

2020 sustainability report



2019 performance



life.augmented

About this report

Scope

This annual sustainability report outlines STMicroelectronics' (ST) sustainability strategy, programs and performance during the calendar year 2019. It is aimed at stakeholders who want to learn more about our commitment and approach to sustainability. Unless otherwise stated, the information and data cover all our activities and sites.

[I 102-1](#) [I 102-50](#) [I 102-52](#) [I](#)

Report structure

The report focuses on the 14 material topics (see [page 19](#)) of our sustainability strategy, which are aligned with our business priorities. We identified these topics in 2017 through a materiality exercise that considered the sustainability context and involved a review of stakeholder concerns. The topics are unchanged in this year's report as they are still relevant for ST in 2019 (see [page 18](#)). For each material topic, we defined ambitions, goals, and programs. In response to our stakeholders' expectations and for a better understanding of our performance, we disclose data and information from previous years. We also include examples of actions we have carried out at ST sites, as well as quotes from stakeholders, enabling them to express their own views on our sustainability performance. [I 102-46](#) [I 102-49](#) [I](#)

There are no significant changes to the organization and its supply chain. [I 102-10](#) [I](#)

There is no restatement of information given in previous reports. [I 102-48](#) [I](#)

Use of symbols

We use the following symbols in this report to indicate our progress towards our objectives:

✓ Target achieved  In progress ✗ No progress/not achieved

Global Reporting Initiative (GRI)

This report has been prepared in accordance with the GRI Standards: Core option. Throughout the report, we use labels to disclose GRI Standards. We list all references to GRI Standards and the corresponding page numbers in the GRI content index on [pages 82 and 83](#).

For the GRI content index service, GRI Services reviewed that the GRI content index is clearly presented and the references for all disclosures included align with the appropriate section in the body of the report. [I 102-54](#) [I](#)

Supporting the UN Global Compact

We have been a signatory of the United Nations Global Compact since 2000 and we follow its 10 principles. This report describes the actions we have taken during 2019 to implement these principles. It therefore serves as our 2019 Communication on Progress (see [page 84](#)). [I 102-12](#) [I](#)

ST supports the United Nations Sustainable Development Goals (SDGs). Our contribution to 10 of the 17 SDGs is highlighted throughout this report, including indicators to measure our performance against these goals: .

External verification

ST's Sustainability Group Vice President has appointed DNV GL Business Assurance France (DNV GL) to provide us with assurance services. DNV GL has verified the content and data in this report and confirmed it has been prepared in accordance with the GRI Standards: Core option. DNV GL interviewed all relevant corporate departments and three categories of stakeholders. In addition, DNV GL audited three manufacturing sites – Bouskoura (Morocco), Calamba (the Philippines), and Crolles (France) – to validate our data reporting process and provide assurance for this year's report. Information and data relating to the ST Foundation were not part of DNV GL's external verification exercise. DNV GL's assurance statement can be found on [pages 86 and 87](#). [I 102-56](#) [I](#)

Availability

This sustainability report is available in PDF format at www.st.com/company-reports, along with last year's report (May 22, 2019) and those from previous years. You can access the 2020 online version at sustainabilityreports.st.com. Printed copies are available on request. [I 102-51](#) [I](#)

Feedback [I 102-3](#) [I 102-53](#) [I](#)

We value feedback and encourage contributions and suggestions from all our stakeholders. You can email us at sustainable.development@st.com or write to us at our headquarters: Corporate Sustainable Development STMicroelectronics International NV 39, Chemin du Champ-des-Filles C.P. 21 CH-1228 Geneva – Plan-Les-Ouates Switzerland

This report has been prepared according to GRI Standards and externally assured. It represents a balanced and reasonable presentation of our organization's economic, environmental and social performance. It also demonstrates our commitment to the UN Global Compact, to which we have been a signatory since 2000.



Jean-Marc Chery
President and CEO

Although reasonable efforts have been made to ensure the consistency of the summary financial information for the year 2019 in this report with ST's financial reporting, reliance should only be placed upon the complete financial reporting contained in ST's Annual Report on Form 20-F for the year ended December 31, 2019, as filed with the SEC on February 26, 2020, which can be found at www.st.com. Some of the statements contained in this report that are not historical facts are statements of future expectations and other forward-looking statements (within the meaning of Section 27A of the Securities Act of 1933 or Section 21E of the Securities Exchange Act of 1934, each as amended) based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance, or events to differ materially from those in such statements. Certain such forward-looking statements can be identified by the use of forward looking terminology such as 'believes', 'may', 'will', 'should', 'would be' or 'anticipates' or similar expressions or the negative thereof or other variations thereof or comparable terminology, or by discussions of strategy, plans or intentions. Some of the relevant risk factors are described in 'Item 3. Key Information – Risk Factors' included in our Annual Report on Form 20-F for the year ended December 31, 2019. We do not intend, and do not assume any obligation, to update any information or forward-looking statements set forth in this report to reflect subsequent events or circumstances.

Content

2020 Edition

This report has been prepared by:

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Sustainability Champion of ST Crolles (France)

This report was prepared at the beginning of 2020 during the COVID-19 pandemic. We are particularly grateful to everyone who contributed to the report during this challenging time and would like to extend them our warmest thanks.

Special thanks to: Jane Bentley, Celine Berthier, Alexis Breton, Jean-Baptiste Collovray, Gerard Cronin, Nelly Dimey, Karen Duhart, Wendy Hudry Allen, Philippe Laffargue, Claudia Levo, Emmanuelle Luce, Priyaranjan Mahanta, Giulia Mancini, Herve Maury, Patrizia Moschetti, Adeline Oliva, Laurent Orsati, Jean-Michel Paris, Antonella Redaelli, Pascal Roquet, Tait Sorensen, Vianney Taufour, Damien Tisserand, Shahrom Tumin.

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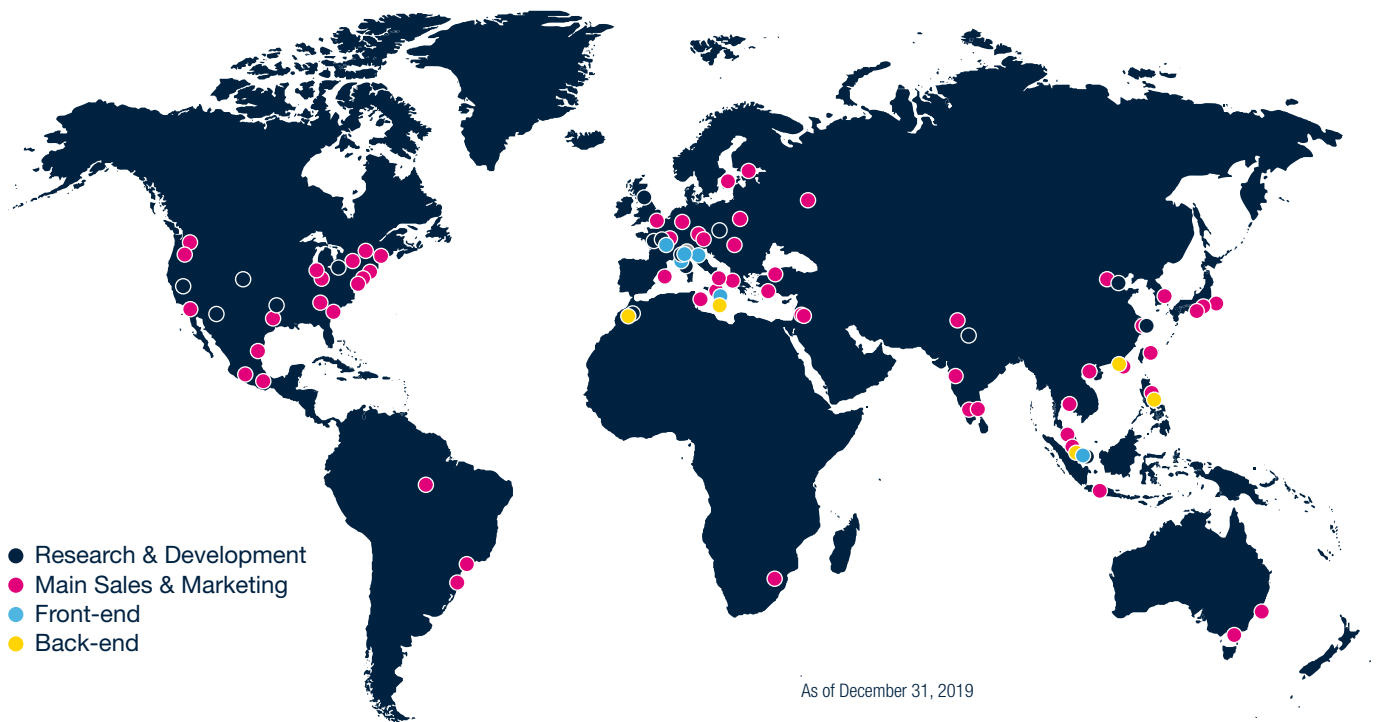
We also would like to thank:

- everyone who kindly agreed to be quoted in this report and provide testimony of their collaboration with ST
- everyone who kindly agreed to have their pictures published in the report
- our interfaces at ST sites, sustainability champions and EHS teams who support our activity all year round
- site directors and human resources managers
- the teams audited in Bouskoura, Calamba and Crolles for their availability

4	ST at a glance
4	ST addresses four end markets
5	Foreword by our President and CEO
6	Our business model
8	ST products and solutions
10	2019 highlights
11	Our ambitions and goals
12	We live our values
12	Governance
14	Ethics and compliance
16	Risk Management
18	Sustainability strategy
22	We improve everybody's life
23	Sustainable Profit
25	Innovation
28	Quality
31	Sustainable Technology
33	Business indicators
34	We put people first
35	Health and Safety
38	Labor and Human Rights
41	Development and Engagement
44	Diversity and Inclusion
47	People indicators
52	We protect the environment
53	Our approach to the environment
55	Energy and Climate Change
59	Water
62	Waste and Effluents
65	Chemicals
68	Environmental indicators
70	Together, we shape the future
71	Supply Chain Responsibility
74	Education and Volunteering
77	Partnerships indicators
79	ST supports the SDG
80	Awards 2019 overview
82	GRI Content Index
84	International standards
85	Glossary
86	External assurance statement

ST at a glance

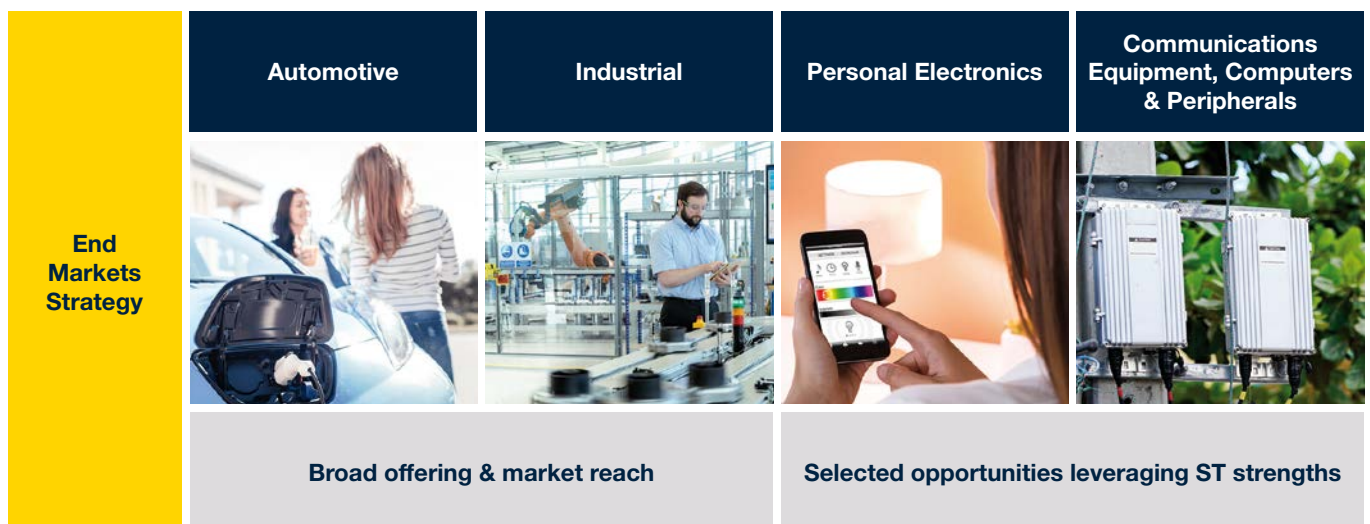
| 102-2 | 102-4 | 102-7 |



- a global semiconductor leader
- 2019 revenues of **US\$9.56B**
- listed: NYSE, Euronext Paris and Borsa Italiana, Milan
- approximately **46,000** employees worldwide
- approximately **7,800** people working in R&D

- **11** manufacturing sites
- over **80** Sales & Marketing offices serving over **100,000** customers across the globe
- signatory of the United Nations Global Compact (UNGC), Member of the Responsible Business Alliance (RBA)

ST addresses four end markets



Foreword by our President and CEO

I 102-14 I

Sustainability is one of the three pillars of ST's value proposition. It is fully embedded in the company DNA and the daily operations of ST's 46,000 employees. We approach sustainability by addressing the opportunities and challenges associated with the long-term trends reshaping our societies: our technologies are enablers of safer, greener mobility, advanced power & energy management across all types of systems and devices, and at the heart of the IoT & 5G. Addressing these opportunities and challenges paves the way to long-term sustainable growth for ST as a global company, for our stakeholders, and more broadly for society.

Providing innovative and sustainable solutions to our customers is a global effort carried out across the entire company. It implies being an independent device manufacturer mastering the entire value chain, from selecting and purchasing raw materials, investing in technology and product R&D, to designing products and ensuring their reliability and high quality. In 2019 we made significant progress in strategic programs focusing on new semiconductor solutions based on Silicon Carbide and Gallium Nitride, and moved forward with the construction of the 300mm fab in Agrate (Italy), dedicated to manufacturing power management devices. We also continued to invest in R&D and collaborated with over 130 R&D partners worldwide to keep on building technological ecosystems around ST solutions. We are also improving our social and environmental footprint at every stage of the product lifecycle, with 62% of new manufactured products identified as Sustainable Technology.

We devote significant effort to enhancing our manufacturing operations. Our yearly investments ensure our technology is state of the art, improve equipment productivity and allow us to reduce the impact of our production on the environment. We continue to implement technical solutions to reduce emissions, reuse water, recycle waste and progressively switch to renewable energy sources. We had set ourselves challenging targets for the reduction of Perfluorinated Compounds and Greenhouse Gas (GHG) emissions. I am pleased to report that GHG direct emissions have been reduced in absolute by 14% compared to 2018, making us 6 years ahead of our 2025 objective. Our longstanding efforts were recognized again in 2019, with ST's presence in the DJSI World and Europe indexes as well as in other key ESG rankings.

People are ST's foundation. I am very proud of the commitment and resilience our employees have demonstrated over the past months as we navigate the consequences of the COVID-19 pandemic. ST is a company built around its employees, whose diversity, combined expertise and long-term commitment are key to create a successful, responsible company on a worldwide scale. We have demonstrated it again with numerous initiatives across the company and with other stakeholders in our communities, with donations of medical supplies and contributions to technology projects to fight the pandemic. Beyond this challenge of early 2020, our latest survey shows that 77% of our employees recommend ST as a great place to work. We are also recognized as a leader in our industry on labor and human rights. We now aim to increase diversity in leadership positions and continue to hire young talents in science and engineering to build a sustainable future.

We have our work cut out for us. Sustainability matters. It is a duty we have towards all our stakeholders and an integral part of our continued business success. I am committed to taking the necessary actions to continue to move forward and achieve ST's strong ambitions in this domain.



Jean-Marc Chery
President and CEO



Our business model

Resources

Human

- ~46,000 employees
- 105 nationalities
- 34% women, 66% men
- Average age: 40

Financial

- US\$12 billion total assets
- US\$1.2 billion capital investments
- US\$672 million net cash

Intellectual

- ~7,800 employees in R&D
- US\$1.5 billion R&D investments
- 138 R&D partnerships

Manufactured

- 11 manufacturing sites in 7 different countries
- 67% of employees in manufacturing
- >5,000 suppliers

Natural

- 2,480GWh of energy consumed
- 27% of renewable energy
- ~19 million m³ of water withdrawn
- >5,000 chemicals used

Social and relationship

- ST values and Code of Conduct
- US\$1.8 million cash donated by ST to local communities
- >145,000 hours donated to local communities

Main steps in our value chain



Suppliers

We purchase raw materials, equipment, energy, gas, chemicals and services from many suppliers and subcontractors.

R&D concept and design

New products are created in a multi-step process including architecture conception, electrical layout, electrical and logic simulation, chip layout and generation of the mask that will be used to etch the design in silicon.

Front-end manufacturing

Manufacturing chips requires around 400 separate stages, starting with a plain wafer, and resulting in the etching of several hundreds to thousands of dies.

Management of our impacts

Suppliers

We require our suppliers to implement the Responsible Business Alliance (RBA) standards and encourage ISO and OHSAS certifications to address ethics, social, environmental, health and safety risks.

We participate in the Responsible Minerals Initiative.

Products

Through our Sustainable Technology program we design products systematically taking into consideration the environmental impact of the device during its whole lifecycle, including raw materials, transportation, manufacturing, usage and end of life.

People

We ensure the health and safety of our employees through advanced management systems and certification.

We implement our Code of Conduct and the RBA standards in all our sites to mitigate our ethics and labor and human rights risks, and carry out regular assessments and audits in all our production sites.

Value created



Electrical wafer sorting

Dies on the wafer are electrically tested. This step is known as wafer sort or probe.



Back-end manufacturing

The dies are cut from the silicon wafer before being assembled in a package. The chips are then tested prior to delivery to the customer.



Product use and end of life

We offer a large portfolio of products suitable for the wide range of applications addressed by our customers.

Environment

We deploy programs to reduce our direct and indirect greenhouse gas emissions from all our operations, including Perfluorinated Compounds (PFCs), which have a very long atmospheric lifetime and high global warming potential.

We minimize the environmental, health and safety risks related to the chemicals and materials used in the manufacturing process, by basing the selection, handling, and substitution on the precautionary principles.

We are continually reducing our water footprint through reuse and recycling and all our wastewater is treated before being discharged into the environment.

We reduce, reuse, recycle or recover as much of our waste as possible, rather than sending it to incineration or landfill.

I 102-2 I 102-9 I 201-1 I

Unless otherwise stated, all data refer to 2019.

Human

Engaged and skilled people in an inclusive and safe workplace

- average of 50 hours of training per employee
- 77% of employees recommend ST as a great place to work
- 0.16 recordable case rate (injuries)

Financial

Sustainable financial performance

- US\$9.56 billion net revenues
- US\$2.96 billion salaries and benefits
- US\$165 million taxes paid
- US\$214 million cash dividend

Intellectual

Innovative products and solutions

- ~18,000 active patents
- 62% of new products classified Sustainable Technology
- 16% of revenues generated by new product lines

Manufactured

Responsible and effective business operations

- >100,000 customers served
- ISO 9001, 14001, 22301, 45001/OHSAS 18001 and IATF certifications
- 100% of manufacturing sites covered by RBA audits
- 99% of new suppliers screened on social responsibility criteria

Natural

Mitigation of the impact of our activities

- 84% decrease in PFC emissions since 1994 (per unit of production)
- 94% of waste reused, recovered or recycled
- 41% of water recycled or reused

Social and relationship

Knowledge and values shared with all

- >110,000 beneficiaries in local communities
- 389 volunteering initiatives from 33 sites worldwide
- >720,000 people trained on computer basics by ST Foundation since 2003

ST products and solutions

ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. Chips and systems from ST, incorporating the most advanced innovations, are found in billions of products, ranging from cars and factory machines, through washing machines and air-conditioning systems, to smartphones and telecommunications equipment. Our technology helps our customers make all of these more intelligent, more energy-efficient, more connected, safer and more secure. | 102-2 |

Our solutions address four end markets: Automotive; Industrial; Personal Electronics; and Communications Equipment, Computers and Peripherals. Some of our products and solutions are specific to the markets and applications we address, such as our dedicated solutions for Automotive and our application-specific analog solutions for Industrial, but others can be used in a wide range of applications – our general purpose microcontrollers or power discrete devices, for example. | 102-6 |



- multicore ARM® Cortex®-R52
- embedded Phase-Change Memory
- ASIL-D with hypervisor
- secure communications

Safe real-time automotive MCU for domain controllers

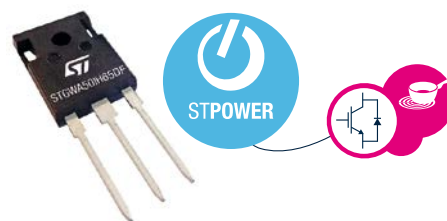
ST serves the key trends in the automotive market – vehicle digitalization and electrification – with a comprehensive range of products and solutions. Our **automotive microcontroller unit (MCU) families** are automotive qualified and meet developer requirements ranging from cost-sensitive to highly advanced automotive applications. They incorporate support for Over the Air (OTA) updates for critical vehicle powertrain, body, chassis, and infotainment features, which are increasingly defined by software.

Car architectures are evolving from many distributed electronic control units to a smaller number of powerful domain controllers. ST is powering this evolution with a new family of high-performance, multi-core automotive microcontrollers that meet the stringent automotive safety requirements.

High-performance MEMS IMU for AR/VR and tracking applications

ST is a long-time leader in **motion and environmental MEMS and sensors** that offer customers increased accuracy and sensitivity, combined with ultra-low power consumption. Our products can be found in the majority of flagship personal electronics devices and are used for the most demanding user experience applications. We also design products for applications that require higher reliability and small size, especially in harsh environments such as factories and cars.

Our innovative thin-film piezoelectric micro actuators ensure higher efficiency and lower costs for traditional applications such as inkjet printing, while enabling new waves of innovation with MEMS speakers, MEMS micromirrors and fluid dispensing technologies.



600V IGBT IH series maximize induction-heating efficiency

ST offers a range of **power discrete devices** that meet the needs of our customers across the end markets we serve. Our Silicon Carbide and Gallium Nitride power devices are recognized for their efficiency and enhanced performance in automotive inverters and charging, industrial automation and communications infrastructure applications. Other products in our power discrete offer are first-choice solutions for high-end power conversion, home appliances, and motor control.

Accelerating electrification Silicon Carbide power devices

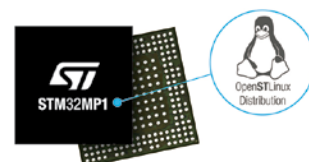
Our **Silicon Carbide technology** for vehicle electrification and charging stations enables our customers to create electric cars with longer ranges, that charge faster, and have a lower weight. As the number of electronic

components per car increases, we need to ensure that all the components used to power, control and monitor the different car subsystems consume less energy. ST's high-efficiency smart power solutions and power-efficient processors are designed to do just that.



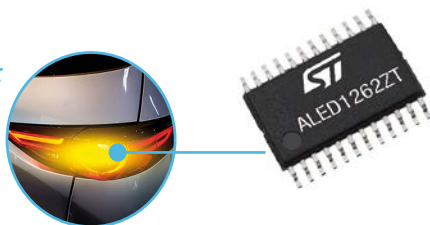
New multicore STMMP1 Series for industrial and IoT applications

ST is addressing the need for embedded processing solutions for Industrial and IoT applications that require more performance, resources and support for large open-source software. Our new line of STM32 **microprocessors** offers high computing power and graphics support, combined with power-efficient real-time control and high feature integration. Customers can now develop a new range of applications using a heterogeneous architecture that performs fast processing and real-time tasks on a single chip, always achieving the greatest power efficiency.



Automotive 12-channel LED driver for advanced rear-lighting solutions

ST offers a complete range of ICs dedicated to body and convenience solutions, including body control modules and car lighting systems, as well as a portfolio of ASIC and ASSP solutions for engine control. Our in-vehicle infotainment systems cover everything from high-end integrated platforms and digital radio to Class-AB and Class-D audio power amplifiers.

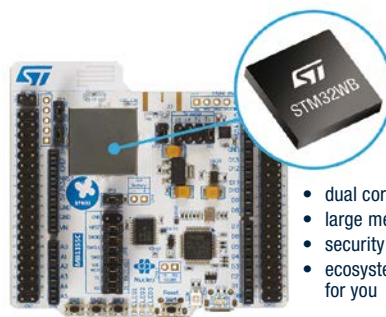


Our ADAS safety solutions make driving safer by helping drastically reduce road accidents and associated casualties, thanks to our cutting-edge RF and vision systems.

STM wireless MCU Supports Bluetooth™ 5, Thread, Zigbee®

To support the needs of the Internet of Things (IoT) and an ever more connected world, we offer a variety of **wireless connectivity solutions**. These include microcontrollers from our STM32 family with embedded wireless capabilities, standalone RF transceivers, and network processors for Bluetooth, Bluetooth Low Energy, Zigbee, Thread and sub-1GHz long-range networks, such as 6LoWPan, WMBUS, SigFox and LoRaWAN.

We also work with partners to make it easier for our customers to use the full spectrum of connectivity services. We offer pre-integrated Cloud connectivity software for our microcontrollers, and evaluation and prototyping tools for fast connection of IoT devices to Cloud services over cellular networks.



- dual core
- large memory
- security features
- ecosystem made for you

Best-in-class RF performance and low-power design ST31P 40nm Flash technology

ST offers solutions that cover the full range of security needs in electronics systems. Our solutions range from software solutions embedded in general purpose microcontrollers, to dedicated embedded hardware and standalone devices that meet the highest security standards. Our **secure microcontrollers** can be found in smartcards used for ID, transport, banking and SIM cards, as well as pay TV applications. We offer a range of authentication solutions for brand protection and Trusted Platform Modules (TPM) designed to secure hardware. Our Secure Element and NFC controller solutions ensure the security of mobile transactions on smartphones, wearables and smart gear.



- Certified by
EMVCO
MIFARE
Calypso
- Compliant with
MIFARE
Calypso



Miniaturized step-down regulator for energy-conscious IoT devices

We address a wide variety of industrial and IoT applications that require a range of generic and application-specific solutions for **power management**. Our solutions for power and energy management enable energy-saving, high-power-density and lower-standby-power designs. Our offering includes higher-efficiency power technologies, such as Silicon Carbide power discretes, MOSFETs, IGBTs and customized power modules, AC-DC and DC-DC converters, battery management ICs, digital controllers, and gate drivers.

STMG4 mixed-signal MCUs shaped for analog-rich applications

Embedded processing capabilities combined with Artificial Intelligence (AI) capabilities enable objects around us to become increasingly smart. ST offers general purpose **microcontrollers and microprocessors**, such as our STM32 family. This has over 1,000 part numbers to ensure designers can find the best solution for their application, whether they require ultra-low power consumption, very high performance, AI, advanced security features or a high level of wireless and wired connectivity. We also offer a comprehensive and continuously expanding development ecosystem that saves on design costs and reduces time to market for our customers.

Our recent additions include a new series of STM32 microcontrollers targeted at advanced digital power applications and consumer and industrial appliances. We have introduced a range of features to support increased performance and energy efficiency, including two new hardware mathematical accelerators.



- 170 MHz Cortex®-M4 core
- new math accelerators
- high-resolution timer v2
- 32 to 512 Kbytes of Flash memory

One billion ToF modules shipped

ST's patented FlightSense™ technology, based on the Time-of-Flight (ToF) principle, ensures a high-accuracy, low-power and all-in-one solution for **proximity and ranging sensors** for personal electronics and industrial applications, as well as 3D sensing for smartphones and smart driving (LiDAR) features.

Our technology is used by PC makers to protect data and save power via user presence detection that instantaneously locks and puts the PC into low-power mode when the user is absent. User presence detection enables instant and touchless wake-up and sign-in as soon as the user returns.



Versatile motor drivers for industrial & medical applications

Electric motors are the main consumers of electrical energy in the industrial environment. ST provides a comprehensive array of motor control solutions that enable motors to run with higher efficiency and greater precision. We cover the requirements of brushed DC motors, stepper motors and brushless DC motors over an extensive range of voltage and current ratings. Our line-up of **STSPIN motor drivers** embeds all the functions needed to drive motors efficiently and with the highest accuracy. The motor drivers include many advanced features, including a low-voltage series designed for battery-powered smart devices.

2019 highlights

15.7%
of revenues
invested in R&D

MEMBER OF
**Dow Jones
Sustainability Indices**
In collaboration with **SAM**
a RobecoSAM brand

Inclusion in DJSI
World and Europe

62%
of new products
classified as
responsible
products



50
average training
hours per employee

41%
of water recycled
and reused

94%
of waste reused,
recovered or
recycled

100%
of products are
conflict-mineral
free

177
supplier
responsibility
audits since 2015

100%
of ST
manufacturing
sites covered by
RBA audits



77%
of employees
recommend ST as a
great place to work

-21%
GHG emissions
vs 2016



0.16
recordable case
rate – among the
best-in-class

CDP
B score for
water and
climate change

>97,000
medical acts
conducted

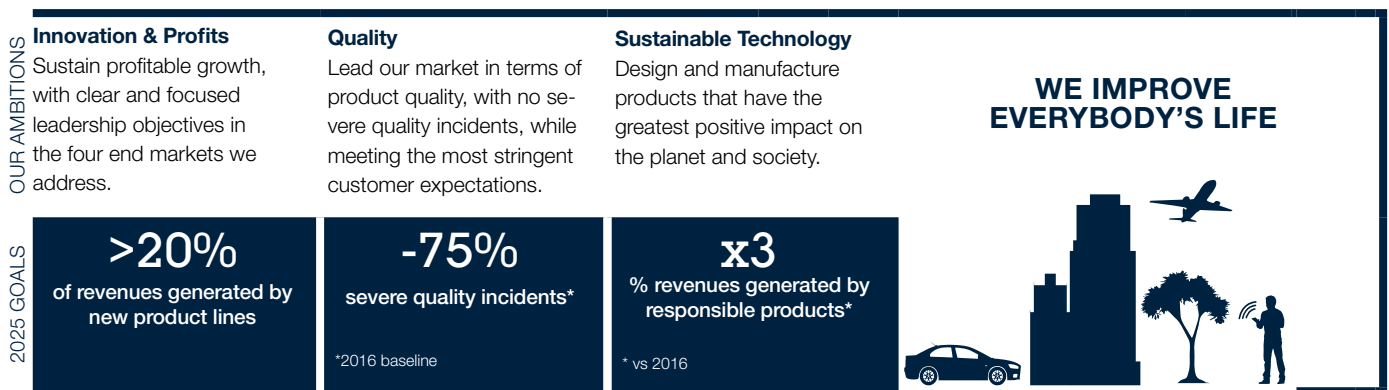
>250
women in the
Women in
Leadership
program since 2015



389
education and
volunteering
initiatives from
33 sites worldwide

Our ambitions and goals

WE LIVE OUR VALUES: People, Integrity, Excellence



Governance



ST headquarters, Geneva, Switzerland

ST's parent company, STMicroelectronics NV, is registered in the Netherlands and is listed on the New York Stock Exchange (NYSE), Euronext Paris, and Borsa Italiana. Our headquarters and operational offices are managed through our wholly-owned subsidiary, STMicroelectronics International NV, located in Plan-les-Ouates, near Geneva, Switzerland. Our operations are also conducted through our various subsidiaries, which are organized and operated according to the laws of their countries of incorporation and consolidated by STMicroelectronics NV. [I 102-5](#) [I 102-45](#) [I](#)

We have a two-tier governance structure, in accordance with Dutch law, where our management is entrusted to our Managing Board under the supervision of our Supervisory Board.

Our corporate governance policies and practices are outlined in our Corporate Governance Charter, Supervisory Board Charter and Managing Board & Executive Committee Charter. These are available in the corporate governance section of our website (see investors.st.com).

Supervisory Board

Our Supervisory Board supervises the policies pursued by the Managing Board and the general course of affairs and business of ST, and supports the Managing Board with its advice. [I 102-18](#) [I](#)

Our Supervisory Board comprises nine members (four women and five men), each appointed at our Annual General Meeting of Shareholders. Supervisory Board members are carefully selected in accordance with the Supervisory Board Charter and Profile, which are available in the corporate governance section of our website (see investors.st.com).

Our Supervisory Board is assisted in its duties by four standing committees. These are independent of the Managing Board and senior management.

- Audit Committee
- Strategic Committee
- Compensation Committee
- Nominating and Corporate Governance Committee

91%
average attendance
rate at our Supervisory
Board meetings

Our Supervisory Board met 10 times in 2019, with an average attendance rate of 91%. Full details of attendance at meetings of the Supervisory Board and its committees are shown in our annual report on Form 20-F, and in our statutory annual report, both of which are available on our website (see investors.st.com).

Managing Board

Since May 2018, our President and CEO, Jean-Marc Chery, has been the sole member of our Managing Board. Following the proposal of our President and CEO, an Executive Committee was established on May 31, 2018 which acts under the authority and responsibility of the Managing Board, and in this respect manages the Company. Jean-Marc Chery is also the Chairman of our Executive Committee.

As of December 31, 2019, the other members of the Executive Committee are:

- Orio Bellezza, President, Technology, Manufacturing and Quality
- Marco Cassis, President, Sales, Marketing, Communications and Strategy Development
- Claude Dardanne, President, Microcontrollers and Digital ICs Group
- Lorenzo Grandi, President, Finance, Infrastructure and Services, and Chief Financial Officer
- Marco Monti, President, Automotive and Discrete Group
- Steven Rose, President, Legal Counsel
- Benedetto Vigna, President, Analog, MEMS and Sensors Group.

Their biographies can be found in the 'About ST' section of our website (see www.st.com).

Corporate Audit

Corporate Audit is strictly independent from corporate and local management. Its primary objective is to enhance and protect organizational value by providing risk-based and objective assurance, advice, and insight.

Our Chief Audit and Risk Executive, Franck Freymond, is head of Corporate Audit. He reports directly to the Audit Committee of our Supervisory Board and attends quarterly meetings with the Audit Committee and executive management.

The current functional reporting line and practices ensure he has the appropriate level of organizational independence and unrestricted access to executive management and the Supervisory Board.

The internal audit process is based on a formal and structured audit methodology, which ensures a risk-based approach. Corporate Audit activities are coordinated with other risk assurance functions within the Company, allowing an effective risk coverage.

Corporate Audit performs its activities in accordance with the International Standards for the Professional Practice of Internal Auditing, published by the Institute of Internal Auditors.

Sustainability governance

Overall responsibility for sustainability lies with our President, Human Resources and Corporate Social Responsibility, who chairs our Sustainability Council and updates our President and CEO at quarterly Executive Committee meetings.

Our Sustainability Council validates our sustainability strategy and ensures the means are in place for each organization and site to deploy the corporate programs. The Council comprises 12 Vice Presidents, representing Human Resources, Compliance and Ethics, Sales and Marketing, Purchasing, Investor Relations, Front- and Back-end Manufacturing, Product Groups, Communications and Quality.

The Corporate Sustainability department is responsible for developing our sustainability strategy and programs. It is supported by a network of over 100 local Sustainability Champions who manage the programs and monitor our performance across all sites and organizations. [I 102-18 I](#)

ST has been a signatory to the Global Compact since 2000 and a member of the Responsible Business Alliance since 2005. [I 102-13 I](#)

**Independent
audit function**

**Sustainability
Council
comprises
12 Vice Presidents**



Responsible Business Alliance
Advancing Sustainability Globally

Ethics and Compliance

As one of the world's leaders in semiconductors, we have a responsibility to lead by example. Our vision speaks for itself: we want to be everywhere microelectronics brings a positive contribution to people's lives. We reflect this in everything we do. We believe that conducting our business with the highest standards of integrity is essential to our long-term success. At ST, compliance and ethics are everyone's job and everyone's responsibility. | 102-16 |



Code of Conduct

Our Code of Conduct is all about our values, which are shared throughout the Company. It sets clear expectations and provides practical guidelines on the way we conduct business and make our decisions, helping to foster a culture of integrity. It also defines guiding principles for everyone at ST, in line with our value proposition to all stakeholders, and it reflects our values.

- **Integrity:** we conduct our business with the highest ethical standards, honor our commitments, deliver on our promises, are loyal and fair, and stand up for what is right.
- **People:** we behave with openness, trust and simplicity; we are ready to share our knowledge, encourage everyone's contribution, develop our people through empowerment, teamwork and training; each one of us is committed and personally involved in the continuous improvement process.
- **Excellence:** we strive for quality and customer satisfaction and create value for all our partners; we are flexible, encourage innovation, develop our competences, seek responsibility and are accountable for our actions; we act with discipline, base our decisions on facts, and focus on the priorities.

Our Code of Conduct is available in 10 languages on our website (www.st.com/code_of_conduct), our intranet and in our ST Integrity app.

In 2019, we refreshed our Code of Conduct. We updated our compliance and ethics risk assessment and risk mapping exercise, and we continued our compliance and ethics awareness and communication campaign, 'Building Trust Together'.

Building Trust Together started in 2018. It uses a variety of tools to engage employees, managers and third-parties, including face-to-face and town hall meetings, e-learning modules, dedicated intranet, articles, posters, targeted emails and short videos.

Internally, we further promoted our ST Integrity app, a dedicated mobile application that provides our employees with quick and easy access to important and useful information. It also includes notifications, quizzes, training materials and a direct link to our misconduct reporting hotline.

Building Trust Together



E-signature of Code of Conduct⁽¹⁾ (%)

2015	2016	2017	2018	2019
95	94	97	97	98

⁽¹⁾Percentage of exempts. Scope was extended to all exempts in 2016.

Bribery and corruption

ST has a zero tolerance approach to bribery and corruption, regardless of the identity or position of the originator or recipient of any bribe. It is also strictly forbidden for anybody in ST to use Company funds or assets to make a political contribution.

Our Code of Conduct and Anti-Bribery and Corruption Policy are available in the corporate governance section of our website (see investors.st.com). They provide clear definitions regarding instances of bribery and corruption and include detailed descriptions of the Company's rules for engaging with third-parties. They also explain how to report actual or suspected violations and outline the potential disciplinary actions and legal consequences of any non-compliance.



Philippe Dereeper

Chief Compliance Officer, and Executive Secretary of the Supervisory Board

Putting integrity, respect and accountability at the core of our decision-making process is key to support our strategy, earn the trust of our employees and business partners and create long-term value for all our stakeholders. Ethics and Compliance stand for Building Trust Together!"

Speak up!
culture

Speak up and misconduct reporting

We encourage everyone, including external business partners, to express, in good faith, any concerns they might have regarding possible violations of our Code of Conduct, the Company's policies, or the law. Managers are accountable for maintaining a working atmosphere where employees feel comfortable about speaking up and expressing their concerns freely.

	LOCALLY • Managers • HR managers • Legal & Compliance departments • Site managers	CORPORATE • Chief Compliance Officer • CVP Human Resources • General Counsel • Chief Audit & Risk Executive	MISCONDUCT REPORTING HOTLINE • Either by phone or online: www.st.ethicspoint.com
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Our misconduct reporting process is communicated to all employees through a range of channels, including our Code of Conduct, dedicated intranet web pages and our ST Integrity app.

In addition to internal local and corporate reporting channels, we have an independent multilingual misconduct reporting hotline. A link to our hotline is accessible on our websites (intranet and www.st.com) and ST Integrity app. It can be used by any ST employee, interested business partners or stakeholders.

We apply the highest standard of confidentiality in the handling of all reports received, either through local management or through the hotline. We ensure that no employee who reports a concern in good faith suffers retaliation in the form of harassment, or adverse employment or career consequences.

Misconduct reporting

	2019
Number of incidents under review as of January 1 st	6
Number of incidents reported or identified during the year ⁽¹⁾	30
Actual misconduct cases identified through audit or management review	1
Incidents closed by a formal investigation report	10
Number of confirmed external misconduct cases	0
Number of confirmed internal misconduct cases	6
which led to employees being dismissed or disciplined	6
which led to terminating or not renewing contracts with business partners	0
Incidents closed after preliminary assessment	21
Incidents still open at year end	5
Number of public legal cases regarding corruption brought against ST or its employees	0

⁽¹⁾ Relates to cases managed at corporate level.

Ethics committees

Our Corporate Ethics Committee is chaired by our Chief Compliance Officer, Philippe Dereeper. It supports ST management in its efforts to foster an ethical business culture that is consistent across regions, functions, and organizations. The committee meets at least quarterly and comprises nine senior managers appointed for three-year terms by our President and Chief Executive Officer.

The committee's role and responsibilities include:

- discussing and evaluating amendments to our Code of Conduct, as well as ethical breaches, allegations, and related investigations
- issuing guidance or recommendations on ethical dilemmas
- coordinating a network of local ethics committees in France, Italy, Asia Pacific and the Americas

These local ethics committees, covering individual countries or regions, meet regularly. Their roles, responsibilities, and organizations are defined locally, based on guidelines issued by the Corporate Ethics Committee.

Risk Management

ERM process
aligned with
ISO 31000

At a time of increased volatility, uncertainty, complexity, ambiguity and change, navigating the complexities of the global semiconductor business presents both opportunities and risks for ST.

We take appropriate steps to identify, manage and monitor these risks in pursuit of our objectives as a listed industrial semiconductor company operating across the globe.

Enterprise Risk Management (ERM)

Our approach to ERM is formalized in a specific policy and is aligned with ISO 31000. Our ERM approach enables us to:

- set our Company strategy, manage our performance, and capitalize on opportunities
- perform systemic identification, evaluation and treatment of risk scenarios

Following an independent audit of our ERM approach in late 2017, ST increased its investment in risk management. In particular, we defined a three-year improvement roadmap in mid-2018, which was rolled out in 2019.

As part of that roadmap, we defined, set up and deployed an ERM framework.

ST's ERM framework

Governance, organization and culture	• ERM oversight and governance
	• Risk culture
	• Risk appetite
	• ERM function and community
Managing risk and opportunities	• Risk and opportunity in strategy and performance management
	• Risk monitoring
	• ERM interactions with other risk functions
ERM enablers	• ERM policy framework and methodology
	• ERM process
	• ERM tools

ERM process

Our risk appetite depends on the nature of the risk. We regularly determine the amount of risk we are willing to eliminate, mitigate, pursue or retain, depending on the expected rewards, opportunities and costs.

The ERM process is embedded in all ST organizations and Company key processes. It applies a holistic approach, combining both 'top-down' and 'bottom-up' perspectives, to ensure that risk identification, evaluation, and management are performed at the right level.

In 2019, we carried out the annual review of our top-down risk assessment with executive management. The output from this exercise was a risk map linked to our strategic objectives, including 11 'priority 1' risk areas.

Risk owners (members of senior management) were appointed for each of these risk areas to develop risk-mitigation action plans and enhanced monitoring and reporting capabilities. These plans are regularly reviewed by senior management and periodically discussed with the Supervisory Board and Audit Committee.

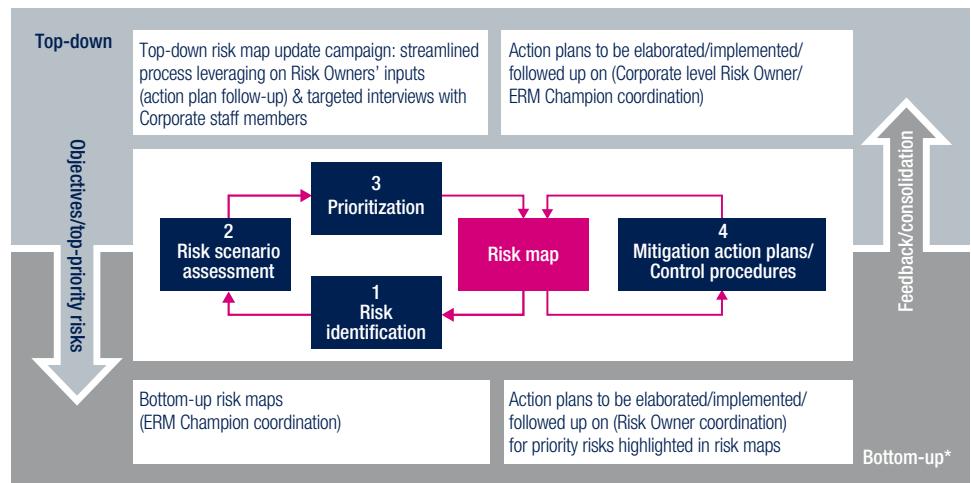
We also completed a bottom-up risk assessment in organizations throughout the Company, including Marketing and Sales, Product Groups, Manufacturing and Technology, corporate functions and large Company projects.

Specific risks and related mitigation activities can be found in the relevant sections of this report.



ISO 22301
re certified
in 2019

**Annual risk
assessment of our
tier 1
supply chain**



* ST organizations

Business continuity

We deploy a structured Business Continuity Management System (BCMS) across our main sites and selected organizations. It provides a consistent and structured methodology to address potential business disruptions that may affect our supply chain and operations through seven broad potential scenarios:

- site unavailability
- people unavailability
- IT systems disruptions (e.g. cyber-attacks)
- facilities disruptions
- critical sourcing disruptions
- logistics/transportation disruptions
- security violations

As such, our approach encompasses potential disasters due to natural hazards (such as earthquakes, floods, snowstorms, volcanic eruptions or tsunamis), industrial accidents (such as fires and explosions), and major impacts related to human activities (such as terrorism, strikes or pandemics).

In 2019, ST obtained its ISO 22301 recertification for three years. In the coming year, third-party surveillance audits and internal audits will be performed.

In January 2020, in the face of the COVID-19 pandemic, we triggered our crisis management and business continuity protocols focusing on two overarching priorities:

- first and foremost, maximizing measures to prevent infection and supporting our employees and their families
- secondly, executing our business continuity plans, closely monitoring the situation across our whole supply chain and working with our customers, suppliers and partners

Sustainability risks

Sustainability risk scenarios are considered as part of our Company ERM program, both from a top-down and bottom-up perspective.

In addition, we identify our overall sustainability risks (and opportunities) through a regular materiality exercise. For more information, see [page 18](#).

For each topic covered by our sustainability strategy, we identify the risks and then define and implement programs to manage these risks. This includes defining policies, deploying certified management systems such as OHSAS 18001 and ISO 14001, and implementing industry standards such as the Responsible Business Alliance (RBA) code of conduct and supporting evaluation and auditing tools. It also includes managing climate-related risks (see [page 58](#)).

In addition, we conduct an annual risk assessment of our entire tier 1 supply chain, to determine the risks related to Labor and Human Rights; Environment, Health and Safety; and Ethics (see Supply Chain Responsibility on [page 71](#)).

Sustainability strategy



25 years
of commitment

Our approach

Sustainability: an integral part of ST's culture

Sustainability has been embedded in our business practices for more than 25 years and is a major factor in our effectiveness and long-term success.

It is integrated throughout our entire business, allowing us to maximize opportunities in areas such as Sustainable Technology, Innovation, and People Engagement, as well as helping us to predict and mitigate risks in our operations and business performance. Sustainability topics are diverse but all support ST's vision to make a positive contribution to people's lives.

Strategy focused on the priorities

At the heart of our sustainability strategy is an unceasing focus on what really matters for ST and our stakeholders.

In 2017, we conducted our third materiality exercise to identify our material topics. The materiality exercise comprised three steps (see our 2018 sustainability report available at www.st.com/company-reports):

- topic identification
- stakeholder consultation
- sustainability strategy validation

For each material topic, we defined a specific ambition and long-term goal. The related programs and performance indicators are presented throughout this report. **| 102-46 |**

As sustainability challenges and opportunities are constantly evolving, we continually monitor external trends, emerging issues and perspectives, as well as ST's changing needs.

In 2019, we analyzed studies and publications from across the electronics industry and business associations to identify any new material topics for ST. We also conducted an internal survey, asking more than 100 members of our Sustainability and Environment, Health and Safety (EHS) networks to review the evolution of the material topics identified in 2017.

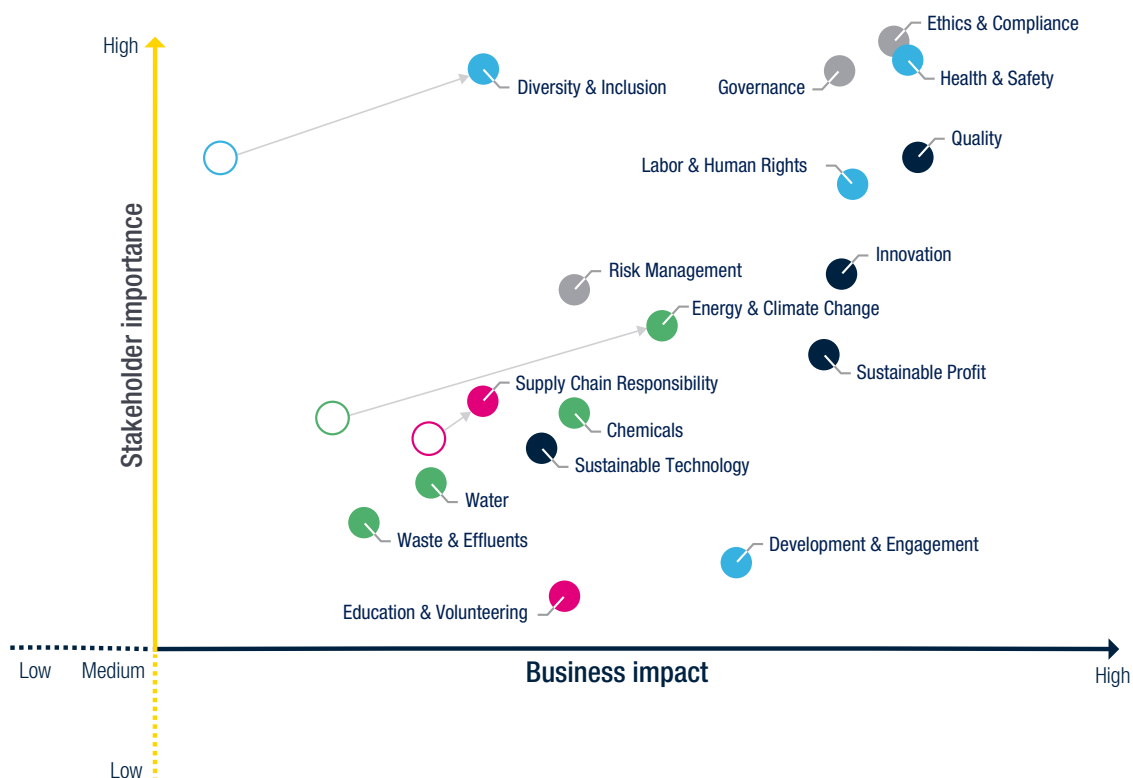
Three topics emerged as being both more important for our stakeholders and having a significant impact on our business:

- Diversity and Inclusion
- Energy and Climate Change
- Supply Chain Responsibility

This analysis was presented to our President and CEO who reviewed and validated the prioritization of the material topics as illustrated in the matrix.

Top **material**
topics

Top material topics | 102-47 | 103-1 |



Interview



Jean-Louis Champseix
Group Vice President,
Corporate Sustainability
and Staffing

What do you think are ST's main strengths in terms of sustainability?

Our longstanding commitment to sustainability makes it an integral part of our culture and the way we manage business. Thanks to the policies and practices in place since ST's creation in 1987, we have reached a certain level of maturity in many areas. For example, in the last 25 years we have reduced our energy consumption by 57% and our water footprint by unit of production by 76%. In terms of safety, we have decreased our accident rate by 83% over the last 17 years.

But sustainability is a never-ending journey for us, as we continually seek to offer new technologies and innovations to our customers. Transparency is another of our strengths. We recognize our weaknesses and work to improve them.

What does sustainability bring to ST?

Sustainability is a driver of our resilience, competitiveness and long-term success. It empowers value creation while reducing risks for us and our stakeholders. By anticipating and adhering to the highest standards, we progress together with our partners to achieve ambitious goals related to working conditions, ethics, employee experience, safety and environmental efficiency and in this way, we embrace dynamic sustainable growth.

With our Sustainable Technology program, which leverages the responsible aspects of our products, we offer our customers differentiated products and address new markets. Our environmental programs help us reduce our emissions and consume fewer resources, and so reduce our operating costs. Sustainability also delivers many competitive advantages to our business, such as:

- being a leading supplier for our customers, partnering with them on new initiatives
- having an engaged, sustainable and responsible supply chain, increasing our competitiveness
- creating a great workplace, retaining and attracting the most talented employees
- attracting investors

How do you think ST should keep moving forward?

In a complex and increasingly unpredictable world, risks are constantly evolving. We need to continue to adapt the way we tackle the health and safety of our people, and the social, environmental or economic challenges the world faces. We also need to continue to anticipate our stakeholders' expectations, innovate to develop new responsible products and solutions, and continuously develop our whole ecosystem."

Stakeholder engagement

Our stakeholders are employees, customers, suppliers, investors and other entities that can affect or be affected by our activities and products. Maintaining an open dialog with our stakeholders is essential to understand their interests and expectations. [I 102-40 I](#)

Each ST site conducts specific actions depending on its activity, size, location and culture, and all ST sites have regular exchanges with major local stakeholders, such as local authorities, schools and universities. During the verification process of this report, DNV GL interviewed three stakeholders about their relations with ST. All of them expressed the positive impact of their collaboration with ST. [I 102-42 I 102-43 I](#)



Stakeholder	Key expectations	Engagement channels
EMPLOYEES	• Quality • Health & Safety • Ethics & Compliance	• Seminars, conferences, forums • VP communication meetings • Recognition, awards, contests • Intranet, internet, news, emails, videos • Training, workshops • Employee surveys • Application week, EHS week
CUSTOMERS	• Ethics & Compliance • Governance • Quality	• Trade shows • Conventions, technical seminars • Audits and site visits • Joint seminars, conferences, technodays, workshops • Meetings
INVESTORS & ANALYSTS	• Health & Safety • Governance • Innovation	• Investors and analysts day • Annual reports • Extra-financial questionnaires
SUPPLIERS	• Health & Safety • Ethics & Compliance • Labor & Human Rights	• Meetings • Audits • Supplier training • Surveys • EHS week • Technical roadshows
LOCAL PARTNERS	• Ethics & Compliance • Labor & Human Rights • Waste & Effluents	• Partnerships • Conferences, conventions, meetings • Site visits • Donations, training, volunteering, local initiatives
NATIONAL & LOCAL AUTHORITIES	• Quality • Ethics & Compliance • Health & Safety	• Partnerships with municipalities • Meetings, conferences, seminars • Annual reports • Site visits
ACADEMIC & LABORATORIES	• Labor & Human Rights • Ethics & Compliance • Diversity & Inclusion	• Internships, scholarships, PhDs • Joint R&D projects, joint labs • Conferences, technical seminars • Site visits
INDUSTRY ASSOCIATIONS	• Governance • Ethics & Compliance • Diversity & Inclusion	• Memberships in public-private partnerships, international and European associations • Participation in consortiums, in working groups of electronic industry associations • Meetings, conferences, seminars
MEDIA	• Waste & Effluents • Innovation • Chemicals	• Conferences, conventions, meetings • Press releases

Key expectations are the top three issues retained by each group of stakeholders in our 2017 materiality exercise.

[I 102-44 I](#)

Contributing to the Sustainable Development Goals (SDGs)



The SDGs set by the United Nations define global sustainable development priorities and aspirations for 2030, highlighting the world's biggest social and environmental challenges.

As a multinational company, we believe we have a responsibility and a role to play to help achieve these goals. We mapped the 17 SDGs to our material topics and business strategy. We then identified the 10 goals that are most relevant to our sustainability strategy. Our performance against these SDGs is highlighted throughout this report.

3 GOOD HEALTH AND WELL-BEING



- We aim to ensure healthy lives and well-being for all.
- We are engaged in minimizing risks of negative impact on people due to our activities.

4 QUALITY EDUCATION



- We support education in all the countries where we operate.
- We develop the competence of our employees through a blended approach.

5 GENDER EQUALITY



- We aspire to achieve full gender equality.
- Our Women in Leadership program prepares the next generation of women leaders.

6 CLEAN WATER AND SANITATION



- We are committed to reducing our water consumption and recycling more.
- All our wastewater is treated before being discharged into the environment.
- We strive for zero waste in landfill.

7 AFFORDABLE AND CLEAN ENERGY



- We deploy programs to improve energy efficiency in all our manufacturing sites.

8 DECENT WORK AND ECONOMIC GROWTH



- We apply a zero tolerance approach to forced labor.
- We assess and mitigate social risks in our extended supply chain.
- We focus on providing a safe workplace with zero injuries and zero occupational diseases.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



- We promote open innovation and partner with a wide range of universities and research institutes throughout the world.

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



- We strive for zero waste in landfill, reduce our consumption of chemicals and eliminate hazardous materials.

10 REDUCED INEQUALITIES



- We promote equal opportunities for all.
- Our ambition is to be a leader in cultural and disability inclusion.

13 CLIMATE ACTION



- We deploy programs to reduce our GHG emissions.
- We actively participate in industry initiatives for action on climate change.

We improve everybody's life



Inclusion in
DJSI
World and Europe



15.7%
of our revenues
invested in R&D



588
new patents
filed in 2019



Mobile World Congress, Barcelona, Spain

Sustainable Profit

Product group revenues

US\$3.6 billion	Automotive and Discrete
US\$3.3 billion	Analog, MEMS and Sensors
US\$2.6 billion	Microcontrollers and Digital ICs

2019 financial results

38.7%
gross
margin

US\$9.56
billion
net revenues

12.6%
operating
margin

Innovation & Profits

OUR AMBITION
2025 GOAL
2019

Sustain profitable growth, with clear and focused leadership objectives in the four end markets we address.

>20%
of revenues generated by
new product lines

15.9%

Our results in 2019 were in line with the full year expectations: net revenues of US\$9.56 billion, with a gross margin of 38.7% and an operating margin of 12.6%.

We achieved strong growth of around US\$1 billion in the second half of the year compared to the first half, driven by a stronger than expected contribution from engaged customer programs and new products.

Our free cash flow for the year was US\$497 million, including capital expenditure of US\$1.17 billion, and our net financial position was US\$672 million. Net income was US\$1.03 billion, translating into US\$1.14 diluted earnings per share.

Sales to OEMs represented 70% of total 2019 revenues, while Distribution represented 30%.
[103-2](#) | [103-3](#)

Product group revenues

Automotive and Discrete Group (ADG) revenues were US\$3.6 billion in 2019, an increase of 1.4% compared to 2018.

Revenues from our Automotive Product sub-Group were substantially flat, reflecting two opposing dynamics: growth in car digitalization applications with ADAS products and microcontrollers, and a decline in legacy products.

Revenues for the Power Discrete sub-Group increased, mainly driven by Silicon Carbide products, power MOSFET and IGBT, and partially offset by non-power Discrete.

Driven by personal electronics applications, 2019 revenues grew 4.6% for our Analog, MEMS and Sensors (AMS) Group compared to 2018, reaching US\$3.3 billion. The increase was partially offset by lower sales in Industrial and hard-disk drives.

Microcontrollers and Digital IC Group (MDG) revenues were US\$2.6 billion in 2019, a decrease of 10.3%. This is mainly due to an inventory correction at our distributors, which affected general purpose microcontrollers during the first half of the year. MDG restarted year-on-year growth during the second half of 2019.

The full details of our financial results are available in our Form 20-F and IFRS annual reports, which can be found on our website (see investors.st.com).

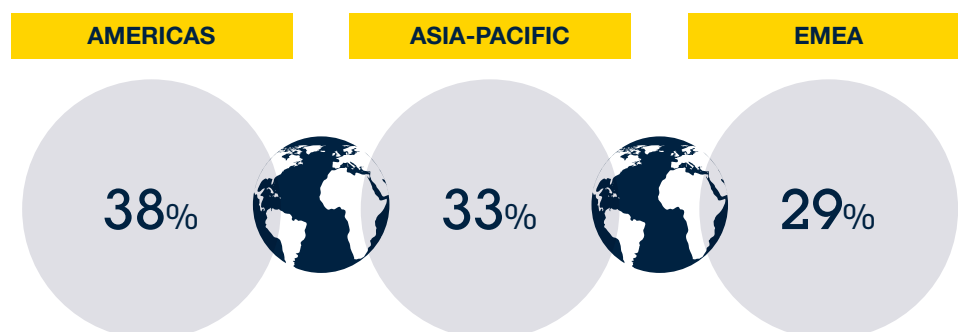


Lorenzo Grandi

President, Finance, Infrastructure and Services, and Chief Financial Officer

In 2019, in a declining semiconductor market, ST was able to show significant resilience in its financial results, testifying to the solid strategy and the superior technology and product portfolio of the Company. The investor community acknowledged this capability of the Company to navigate in difficult waters with a significant share appreciation during the year: around +94% compared to the +60% of the SOX index. Our commitment to sustainability is embedded in our financial strategy, helping us not only to manage risks but to create short-term as well as long-term opportunities."

Net revenues by region of origin



Looking forward

In order to address our new products ramp-up, customer demand in 2020 and ongoing strategic initiatives, we plan our capital investment in 2020 to be in the range of US\$1.0 billion to US\$1.2 billion.

This investment includes additional capacity for some of our existing technologies and investments to develop the product mix for our 200mm fabs, support for our R&D activities and maintenance of manufacturing operations. It also includes spending for three strategic initiatives:

- investment in the new Agrate (Italy) 300mm fab to support BCD (Bipolar, CMOS, DMOS), IGBT and other power technologies
- R&D for Gallium Nitride power technologies and production ramp up for Gallium Nitride for radio frequency devices
- investments for Silicon Carbide. These include substrate activities, following our acquisition of Norstel

**Investing in
3 strategic
initiatives:
the Agrate 300mm
fab, GaN and SiC**

Extra-financial reporting

Each year, socially responsible investment rating agencies, analysts and investors evaluate our corporate behavior and performance based on a wide range of environmental, social and governance (ESG) topics.

In 2019, we were included in the Dow Jones Sustainability Indices World and Europe for the second year in a row. With our best score of 83 points out of 100, ST was ranked fourth among global semiconductor companies invited to participate in the indices. This achievement acknowledges our longstanding commitment to conducting our business responsibly and recognizes our performance in many areas, ranging from business ethics, innovation, and quality, to environment and labor practices.

We were also included in the Bloomberg Gender Equality Index and maintained a strong presence in other major sustainability indices, such as FTSE4Good, Ethibel, and Euronext Vigeo (see ST inclusion in the main sustainability indices in 2019 on [page 33](#)).

Participating in these evaluations gives us an opportunity to assess our performance within a wider context, benchmark ourselves against our peers, measure our progress, and identify areas for further improvement.



Manjit Jus

Head of ESG Ratings RobecoSAM

MEMBER OF

**Dow Jones
Sustainability Indices**



In collaboration with

We congratulate STMicroelectronics for being included in the DJSI World and Europe. The SAM Corporate Sustainability Assessment has again raised the bar in identifying those companies best-positioned to address future sustainability challenges and opportunities. This year – which marks the 20th anniversary of the DJSI – record corporate interest in the SAM CSA reflects the enduring relevance of the DJSI for measuring and advancing ESG practices.”

Innovation



ST Technoday and Innovation Night, Fondation Louis Vuitton, Paris, France

Innovation & Profits

OUR AMBITION

Sustain profitable growth, with clear and focused leadership objectives in the four end markets we address.

2025 GOAL

>20%
of revenues generated by
new product lines

2019

15.9%

Acquisition of SiC wafer manufacturer Norstel AB

Innovation is the fuel that drives our sustainability and our growth. As a technology and innovation-driven company, we invested US\$1.50 billion in research and development (R&D) in 2019, representing 15.7% of our net revenues. [I 103-1 I](#)

Leading edge technology

ST is one of the few semiconductor companies mastering many different manufacturing technologies, including FD-SOI (Fully Depleted Silicon-On-Insulator), CMOS (Complementary Metal Oxide Semiconductor), differentiated Imaging technologies, PCM (embedded non-volatile phase-change memory), RF-SOI (RF Silicon-On-Insulator), Bi-CMOS, BCD (Bipolar, CMOS, DMOS), Silicon Carbide (SiC), Gallium Nitride (GaN), VIPower, MEMS and actuator technologies.

Our technology is found everywhere microelectronics makes a positive contribution to people's lives. It allows our customers to make end-products more intelligent, more energy efficient, more connected, safer and more secure, and contributes to resolving the challenges faced by society.

In 2019, we acquired the Swedish SiC wafer manufacturer Norstel AB to strengthen our internal SiC ecosystem, from materials expertise and process engineering to SiC-based MOSFET and diode design and manufacturing. We have also begun building up our GaN-on-Silicon production capacity to serve the worldwide 5G infrastructure buildout.

Technical expertise

Around 7,800 ST employees work in R&D, and design. This includes 696 technical staff members recognized for their advanced expertise, who play a key role in cross-functional knowledge sharing.

This community drives our most advanced innovation, developing new technology and fostering R&D partnerships with prestigious universities and partners worldwide.



Marco Cassis

President – Sales, Marketing, Communications and Strategy Development

As a player in complex value chains across the markets we operate in, we understand the importance of innovation and collaboration at all levels to find and bring to market the next technology disruptions. Cooperation and partnerships with global OEMs, SMEs, startups and research labs are part of our DNA. We invest heavily in these efforts to achieve our business ambitions – from open innovation in fundamental technologies, to the creation of multi-party ecosystems supporting end-product developers.”

~7,800
employees dedicated
to R&D and
product design

Our human expertise and innovative products are widely recognized by institutions, customers and media worldwide. Examples include:

- awards for numerous staff members, such as:
 - Joël Hartmann, Executive Vice President of Digital & Smart Power Technology and Digital Front-End Manufacturing, who was recognized by SEMI⁽¹⁾ for his work in the field of low power technology, in particular FD-SOI
 - Laurent Malier, Technology & Design Platforms General Manager, who was accepted into the prestigious National Academy of Technologies of France
 - Andreia Cathelin, one of our technology R&D staff fellows, who has been awarded an honorary doctorate (doctor honoris causa) from the Faculty of Engineering of the prestigious University of Lund in Sweden (promotion 2020)
- awards for our products, such as:
 - an innovation award from Schneider Electric in recognition of our highly secure products (STSAFE, TPM2.0, e-SIM) which enable Schneider to provide secure connectivity for Industry 4.0 applications
 - a ‘Best Innovation’ award from Elecfans, a popular electronics industry portal in China, for our STSPIN32F0 motor control system-in-package device
 - ‘Innovator of the Year’ award from German trade magazine ‘Design & Elektronik’ in three categories: development kits; analog and power management; and power supply subsystems

Open innovation

Recognizing the importance of partnerships in the innovation process, we have established a worldwide network of strategic alliances. These include product development with key customers, technology development with other semiconductor manufacturers and development alliances with suppliers of major equipment and software design tools. [I 103-2 I](#)

These industrial partnerships are complemented by a wide range of research programs conducted with leading universities and research institutes around the world.

Overall, we were involved in 138 active R&D partnerships in 2019. [I 103-3 I](#)

138
active R&D
partnerships

Research partnerships SDG 9.5

	2016	2017	2018	2019
Contracts with higher education institutions or research labs	228	234	160	138

Important Project of Common European Interest

A key R&D partnership is the Important Project of Common European Interest (IPCEI) for microelectronics, which gathers the most important European players in microelectronics to cooperate and innovate to serve the IoT, space, smart driving, and security markets.

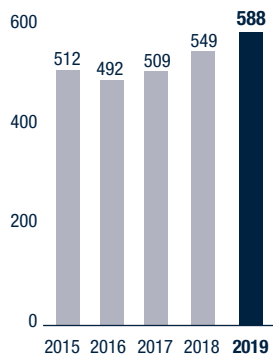
In 2019, technical teams from ST France and Italy, along with their external partners, achieved notable R&D breakthroughs in embedded memories and power technologies, which are particularly important for efficient power management systems.

At the same time, we have focused on sharing progress and disseminating knowledge throughout Europe, participating in numerous forums, conferences and cooperative projects.

One of the projects, Nano2022, is a five-year French public-private strategic support program, targeting not only R&D and innovation, but also First Industrial Deployment. It was officially launched on our Crolles site (France) in March 2019 by the French Minister of the Economy and Finance, Bruno Le Maire.



ST new patents filed SDG 9.5



In addition, a new multi-project wafer program has been launched, which aims to increase the use of 28nm FD-SOI technology in academic laboratories, SMEs and startups, expanding the impact of IPCEI in Europe. ST has also been involved in 12 ECSEL⁽²⁾ collaboration projects connected to the microelectronics IPCEI since its initiation in 2018.

Artificial intelligence partnerships

In the field of Artificial Intelligence (AI), we are engaged in several partnerships with renowned universities such as the MIT Computer Science & Artificial Intelligence Lab in the US, research laboratories such as CEA-LIST⁽³⁾ in France, and competency centers such as the 3AI⁽⁴⁾ Côte d'Azur and the MIAI⁽⁵⁾ Grenoble Alpes, two of four of the Interdisciplinary Institutes of Artificial Intelligence created by the French government in 2019 (see Focus). [I 102-12 I](#)

ST partner program

Launched in 2018, the ST partner program (see www.st.com/partner-program) continues to grow, reaching 250 member partners in 2019. This program aims to enhance the ecosystem around our broad portfolio of products, helping our customers reduce development effort and accelerate time to market. Members of the program provide a wide range of products and services, covering areas such as software and hardware development tools; embedded software, components and modules; and training and engineering services.

Innovation for all

Since 2016, we have introduced new spaces and methodologies to enhance our capabilities in creative thinking and innovation.

Employee intrapreneurs have access to 'Makers Labs' to explore their ideas and prototype applications using ST products, and 'Crea-Labs' to propose new tools and processes that can help us work better.

The Opus Fab Lab, at our Agrate site (Italy), for example, is dedicated to the development of prototypes, demonstration objects, or even new solutions to improve workflows. It is the latest in a series of four similar labs we have created since 2016.

We also support startups through open innovation contests and by hosting them at our sites. [I 103-2 I](#)

Contributing to the Sustainable Development Goals

Our commitments and programs as described above contribute to:

SDG target 9.5 – Enhance scientific research, upgrade the technological capabilities of industrial sectors, and increase private research and development spending.

⁽¹⁾ SEMI is the global industry association serving the product design and manufacturing chain for the electronic industry.

⁽²⁾ Electronic Component and Systems for European Leadership.

⁽³⁾ Laboratory for Integration of Systems and Technology of 'Commissariat à l'énergie atomique et aux énergies alternatives', a French public government-funded research organization.

⁽⁴⁾ Interdisciplinary Institute for Artificial Intelligence.

⁽⁵⁾ Multidisciplinary Institute in Artificial Intelligence.

FOCUS

Developing our AI competencies

Since 2012, we have been developing our AI competencies by embedding them in ST solutions and applying them to augment intelligence in our internal processes.

Leveraging the industry-leading position of our STM32 family of microcontrollers, we have added advanced AI features in the associated STM32CubeMX ecosystem used by product developers, so that developers can now convert pretrained neural networks into C-code that can run on STM32 microcontrollers.

We are also building our internal pool of AI expertise, applying AI to our internal processes such as default analysis and tracking, predictive maintenance, and new fields of marketing.

External partnerships and open innovation are key for growth in this field. In addition to R&D collaboration, ST partners closely with the most-used neural network training tools providers, such as Google TensorFlow and others, to ensure they are available to customers for our STM32 portfolio. Several recognized ST experts are also engaged in high-level AI advisory groups organized by the EU Commission and the Italian Ministry of Economic Development.

Artificial Intelligence @ ST



Quality



Employees, ST Rousset, France



Quality is a priority in ST. Our vision is to elevate ST to the highest level of quality, making it an asset for our customers. We are continually adapting to ensure we have the necessary infrastructure and organization in place so that our products meet the highest quality and reliability requirements of customers in the markets we serve.

We organize Product Quality & Reliability at a corporate level but also embed it in ST organizations. It is led by a team comprising quality directors from every area of our business operations: front-end and back-end manufacturing, product groups, sales regions and corporate organizations.

In 2019, our corporate quality organization was reinforced and extended to include new functions, either not previously present or previously positioned elsewhere within the Company. The intention is to cover and efficiently drive the full spectrum of quality topics. These functions include:

- program management and strategic office
- innovation and development
- reliability
- operations and compliance
- materials and supplier quality management
- culture and communication

A new working model with a cross-organizational Quality Steering Committee was also set up to drive our three-year quality strategy. [I 103-2 I](#)



2019 OBJECTIVES

Reduce customer complaints per million units by 6% compared with 2018.

Status



Comments

2% decrease in customer complaints in 2019. See Quality table. Objective discontinued.

Focusing on our customers



FOCUS

Offering the best level of quality to our customers

As part of our efforts to rethink our way of working in 2019, we streamlined our quality and reliability approach to customers by providing a framework for:

- regular strategic meetings (internal and external)
- reinforced tracking of customer KPIs and scorecards

This approach helps us to build a closer relationship with our customers, creating an environment for optimized exchange. As a result, we can better respond to their needs and expectations and, through regular monitoring of performance and expectations, adjust and sustain our quality performance.

Our approach

Our quality approach is based on our Quality Management System (QMS), as documented in our Quality Manual. The manual details how we implement the processes to guarantee that our products meet or exceed the highest standards and customer requirements. [I 103-2 I](#)

ST adheres to internationally recognized quality management standards. We received our first companywide ISO TS 16949 certification in 2003 and this has been renewed every three years since then. Since 2018, ST has been certified IATF 16949:2016 and ISO 9001:2015, demonstrating our robust quality governance, effective QMS and quality compliance across the company. [I 103-3 I](#)

From quality booster to quality roadmap

To step up our quality performance, incident prevention and enable us to better respond to customer expectations, we initiated a specific internal booster program at the end of 2017 to challenge and improve our quality practices.

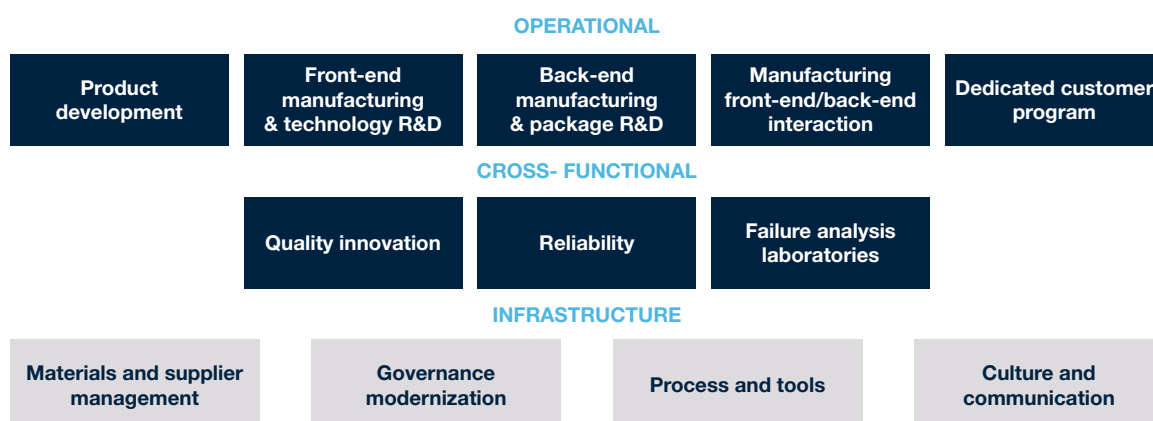
Having completed most of the initiatives in our booster program, during the second half of 2019 we transitioned to a more standard way of working. We built a three-year roadmap, maintaining the same holistic approach, with cross-functional working groups, strong governance with top management commitment, and a robust program management infrastructure with monitoring and KPIs.

Our three-year roadmap is based on a global program organized in three areas (operational, cross-functional and infrastructure) and 12 work packages.

The goal is to generate long-term structural improvements and prevent incidents occurring by focusing on three strategic domains of quality and reliability:

- streamlining customer focus
- innovation in development, detection and prevention
- modernization and digitalization

Quality strategic program



82%

of employees said
they understand how
quality fits into
their job

Quality as a business enabler

Quality is an important business enabler of ST's strategic objectives.

We maintain our efforts towards making quality visible throughout the Company to employees at all levels, through our quality communities, campaigns, and annual Quality Week events.

Our commitment to fostering a culture of quality was confirmed by our 2019 employee engagement survey. 82% of employees said they clearly understand how quality expectations fit into their job requirements (nine points above the global industry norm⁽¹⁾), while 79% said day-to-day decisions in their team clearly show that quality is a priority throughout our business.

We have identified and aligned key performance indicators (KPIs) that make our goals clearer for all, while at the same time guaranteeing the robustness of our processes and programs. [I 103-3 I](#)

Quality performance

Our customer quality returns increased slightly compared to 2018, due to an isolated issue with a specific technology that has now been resolved.

Our overall quality performance improved significantly in 2019. With a 70% reduction of severe quality incidents compared to our 2016 baseline, we are on target to achieve our 2025 goal.

⁽¹⁾ CultureIQ manufacturing industrial equipment/instruments norm.

Quality

	2015	2016	2017	2018	2019
Customer complaints	103	85	71	67 ⁽¹⁾	71
Cycle time to process failure analysis	91	99	96	87	98
Customer quality returns	71	71	29	25	75

Baseline 100 in 2013.

⁽¹⁾ Data updated due to new complaints received after the closure of the previous reporting period.



Nicolas Yackowlew

Executive Vice President, Product Quality & Reliability

We are constantly striving to satisfy our customers by responding to their expectations for the best quality performance of our products.

For us, quality is more than basic compliance with industry standards. It's also the focus that enables us to achieve breakthroughs and innovation in our ways of working, methods, processes and tools, ensuring we are always able to offer the best level of quality to our customers."

Sustainable Technology



Roborace car, Electronica Munich, Germany

Sustainable Technology

OUR AMBITION
2025 GOAL
2019

Design and manufacture products that have the greatest positive impact on the planet and society.

x3

% revenues generated by responsible products*

* vs 2016

x1.5

62%

of new products are responsible products

Sustainable Technology, our product stewardship program, is about improving our social and environmental footprint at every stage of the product lifecycle, from raw material extraction to end of life. Since the start of the program in 2011, we have been designing, identifying and promoting innovative responsible products that deliver environmental and social benefits such as reducing energy consumption, saving resources, protecting the environment, and improving people's quality of life. [I 103-1 I](#)

Identifying innovative responsible products

Our Sustainable Technology program is based on three main axes:

- **Product compliance** covers legislation and the requirements of our customers and other stakeholders regarding EHS, and the social and ethical impacts of our products (see ECOPACK® products on [page 33](#), and Conflict minerals inquiry results on [page 78](#)).
- **Eco-design** takes into consideration the environmental impact of the device during its whole lifecycle, such as power-efficient and low-carbon responsible products (see Focus on [page 32](#)).
- **Responsible applications** bring sustainable benefits for human welfare or the environment, such as planet-friendly and human-welfare responsible products (see quote on [page 32](#)). [I 103-2 I](#)

We systematically apply these Sustainable Technology programs during the product development process to identify responsible products that provide clear social or environmental benefits to society.

The product R&D teams record and track responsible indicators in our Project Management System (PMS). This enables them to evaluate the products, awarding one, two or three stars to indicate their value to society and their level of innovation. To support the teams, we deployed across all ST sites an e-learning program specific to the semiconductor industry, called 'Fundamentals of product stewardship'. [I 103-3 I](#)

The percentage of new products that are classified as responsible increased from 50% in 2018 to 62% in 2019.

In line with our 2025 goal, we have established indicators that estimate the revenues derived from our responsible products. In 2018, we estimated they contributed to 13% of ST revenues. In 2019, we improved this score, reaching 15.5% of our revenues.



Pierluigi Gardella

Healthcare Business Unit Manager, AMG Analog, Agrate (Italy)

Everywhere microelectronics make a positive contribution to people's lives, ST is there! And nowhere is this more important than our Healthcare Business Unit. Over the years, our experts have developed trusted relationships with our customers, an important aspect of working with medical companies, to develop innovative healthcare technology. Examples include a device for new cardiac rhythm management that enables smaller pacemakers with longer battery life.

The Healthcare Business Unit is also developing integrated circuits for ultrasound imaging systems. For example, thanks to our pulser devices, the ultrasound scanner will ultimately replace the stethoscope in the day-to-day practice of medicine, becoming a diagnostic imaging tool accessible to anyone."



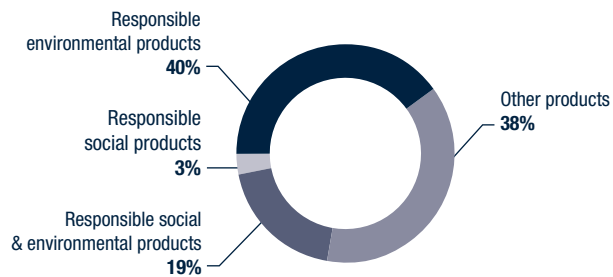
Promoting innovative responsible products

Since 2018, we have used our Sustainable Technology label to promote products in our recent portfolio that bring the most benefits to people or the environment.

Products are labelled following the results of our analysis process, which is managed at various steps of the product lifecycle. The label is applied to the most innovative responsible products, typically those awarded two or three stars.

In 2019, we published our first list of Sustainable Technology products on our website, available at www.st.com/responsible-products.

ST new products in 2019 | 417-1 |



STAR classification for new products in 2019 (%) | 417-1 |

	Social products ⁽¹⁾	Environmental products ⁽²⁾
★ Incremental improvement to existing offer	15	41
★★ Significant improvement to existing offer	12	28
★★★ New or dramatic improvement to existing offer	8	26

⁽¹⁾ Provides new social solutions that improve end-user quality of life (education, medical, health, safety, security of personal information or social solution for developing countries).

⁽²⁾ Power-efficient or low-carbon products (resulting from Eco-design assessment) or products included in end-user applications that contribute to saving energy or resources, environmental preservation (water, chemicals, emissions) or generating renewable energy.

Power-efficient responsible products



FOCUS

Silicon Carbide at the heart of new energy conversion systems

Energy conversion is critical in many applications powered by electricity, including power supplies, electrical vehicles and renewable energy devices.

We are constantly exploring more efficient, more compact and lighter solutions to ensure the optimal use of energy in these applications. As a major innovator and supplier of power semiconductor devices, we have been investing in wide bandgap materials such as Silicon Carbide (SiC) and Gallium Nitride (GaN), used to create components such as diodes and transistors. The widespread introduction of these materials has opened up opportunities for ST to gain market share in a wide variety of power applications.

The use of such components leads to improved designs that use less material and deliver greater energy efficiency. This enables designers to make a technological leap in energy conversion across a wide range of applications, notably electric vehicle chargers and renewable energy production equipment.

ST's expertise, combined with our mass production capacity for these components, puts us in a strong position in the energy conversion systems market.

Business indicators

This section includes indicators and GRI Standard disclosures.

ST key figures | 102-7 | 201-1 |

	2015	2016	2017	2018	2019
Net revenues (US\$m)	6,897	6,973	8,347	9,664	9,556
Gross profit (US\$m)	2,332	2,459	3,272	3,861	3,696
Gross profit as a percentage of sales (%)	33.8%	35.3%	39.2%	40.0%	38.7%
Net earnings (US\$m)	104	165	802	1,287	1,032
Diluted earnings per share (US\$)	0.12	0.19	0.89	1.41	1.14
Market share versus TAM (%) (Total Available Market)	2.06%	2.06%	2.02%	2.06%	2.32%

Net revenues by location of order shipment⁽¹⁾ (%)

| 102-6 | 102-7 | 201-1 |

	2015	2016	2017	2018	2019
Americas	16	15	13	13	14
Asia Pacific	58	58	61	61	62
EMEA	26	27	26	26	24

⁽¹⁾ Net revenues by location of order shipment are classified by location of customer invoiced or reclassified by shipment destination in line with customer demand. For example, products ordered by U.S.-based companies to be invoiced to Asia Pacific affiliates are classified as Asia Pacific revenues. Furthermore, the comparison among the different periods may be affected by shifts in shipment from one location to another, as requested by our customers.

Operating income and cash flow (US\$m) | 201-1 |

	2015	2016	2017	2018	2019
Operating income	109	227	1,005	1,400	1,203
Net operating cash flow	327	316	308	533	497

ST sales by market channel⁽¹⁾ (%) | 102-6 |

	2015	2016	2017	2018	2019
OEM	68	67	66	65	70
Distribution	32	33	34	35	30

⁽¹⁾ Original Equipment Manufacturers (OEM) are the end-customers to which we provide direct marketing application engineering support, while Distribution customers refers to the distributors and representatives that we engage to sell our products around the world.

Dividends paid (US\$m) | 201-1 |

	2015	2016	2017	2018	2019
Dividends	350	251	214	216	214

Taxes (US\$m) | 201-1 |

	2015	2016	2017	2018	2019
Tax expense for the year	75	74	86	95	165

ECOPACK® products (%) | 417-1 |

	2015	2016	2017	2018	2019
Non ECOPACK®	0.3	0.3	0.2	0.2	0.2
ECOPACK® 1: Compliant with the RoHS/ELV directives, second level interconnect lead-free ⁽¹⁾	8.7	7.8	6.7	6.8	6.3
ECOPACK® 2: as ECOPACK® 1, plus free of brominated, chlorinated and antimony oxide flame retardants	83.0	84.0	86.0	85.1	85.2
ECOPACK® 3: as ECOPACK® 2, plus free of halogens with no RoHS exemptions	8.0	7.9	7.1	8.0	8.3

⁽¹⁾ With adapted reliability for soldering at higher temperature, as some exemptions are necessary mainly for the automotive market regarding the RoHS Directive.

ST site certifications

ST is ISO 9001 certified Company-wide

	OHSAS 18001/ISO 45001 Health & Safety	ISO 14001 Environment	EMAS Environment performance disclosure	ISO 50001 Energy	ISO 22301 Business Continuity	IATF 16949
Main manufacturing sites						
Agrate	✓	✓	✓	✓	✓	✓
Ang Mo Kio	✓	✓	✓	✓	✓	✓
Bouskoura	✓	✓	✓	✗	✓	✓
Calamba	✓	✓	✓	✗	✓	✓
Catania	✓	✓	✓	✓	✓	✓
Crolles	✓	✓	✓	✓	✓	✓
Kirkop	✓	✓	✓	✗	✓	✓
Muar	✓	✓	✓	✓ ⁽²⁾	✓	✓
Rousset	✓	✓	✓	✓	✓	✓
Shenzhen	✓	✓	✗	✓	✓	✓
Tours	✓	✓	✓	✓	✓	✓
Other sites						
Castelletto	✓	✓	✓	✗	✓	✓
Geneva	✗	✗	✗	✗	✓	✓
Greater Noida	✓	✗	✗	✗	✓	✓
Grenoble	✓	✓	✓	✗	✓	✓
Le Mans	✗	✗	✗	✓	✗	✓
Loyang	✓	✓	✗	✗	✓	✓
Marcianise	✓	✓	✗	✗	✗	✓
Napoli	✓	✗	✗	✗	✗	✓
Rennes ⁽¹⁾	✓	✓	✗	✗	✓	✗
Toa Payoh	✓	✓	✓	✓	✓	✓
Total	19	17	13	10	18	20

⁽¹⁾ Rennes Space & High-Reliability Products.

⁽²⁾ Audit conducted with positive conclusions in December 2019. Certificate issued in February 2020.

ST inclusion in the main sustainability indices in 2019



We put people first



average of
50
hours of training
per person



105
different
nationalities



79%
employee
engagement score



Health and Safety

Health & Safety

OUR AMBITION

Be a safe workplace with zero injuries, zero occupational diseases and ensure healthy lives and well-being for all.

2025 GOAL

<0.15%

recordable cases (RC)*
for employees and contractors

* injuries and illnesses

2019

RC for employees 0.16%

RC for employees includes injuries only.
RC for contractors not yet available.

>97,000

medical acts
conducted worldwide

Maintaining a healthy and safe workplace at all our sites is about more than just policies and procedures; it is about building a culture of health and safety alongside our employees and subcontractors and promoting well-being everywhere and for everyone. We believe that investing in employee health improves both vitality and productivity, energizing the entire organization and improving results. Accordingly, we take a strategic approach to creating safe and pleasant workplace environments that promote both physical and mental health among employees. | 103-1 |

Health

Promoting employees' health and well-being

We believe in helping our employees to adopt healthy lifestyles because we know good health is the foundation of a fulfilling and productive life. Our health plan provides our employees with a very high level of medical care, including:

- regular medical check-ups
- blood tests
- audiometric tests
- ophthalmologic exams
- vaccinations
- cancer prevention screening

One example is the sponsored digital mammograms at our Bouskoura site (Morocco), available to all female employees aged 50 years and over.

We also promote employees' health and well-being through local initiatives. This helps us to anticipate risks and take preventive action. Thanks to this approach, each site can design a health program that is tailored to local needs (see Focus on [page 36](#)).

For example, at our Crolles site (France), our employees appreciated the 'Santé vous Bien' (or 'Feel Good') program, which aims to improve different aspects of working conditions, such as:

- ergonomics
- stress management
- work environment
- relations between colleagues

| 103-2 |

Health Plan – medical acts⁽¹⁾

	2015	2016	2017	2018	2019
Medical examinations	47,278	57,871	62,008	64,938	63,722
Check-up with a physician	21,978	25,476	26,574	28,225	28,423
Blood tests (including biomonitoring tests ⁽²⁾)	11,981	16,027	16,774	16,392	15,449
Chest X-rays	6,906	6,544	9,478	10,872	7,820
Colorectal cancer immuno cult tests	436	861	1,023	608	975
Electrocardiograms	4,194	6,644	5,592	7,165	7,814
Mammography	626	406	561	318	838
Pap smear tests	766	1,169	742	846	1,347
Prostate cancer screenings	391	744	1,264	512	1,056
Screening tests	13,693	15,209	12,348	19,280	31,509
Immunizations	1,606	1,428	1,861	3,524	2,484
Total services provided⁽³⁾	62,577	74,508	76,217	87,742	97,715

⁽¹⁾ All sites represented, except USA. Tours site (France) data missing for H2 2016.

⁽²⁾ These tests are dedicated to employees working in manufacturing areas and on some specific maintenance operations.

⁽³⁾ Employees may undergo multiple examinations in the year.

Lean on me



FOCUS

Targeted weight loss program in Singapore

At our Ang Mo Kio site (Singapore), targeted weight loss intervention is part of our Workplace Health Promotion program.

ST partners with an external service provider in a 15-week targeted weight loss program. The program prescribes a holistic approach to healthy weight management by incorporating on-site, nutritionist-led educational talks and workshops, and fitness classes. A rewards system and team motivation are also built into the program to encourage successful outcomes.

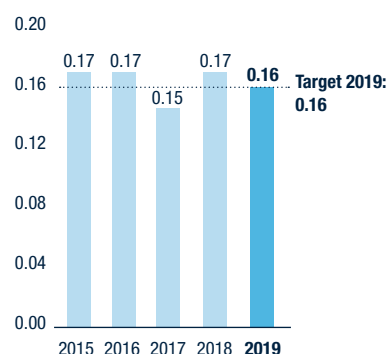
The program is open to any employee who meets the body mass index and health status participation criteria, and the program fees are fully covered by ST. In 2019, four programs were run at the site, involving 75 participants.

0.16
recordable injury
case rate

Safety

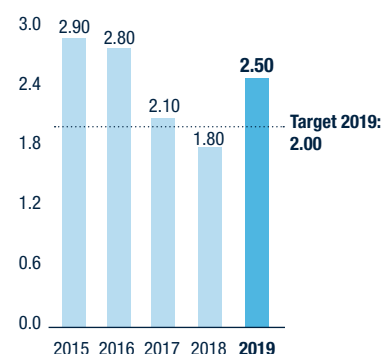
Our recordable case rate for employees was on target in 2019, reaching 0.16. Our severity rate, however, increased to 2.50 compared to a target of 2.00. This was mainly due to working days lost after on-site domestic accidents – falls and slips – that were not directly linked to our manufacturing or business activity. We therefore remain focused on driving further improvements in employee behavior and working conditions.

Recordable cases rate⁽¹⁾ | 403-2 |



⁽¹⁾ Work-related injuries per 100 employees per year as defined by OSHA-US regulation.

Severity rate⁽¹⁾ | 403-2 |



⁽¹⁾ Number of days lost per 100 employees per year as defined by OSHA-US regulation.

Proactive
initiatives to reinforce
safety culture

We work proactively at all levels to identify potential issues or concerns in the workplace, develop measures to address them, and make it easier for people to get their jobs done.

We align our programs with industry risks, with a priority on preventing employees' potential exposure to hazards such as chemicals (see Chemicals on [page 65](#)), fire, radiation and nanomaterials; and mechanical, handling and ergonomic risks. | 103-2 |

In line with SDG target 8.8 on the promotion of a safe and secure working environment for employees, we reinforce our safety culture with proactive initiatives such as:

- Emergency Response Team with employees trained to respond to emergencies
- field safety visits performed by trained managers
- monthly meetings to:
 - share accidents, incidents including first aid, near misses and high potential incidents
 - adapt our prevention and practices to different situations
- safety training that considers human factors and awareness initiatives worldwide



Serge Hutin
Program Manager, FMT Central Functions

Make no mistake, there is one priority at ST that is valued and shared on all the sites I've visited worldwide, whatever their culture – people's safety! I'm very proud to have been able to train the safety community that takes care of all ST employees."

0.26
Subcontractor
Lost Workday Case
incidence rate

Learning from Incidents (LFI) is part of our safety training that considers human factors. It is an investigation process for safety incidents and accidents that aims to identify all the technical and systemic causes. LFI helps to minimize the potential for a recurrence by taking into consideration the inevitability of human error. In 2019, we trained more than 50 people in France, Italy and Asia on LFI.

Safety First everywhere for everyone

In ST, it is standard practice to inform all workers about our safety requirements, communicate with them and train them. Our Safety First program includes all people working on ST sites – employees and subcontractors – in line with our safety policy and OHSAS requirements that every person in the workplace be treated in the same way. In 2019, the Lost Workday Case (LWDC) incident rate for subcontractors was better than our target of 0.27, reaching 0.26. [I 103-3 I](#)

Lost Workday Case incidence rate (LWDC rate) – subcontractors [I 403-2 I](#)

	2015	2016	2017 ⁽¹⁾	2018	2019
Lost workdays cases per 100 subcontractors	0.40	0.35	0.24	0.29	0.26

⁽¹⁾ Up until end 2016, we covered only independent subcontractors working on-site for more than 3 months. From 2017 onwards, we cover all independent subcontractors.



Contributing to the Sustainable Development Goals

Our commitments and programs as described above contribute to:

SDG target 3.8 – Achieve universal health coverage, including access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

SDG target 8.8 – Protect labor rights and promote safe and secure working environments for all workers.



2019 OBJECTIVES

	Status	Comments
Employee severity rate ≤ 2.0 .	✗	2.5 Objective 2020: ≤ 2.0 .
Main on-site subcontractors Lost Workday Case rate (LWDC) ≤ 0.27 .	✓	0.26 Objective 2020: ≤ 0.24 .
Recordable cases for employees ≤ 0.16 .	✓	0.16 Objective 2020: ≤ 0.16 .

Labor and Human Rights



Employee day, ST Calamba, the Philippines

Labor & Human Rights

OUR AMBITION
Be recognized as a leader in labor and human rights and apply a zero tolerance approach to forced labor.

2025 GOAL
100%
of ST manufacturing sites recognized by external international bodies

2019
27%
3/11 sites with RBA Platinum recognition⁽¹⁾.

100%
of ST manufacturing sites audited

Treating our employees with respect and dignity is a fundamental part of ST culture, dating back to our inception in 1987. Since then, we have put many programs in place to make this commitment a reality in our employees' day-to-day lives. **I 103-1 I**

The main programs we use to monitor, control and improve labor conditions in our operations are:

- an internal audit program on labor and human rights, targeting our 11 manufacturing sites
- Responsible Business Alliance (RBA) human rights self-assessments at all major ST sites and third-party RBA audits at all ST manufacturing sites, with an average RBA audit score above the industry average: +47 points in initial audits and +15 points in closure audits (score out of 200)
- multiple initiatives to uphold human rights and mitigate risks in regions where we operate, including the Factory of Choice program (see Advancing labor and human rights) and the Responsible Workplace program (see Focus on [page 40](#))

Being recognized as a leader in our industry

As a member of RBA since 2005, we uphold the highest standards and apply a comprehensive due diligence process covering nine core principles:

- freely chosen employment
- prevention of underage labor and protection of young workers
- fair organization of working time
- fair wages and benefits
- fair treatment and antiharassment
- non-discrimination
- freedom of association
- fair working conditions
- employee well-being and privacy of personal information

⁽¹⁾ All manufacturing sites are now recognized either Platinum, Gold or Silver, so we have reinforced our goal, requiring every site to reach Platinum level.

82%
of employees covered
by audits

Labor and human
rights **risk**
identification
and mitigation

Our approach

We apply a process based on RBA methodology to continually improve our management system:

- commitment to the RBA code of conduct
- risk assessments
 - external risk assessment based on inherent risks of activity and location
 - annual self-assessment questionnaire covering 90% of our employees. Sites scored from 91 to 96/100, which is better than the industry average of 89/100
- audit programs covering our 11 manufacturing sites (82% of our employees)
 - internal audits allocating priorities based on the concept of risk-based auditing, with timely and adequate corrective follow-up actions
 - RBA (VAP 6.0) third-party audits every two years with appropriate audit follow-up, including corrective action plans and closure audits

I 103-2 I

Our risks and actions

In 2019, the main risks identified, and preventive and corrective actions implemented are described in the table below.

Description	Actions implemented
Detection and monitoring of any employment fees (work permits, medical consultations, health insurance) which could potentially have been paid by locally recruited foreign workers in Europe.	• Implemented a procedure to strengthen the process to detect and monitor locally recruited foreign workers. • Formalized a reimbursement process for recurring employment fees that cannot be paid directly by ST. • Communicated internally on reimbursing employment fees and reminded people of the misconduct reporting process for any concerns.
Control and monitoring of working hours (including days off).	• Reinforced monitoring of working hours and days off for compliance. • Analyzed and adapted shift schemes.
Management of student allowances .	• Analyzed the practices of all major sites regarding student working conditions and allowances. The next step for 2020 will be to formalize and deploy more detailed corporate guidelines.

Our main third-party audit results

In 2019, our Tours and Rousset sites (France) respectively scored 51 and 58 points above the industry average in their first audits, highlighting the low level of risk. In Catania (Italy), another first-time audit, no priority or major non-conformances were identified, and the audit score was 33 points above the industry average.

Regarding closure audits, our Muar site (Malaysia) was the best performer with full compliance, for which it received RBA platinum recognition. Our other sites received RBA silver recognition and improvement plans have been implemented to reinforce existing social management systems. Furthermore, the internal audit program related to labor and human rights has been strengthened and standardized to foster continuous improvement of our sites' performance. I 103-3 I



Emmanuelle Luce

Sustainability Champion, Crolles (France)

French labor regulations are already demanding, yet our customers expect more from our manufacturing sites in terms of CSR performance. The RBA audit program is very challenging as it requires us to prove the effectiveness of our CSR management system, but it also enables us to better mitigate our risks and continuously improve our social performance. As the Crolles site (France) Sustainability Champion, I'm proud and enthusiastic to be part of this!"

RBA Responsible Workplace program



FOCUS

Continuously improving protection for foreign migrant workers

Building on the Workplace of Choice pilot, the Responsible Workplace program was launched by RBA in 2018 to improve workers' awareness of their labor rights, develop communication and amplify workers' voices. Our Muar site (Malaysia) has been engaged in the program from the beginning.

In 2019, 285 workers, both foreign and local, were interviewed anonymously on recruitment and working conditions. The survey results have enabled the site to identify opportunities to enhance employee protection and satisfaction and take action. One of the outcomes was a dialog session with foreign workers to provide more information on their contracts and strengthen the predeparture procedures and documentation.

As well as the surveys, members of the site's human resources team took part in worker-management communication training and around 150 foreign workers hired in 2019 completed an RBA predeparture orientation program.

RBA audit results for ST operations in 2019 SDG 8.7

Number of audits		8	
Labor, Ethics and Management systems		Environment, Health and Safety	
Total of major non-conformances	6	Total of major non-conformances	6
Working hours	1	Industrial hygiene	1
Freely chosen employment	2	Occupational injury and illness	1
Non-discrimination	1	Emergency preparedness	2
Supplier responsibility	1	Occupational safety	1
Audits and assessments	1	Energy consumption and GHG emissions	1

Figures from 2015 onwards can be found in the table on page 50.

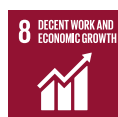
Advancing labor and human rights

As a member of the French business human rights initiative 'Entreprises pour les Droits de l'Homme' (EDH), ST's CEO has signed the French version of the World Business Council for Sustainable Development's (WBCSD) call to action for business leadership on human rights. The call to action was signed by top executives from 40+ WBCSD and EDH member companies. It calls on businesses to embed human rights in corporate culture, set clear expectations for suppliers and business partners, and drive meaningful engagement and collaboration with peers, governments and civil society.

Reflecting our commitment to this issue, ST's Muar site (Malaysia) was invited to speak at the first National Conference on Human Trafficking in August 2019, jointly organized by the National Council on Anti-Trafficking in Persons and Anti-Smuggling of Migrants and Joining Hands Against Modern Slavery, a coalition of non-governmental organizations working towards ending modern slavery. The findings and recommendations will be presented to the Malaysian government as part of its preparations for its National Action Plan on Anti-Trafficking in Persons.

Our Calamba site (the Philippines), which holds RBA platinum status, received the RBA Factory of Choice award for its 2019 achievements. The award demonstrates the site's deep commitment to sustainability and the success of its quarterly 'employee day', where workers provide feedback to management on relevant topics, as well as its successful implementation of changes to improve the working environment.

ST Calamba received
RBA **Factory of Choice** award



Contributing to the Sustainable Development Goals

Our commitments and programs as described above contribute to:

SDG target 8.7 – Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking, and secure the prohibition and elimination of the worst forms of child labor.

SDG target 8.8 – Protect labor rights and promote safe and secure working environments for all workers.



2019 OBJECTIVES

	Status	Comments
100% of priority, major and minor non-conformances closed during the RBA closure audit.	✗	65% of findings closed (26/40). Objective maintained in 2020.
100% of all manufacturing sites audited every 2 years for compliance with the RBA standard.	✓	100%. 11/11 manufacturing sites audited. Objective maintained in 2020.

Development and Engagement



Managing personal energy, train the trainers session, France

Development & Engagement

OUR AMBITION

Offer the best employee experience in all the locations where we operate.

2025 GOAL

Employee engagement rate

+10 points
above country norms

2019

7/11 countries

China, Japan, Malaysia, Singapore, Switzerland, the Philippines and USA.

77%
of employees
recommend ST as a
great place to work

We aim to be recognized as a market-leading, attractive, and innovative employer where entrepreneurial spirit, feedback, cooperation, responsibility and leadership are the norm. Our talent strategy is fully aligned with our business growth ambitions.

Reinforcing our talent pool

Sourcing, attracting, developing and retaining the best talent is vital to support ST's business strategy.

Increasing our employer attractiveness

Delivering the best employee experience is crucial for us to attract and retain the best people.

In 2019, we introduced more attractive employer branding and defined a new staffing strategy to reinforce ST's external image. We also implemented new digital solutions to speed up our recruitment process.

We enhanced our compensation and benefits policy and we continued to promote a differentiated and transparent approach to remuneration and rewards.

To deliver a great onboarding experience to newcomers, we improved our induction process by sharing and spreading our current best practices.

We also continued the initiatives we launched in 2018 to modernize our processes and transform our workplace from an employee experience perspective. One example is the 'Paris.Augmented' program at our Paris site (France), in which employees worked together to create a better workplace that encourages greater well-being, creativity, collaboration and fulfilment.

Coaching at ST



Coaching to support career development

~1,500
employees
participated
in Leadership
Augmented

FOCUS

Coaching helps employees give the best of themselves

Coaching is one of our people development priorities. During a thought-provoking nine-month process, ST coaches help employees to maximize their personal and professional potential by asking powerful questions, opening up new angles, and confronting issues with compassion to enable people to find their own solutions. This process facilitates change and improves engagement and pride. It also spreads a feedback culture and supports the whole Company in acting together as a learning organization.

“In a fast-changing environment, it is important to coach people to develop their self-awareness, boost their autonomy, increase their assertiveness, reveal their courage and intensify cooperation. This helps the participant to explore new ideas, manage their energy and balance career opportunities,” says Marie-Sophie Note, Head of the Coaching Office at ST.

Developing and supporting our people at every stage

Feedback is a fundamental pillar of our culture. It helps us strengthen and continuously develop our talent pool to address future business challenges.

Since 2018, we have strengthened our people management process with collective and individual assessments. Our objective is to improve self-awareness and better prepare people to fulfil their potential with us, through structured career paths and customized development plans. These assessments are now an integral part of the promotion process for senior managers and up-and-coming talent identified through our people review as key position successors. They are also integrated into our longstanding talent-development ‘booster’ program.

Embedded in our managerial culture, coaching is also a powerful tool to support the career development of our people.

To reinforce the quality and consistency of our coaching program, we created a coaching committee in 2019 comprising 12 managers and representatives from human resources. The committee oversees and shapes the coaching strategy, vets coaches, ensures good governance, and measures the business impact (see Focus).

Leadership skills for all

During 2019, we focused on instilling leadership skills at every level of the company to ensure a consistent global culture. By the end of the year, nearly 1,500 people had participated in our ‘Leadership Augmented’ program, with modules covering topics such as strategy and innovation, change management, leadership and Lean.

As announced in 2018, we also introduced two new modules:

- Communicative leaders – to develop managers’ communication skills, improve engagement and better connect employees with ST’s vision
- Managing personal energy – to strengthen people’s ability to manage pressure in order to reduce any potential socio-psychological risks

We received very positive feedback from participants on both modules (see quote).



2019 OBJECTIVES

	Status	Comments
Annual qualitative performance feedback for >90% eligible employees (exempts and non-exempts).	✓	94% Objective discontinued.
Keep voluntary turnover at or below 10% worldwide (excluding operators).	✓	7.4% Objective discontinued.



Martina Giuffrida

Technical Marketing Senior Engineer, ADG Catania (Italy)

We are all constantly confronted with ever-increasing, challenging demands inside and outside the workplace. To preserve high engagement, performance, focus and creativity, we need new and concrete tools, because time is a finite resource. The 'Manage your Energy' training program I attended this year helped me to develop my own strategies to deal with this."

84%

of employees are willing to put in extra effort to meet ST goals

Getting the best from all our people

Getting the most from our people is essential to help us anticipate evolving customer needs and meet new market demands.

Enabling a high level of engagement

Employee engagement is a critical driver of organizational performance as we seek to achieve our business objectives. **I 103-1 I**

We carried out a new employee survey in 2019 focusing on individual engagement, goal alignment, and organizational agility. The 90% participation rate was the highest in ST's history and all results showed an increase of at least two points over the 2018 survey.

I 103-2 I

The overall engagement index stood at 79%, two points higher than 2018 and 10 points above the global industry norm⁽¹⁾.

77% of employees recommend ST as a great place to work, two points up on 2018.

84% of employees are willing to put in extra effort to help ST meet its goals, which is nine points above the global industry norm⁽¹⁾. **I 103-3 I**

Employee survey – engagement rate (%)

	2015 ⁽¹⁾	2016	2017 ⁽¹⁾	2018	2019
Overall participation rate	NA	82	NA	87	90
Individual engagement index	NA	72	NA	77	79
Organizational agility index	NA	63	NA	66	68
Goal alignment index	NA	73	NA	77	80

⁽¹⁾ No survey conducted in 2015 and 2017.

This improvement reflects the actions we have implemented over the past three years in areas such as leadership skills, quality, Lean and feedback culture, strategic alignment, talent recognition and differentiation.

Capitalizing on our Lean experience

In 2019, we continued our program – begun in 2008 – of introducing Lean practices to streamline process flows, break silos and improve agility throughout the Company.

Already in place in our Greater Noida (India) and Rousset (France) sites, we extended our site-based Lean communities to other sites including Tours (France), Catania (Italy), Singapore and Muar (Malaysia).

The aim is to create Lean communities at all our main sites by the end of 2020.

Composed of Lean Champions (the experts) and Lean Ambassadors (the supporters and influencers) from different on-site organizations, these Lean communities help us to tackle common issues efficiently, as well as making it easier to share experiences, ideas and practices.

We have defined a specific development path for Lean Champions based on three types of assessment: job observation, behavioral assessment, and self and managerial evaluation of lean activities, enabling us to create personalized, high-quality development plans.

Contributing to the Sustainable Development Goals

Our commitments and programs as described above contribute to:

SDG target 4.3 – Ensure equal access for all women and men to affordable and quality technical vocational and tertiary education, including university.

⁽¹⁾ CultureIQ manufacturing industrial equipment/instruments norm.



Diversity and Inclusion



Diversity & Inclusion

OUR AMBITION

Achieve full gender equality and be a leader in cultural and disability inclusion.

2025 GOAL

>20%
women in all
management levels

2019

Experienced	18%
Senior	13%
Executive	9%

We strongly believe that a diverse workforce and an inclusive work environment increase our performance and bring value to our business through effective innovation, engagement, attractiveness, and agility. [I 103-1](#) |

In 2019, we reviewed our Diversity and Inclusion governance to give a new impetus to our programs. Our global strategy was reshaped, focusing on three pillars that will drive numerous programs at both company and local levels. [I 103-2](#) |

It will take some time to see the full results of our programs, but we have already seen some improvement in our key priority for 2025: increasing the percentage of women at all management levels. The percentage of women in experienced management roles has increased from 16% to 18% and in senior management roles from 12% to 13% compared to 2018. However, the corresponding figure at executive management level remains at 9%. [I 103-3](#) |

Women in management | 405-1 | SDG 5.5

	2015	2016	2017	2018	2019
Women in experienced management ⁽¹⁾ (%)	15%	16%	16%	16%	18%
Women in senior management ⁽²⁾ (%)	11%	11%	12%	12%	13%
Women in executive management ⁽³⁾ (%)	8%	9%	9%	9%	9%
Number of women on the Board	3	3	3	3	4

⁽¹⁾ Job grade 15 to 16.

⁽²⁾ Job grade 17 to 18.

⁽³⁾ Job grade 19 and above.



2019 OBJECTIVES

Status

Comments

Recruit at least 20% women in management positions.



24%
Objective 2020: ≥30% women
in exempt positions.

34%
of women in our
workforce

Striving for a diverse workforce

Our ambition is to recruit and retain a diverse workforce, particularly in terms of gender, age and disability.

Increasing the number of women

At the end of 2019, we employed 15,663 women – representing 34% of our global workforce and 23% of exempts.

During the year, 24% of the people we hired at management levels were women, four points above our target of 20%. For 2020, we have increased the target to 30% of women across all exempt jobs.

Of course, we recognize that to recruit more women we need to go beyond our own operations and address the shortage of women studying technical subjects in colleges and universities. In line with this ambition, we expanded our STEM program to include a focus on encouraging girls to choose technical studies at an early stage of their education (see Education and Volunteering on [page 74](#)).

Attracting and retaining young talent

In 2019, our objective was to recruit more than 50% of new non-manufacturing employees with under five years' experience. We achieved 47%, slightly down from 56% in 2018, as we hired a greater number of experts.

With a low staff turnover, particularly for our exempt population (4%), we have a very skilled and experienced workforce. If we want to ensure our long-term business success, however, we also need to recruit young talent.

We developed new employer branding in 2019 as part of our initiative to reinforce ST's external image and better attract younger candidates. We also improved our induction process by standardizing best practices to offer a great onboarding experience to newcomers.

Enhancing hiring and inclusion of disabled people

We increased our employment of disabled people by 1.6% in 2019, reaching 1.8% worldwide.

In France, thanks to longstanding, innovative and dynamic disability inclusion programs, the percentage of disabled workers increased from 1.2% in 2006 to 5.7% in 2019, which is one point above the average in French companies (see Focus).

In Italy, the figure increased from 2.5% in 2018 to 2.7% in 2019 thanks to initiatives such as 'Isola Formativa' (see Energy and Climate Change on [page 58](#)). This is an initiative at our Agrate site (Italy) to employ people with disabilities and train them in professional bicycle maintenance techniques, equipping them with knowledge and skills to help them enter the world of work. Our target is to host five disabled trainees per year for at least five years, rotating people every year.

Moving forward, ST Italy is implementing actions such as increasing awareness among ST employees, redesigning roles to create hiring opportunities and working with suppliers that employ people with disabilities.

5.7%
of disabled
employees in France

ST France disability policy



FOCUS

'Difference is not a handicap, but the driver of our excellence'

This is the disability slogan of ST France, whose disability inclusion program, formalized in a four-year collective agreement, has already brought numerous benefits in terms of employee engagement and motivation, as well as better use of tax and business possibilities.

Launched in 2006, the program creates value from differences, boosting collective performance and business opportunities. One of the flagship actions is FIAM, a multi-enterprise professional education program created in 2017. FIAM trains disabled people to align their level of education with the needs of the electronics industry.

At the same time, there are many initiatives to increase awareness among managers and employees to eliminate bias and change employee perceptions. For example, the 'DuoDay' event held in May 2019 and supported by the French government, enabled 58 ST employees at different sites to showcase their jobs to 46 disabled employees.



Sheila D'Annunzio

Director, Corporate Social Responsibility and Diversity & Inclusion

People must be respected and valued whoever they are. Every employee must be able to give their best contribution by being their authentic self.

We know much remains to be done, but we are expanding our programs to build and develop diverse teams and create a collaborative workplace free of bias and stereotypes. And it makes business sense. With an inclusive culture we can harness an abundance of new ideas and perspectives to nurture innovation, create value and secure our long-term business success."

>250

women in our
WIL program
since 2015

87/100

in French Gender
Equality Index

>8,000

HR and managers
enrolled in D&I
e-learning

Supporting career development

Recruiting a diverse workforce is not enough. We must also ensure that the workplace is supportive and that everyone has the same career opportunities.

Women in Leadership

Our 'Women in Leadership' (WIL) program, targeted at junior and middle management, aims to prepare the next generation of female leaders. It has been running for five years and has already trained over 250 women. However, as our figures show, the progression of women in management has been very slow. For this reason, we have extended the WIL program into a full career path, including coaching, mentoring and co-development sessions for women, with quotas for women candidates in all promotion committees. We have also put in place a network for women on the WIL career path, with local events, webcasts and a blog to share experiences.

In 2020, we are taking our WIL career path a step further by adding an advanced module for senior managers and directors to help them increase their self-confidence and become more visible and recognized.

Gender Equality Index

In 2019, the French government introduced a new regulation obliging French companies with more than 50 employees to assess themselves each year against a Gender Equality Index. The index consists of five indicators, calculated on a total of 100 points.

The five indicators are:

- pay gaps
- promotion rates
- salary increases
- percentage of women receiving a salary increase in the year of their maternity leave
- percentage of women in the top-ten remunerated positions

ST France scored 87/100 in the 2019 index, well above the threshold of 75 points, where a company is obliged to define and implement corrective measures within three years.

Although the legal obligation is limited to our French operations, we have decided to roll out the program to our worldwide operations by the end of 2020, starting with our other European sites.

Developing an inclusive culture

We revised our Diversity and Inclusion awareness training in 2019. Our objective is to widely promote the added value of a diverse and inclusive workforce and fight against stereotypes. The program includes:

- mandatory Diversity and Inclusion e-learning for more than 8,000 human resources staff and managers
- unconscious bias workshops to sensitize mindsets

We are also working on policies to foster a work-life balance that supports a diverse workforce. These include our 'Teleworking' program, which was extended to our French sites in 2019. In addition, we plan to develop a parental leave policy in 2020 to ensure that our employees, wherever in the world they are based, are guaranteed an appropriate period of leave to welcome and care for their new arrival.

Contributing to the Sustainable Development Goals

Our commitments and programs as described above contribute to:

SDG target 5.5 – Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.

SDG target 10.2 – By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, disability, race, ethnicity, origin, religion or economic or other status.



People indicators

This section includes indicators and GRI Standard disclosures.

LEGEND

-	Data not available or not required.
NA	Not applicable.
Operator	Employees working in production operations.
Non-exempt	Employees who hold positions normally requiring higher education and who are eligible for overtime compensation.
Exempt	Employees who hold positions normally requiring graduate or post-graduate education and who are not eligible for overtime compensation.

Headcount evolution by region⁽¹⁾ | 102-8 |

	2015	2016	2017	2018	2019
Americas	839	741	743	744	761
Female	190	185	190	183	192
Male	649	556	553	561	569
Asia Pacific	17,320	17,518	18,820	18,828	18,398
Female	7,182	7,472	7,947	7,848	7,484
Male	10,138	10,046	10,873	10,980	10,914
Europe	20,327	20,497	21,266	21,464	21,633
Female	4,925	4,950	5,188	5,296	5,320
Male	15,402	15,547	16,078	16,168	16,313
Mediterranean	4,697	4,724	4,638	4,917	4,762
Female	2,563	2,614	2,491	2,741	2,667
Male	2,134	2,110	2,147	2,176	2,095
Total	43,183	43,480	45,467	45,953	45,554
Female	14,860	15,221	15,816	16,068	15,663
Male	28,323	28,259	29,651	29,885	29,891

⁽¹⁾ Includes direct and indirect workers.

Employees by gender and by category | 405-1 |

	2015	2016	2017	2018	2019
Number of operators					15,794
Female (%)	56%	56%	55%	55%	56%
Male (%)	44%	44%	45%	45%	44%
Number of non-exempts					10,024
Female (%)	23%	23%	23%	22%	22%
Male (%)	77%	77%	77%	78%	78%
Number of exempts					19,736
Female (%)	22%	22%	22%	23%	23%
Male (%)	78%	78%	78%	77%	77%

External hires in manufacturing (%)

	2015	2016	2017	2018	2019
Jobs filled externally vs overall jobs filled	96	97	97	98	96

Hires by job type | 401-1 |

	2015	2016	2017	2018	2019
Operator	6,906	7,904	10,769	11,379	6,687
Female	3,073	3,463	3,984	3,938	2,114
Male	3,833	4,441	6,785	7,441	4,573
Non-exempt	2,297	2,192	2,503	2,760	3,033
Female	525	437	515	557	635
Male	1,772	1,755	1,988	2,203	2,398
Exempt	1,397	1,328	1,797	2,385	2,603
Female	374	388	445	733	713
Male	1,023	940	1,352	1,652	1,890
Total	10,600	11,424	15,069	16,524	12,323
Female	3,972	4,288	4,944	5,228	3,462
Male	6,628	7,136	10,125	11,296	8,861

Newcomers induction program (%)

	2015	2016	2017	2018	2019
Newcomers who participated in a formal induction session (e.g. newcomers seminar) during their first year of employment	78	85	78	72	71

Workforce by employment type (% of workers) | 102-8 |

	2015	2016	2017	2018	2019
Full-time contract	97	97	97	97	97
Female	93	94	94	94	94
Male	99	99	99	99	99
Part-time contract	3	3	3	3	3
Female	7	6	6	6	6
Male	1	1	1	1	1

Workforce by employment contract (% of workers) | 102-8 |

	2015	2016	2017	2018	2019
Permanent contract	96	96	95	95	97
Female	96	95	94	94	96
Male	97	97	96	96	98
Temporary contract⁽¹⁾	4	4	5	5	3
Female	4	5	6	6	4
Male	3	3	4	4	2

⁽¹⁾ Includes direct and indirect workers.

Workforce by employment contract by region (% of workers) | 102-8 |

	2017	2018	2019
Permanent contract			
Americas	99.2	99.6	99.3
Asia Pacific	99.6	98.8	99.4
Europe	93.8	94.7	97.1
Mediterranean	84.7	82.2	89.2
Temporary contract⁽¹⁾			
Americas	0.8	0.4	0.7
Asia Pacific	0.4	1.2	0.6
Europe	6.2	5.3	2.9
Mediterranean	15.3	17.8	10.8

⁽¹⁾ Includes direct and indirect workers.

Workforce by employment relation (% of workers) | 102-8 |

	2017	2018	2019
Direct relation⁽¹⁾	98	97	99
Indirect relation⁽²⁾	2	3	1

⁽¹⁾ Workers employed directly by ST.

⁽²⁾ Workers employed by a third-party, such as interim agencies.

Remuneration (%)

	2015	2016	2017	2018	2019
Employees below the ST minimum salary scale in their job grade (exempt)	14	17	14	14	13
Employees with individual salary increase	81	75	86	84	83

Benefits, bonus & unvested stock awards | 201-1 |

	2015	2016	2017	2018	2019
Eligible (exempt >JG 11) employees receiving unvested stock awards (%)	26%	27 %	29%	29%	30%
Number of employees rewarded	4,730	4,750	5,050	5,140	5,590

Number of nationalities in the headcount by region⁽¹⁾ | 405-1 |

	2015	2016	2017	2018	2019
Americas	19	21	20	21	21
Asia Pacific	38	35	34	35	34
Europe	76	80	83	87	87
Mediterranean	25	32	40	47	50
Total	-	-	97	105	105

⁽¹⁾ Expatriates and assignees are counted in host country.

Number of nationalities in Corporate staff | 405-1 |

	2015	2016	2017	2018	2019
Different nationalities represented in the Corporate staff	8	6	6	6	6

Employees by gender and by region (%) | 405-1 |

		2015	2016	2017	2018	2019
Americas	Male	77	75	74	75	75
	Female	23	25	26	25	25
Asia Pacific	Male	59	57	58	58	59
	Female	41	43	42	42	41
Europe	Male	76	76	76	75	75
	Female	24	24	24	25	25
Mediterranean	Male	45	45	46	44	44
	Female	55	55	54	56	56

Average⁽¹⁾ overall turnover rate⁽²⁾ by age group (%) | 401-1 |

	2015	2016	2017	2018	2019
Under 30 years old	54	62	60	56	49
30-50 years old	6	7	8	9	9
Over 50 years old	6	6	9	6	6

⁽¹⁾ Turnover rate calculated on average headcount in activity throughout the year.

⁽²⁾ Resignations, retirements and dismissals.

Average⁽¹⁾ turnover rate (%) | 401-1 |

	2015	2016	2017	2018	2019
Average voluntary turnover rate ⁽²⁾	14.2	16.8	18.5	18.3	16.1
Average overall turnover rate ⁽³⁾	16.5	19.2	20.5	20.1	17.7

⁽¹⁾ Turnover rate calculated on average headcount in activity throughout the year.

⁽²⁾ Resignations.

⁽³⁾ Resignations, retirements and dismissals.

Average⁽¹⁾ overall turnover rate⁽²⁾ by gender, by category and by region in 2019 (%) | 401-1 |

	Operator		Non-exempt		Exempt	
	Female	Male	Female	Male	Female	Male
Americas ⁽³⁾	NA	NA	13.4	8.8	5.9	5.7
Asia-Pacific	21.9	112.3	21.2	35.5	7.1	8.1
Europe	3.4	2.4	3.8	2.9	3.0	4.0
Mediterranean	9.7	23.3	4.9	9.7	23.7	19.2

⁽¹⁾ Turnover rate calculated on average headcount in activity throughout the year.

⁽²⁾ Resignations, retirements and dismissals.

⁽³⁾ The Company has no manufacturing sites in these regions.

Average employee age by category

	2015	2016	2017	2018	2019
Operator	34	34	34	34	35
Non-exempt	38	38	38	39	39
Exempt	42	43	44	44	44
Average employee age (years)	38	39	39	39	40

Employees by category and by age group in 2019 (%) | 405-1 |

	Under 30 years old	30-50 years old	Over 50 years old
Operator	38	52	10
Non-exempt	26	60	14
Exempt	10	63	27

Promotion ratio female/male by category and by region in 2019 (%) | 405-1 | SDG 5.5

	Operator		Non-exempt		Exempt	
	Female	Male	Female	Male	Female	Male
Americas ⁽¹⁾	NA	NA	7	0	12	11
Asia-Pacific	6	11	13	8	13	12
Europe	7	4	9	6	13	12
Mediterranean	11	5	29	18	18	17

⁽¹⁾ The Company has no manufacturing sites in these regions.

Disabled employees (%) | 405-1 | SDG 10.2

	2015	2016	2017	2018	2019
Disabled people employed as % of total workforce	1.5	1.5	1.5	1.6	1.8

Career development (%)

	2015	2016	2017	2018	2019
Employees with a promotion in the year	10	8	9	11	10
Employees with a job function change in the year	4	4	3	2	2

Employee yearly Individual Performance Management (%) | 404-3 |

	2015	2016	2017	2018	2019
Operator	71	77	75	81	84
Female	76	73	70	72	77
Male	68	82	82	92	94
Non-exempt	83	84	81	91	90
Female	80	81	80	89	87
Male	84	85	82	92	92
Exempt	93	94	93	97	95
Female	91	92	91	96	95
Male	93	94	94	97	96
Total	90	86	90	89	90
Female	87	79	88	80	82
Male	91	89	91	95	95

Employees with a formal individual development plan⁽¹⁾ (%)

I 404-3 I

	2015	2016	2017	2018	2019
Non-exempt	41	38	31	39	47
Female	44	40	35	44	51
Male	40	37	29	36	45
Exempt	55	53	50	57	64
Female	56	55	52	60	66
Male	54	52	49	56	63

⁽¹⁾ Operators are managed through a different process.

ST population recognized through the technical ladder⁽¹⁾ (%)

	2015	2016	2017	2018	2019
Asia Pacific	1.2	3.0	3.3	3.7	3.5
Europe & Mediterranean	4.1	6.4	6.8	6.7	6.7
Worldwide	3.0	5.2	5.8	5.8	5.7

⁽¹⁾ The specified path starts from job grade 14.

Internal mobility for exempt positions (%)

	2015	2016	2017	2018	2019
Jobs filled internally	29	33	33	25	20

Average number of training hours per year⁽¹⁾

I 404-1 I  SDG 4.3

	2015	2016	2017	2018	2019
Operator	65	66	66	60	65
Female	57	60	56	56	62
Male	75	73	75	64	68
Non-exempt	35	34	38	40	46
Female	27	30	29	30	40
Male	37	36	40	42	47
Exempt	22	27	28	30	33
Female	24	29	31	32	37
Male	22	26	27	29	32
Total	42	46	48	47	50
Female	45	50	48	48	53
Male	41	44	48	46	47

⁽¹⁾ Based on the total headcount including turnover. Includes training on equipment and outside training.

Employees enrolled in ST supported external education programs (%)

	2015	2016	2017	2018	2019
Operator	0.9	1.1	0.8	0.6	1.1
Non-exempt	1.6	1.2	2.2	1.9	2.1
Exempt	1.5	1.6	1.8	1.9	3.6

Formal recognition and suggestion scheme

	2015	2016	2017	2018	2019
Number of people recognized⁽¹⁾	15,899	17,952	17,110	18,879	20,837
Accepted suggestions which were implemented (%)	60%	58%	54%	52%	30%

⁽¹⁾ Can include more than one recognition per employee over the year.

Unplanned absenteeism (%) | 403-2 |

	2015	2016	2017	2018	2019
Unplanned absenteeism	2.95	3.14	2.59	2.92	2.77
% by region					
Americas	0.00	0.11	0.17	0.24	0.03
Asia-Pacific	2.96	3.04	1.99	2.82	2.83
Europe	3.53	3.16	2.90	2.84	2.89
Mediterranean	1.30	3.91	3.91	3.99	2.45
% by gender					
Female	2.74	2.75	3.40	3.54	3.19
Male	3.34	3.87	2.14	2.57	2.54

Collective bargaining | 102-41 |

	2015	2016	2017	2018	2019
Number of collective agreements signed in the year	39	52	49	55	30
People covered by collective bargaining agreements (%)	75%	75%	74%	74%	78%
People covered by representatives (%)	72%	71%	71%	71%	71%

Fair wages (%) SDG 10.2

	2015	2016	2017	2018	2019
Employees paid above 105% of the legal or conventional minimum wage	90.1	90.8	89.2	90.8	93.2

Working time and overtime hours

	2015	2016	2017	2018	2019
Employees with regular worktime less than 48 hours per week (%)	87%	86%	84%	85%	85%
Average weekly overtime (hours per employee)	3.8	3.7	5.0	5.2	4.3

Average weekly working time, including overtime, in selected countries⁽¹⁾ (hours)

		2015	2016	2017	2018	2019
China	ST standard working time	40	40	40	40	40
	Overtime	5.5	6.3	8.2	9.0	8.9
France	ST standard working time ⁽²⁾	38.5	38.5	38.5	38.5	38.5
	Overtime	0.1	0.1	0.1	0.2	0.1
Italy	ST standard working time	40	40	40	40	40
	Overtime	0.3	0.3	0.4	0.4	0.3
Malaysia	ST standard working time	48	48	48	48	48
	Overtime	11.5	11.4	12.0	12.2	12.2
Malta	ST standard working time	40	40	40	40	40
	Overtime	6.4	6.5	8.2	8.1	6.9
Morocco	ST standard working time	44	44	44	44	44
	Overtime	0.3	0.2	0.4	0.6	1.7
Singapore	ST standard working time	44	44	44	44	44
	Overtime	4.8	1.9	7.2	8.3	4.7
The Philippines	ST standard working time	48	48	48	48	48
	Overtime	6.3	5.1	7.9	7.0	0.9

⁽¹⁾ For non-exempts and operators.

⁽²⁾ French standard legal working time is 35 hours, but ST has a collective agreement for 38.5 hours.

ST sites subject to regular human rights SAQ & audits (RBA)

I 412-1 | SDG 8.8

Country	Major site ⁽¹⁾	% Workforce	Self-assessment	Audit
High risk				
China	Shenzhen	10.0%	✓	✓
Malaysia	Muar	9.1%	✓	✓
Singapore	Ang Mo Kio	10.3%	✓	✓
The Philippines	Calamba	5.8%	✓	✓
Medium risk				
Malta	Kirkop	4.0%	✓	✓
Morocco	Bouskoura	6.1%	✓	✓
Low risk				
France	Crolles	8.6%	✓	✓
	Grenoble ⁽²⁾	3.9%	✓	✗
	Rousset	5.5%	✓	✓
	Tours	2.6%	✓	✓
India	Greater Noida ⁽²⁾	1.8%	✓	✗
Italy	Agrate	10.3%	✓	✓
	Castelletto ⁽²⁾	2.3%	✓	✗
	Catania	9.6%	✓	✓
	Marcianise	0.5%	✓	✗
Percentage coverage of total workforce		90%	90%	82%
Number of sites subject to regular human rights SAQ and audits			15	11

⁽¹⁾ Sites with >700 employees and all manufacturing sites.

⁽²⁾ Design centers. Other sites are manufacturing.

RBA audit results for ST operations SDG 8.7

		2015	2016	2017	2018	2019
Labor, Ethics and Management Systems	Number of audits	7	4	4	7	8
	Priority non-conformances					
	Child labor avoidance (young workers)	0	1 ⁽¹⁾	0	0	0
	Major non-conformances					
	Working hours	2	2	1	4	1
	Wages and benefits	0	1	2	1	0
	Freely chosen employment	0	0	1	1	2
	Non-discrimination	0	0	0	0	1
	Freedom of association	1	0	0	0	0
	Supplier responsibility	0	1	0	1	1
	Training	0	0	0	1	0
	Audits and assessments	0	0	0	1	1
	Total of major/priority non-conformances	3	5	4	9	6
	Average major/priority NC/audit	0.4	1.3	1.0	1.3	0.8
Environment, Health and Safety	Major non-conformances					
	Hazardous substances	0	0	2	2	0
	Industrial hygiene	0	0	0	0	1
	Occupational injury and illness	0	0	0	3	1
	Emergency preparedness	1	0	1	3	2
	Storm water management	0	1	1	0	0
	Occupational safety	0	0	0	3	1
	Energy consumption and GHG emissions	0	0	0	1	1
	Total of major non-conformances	1	1	4	12	6
	Average major NC/audit	0.1	0.3	1.0	1.7	0.8

⁽¹⁾ 17-year-old workers working overtime in Shenzhen site (China).

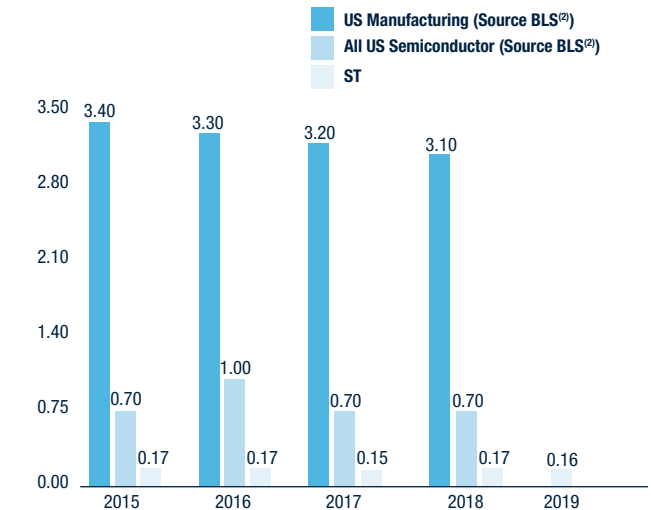
Employees with healthcare coverage provided by ST⁽¹⁾ (%)

SDG 3.8

	2018	2019
Work-related health issues	78	79
Personal health issues	89	89
Direct family member's health issues	72	68

⁽¹⁾ In addition to national healthcare schemes.

Recordable cases rate benchmarks⁽¹⁾ | 403-2 |



⁽¹⁾ Including injuries only. 2018 benchmark data not available at time of publishing.

⁽²⁾ Bureau of Labor Statistics (United States Department of Labor).

Recordable case rate⁽¹⁾ by gender and by region

I 403-2 | SDG 8.8

	2015	2016	2017	2018	2019
Gender					
Female	0.15	0.23	0.23	0.18	0.21
Male	0.18	0.14	0.10	0.16	0.13
Region					
Americas	0.00	0.00	0.00	0.00	0.00
Asia Pacific	0.12	0.14	0.16	0.11	0.11
Europe & Mediterranean	0.21	0.18	0.14	0.23	0.21

⁽¹⁾ Work-related injuries per 100 employees per year as defined by OSHA-US regulation.

Recordable case rate⁽¹⁾ – on-site industrial/domestic⁽²⁾

I 403-2 |

	2015	2016	2017	2018	2019
Recordable case industrial rate	0.12	0.11	0.07	0.13	0.09
Recordable case domestic rate	0.05	0.06	0.08	0.04	0.07

⁽¹⁾ Work-related injuries per 100 employees per year as defined by OSHA-US regulation.

⁽²⁾ Industrial recordable cases are directly linked with industrial activity. Domestic recordable cases are on-site cases such as fall or slip on stairs or struck by or against door/chair/building and structures etc.

Recordable cases by type of event, accident or exposure (%)

I 403-2 |

	2015	2016	2017	2018	2019
Fall or slip	31	37	48	30	45
Struck by or against	30	38	27	35	32
Overexertion	6	4	4	3	1
Caught in, under or between	7	5	8	10	7
Contact with chemicals	9	8	2	4	1
Bodily reaction from slip or motion	7	4	2	9	6
Others	10	4	9	9	8

Severity rate⁽¹⁾ by gender and by region | 403-2 |

	2015	2016	2017	2018	2019
Gender					
Female	3.3	4.2	2.4	2.1	3.3
Male	2.8	2.1	1.9	1.6	2.0
Region					
Americas	0.0	0.0	0.0	0.0	0.0
Asia Pacific	0.7	0.9	0.9	0.4	0.7
Europe & Mediterranean	4.8	4.1	3.1	3.1	4.1

⁽¹⁾ Number of days lost per 100 employees per year as defined by OSHA-US regulation.

Occupational diseases rate⁽¹⁾ by gender and by region | 403-2 |

	2016	2017	2018	2019
Occupational diseases rate	0.05	0.01	0.02	0.01
Gender				
Female	0.10	0.03	0.06	0.03
Male	0.02	0.00	0.00	0.00
Region				
Americas	0.12	0.13	0.00	0.00
Asia Pacific	0.00	0.00	0.00	0.00
Europe & Mediterranean	0.09	0.03	0.04	0.02

⁽¹⁾ Work-related illnesses per 100 employees per year as defined by OSHA-US regulation.

Occupational diseases severity rate⁽¹⁾ by gender and by region | 403-2 |

	2016	2017	2018	2019
Occupational diseases severity rate	2.94	1.05	1.25	0.93
Gender				
Female	4.42	2.70	3.60	2.70
Male	2.13	0.00	0.00	0.00
Region				
Americas	0.84	0.65	0.00	0.00
Asia Pacific	0.00	0.00	0.00	0.00
Europe & Mediterranean	5.70	2.00	2.40	1.78

⁽¹⁾ Number of days lost per 100 employees per year as defined by OSHA-US regulation.

Lost Workday incidence rate – subcontractors | 403-2 |

	2015	2016	2017 ⁽¹⁾	2018	2019
Lost workdays per 100 subcontractor employees	6.8	6.6	5.1	5.2	4.1

⁽¹⁾ Up until end 2016, we covered only independent subcontractors working on-site for more than 3 months. From 2017 onwards, we cover all independent subcontractors.

Lost Workday incidence rate⁽¹⁾ – subcontractors by region | 403-2 |

	2015	2016	2017 ⁽²⁾	2018	2019
Americas	0.00	0.00	0.00	0.00	0.00
Asia Pacific	1.90	0.90	5.98	1.62	0.00
Europe & Mediterranean	10.40	9.60	4.50	7.55	6.85

⁽¹⁾ Number of days lost per 100 employees per year as defined by OSHA-US regulation.

⁽²⁾ Up until end 2016, we covered only independent subcontractors working on-site for more than 3 months. From 2017 onwards, we cover all independent subcontractors.

Lost Workday – subcontractors by gender (%) | 403-2 |

	2015	2016	2017 ⁽¹⁾	2018	2019
Female	54	29	13	26	26
Male	46	71	87	74	74

⁽¹⁾ Up until end 2016, we covered only independent subcontractors working on-site for more than 3 months. From 2017 onwards, we cover all independent subcontractors.

Lost Workday Case⁽¹⁾ incidence rate – subcontractors by region | 403-2 |

	2015	2016	2017 ⁽²⁾	2018	2019
Americas	0.00	0.00	0.00	0.00	0.00
Asia Pacific	0.09	0.26	0.17	0.14	0.00
Europe & Mediterranean	0.64	0.40	0.30	0.40	0.44

⁽¹⁾ Number of cases with days lost per 100 employees per year as defined by OSHA-US regulation.

⁽²⁾ Up until end 2016, we covered only independent subcontractors working on-site for more than 3 months. From 2017 onwards, we cover all independent subcontractors.

Lost Workday Cases – subcontractors by gender (%) | 403-2 |

	2015	2016	2017 ⁽¹⁾	2018	2019
Female	30	25	24	14	30
Male	70	75	76	86	70

⁽¹⁾ Up until end 2016, we covered only independent subcontractors working on-site for more than 3 months. From 2017 onwards, we cover all independent subcontractors.

Injuries costs and savings (US\$m)

	2015	2016	2017	2018	2019
Injuries costs	1.8	1.9	1.4	1.4	1.9
Results without action	8.2	8.4	8.9	9.2	8.8
Savings ⁽¹⁾	6.4	6.5	7.4	7.8	6.9

⁽¹⁾ Around US\$98m savings in 16 years.

Fines and total number of non-monetary sanctions in 2019

STS Shenzhen (China) fined RMB50K (~US\$7,000) for a delay in reporting the relocation of their fire pump room to the correct authority.

Number of fatalities

	2015	2016	2017	2018	2019
Employees	0	0	1 ⁽²⁾	0	0
Subcontractors	1 ⁽¹⁾	0	1 ⁽³⁾	0	0
Total	1	0	2	0	0

⁽¹⁾ One subcontractor was fatally injured following the accidental explosion of a portable cryogenic liquid nitrogen container at our Muar site (Malaysia).

⁽²⁾ One ST employee died from medical complications after coming into contact with a chemical (tetramethylammonium hydroxide) in Ang Mo Kio site (Singapore). In 2018, the Singapore Ministry of Manpower Investigation concluded that the accident was work-related.

⁽³⁾ One subcontractor victim of a fatal accident in an electrical area at our Bouskoura site (Morocco).

We protect the environment



94%
of waste reused,
recovered or sent
for recycling



-21%
GHG emissions
per unit of production
vs. 2016



41%
of water recycled
and reused



Photovoltaic carport, ST Bouskoura, Morocco

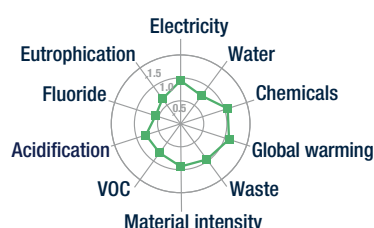
Our approach to the environment

GHG emissions goal achieved six years ahead of target

2019 was a landmark year for ST. We achieved our goal of reducing our GHG emissions by 21% compared to our 2016 baseline, six years ahead of our 2025 target. In doing so, we confirmed our longstanding commitment to minimizing the impact of our activities on the environment by:

- reducing our environmental footprint, largely by decreasing our direct and indirect emissions (see Energy and Climate Change on [page 55](#))
- exploring more renewable energy options (see Energy and Climate Change on [page 55](#))
- reducing the use of plastic in our non-manufacturing activities (see Waste and Effluents on [page 62](#))

Eco-footprint



Reduced environmental footprint

Driving environmental efficiency

Good progress on overall environmental performance

In 2019, our 'eco-footprint score' was 0.76. This was 0.04 better than our 2018 score and ahead of our 2020 target of 0.80.

Our 'eco-footprint radar', an internal tool we have been using since 2001, indicates our environmental footprint by gathering data on the inputs and outputs of our manufacturing operations, such as resource consumption, waste and air emissions. The smaller the footprint, the better the performance, with a score of 1.0 or below considered as good. It allows us to compare the environmental impact of each ST manufacturing site, as well as our overall progress year on year. We analyze the results to identify possible improvements and define the priorities we need to address. [I 103-3 I](#)

Strong governance

We have managed the environmental impact of our activities for more than 25 years, supported by our Environmental Policy and our Environmental Health and Safety (EHS) Decalogue (both available at www.st.com). Our approach to the environment covers all our major sites, including all manufacturing sites. Dedicated corporate and site teams collaborate to define and implement environmental programs and procedures, review projects, share best practices and evaluate performance. [I 103-2 I](#)

Environmental risks are reviewed annually through our Enterprise Risk Management and business continuity processes (see Risk Management on [page 17](#)).

In addition, to prevent any potential negative impacts on the environment, we take a precautionary approach when assessing new processes, chemicals and products, as set out in Principle 15 of the Rio Declaration. [I 102-11 I](#)

Enhanced management system

We manage our environmental programs in accordance with international standards such as ISO 14001, ISO 50001 and EMAS. Our environmental performance and management systems are regularly evaluated and certified through internal and third-party audits.

Moreover, to limit any risks related to our license to operate, we have a three-year program to conduct third-party EHS legal compliance audits. This program covers all our manufacturing sites, all our warehouses and all our sites with more than 150 employees.

In 2019, six EHS legal compliance audits were performed. The Corporate EHS team also carried out internal audits at nine sites (manufacturing sites, R&D centers and sales & marketing offices) to assess the sites' performance against objectives, programs and procedures.

During 2019, we modernized the data management tool we use to gather and consolidate our environmental data. The aim was to improve the efficiency of the data collection and management process (monthly, quarterly and yearly), and subsequently improve our overall performance. [I 103-3 I](#)

6 EHS legal compliance audits

Adopting Lean practices



FOCUS

Extending Lean to the environment

Lean practices are part of ST's day-to-day manufacturing operations as we strive to increase efficiency, reduce waste and enable continuous improvement. In 2019, our Rousset site (France) extended the Lean methodology to its environmental approach to further improve its performance.

Results and feedback are very positive after one year of monthly 'Gemba walks', during which the environmental team and on-site contractors visited all environmental areas to observe behaviors and potential deviations. The site noticed a 33% reduction in 'near misses' compared to 2018 and an improvement in waste segregation and disposal.

This proactive approach reinforces collaboration between ST teams and the contractors. It also helps raise awareness throughout each organization and promotes good environmental practices.

38

experts, one common
action plan

Working together to tackle environmental challenges

Combining our efforts

A strong and engaged community working on a common action plan to minimize our environmental impact (consumption, recycling), engage external stakeholders and reduce risks (regulations, scarcity, price fluctuation, incidents): this was the main outcome of the international environmental event held in June 2019 at our Muar site (Malaysia).

Over three days, 38 environment experts from ST's major sites around the world worked together to address critical environmental challenges. It was a great opportunity for all to meet, discuss common issues, and share ideas to put in place concrete actions to reach ST's 2025 goals.

Participants gained valuable insights into 45 best practices covering water consumption and recycling; and waste, energy and emissions management. Suppliers were also invited to discuss environmental challenges and introduce new solutions and innovations.

Participating in industrial and trade associations

In 2019, we continued our work with the European Semiconductor Industry Association (ESIA), the European arm of the World Semiconductor Council, whose aim is to support the long-term, sustainable growth of the semiconductor industry. Our implication was reinforced by the election of Jean-Marc Chery, President and CEO of STMicroelectronics, as the new ESIA President in December 2019.

ST's experts actively participated and brought their experience, leading several working groups on resource conservation, air emissions, chemicals, and health and safety. Our Corporate Environment Senior Manager, Pascal Roquet, who leads the ESIA EHS committee, worked with peers to define new objectives for 2030.

We are active members of trade associations such as ACSIEL, Alliance Electronique, and Fédération des Industries Electriques, Electroniques et de Communication in France; Federazione Nazionale Imprese Elettrotecniche ed Elettroniche in Italy; and SEMI Europe. We also participate with other semiconductor players in defining the future and considering the environmental impact of the electronics industry. [I 102-12 I](#)

Shaping the future

We believe that tackling environmental challenges is a shared concern and working with external stakeholders creates more opportunities for us to shape the future together.

Our Agrate and Castelletto sites (Italy) developed an innovative initiative by creating an environmental statement aimed at children. The 30-page document was based on certified data and distributed to pupils aged between 9 and 10 years old, providing information on ST commitments and achievements in environmental protection. It was supported by a series of lectures from ST employees involving more than 300 students. The initiative received very positive feedback from the children and their teachers, as well as local communities and ST employees.



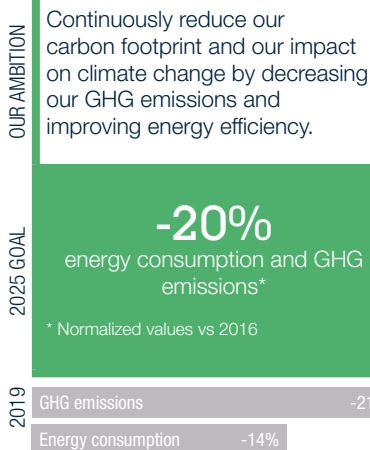
Environmental
statement for children

Energy and Climate Change



Thermal processing units, ST Catania, Italy

Energy & Climate Change



Climate change is considered as one of the most serious global risks by the World Economic Forum. In ST, we recognize the importance of this global issue and take action to mitigate the impact of our activities. [I 103-1 I](#)

In 2019, we accelerated our efforts to address climate change challenges and introduced specific initiatives to significantly reduce our air emissions. As a result, we reduced by nearly 21% our greenhouse gas (GHG) emissions per unit of production compared to our 2016 baseline, achieving our target six years early. Thanks to this achievement, we are now working on more ambitious targets to move towards carbon neutrality.

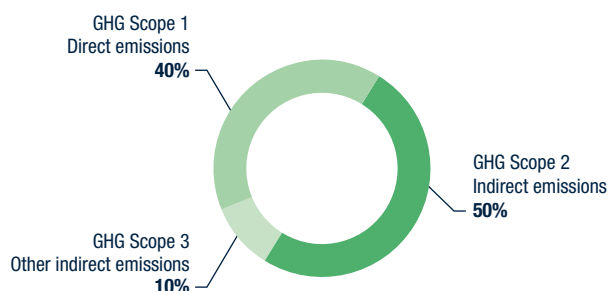
We also confirmed our voluntary commitment to reducing our carbon footprint by joining the 99 signatory companies of the French Business Climate Pledge.

During the year, we reduced our energy consumption by 14% per unit of production compared to 2016 and we committed to more green sourcing (see Moving towards more renewable energy).

Our effective performance and management approach were recognized by external stakeholders as we received a B score in the CDP Climate Change, positioning ST above the global CDP average, above the Europe regional average and above the electrical and electronic equipment sector average, which were all scored as C.

Summary of net CO₂ equivalent emissions [I 305-1 I 305-2 I 305-3 I](#)

-21%
GHG emissions per unit of production compared to 2016



Scopes 1, 2, 3 according to Greenhouse Gas (GHG) protocol.

14%
decrease in absolute
direct air emissions
vs 2018

Decreasing our carbon footprint

In 2019, our absolute direct emissions decreased by 14% compared to 2018, highlighting the impact of the numerous actions we have taken and the investments we have made in recent years.

Reducing PFC use and related emissions

Our direct air emissions (scope 1 of the GHG protocol) result mainly from Perfluorinated Compounds (PFCs) that are widely used in the semiconductor manufacturing process and for which there are not always alternatives. Reducing the use of PFCs and properly treating them before their release into the atmosphere is therefore a major element of our environmental strategy.

The 14% reduction in absolute direct air emissions is largely due to the installation of new abatement systems in our sites with the highest emissions rates.

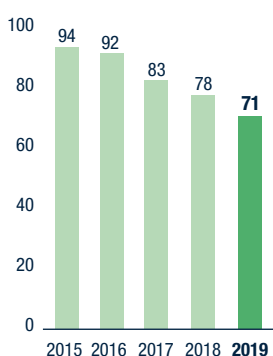
In Ang Mo Kio (Singapore), we achieved a 21% reduction in CO₂ equivalent emissions linked to PFCs compared to 2018, mainly thanks to changes in the gas process and the installation of new abatement equipment. Similarly, a new building at our Catania site (Italy) has been fully equipped with 17 thermal processing units, resulting in a reduction of over 7% in PFC-linked CO₂ emissions.

We expect this positive trend to continue in future years thanks to our PFC roadmap, including the purchase of other new equipment and more gas replacement projects.

CO₂ equivalent emissions

| 305-4 |  SDG 13.1

Per unit of production – normalized values

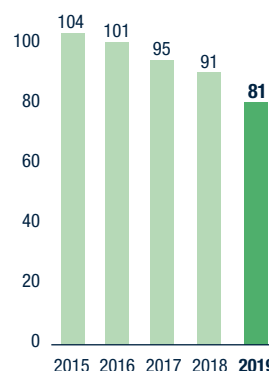


Baseline 100 in 2010.

PFC emissions

| 305-4 |

Per unit of production – normalized values



Baseline 100 in 2010.

Compensating with trees

To help offset our remaining direct emissions, ST has developed CO₂ sequestration programs based on reforestation. More than 6,200 hectares of forests were planted in Italy, Morocco and the United States between 2002 and 2005. These trees sequestered 209,000 tons of CO₂ in 2019, compensating for almost 38% of our annual direct emissions⁽¹⁾.

⁽¹⁾ Internal calculation method.



Dominic Tay Cho Seng

Central Maintenance Manager, Ang Mo Kio (Singapore)

With strong support from the Company, and in line with the Singapore Government's determination to cut carbon emissions, we have managed to significantly reduce our PFC emissions. It is a very positive move given the forthcoming carbon tax and increasing concerns over global warming. It is our privilege and pride to be contributing to the battle against climate change and helping to secure a more sustainable future for humanity."

FOCUS

Photovoltaic carport



Safeguarding the environment

Our Bouskoura site (Morocco) estimates it will reduce CO₂ emissions by almost 740 tons per year thanks to a new 4,000m² photovoltaic carport inaugurated at the end of 2019. The electricity produced by the 2,400 solar panels partially powers the clean room. The carport, among the biggest in Morocco, was installed and is run by GreenYellow, the Moroccan subsidiary of the French GreenYellow Group. This project is in addition to the 8,470m² photovoltaic carport installed at our Catania site (Italy) in 2011.

"This is in line with our ambition to develop low-carbon electricity around the world and corresponds to a common desire to pursue our commitments and investments in green projects through the exploitation of renewable energies. In addition, it offers additional comfort to all our employees whose cars will be protected from the sun," explained Fabrice Gomez, General Manager of Bouskoura.

26%
of renewable energy

Mitigating our indirect emissions with renewable energy

Our absolute indirect emissions (scope 2 of the GHG protocol) decreased by 11% in 2019 compared to 2018. This is a direct consequence of our increased use of renewable energy, as during the same period we consumed 2% more energy in our operations. It highlights the need to further increase the level of renewable sources in our energy mix and to improve the efficiency and management of our energy consumption.

Moving towards more renewable energy

26% of the total volume of energy we purchased in 2019 came from green electricity. Renewable energy makes up 70% of the electricity used by our sites in France, 30% of the electricity used by our sites in Italy and 13% of the electricity supplied to our Calamba site (the Philippines). In France, green sourcing helped us reduce our emissions by the equivalent of 41,192 tons of CO₂, enough for 41,192 individual return flights from Paris to New York.

Our objective for 2020 is to significantly increase the sourcing of renewable energy in all our sites and more particularly in Italy and Morocco.

In 2019, ST joined a clean energy program initiated by a customer. In so doing, we confirmed our low carbon commitment and agreed to supply products 100% manufactured with renewable energy to this customer by 2021.

The construction of a photovoltaic carport at our Bouskoura site (Morocco) is another initiative implemented in 2019 to increase the use of renewable energy at our sites (see Focus).

Meanwhile, the solar power installations at our sites in Catania (Italy) and Grenoble (France) produced 2.1GWh of green energy during 2019.

Managing energy consumption

All our manufacturing sites continued developing initiatives to better manage their energy consumption and reduce ST's footprint. These include investing in substation equipment at our Muar site (Malaysia) and energy savings programs at our Rousset site (France). During 2019, EHS teams at our front-end and back-end sites worked on 44 improvement projects, saving 18.45GWh of energy. [I 302-4 I](#)

Exhausts and air recycling represent a big part of the electricity consumption at our manufacturing sites. Our Rousset site (France) introduced a project to improve exhaust capacity and optimize scrubber availability. Applying a Lean approach, people from various organizations (facilities, environment and operations) and with different skills, first identified the 'mudas' (waste) to eliminate. This highlighted several potential areas and opportunities for improvement, such as optimizing the settings on various items of equipment. This led to a sustained increase in performance, decreasing the acid exhaust flowrate by 13% and reducing electricity consumption by an estimated 900MWh.

Implementing a systematic approach to energy management helps improve our performance. At the end of 2019, our Muar site (Malaysia) underwent an ISO 50001 certification audit, joining the nine ST sites already certified (see ST site certifications on [page 33](#)).

10
sites certified
ISO 50001



2019 OBJECTIVES

Status Comments

-30% PFCs emissions (tons CO₂ per production unit) by 2020 from 2010 baseline.



-19% compared to 2010.

+10% green energy each year.



+25% compared to 2018.

Adopting greener transport solutions

One commitment of our EHS Decalogue is to reduce CO₂ emissions from the transportation of our employees and products (scope 3 of the GHG protocol). We report on three categories of scope 3: employee commuting, business travel and goods transportation. This represents 10% of our total CO₂ emissions. In 2019, our scope 3 absolute emissions increased by 4% compared to 2018, mainly due to goods transportation.

Employee commuting and business travel

At ST, we encourage employees to play their part in combatting climate change by choosing greener mobility options such as bicycles, electric cars, buses and trains. In 2019, we reduced CO₂ emissions related to employee commuting by 4%, thanks to various initiatives launched by our sites to promote eco-friendly alternatives.

- We installed electric car charging stations at our Shenzhen site (China) and corporate headquarters in Geneva (Switzerland). These two sites have now joined all our French sites, as well as Catania and Agrate (Italy), on the journey to green commuting.
- Our Zaventem site (Belgium) took the opportunity of European Mobility Week to encourage employees to commute by walking, cycling or using public transport, or to work from home. This led to a reduction of approximately 11% in CO₂ emissions during that week, compared to a standard working week, as well as more employee awareness and engagement.
- Our Agrate site (Italy) has set up an 'Isola Formativa' (training island) that provides free bicycle management and maintenance for ST employees and their families, encouraging people to cycle more. This unique, sustainable and inclusive project taught five disabled trainees professional skills that will enable them to enter the world of work. The five-year project was developed in collaboration with Lo Sciamè (The Swarm) a nonprofit social cooperative.

We also encourage our employees to use video conferencing and remote team meetings to minimize business travel.

Goods transportation

Emissions related to goods transportation represent about 50% of our scope 3 emissions. Whenever possible, we optimize loadings and routes. In 2019, our CO₂ emissions from goods transportation increased by 12%, due to an increased volume of internal shipments.

Addressing climate-related risks

Through our Enterprise Risk Management (ERM) program, we identify and assess climate-related risks. The Business Continuity Plans (BCP) we implement at each site help prevent and protect our operations against climate change and natural disasters (see Risk Management on [page 17](#)). We adopt a bottom-up approach to assess risks, allowing us to zoom in on a specific site or zoom out at a Company level. Benchmarking helps us identify the types of risks and the sites most exposed.

The methodology we use is inspired by the 'Water Risk Filter', a tool developed by the World Wildlife Fund and adapted for carbon risk assessment. We assess the physical risks (such as dependence of operations on weather and temperature), regulatory risks (such as legislation and fines) and reputational risks (such as exposure to media, involvement in compensation measures and initiatives). ST also identifies risks that are driven by changes in other climate-related developments, such as changing consumer behavior.

Contributing to the Sustainable Development Goals

Our commitments and programs related to Energy and Climate Change as described above contribute to:

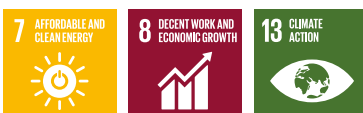
SDG target 7.3 – By 2030, double the global rate of improvement in energy efficiency.

SDG target 8.4 – Improve progressively, through 2030, global resource efficiency in consumption and production.

SDG target 13.1 – Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

4%

decrease in CO₂ emissions related to employee commuting



Water



Ultra-pure water, ST Crolles, France

Water

OUR AMBITION
Maintain our leadership in water efficiency by reducing consumption, recycling more, and reinforcing our efforts in water scarcity areas.

2025 GOAL

-20%
water consumption*

* Normalized values vs 2016

2019

-9%

76%
reduction in our water
footprint over the last
25 years

Over the last 25 years, ST has adopted a comprehensive approach to water management, including water stress assessments, conservation programs, and initiatives with local communities to reduce water extraction and consumption. Through our continuous efforts, we have succeeded in reducing our overall water footprint by 76% (per unit of production). [I 103-2 I](#)

Our 2019 performance and actions

Semiconductor manufacturing processes are more and more complex and require an increasing volume of ultra-pure water (UPW) for both front-end and back-end sites.

Against this background, we were pleased to maintain a rate of 41% recycled and reused water in 2019, although our water consumption slightly increased.

Conserving water initiatives

Although it is increasingly challenging to reduce water consumption, we continue to implement innovative and creative solutions to minimize the impact of our activity on water availability. We always strive for solutions that optimize the availability of high-quality UPW while minimizing water use.

In 2019, our Calamba site (the Philippines) reduced water consumption by 47,000m³ by replacing the water softener used in the reverse osmosis pretreatment process – the filtration system to produce UPW – with a new anti scalant product. This also reduced our chemical consumption, without affecting the water quality supplied for the manufacturing processes (see Chemicals [page 65](#)).

Another reverse osmosis project was successfully implemented at our Agrate site (Italy), substantially reducing water consumption (see Focus [page 60](#)).

Meanwhile, our Bouskoura site (Morocco), where water is a scarce resource, developed a new solution to reuse water after the sawing stage of the manufacturing process, saving 100m³ of water per day.

In addition, our Tours site (France) collaborated with a supplier to add sensors to measure water consumption in both facilities and manufacturing areas. The sensors enable us to accurately monitor water consumption and detect any irregularity.



Ignacio Elarco

Facilities Manager – Operations & Maintenance, Calamba (the Philippines)

Our Calamba site (the Philippines) is one of the largest users of chemicals and water in ST, and its consumption has been increasing over the past few years. This presents a tough challenge; however we continue to work to reduce our chemical and water use, with projects such as the reverse osmosis pretreatment process change. I am proud to be able to contribute my 29 years of experience to this kind of project that aims to conserve natural resources and protect future generations."



Scrutiny from external stakeholders

Once again, we were one of 2,435 companies to participate in the 2019 CDP questionnaire on water security. We achieved a B score, positioning ST higher than the average for the electrical and electronic equipment sector and the global average.

The CDP evaluates our risk assessment practices, water policies, management and performance, as well as our exposure to water-related risks across our value chain. By participating in the CDP, we are able to better understand our risk and increase transparency for stakeholders.

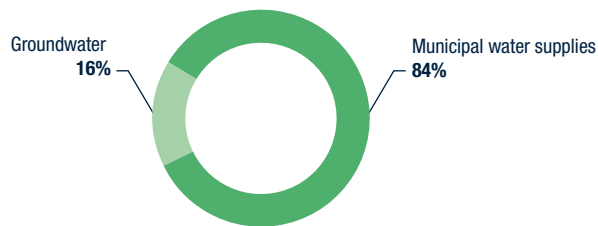
Water preservation and management is an important topic for us and our stakeholders. In 2019, our Shenzhen site (China) was audited by a customer as part of its clean water program. The site was recognized as a best-in-class supplier, joining four of our front-end sites that were audited under the same program in 2015.

A precious resource for all

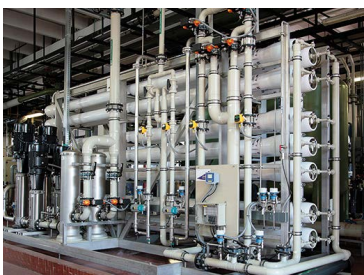
It is essential to have a reliable water supply for the semiconductor manufacturing process. All ST sites manage their water-related risks according to their needs and water availability. Each site monitors the volume of water it uses and complies with local permits. One of our 11 manufacturing sites uses groundwater for its operations. In 2019, 16% of the total amount of water used at our manufacturing sites came from groundwater and 84% from municipal water supplies.

We firmly believe it is essential to ensure the continuity of water supplies in the areas where we operate. We therefore engage in regular discussions with local stakeholders and implement solutions to reduce water extraction and consumption.

Water withdrawal by source | 303-1 | SDG 6.4



Determination leads to success



FOCUS

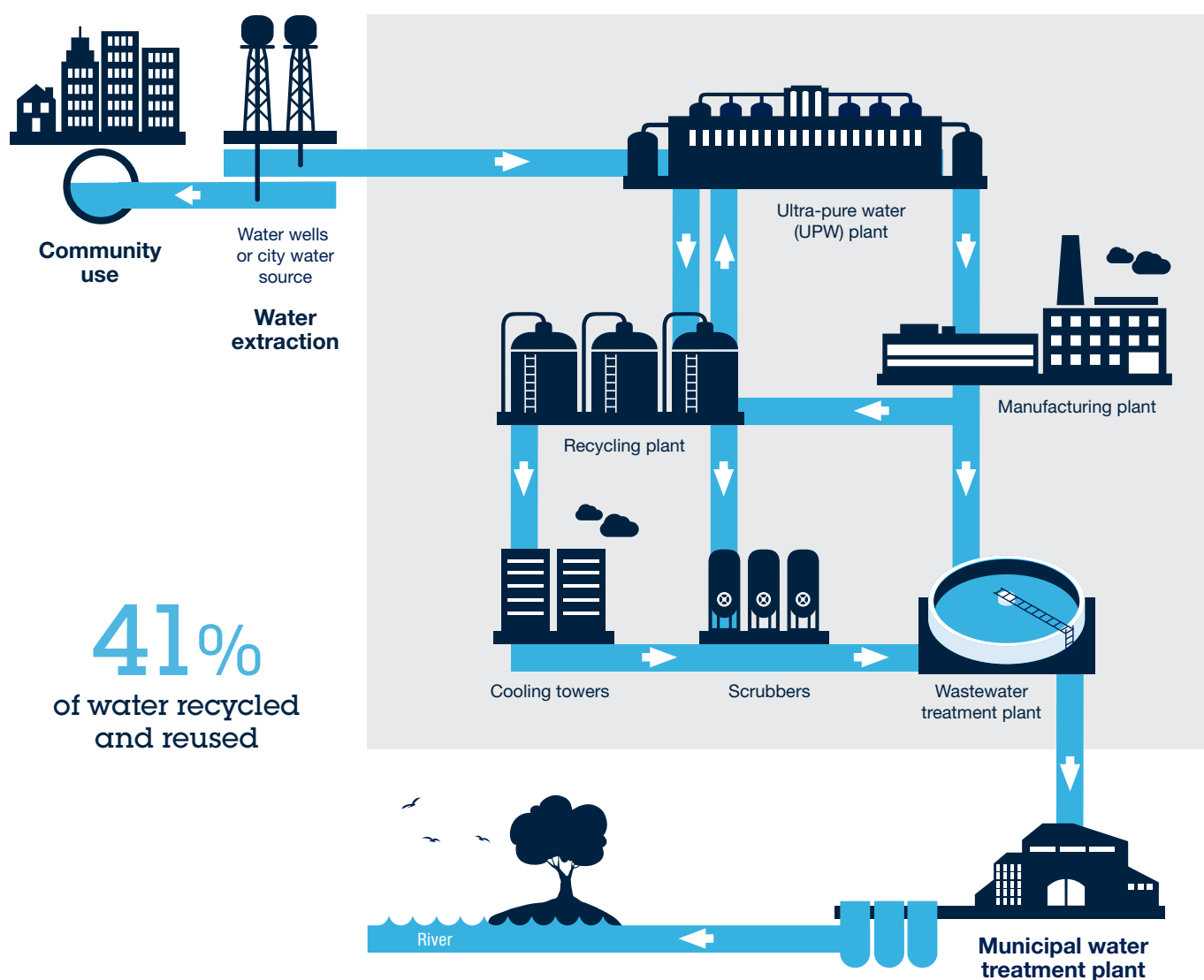
Saving water, saving chemicals and saving energy

Our Agrate site (Italy) initiated a new project in 2019 to use thin-film composite membranes for the reverse osmosis process used to generate ultra-pure water. Although this technology is already widely used elsewhere, previous attempts to implement it at this site had failed due to the chemical make-up of the local groundwater.

The ST team worked for years with industry experts to find the best compromise between membrane brands, field parameters and chemical dosage settings. This determination and collaborative approach eventually delivered a successful outcome, resulting in higher quality ultra-pure water. This in turn led to savings of 30,000m³ of water, 100 tons of chemicals and 540MWh of energy per year.

This technology will now be applied to other systems, enabling us to achieve a more efficient conversion of raw water into ultra-pure water. It will also become the reference case for the water plant at our new manufacturing facility currently under construction.

Typical ST water cycle



41%
of water recycled
and reused

Contributing to the Sustainable Development Goals



Our commitments and programs related to Water as described above contribute to:
SDG target 6.4 – Substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity.
SDG target 8.4 – Improve progressively, through 2030, global resource efficiency in consumption and production.



2019 OBJECTIVES

Recycle rate $\geq 45\%$.

Status

Comments



41%
Objective maintained in 2020.

Waste and Effluents



Spent resin waste, ST Kirkop, Malta

Waste & Chemicals

OUR AMBITION
Strive for zero waste in landfill, reduce our consumption of chemicals and eliminate hazardous materials.

2025 GOAL
95%
of our waste reused and recycled

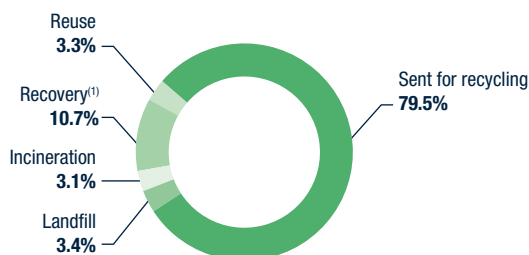
2019
94%

Our waste management programs cover all waste streams generated by our own operations and all related activities and products. We prioritize solutions to reduce, reuse, recycle, and recover rather than dispose, and we align our actions with both local regulations and ST policy, always applying the most stringent requirements. [103-2](#)

2019 performance

In 2019, 94% of the waste generated by our operations was reused, recovered or sent for recycling, and we remain on track to reach our goal of 95% by 2025. We also reduced the waste sent to landfill from 4% in 2018 to 3.4% in 2019, in line with our objective of less than 3%.

Waste split [1306-2](#)



⁽¹⁾ Waste burnt with recovery of energy (combustion).

Our various manufacturing processes can generate hazardous or potentially hazardous waste such as chemical substances and contaminated plastics. We pay close attention to each type of waste that can impact the environment or people's health and safety. In 2019, 48% of our waste was identified as hazardous. Most of it (94%) was reused, recovered or sent for recycling. The remaining waste was disposed of and treated locally by specially authorized companies.

94%
of waste reused,
recovered, or sent
for recycling

The way we treat waste depends on its characteristics and on local capabilities. Our sites adopt different approaches to reduce the amount of waste generated and improve its recycling. At our sites in Calamba (the Philippines), Shenzhen (China) and Crolles (France), an emphasis on greater employee awareness and improved labelling led to better waste sorting and a higher rate of recycling.

Of course, the best waste is the one we do not produce. With this in mind, our Tours site (France) modified two pieces of manufacturing equipment to better segregate water and a specific hazardous substance, reducing the amount of waste sent for incineration by 30 tons per year.

Managing our effluents

Wastewater is treated on-site or externally in dedicated treatment plants, either owned by ST or developed in collaboration with local authorities and partners. These remove polluting substances such as fluoride, which in some cases cannot be treated by municipal plants. Once the wastewater has obtained a sufficient level of purity and any risk of pollution is eliminated, it is discharged into the natural environment. We work closely with local communities to reduce all risks related to water discharge and pollution.

In 2019, our manufacturing sites carried out various initiatives to improve the management and treatment of wastewater. For example, our Crolles site (France) strengthened measures to protect the stormwater infrastructure by adding special valves to load and unload hazardous substances in the storage area.

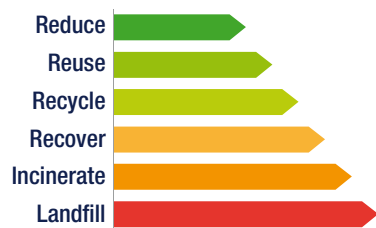
In addition, our Calamba site (the Philippines) installed a new filter press for filtering wastewater and improving the wastewater recovery process in the treatment plant. This has increased our recycling rate and we estimate that it will reduce water withdrawal by 21% by 2020.

Progressing towards a circular economy

Our sites always look for opportunities to reuse the waste generated to benefit the environment, local communities and ST. We have implemented various initiatives and techniques to achieve this:

- Landfill industrial waste is transformed into solid combustible material and used in cement factory furnaces.
- Sulfuric acids are used for recycling batteries.
- Spent resin and sludge are used in the cement and brick industry.
- Deflashing waste powder is sent for precious metal recovery.
- Electronic waste is dismantled; some parts are reused, and precious metals are recovered.
- Solvents are sent for distillation and reuse.
- Solvents are burned and the energy recovered.
- Ammonia in wastewater is treated and used in agricultural fertilizers.
- Silicon wafer scraps are used for aluminum production.
- Paper, cardboard, plastics and wood are recycled.
- Organic waste is transformed into compost.

Waste hierarchy



Employee initiatives



FOCUS

Participating in clean-up operations

Engaging employees in environmental initiatives is a good opportunity to raise awareness of the need for everyone to be more responsible and to encourage good behavior, both individually and collectively. Every year, our sites organize or take part in initiatives to clean up rivers, beaches, and cities in locations where we operate. In 2019, this included activities in:

- Taipei (Taiwan), where 915kg of rubbish was collected on a beach
- Tokyo (Japan), where volunteers from our sales office cleaned up around Shinagawa train station
- Hong Kong, where 23 ST employees collected 82kg of rubbish on a beach, along with 348 plastic bottles for recycling
- Ang Mo Kio (Singapore), where ST staff participated in a beach clean-up initiative

In addition to this, our Muar site (Malaysia) joined the Melaka Smart River project to monitor the water and air quality in Melaka using our IoT technology.



Romain Fouqueray
Environment Engineer, Tours (France)

Our program to reduce waste by eliminating single-use plastic cups in our offices and canteen was an excellent opportunity to highlight the difference we can all make to safeguard our environment. To remove the need for disposable cups in the ST canteen and at office water fountains, we replaced them with customized ceramic mugs for all employees that can be reused instead of thrown away. This small but significant change was welcomed by staff and very much appreciated. As a result, we decreased the amount of plastic waste generated by almost three tons!"

25
waste disposal
suppliers audited

Going beyond our operations

Stronger control of waste management

When waste leaves our sites, it still needs to be properly treated and disposed of. In line with our internal specifications, local EHS teams visit waste disposal suppliers to assess their compliance with ST's requirements, local regulations, best practices and treatment techniques. In 2019, 25 audits were performed at our suppliers' waste disposal facilities, six more than in 2018. For example, at our Ang Mo Kio site (Singapore), a team comprising people from EHS, purchasing and quality, conducts these audits with suppliers, reinforcing collaboration within teams and with suppliers to achieve better waste management.

Reducing plastic use in our offices

The need to reduce plastic waste is widely recognized as a global environmental priority. Several ST sites initiated plans in 2019 to eliminate single-use plastic in offices and canteens. Employees at our Paris, Tours (France), Geneva (Switzerland) and Hong Kong sites, were provided with glass bottles, mugs and thermos bottles to replace plastic cups. The Tours site estimated that this will help save 910,000 disposable cups per year, equivalent to 2.8 tons of plastic (see quote).

Contributing to the Sustainable Development Goals

Our commitments and programs related to Waste and Effluents as described above contribute to:

SDG target 3.9 – Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution, and contamination.

SDG target 6.3 – Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

SDG target 12.4 – Achieve the environmentally sound management of chemicals and all wastes throughout their lifecycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



2019 OBJECTIVES

≤3% waste in landfill.

Status

Comments



3.4%
Objective maintained in 2020.

Chemicals



Automatic revelation tool, ST Tours, France

Waste & Chemicals

OUR AMBITION
Strive for zero waste in landfill, reduce our consumption of chemicals and eliminate hazardous materials.

2025 GOAL
95%
of our waste reused and recycled

2019 **94%**

5,896
chemicals in use

Managing hazardous materials in a responsible way

ST takes a precautionary principles approach to responsibly managing chemical substances and materials, to protect people and the environment and comply with customer and legal requirements.

All chemicals used on site are evaluated before being used. The evaluation focuses on the composition, the hazards and the use conditions, including risk management measures, personal protective equipment, waste management and administrative controls. Thanks to this continual process, critical substances are identified as soon as they are introduced or reclassified. In 2019, we recorded 5,896 chemicals in use, and we conducted 815 new risk assessments, reaching a total of 29,408 validated risk assessments by the end of the year. [103-2](#) | [103-3](#) |

Preventing human exposure to chemicals

We implement programs on all sites to improve safety during chemical handling and to reduce employee exposure. We continue to strengthen the safety of equipment and controlled conditions. For example, our Tours (France) and Agrate (Italy) sites developed specific medium-term programs to upgrade or replace equipment and minimize manual handling, thereby limiting the potential exposure of employees and improving safety levels.

The 10,326 industrial hygiene measurements we performed during the year were all below the applicable limits, demonstrating the effectiveness of our mitigation actions.



2019 OBJECTIVES

In line with WSC statement, remove PFOA and PFOA-related substances in all manufacturing chemicals by 2025.

Status

Comments



Removed 94.4% PFOA and PFOA-related substances in 2019 compared to 2014 when the program started.



Hahnsen L. Isidro
President and GM

STMicroelectronics is a leading semiconductor company in the Philippines recognized for its egalitarian approach to suppliers. Its robust accreditation privileges are bolstered by its desire for supplier companies to mirror its technical expertise and to provide only the best quality products and services. It is continually looking to improve efficiency by the use of new technologies and systems. Quimicos is committed to supporting STMicroelectronics to accomplish new goals in the future."

Substituting chemicals

Replacing hazardous substances

At each manufacturing site we implement programs to consider chemical use and potential alternatives, whenever possible.

After seven years of work and tests, our Rennes site (France) successfully identified a resin to substitute the substance MHHPA (hexahydromethylphthalic anhydride), a well-known and widely used component of hard resins. It has been included in the SVHC⁽¹⁾ candidate list since December 2012 due to its respiratory sensitizing properties⁽²⁾.

We use this resin to test the reliability of samples of a product for the medical market. When the testing is complete, the final product – which does not contain the resin itself – is delivered to the customer. Even though there is no resin in the final product, we believe it is important to find an alternative, while also excluding substances that could potentially face restrictions in the future.

For each resin, we conducted many reliability tests to validate the process. In 2019, we finally identified one suitable resin. We will therefore use a different resin in 2020, once the customer approves the process change.

During 2019, we continued to work on phasing out PFOA (Perfluorooctanoic acid) related substances in line with our commitment. However, we have not yet completed the replacement plan for the DEHP (Di-ethylhexyl phthalate) contained in wafer tapes.

Where there is no alternative to using hazardous substances, we take precautionary measures to prevent any adverse impact on people and the environment. We also proactively work with chemical manufacturers on replacement plans. We are currently doing this for a specific nonylphenol used in both a back-end plating solution and a laboratory solution for medical diagnosis. This substance is already listed under Annex XIV and included in the SVHC candidate list. We also ensure usage occurs under adequate risk management measures, so there is no potential exposure to employees.

Our Calamba site (the Philippines) is one of the largest users of water and chemicals among our back-end sites. It therefore introduced a program to reduce consumption of these resources. To reach the challenging environmental goals, the site's facilities team looked for an alternative to reverse osmosis feed-water pretreatment, part of the process to generate ultra-pure water (see Water on [page 59](#)).

A new product, a type of antiscalant, was introduced to replace the water softener. As the antiscalant prevents scaling and fouling, it helps maintain the membrane surface cleaner and therefore reduces the need for water. The elimination of the water softener reduced the use of water during the regeneration process by 4% (around 47,000m³ per year) and reduced the use of chemicals by 68% (around 363,000kg per year) compared to 2018, without affecting the quality of the water supplied for the manufacturing processes. This was only possible thanks to an extensive collaboration with the chemical provider (see quote).

Adhering to the highest standards

We aim to ensure that all chemicals used in ST operations and products are legally authorized and meet customer requirements.

Complying with legal requirements

We comply with applicable environmental regulations and requirements, including European chemical policies and directives such as REACH⁽³⁾, RoHS⁽⁴⁾, and ELV⁽⁵⁾. Over the last two years, ST's chemical experts have jointly worked with suppliers and car manufacturers to renew the exemption to the ELV Directive for the use of lead in high melting temperature solders, due to there being no suitable alternative. At the end of 2019, the European Commission granted the extension of this exemption while work continues to identify suitable alternatives, leading the industry into the next phase of the lead-free semiconductor evolution.

Using less chemicals and water

Reducing hazards



FOCUS

Identifying a safer alternative

Our Shenzhen site (China) implemented a project to eliminate hazardous liquid waste generated by the plating line process, a step in the manufacturing process.

Before 2019, the neutralizer used in one of the process steps generated hazardous liquid waste which we could not treat on site. Taking into consideration the impact of our activities on both people and the environment, the teams focused their efforts on finding a more suitable and effective solution.

Experts identified one neutralizer solution among four preselected, ensuring it would not impact the manufacturing process or the product quality. As a result, the chemical liquid waste now generated by the process is treated on site and is no longer hazardous.

Positive feedback from customers

Meeting customer expectations

To provide our customers with information on the chemical composition of all our products, we report and publish our material declarations (available at www.st.com) in accordance with the IPC1752⁽⁶⁾ standard.

In 2019, as in previous years, our customers maintained a high level of interest in the way we manage chemicals. Seven customer audits were conducted throughout the year at our sites in Shenzhen (China), Calamba (the Philippines) and Ang Mo Kio (Singapore). The results demonstrated a good level of chemical management. All three sites received positive feedback from customers, who recognized a continuous improvement.

ST still pursues the implementation of Hazardous Substance Process Management (HSPM) to identify, control, qualify and report any dangerous element in component products according to the QC080000 standard.

We require our suppliers to respect our EHS-regulated substances list, which contains more than 3,000 substances and is regularly reviewed. We also require them to confirm their compliance through analytical certificates, safety datasheets and commitments.

Contributing to the Sustainable Development Goals

Our commitments and programs as described above contribute to:

SDG target 3.9 – Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.

SDG target 6.3 – Improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally.

SDG target 12.4 – Achieve the environmentally sound management of chemicals and all wastes throughout their lifecycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



⁽¹⁾ SVHC: Substance of Very High Concern.

⁽²⁾ <https://echa.europa.eu/documents/10162/3ee8978c-40be-4dc4-a12d-798caf6424f0>

⁽³⁾ REACH: Registration, Evaluation, Authorization and Restriction of Chemicals.

⁽⁴⁾ RoHS: Restriction of Hazardous Substances.

⁽⁵⁾ ELV: End of Life of Vehicles.

⁽⁶⁾ IPC1752: Association connecting electronics industries.

Environmental indicators

This section includes indicators and GRI Standard disclosures.

Our environmental data covers our 11 main manufacturing sites, representing more than 95% of the overall environmental impact of the Company.

The methodologies used to calculate data are detailed in internal Company procedures, which are regularly reviewed during third-party environmental audits (EMAS, ISO 14001, ISO 50001). See ST site certifications table on [page 33](#).

ST follows the Greenhouse Gas (GHG) Protocol for managing its GHG emissions. The resulting CO₂ emissions are reported according to recognized international standards (Reference – World Resources Institute (2004) GHG Protocol – A Corporate Accounting and Reporting Standard).

SCOPE 1 – Direct emissions resulting from operations

- Combustion emissions: World Resources Institute (2008) – GHG Protocol Calculation tool for stationary combustion v.4.1
- PFC emissions: 2007 IPCC fourth Assessment Report Climate Change. Table 2.14. Lifetimes, radiative efficiencies and direct GWPs relative to CO₂ <https://www.ipcc.ch>

SCOPE 2 – Indirect emissions resulting from purchased electricity

- World Resources Institute (2014). GHG Protocol tool for stationary combustion. Version 4.8, GHG Protocol Scope 2 Guidance

SCOPE 3 – Emissions resulting from travel and transportation

- Mobile Combustion GHG Protocol tool v.2.6
- Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard

Environmental investments (%)

	2015	2016	2017	2018	2019
% of total company investments	0.70	0.33	0.47	0.17	0.35

Consumption – absolute values | 302-1 | 302-4 |

	2015	2016	2017	2018	2019
Electricity (TJ ⁽¹⁾)	7,517	7,536	7,812	8,094	8,208
Water (1,000m ³)	15,940	16,406	17,064	18,204	18,843
Chemicals (tons)	19,125	17,615	20,118	23,127	21,780
Natural gas (TJ ⁽¹⁾)	661	690	695	666	696

⁽¹⁾ Terajoule.

Summary of net CO₂ emissions (KTons)

| 305-1 | 305-2 | 305-3 | SDG 13.1

	2015	2016	2017	2018	2019
Direct emissions (operations) Scope 1	575	552	605	644	557
Indirect emissions (purchased electricity) Scope 2 ⁽¹⁾	748	739	756	791	702
Other indirect emissions (transportation ⁽²⁾) Scope 3	135	113	132	137	143
Total emissions	1,459	1,404	1,493	1,573	1,402

⁽¹⁾ Market-based method calculation according to GHG Protocol standard.

⁽²⁾ The transportation emissions value is a global estimate of employee transportation and transportation of goods.

Environmental burden – net values SDG 3.9 - SDG 6.3

	2015	2016	2017	2018	2019
Emissions to air					
Global warming ⁽¹⁾ (MTCE)	397,832	382,909	407,290	428,912	382,277
Ozone depletion (kg R11 Eq)	0.25	0.14	0.00	0.00	0.00
VOCs (Tons)	224	231	287	297	139
Atmospheric acidification (Kg SO ₂ Eq)	34,170	32,283	36,084	43,856	46,018
Photochemical oxidant creation (Kg ethylene Eq)	31,498	46,186	49,166	43,749	35,799
Air emission toxicity ⁽²⁾ Kg PH3 Eq	2,063	2,529	1,595	2,240	1,414
Emissions to water⁽³⁾					
Eutrophication (Kg (P+N))	259,428	160,155	176,555	164,027	169,575
Aquatic oxygen demand (Kg COD ⁽⁴⁾)	474,486	508,468	595,257	605,100	632,625
Heavy metals to water (Kg Heavy metals)	6,022	8,217	11,560	14,222	9,233
Aquatic ecotoxicity (Kg Cu Eq)	4,097	5,114	6,208	5,764	5,211

⁽¹⁾ Includes direct greenhouse gas (GHG) emissions from our manufacturing plants and indirect emissions from energy consumption and transport, reported in Metric Tons of Carbon Equivalent (MTCE). Does not include GHG emissions from subcontractors and foundries.

⁽²⁾ Emissions of substances are considered only if they exceed the minimum threshold of 3ppm, expressed in phosphine equivalent. For Volatile Organic Compounds, Atmospheric Acidification, Photochemical Oxidant Creation and Air Emission Toxicity the Particulate Matter is not covered.

⁽³⁾ Domestic wastewater is included.

⁽⁴⁾ Total Chemical Oxygen Demand (COD).

Direct and indirect energy consumption by primary sources⁽¹⁾ (%) | 302-1 | 302-4 |

	2015	2016	2017	2018	2019
Green electricity purchased	22.4	23.6	25.8	21.2	26.4
Photovoltaic and thermal solar electricity produced by ST	0.1	0.1	0.1	0.1	0.1
Electricity purchased from nuclear (CO ₂ free)	15.6	12.6	12.1	9.2	6.9
Electricity purchased from fossil fuel sources	53.6	55.1	53.7	61.8	58.6
Natural gas	8.1	8.4	8.1	7.6	7.8
Other fuels	0.2	0.2	0.3	0.3	0.3

⁽¹⁾ The sums may not add up to 100% due to rounding of the figures.

Energy consumption by source | 302-1 | 302-4 |

	2015	2016	2017	2018	2019
Electricity (TJ ⁽¹⁾)	7,517	7,536	7,812	8,094	8,208
Natural gas (TJ ⁽¹⁾)	661	690	695	666	696
Others (TJ ⁽¹⁾)	16	17	24	22	22
Total energy (TJ ⁽¹⁾)	8,193	8,244	8,531	8,782	8,926
Energy from electricity (%)	91.7%	91.4%	91.6%	92.2%	92.0%

⁽¹⁾ Terajoule.

Consumption of energy | 302-3 | SDG 7.3

Per unit of production – normalized values

	2015	2016	2017	2018	2019
Consumption of energy	109	109	97	89	94

Baseline 100 in 2010.

Consumption of electricity | 302-3 |

Per unit of production – normalized values

	2015	2016	2017	2018	2019
Consumption of electricity	109	109	97	89	94

Baseline 100 in 2010.

Consumption of natural gas | 302-3 |

Per unit of production – normalized values

	2015	2016	2017	2018	2019
Consumption of natural gas	113	118	101	86	94

Baseline 100 in 2010.

Carbon footprint of ST's products per mode of transportation⁽¹⁾ (%)

	2015	2016	2017	2018	2019
Air <2,000km	14	16	19	19	22
Air >2,000km	85	82	79	80	76
Road	2	2	2	2	2
Ocean	0	0	0	0	0

⁽¹⁾ The sums may not add up to 100% due to rounding of the figures.

Consumption of water

Per unit of production – normalized values

	2015	2016	2017	2018	2019
Consumption of water	96	99	88	84	90

Baseline 100 in 2010.

Water withdrawal by source (1000m³)⁽¹⁾ | 303-1 | SDG 6.4

	2017	2018	2019
Ground water	3,055	4,236	3,029
Surface water	-	0	0
Municipal water supplies	14,009	13,967	15,814
Total withdrawal	17,064	18,204	18,843

⁽¹⁾ The sums may not add up due to rounding of the figures.

Recycled and reused total water

| 303-3 |  SDG 6.3 - SDG 6.4

	2015	2016	2017	2018	2019
Total water used (1,000m ³)	29,022	29,219	29,920	30,654	31,708
Total volume of water recycled and reused (1,000m ³)	13,080	12,798	12,857	12,450	12,870
Water recycled and reused (%)	45.1%	43.8%	43.0%	40.6%	40.6%

Total water discharge | 306-1 |

	2015	2016	2017	2018	2019
Water discharge (1,000m ³)	13,053	13,794	14,406	14,926	15,621
Treated in ST wastewater treatment plant (%)	79%	78%	78%	68%	69%
Treated in external wastewater treatment plant ⁽¹⁾ (%)	58%	59%	58%	57%	55%

⁽¹⁾ Part of this water has already been treated in ST wastewater treatment plants, meaning that 100% of water discharged is treated either internally, externally, or both.

Waste in tons | 306-2 | SDG 12.4

	2015	2016	2017	2018	2019
Total hazardous waste (tons)	10,406	11,291	14,361	20,173	21,092
Total waste (tons)	34,571	34,041	40,469	49,471	43,593

Waste split in tons | 306-2 |

	2015	2016	2017	2018	2019
Reuse	3,634	3,696	1,543	2,097	1,614
Sent for recycling	25,969	24,092	32,182	39,077	38,831
Recovery ⁽¹⁾	1,741	3,291	3,098	4,642	5,224
Incineration	1,757	1,336	2,128	1,671	1,497
Landfill	1,470	1,625	1,519	1,983	1,651
Total Waste	34,571	34,041	40,469	49,471	48,817

⁽¹⁾ Waste burnt with recovery of energy (combustion).

Non hazardous waste split⁽¹⁾ (%) | 306-2 |

	2015	2016	2017	2018	2019
Reuse	3.7	6.7	3.7	5.0	3.5
Sent for recycling	86.6	81.2	88.9	83.9	86.1
Recovery ⁽²⁾	0.8	2.2	1.7	3.3	3.6
Incineration	4.1	3.5	1.4	2.4	2.4
Landfill	4.9	6.3	4.5	5.4	4.4

⁽¹⁾ The sums may not add up to 100% due to rounding of the figures.

⁽²⁾ Waste burnt with recovery of energy (combustion).

Hazardous waste split⁽¹⁾ (%) | 306-2 | SDG 12.4

	2015	2016	2017	2018	2019
Reuse	26.4	19.1	4.1	3.1	3.1
Sent for recycling	48.5	49.7	62.7	71.8	70.9
Recovery ⁽²⁾	15.0	24.6	18.5	18.3	20.0
Incineration	7.4	4.7	12.2	4.8	3.9
Landfill	2.7	1.8	2.5	2.0	2.1

⁽¹⁾ The sums may not add up to 100% due to rounding of the figures.

⁽²⁾ Waste burnt with recovery of energy (combustion).

WEEE

As a supplier of components to the electronics industry (and not a manufacturer of electronic equipment), our silicon products are not directly affected by the European Directive 2012/19/ EU Waste of Electrical and Electronic Equipment (WEEE). However since 2018, demonstration and evaluation boards supplied by ST are subject to the Directive.

Consumption of chemicals SDG 12.4

Per unit of production – normalized values

	2015	2016	2017	2018	2019
Consumption of chemicals	117	108	105	108	106

Baseline 100 in 2010.

ST exposure to Substances of Very High Concern (SVHC)

	2015	2016	2017	2018	2019
SVHC total list	168	169	176	191	201
SVHC used in ST	22	22	23	26	27
SVHC Annex XIV used in ST	1	1	1	1	3
Total SVHC used in ST replaced since 2008	6	7	7	7	7

Elimination of Substances of Very High Concern (SVHC)

 SDG 12.4

	2015	2016	2017	2018	2019
Total number of action plans ⁽¹⁾ completed since 2008	22	23	23	23	23

⁽¹⁾ One substance can be subject to several action plans to be eliminated from different ST processes.

Deployment of ST substances specification to key suppliers and subcontractors (%)

	2015	2016	2017	2018	2019
Response rate from key partners	99	100	100	100	97
Commitment from key partners to ST substances specification	96	98	80	89	72

Spills in 2019 | 306-3 |

None

Fines and non-monetary sanctions in 2019

Calamba (the Philippines) fined US\$3,600 by Philippine Drug Enforcement Agency for importing a production material containing a controlled substance without the authorized documentation.

Together, we shape the future



100%
of our products are
conflict-mineral
free



389
education and
volunteering
initiatives from 33 sites
worldwide



145,498
hours of
Company time
donated



New fab construction, ST Agrate, Italy

Supply Chain Responsibility

Supply Chain Responsibility

Systematically assess and mitigate social, environmental, health & safety, and ethical risks in our extended supply chain.

100%
suppliers at risk audited

18%
88/500 suppliers audited.

Building a responsible supply chain

ST is committed to partnering with suppliers who share our values of respecting people and doing business with integrity and excellence. We also require suppliers to apply our standards to their own supply chain.

Our main Supply Chain Responsibility program addresses labor and human rights, safety, ethics and environmental risks in our tier 1 supply chain. It is based on the Responsible Business Alliance (RBA) methodology, adopted in 2006 and deployed progressively since then. It comprises three steps:



- Commitment letter**
 - Suppliers declare their commitment to ST's RBA-based standards.
- Self-Assessment Questionnaire (SAQ)**
 - Suppliers complete an RBA self-assessment. The results enable us to identify areas that require attention.
- Validation Assessment Program audit (VAP)**
 - Suppliers receive an RBA audit to monitor and control compliance and address areas of non-compliance.

As a company with thousands of tier 1 suppliers, it is important for us to identify and prioritize suppliers at risk to include them in our due diligence process. Our annual risk assessment takes into account the type of supplier, the location of their operations (or a specific factory) and the volume of business they do with ST.

In addition to the program for our tier 1 suppliers, we also manage our sub-tier suppliers for raw minerals, see Responsible mineral sourcing section. [103-1](#) [103-2](#)

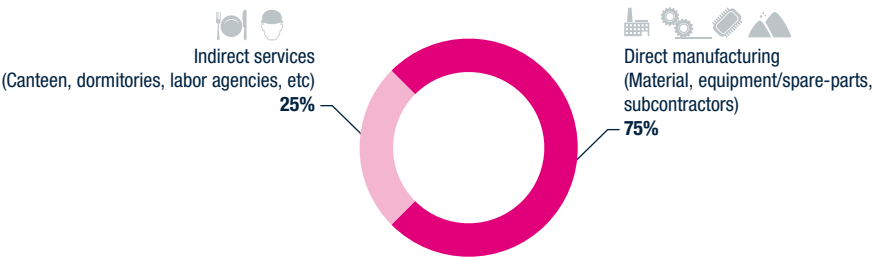
RBA standard and methodology deployed in our supply chain

Scalable programs for two categories of suppliers

We adapt our level of due diligence to the two different categories of suppliers we manage.

- Direct manufacturing suppliers** including manufacturing subcontractors, material suppliers and equipment and spare-parts suppliers. This segment represents the highest percentage of ST's procurement volume (75%).
- Indirect services** including local suppliers such as catering, security, labor agencies or facilities management, which represents 25% of our procurement volume.

Our suppliers [102-9](#) Procurement volume



2019 OBJECTIVES

≥90% of eligible suppliers signed an agreement to comply with the RBA code of conduct.

Status

Comments



93%
Objective maintained in 2020.

90%
of direct
manufacturing
suppliers have signed
a commitment letter

31%
of eligible indirect
services suppliers
audited

177
supplier
responsibility
audits since 2015

We monitor each category through the three-step process, adapting the level of due diligence by defining the suppliers eligible for each step according to their level of risk.

Direct manufacturing suppliers

- 90% of 200 eligible suppliers have signed a commitment letter and 100% of new direct suppliers have undergone a screening process, including social, environmental and health and safety criteria.
- 85% of 388 eligible supplier facilities have completed an SAQ. 92% are rated low risk and 8% are medium risk.
- 7% of 388 eligible supplier facilities have undergone a third-party RBA VAP audit over the past two years.

Top five audit findings in our direct manufacturing supply chain⁽¹⁾ | 308-2 | 414-2 |

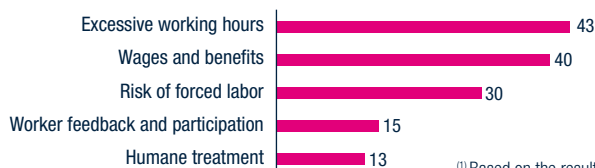


⁽¹⁾ Based on results of 29 key direct suppliers' RBA audits.

Indirect services suppliers

- 95% of 252 eligible suppliers have signed a commitment letter and 98% of new indirect suppliers have undergone a screening process, including social, environmental and health and safety criteria.
- 44% of 188 eligible suppliers have completed an SAQ.
- 31% of 188 eligible suppliers have undergone a second-party RBA audit (customer-managed audit) over the past two years.

Top five audit findings in our indirect services supply chain⁽¹⁾ | 308-2 | 414-2 |



⁽¹⁾ Based on the results of 59 indirect services suppliers' 2nd party RBA audits.

We support and monitor our suppliers in implementing the required corrective actions to keep them aligned with our values and standards (see Focus).

In addition, we regularly evaluate our suppliers' performance on social, environmental, and health and safety criteria, and we deploy specific programs addressing environmental and safety topics (see Health and Safety on [page 35](#); Chemicals on [page 65](#); and Waste and Effluents on [page 62](#)).

In 2019, 76% of our key suppliers were ISO 14001 certified or EMAS validated. | 103-3 |

Helping our suppliers to improve their performance

Our objective is to support our suppliers to improve their performance in a sustainable way, through dedicated elearning on risk issues in areas such as labor (including working hours and forced labor), ethics, health and safety, environment and management systems.

In 2019, we created three dedicated learning paths, comprising both RBA and ST material, all available in the RBA training platform.

- Understanding ST's approach to sustainability and the RBA standard
- Completing an SAQ
- Preparing for an audit and implementing a corrective action plan

Through this training program, we aim to reinforce the awareness of our suppliers worldwide and to engage them in doing business responsibly.



Filippo Rigoli

Project manager, S.A.I.E. spa, construction supplier, Italy

Our collaboration with ST, which began in 1960, has helped us to develop effective management procedures and systems in our construction and maintenance activities, with a particular focus on workers' rights and on environmental sustainability. The labor and ethics audit undertaken by ST is further confirmation of our shared commitment."

Quick action to address issues



FOCUS

Remediating forced labor in the supply chain

In 2019, when we discovered an allegation of forced labor related to a labor agent used by a supplier in Malaysia, we took immediate action.

Alerted by an NGO, the RBA informed their members who were customers of the supplier, including ST. ST took the lead in investigating the allegations of unpaid wages, wage deductions to cover work permits and the retention of passports for migrant workers.

When we contacted the supplier, it was unaware of the allegations, as it had paid the labor agent in a timely manner, but after investigating, it confirmed that the labor agent was several months behind with wage payments and had unilaterally made salary deductions.

We, along with the RBA, supported the supplier and assisted it in the remediation process. As a result, the overdue wages were paid (MYR74,000 or US\$18,000) to 26 workers and deductions were reimbursed – up to MYR9,000 or US\$2,000 per worker. Repatriation was also organized for workers who wished to return home.

This was followed up with a third-party RBA audit and we are assisting the supplier with its corrective action plan. Following this incident, we also reviewed our risk assessment framework and updated the criteria for the type of suppliers at risk.

100%
of our 3TGs smelters
validated through the
Responsible Minerals
Assurance Process

Responsible mineral sourcing

Our Supply Chain Responsibility approach goes beyond our tier 1 suppliers and covers the responsible sourcing of raw material in our upstream supply chain. In 2019, we had 253 smelters in our tin, tungsten, tantalum and gold (3TGs) supply chain. For the third consecutive year, we successfully validated all of them through the Responsible Minerals Assurance Process. We eliminated four non-compliant smelters from our supply chain and six others ceased operation. We also identified 12 new smelters.

As an active participant in the Responsible Minerals Initiative (RMI), we began to monitor our cobalt supply chain during 2019. Multiple reports have highlighted concerns over the social and environmental impacts of cobalt extraction, including child labor and unsafe working conditions in artisanal cobalt mining.

Our first step was to identify the cobalt smelters in the supply chain. The next step will be to use the RMI to ensure we have only validated smelters. In contrast with 3TGs, the lack of existing regulations on cobalt makes the smelter mapping and certification process more challenging. In addition to our own direct influence, we are counting on RMI's common actions and new regulations to speed up progress in the future.

For more detailed information on our progress, see www.st.com/conflict-free_minerals.

Staying vigilant

Being part of the French business human rights initiative 'Entreprises pour les Droits de l'Homme' and RBA helps us better understand and address the risks in our supply chain.

In 2019, we participated in the joint Global Reporting Initiative – Responsible Labor Initiative (GRI–RLI) task force to create a toolkit to encourage reporting on modern slavery across the supply chain. The GRI–RLI task force comprised 14 organizations, including semiconductor, automotive, consumer goods electronics, and retail businesses; and stakeholders, including civil society and socially responsible investors. Working together, we identified common challenges, discussed approaches to addressing them and provided guidance on supportive measures to tackle modern slavery.

Focusing both on our own risks and the external context helps us to comply with due diligence regulations such as the Countering America's Adversaries Through Sanctions Act, which restricts entry into the US of goods made with North Korean labor, and the 'Duty of Vigilance' law in France, for which we received the best due diligence plan prize for 2019 (see Awards on [page 80](#)).

Contributing to the Sustainable Development Goals

Our commitments and programs related to Supply Chain Responsibility as described above contribute to:

SDG target 8.7 – Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking, and secure the prohibition and elimination of the worst forms of child labor.

SDG target 8.8 – Protect labor rights and promote safe and secure working environments for all workers.



Education and Volunteering



Open day for pupils and students for the 40th anniversary of ST Rousset, France

Education & Volunteering

OUR AMBITION

Prepare the future by supporting education in schools in all the countries where we operate.

2025 GOAL

STEM* education partnerships in

20
countries

* Science, Technology, Engineering and Mathematics

2019

9/20 countries

China, Czech Republic, France, India, Italy, Malaysia, Singapore, the Philippines and USA.

Sharing our passion for science

Through our 'STEM your way' program, we invest in the future of the communities we support, sharing with young people our passion for science and electronics.

Technology and innovation play an increasingly influential role in today's digital world. As a global leader in the electronics industry, we believe we can make a valuable contribution to raising awareness in young people about the importance of STEM subjects (science, technology, engineering, mathematics) and inspiring the next generation to explore STEM-related careers. This is already an area of particularly high demand in the global employment market, so attracting more young people into STEM careers is a priority. [I 103-1 I](#)

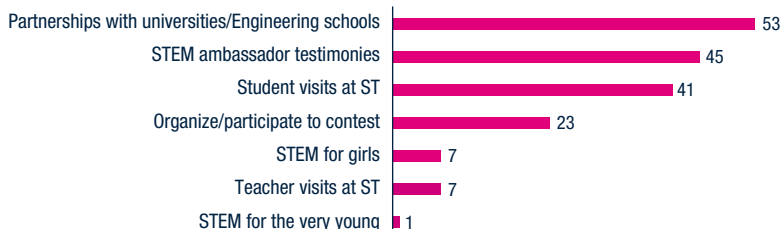
At the same time, it is an opportunity for us to broaden our own recruitment diversity, address potential skill shortages, showcase ST as an exciting, caring and attractive place to work, promote our products and our brand, and ensure our business is ready for the future.

In 2019 our worldwide STEM taskforce, established at the end of 2018, worked to build a more structured program that can be implemented at all our sites. [I 103-2 I](#)

Major achievements include:

- sharing best practices to encourage sites to do more and engage volunteers
- defining priorities and developing site guidelines
- developing a 'STEM your way' label to raise awareness of the program
- establishing KPIs to measure our performance

Number of STEM initiatives





Dr. Masrullizam Mat Ibrahim

Deputy Dean (Academic) Associate Professor, Universiti Teknikal Malaysia Melaka (UTeM)

To succeed in today's information-based and highly technological society, students need to develop their capabilities in STEM to levels far beyond what was necessary in the past. In the STEM innovation competition, students were required to design an innovative Internet of Things (IoT) application applying ST's STM32 technology. The commitment and technical support provided by STMicroelectronics has been very beneficial for the students and contributes to the ecosystem of STEM education activities in Malaysia."

STEM ambassadors visit schools and events



STEM your way
Innovation depends on you

We defined a number of complementary priorities for the program designed to address different audiences and achieve different outcomes. These include:

- organizing dedicated visits to our sites for students and teachers
- sending STEM ambassadors – ST volunteers – into classrooms or to events to meet students and talk about their work, their studies and their careers
- organizing competitions, such as robotics and ST product-based competitions
- arranging specific events to engage more girls in science
- partnering with educational institutions, engineering schools and universities to promote links with the industry through seminars, courses and curriculum-based activities involving ST technologies and products
- setting up projects in schools and innovation hubs, such as fab labs, to build long-term partnerships
- bringing students together at engineering camps to share ideas and create innovative applications
- supporting activities in primary schools, such as introduction to coding sessions

Some of the new STEM activities we introduced in 2019 include:

- Our Muar site (Malaysia) established a STEM innovation competition for students, in collaboration with the Universiti Teknikal Malaysia Melaka (UTeM) (see quote).
- In Italy, several ST sites organized specific events to engage girls in science (see Focus).
- In France, most ST sites were involved in a series of events promoting French industry across the country, called the 'French Fab Tour' and the 'Extraordinary Factory'. This was a unique opportunity to raise awareness of ST and our activities among potential future talent. For more information, see www.lafrenchfab.fr/tournee.

FOCUS

STEM is for everyone



STEM is for girls and boys

STEM careers are available to girls and boys in equal measure. This is the message promoted by our Italian sites through two major events in 2019, each involving about 100 students.

In March, ST Catania held an inspirational meeting in collaboration with the Institute of Microelectronics and Microsystems of the Italian National Research Council and the Galileo Galilei Scientific High School. Three women from ST Catania shared their professional and personal experience, encouraging girls to follow their dreams and take up a stimulating and rewarding scientific career.

In November, ST Agrate and Castelletto organized a 'STEM Who?' event involving boys and girls aged 14, the age at which students choose their higher studies in Italy. During a panel session, the students played the role of interviewers asking questions to five women working in STEM roles. There were also demonstrations and the opportunity to chat with 20 female and four male ST colleagues covering almost all scientific roles in the Company, along with a researcher from the Italian National Research Council (CNR).



London
Benchmarking
Group

>145,000
hours of company
time donated to our
local communities

Our ST Foundation
is bridging the
digital divide

Overall achievements

We have been using the London Benchmarking Group methodology since 2012. This is a global standard to measure and manage corporate community investment. | 103-3 |

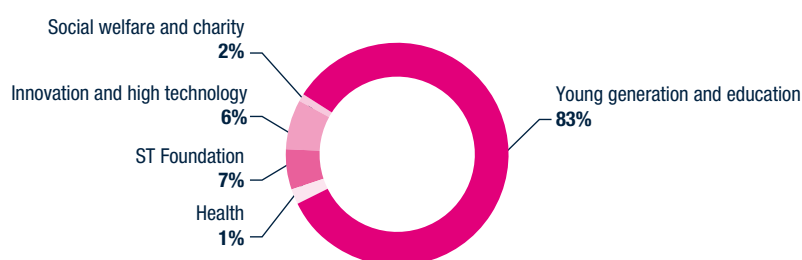
In 2019, we conducted 389 community initiatives worldwide at 33 of our sites and in 19 countries. This included contributing:

- 145,498 hours of company time, representing 66% of our total community investment
- US\$1.8 million in cash donations

In addition to our STEM-related activities, we continue to contribute in other fields in line with our sustainability strategy, such as our support for startups, organizing blood donations, beach cleaning and sponsoring local charities.

Education and innovation, as reflected by the 'STEM your way' program, continue to be the main focus of our activities. 83% of our initiatives support education, with 43% linked to innovation. | 103-3 |

Domains of involvement⁽¹⁾



⁽¹⁾ Among initiatives classified as young generation and education, some are also related to economic development, and innovation and high technology. The sums may not add up to 100% due to rounding of the figures.

ST Foundation

The ST Foundation develops and sponsors projects that employ technology to promote human progress and sustainable development of less privileged communities around the world.

Digital Unify is the main program of the ST Foundation. It aims to spread the benefits of digital technology by providing free-of-charge equipment and training in basic computer skills. Since its inception in 2003, it has trained nearly 730,000 people in 26 countries. In 2019, over 100,000 students took part in basic computer training and 'Tablets for Kids' classes alone. SDG 4.3

In 2019, the ST Foundation strengthened its program to target less privileged populations in countries where we operate, such as migrants and the elderly, while maintaining the current level of activity in other geographical locations.

To address the evolving needs of specific groups, the ST Foundation developed new learning paths such as the tablet for seniors and computer basics classes for visually impaired people.

ST provided a wide range of support to the Foundation in 2019, including:

- a cash donation of US\$500,000
- electronics and IT equipment donations
- volunteering time from employees involved in the Digital Unify program as trainers
- support from Corporate External Communications to produce the Foundation's activity report for external stakeholders and to maintain the website

In 2019, ST volunteers at our Muar site (Malaysia) helped to customize the 'Tablets for Kids' training material to make the course available to the local community. The material was adapted to the local context so that the course would be effective and tailored to the children's culture.

ST volunteers at our Agrate site (Italy) worked closely with our Foundation to organize the fourth edition of the Energy Run in September 2019. Thanks to the high level of public participation and support from sponsors, the event raised more than US\$13,000 in funds to support the ST Foundation's ongoing activities in Italy.

For more information on the ST Foundation, see www.stfoundation.org.

Contributing to the Sustainable Development Goals

Our commitments and programs related to Education and Volunteering as described above contribute to:

SDG 4.3 – Ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.



Partnerships indicators

This section includes indicators and GRI Standard disclosures.

Suppliers' and subcontractors' Environmental, Health & Safety performance

	2015	2016	2017	2018	2019
Number of eligible suppliers/subcontractors					
Material suppliers	89	81	95	96	88
Equipment/spare-parts suppliers	80	80	80	74	81
Back-end subcontractors	55	31 ⁽¹⁾	29	28	27
Front-end subcontractors	16	12	13	12	9
Total	240	204	217	210	205
ISO 14001 certified/EMAS validated (%)					
Material suppliers	79	78	93	82	97
Equipment/spare-parts suppliers	70	75	80	5 ⁽²⁾	44
Back-end subcontractors	100	100	96	96	96
Front-end subcontractors	100	100	100	100	100
Overall %	82%	81%	89%	58%	76%
OHSAS validated (%)					
Material suppliers	47	46	50	48	56
Equipment/spare-parts suppliers	26	35	23	1 ⁽²⁾	14
Back-end subcontractors	67	70	67	72	75
Front-end subcontractors	75	75	70	67	78
Overall %	46%	47%	44%	36%	43%

⁽¹⁾ In previous years we counted the number of plants for BE subcontractors but starting from 2016 we count only the number of companies.

⁽²⁾ Issue with data consolidation in 2018.

New suppliers screened using social & environmental criteria in 2019 (%) | 308-1 | 414-1 |

	2019
Direct manufacturing	100
Indirect services	98
Total	99

Step 1 – supplier agreement to comply with RBA code in 2019

	Eligible suppliers ⁽¹⁾	% signed
Direct manufacturing		
Material suppliers	87	91%
Equipment/spare-parts suppliers	80	85%
Back-end subcontractors	26	100%
Front-end subcontractors	7	100%
Total	200	90%
Indirect services		
Local suppliers	221	95%
Local labor agencies	31	100%
Total	252	95%

⁽¹⁾ Suppliers identified at risk.

Step 2 – supplier CSR self-assessment questionnaires⁽¹⁾ (SAQ) in 2019 | 308-2 | 414-2 |

Direct manufacturing	Eligible facilities ⁽²⁾	% completed ⁽³⁾
Material suppliers	237	83%
Equipment/spare-parts suppliers	94	87%
Back-end subcontractors	39	87%
Front-end subcontractors	18	89%
Total	388	85%
Indirect services	Eligible suppliers	% completed
Local suppliers	177	40%
Local labor agencies	11	100%
Total	188	44%

⁽¹⁾ Either official RBA SAQ or ST SAQ based on RBA SAQ.

⁽²⁾ For direct manufacturing suppliers SAQs are completed at facility level.

⁽³⁾ All suppliers who have completed an SAQ are required to have a corrective action plan.

Step 3 – supplier CSR audits in 2019

| 308-2 | 414-2 |  SDG 8.8

Direct manufacturing	Eligible facilities	% verified ⁽¹⁾
Material suppliers	237	4%
Equipment/spare-parts suppliers	94	3%
Back-end subcontractors	39	28%
Front-end subcontractors	18	28%
Total	388	7%
Indirect services	Eligible suppliers	% verified ⁽¹⁾
Local suppliers	177	31%
Local labor agencies	11	36%
Total	188	31%

⁽¹⁾ Percentage of valid audits (audits took place over a two-year period - Q1 2018 to Q4 2019, either official 3rd party RBA audit or ST verification based on RBA audit protocol).

Supplier facilities average RBA SAQ score⁽¹⁾ (%)

	2015	2016	2017	2018	2019
Health and Safety section	91.9	92.1	90.7	90.7	90.3
Environment section	90.4	90.6	88.4	88.0	88.6
Labor section	91.1	91.4	92.2	91.1	91.7
Ethics section	93.0	93.8	93.6	93.1	94.0
Overall average	91.6	92.0	91.2	90.5	91.0

⁽¹⁾ Direct manufacturing suppliers facilities.

Suppliers terminated as a result of a negative social or environmental impact | 308-2 | 414-2 | SDG 8.7

	2015	2016	2017	2018	2019
Number of suppliers	0	2 ⁽¹⁾	1 ⁽²⁾	2 ⁽³⁾	1 ⁽⁴⁾

⁽¹⁾ Working conditions with a security service supplier in Calamba site (the Philippines) and recruitment fees with a labor agency in Muar site (Malaysia).

⁽²⁾ Recruiting conditions in cleaning services in Kirkop site (Malta).

⁽³⁾ Recruitment fees and detention of employee passports in a cleaning service supplier; and recruitment fees and levy deduction with a security service supplier in Muar site (Malaysia).

⁽⁴⁾ Legal requirement concerning social contributions not respected by a cleaning services company in Tunis site (Tunisia).

Suppliers engaged in reporting EHS and social KPIs

	2015	2016	2017	2018	2019
Number of front-end material suppliers	37	42	41	46	42
Number of back-end material suppliers	39	42	48	47	50

Conflict minerals – suppliers/subcontractors and smelters

	2015	2016	2017	2018	2019
Number of materials suppliers and subcontractors involved in the RBA-RMI ⁽¹⁾ Due Diligence survey	148	170	186	189	206
Number of involved suppliers and subcontractors associated with at least one 3TG metal	117	118	126	128	124
Involved 3TG suppliers and subcontractors that have completed the RBA-RMI ⁽¹⁾ Due Diligence survey (%)	100%	100%	100%	100%	100%
Number of smelters identified in ST's raw materials supply chain	118	119	143	182	167
Number of smelters identified in ST subcontractors' supply chain	133	174	191	251	253
Total number of smelters identified in ST supply chains	139	177	197	251	253

⁽¹⁾ Responsible Minerals Initiative.

Conflict minerals inquiry results 2019 SDG 8.7

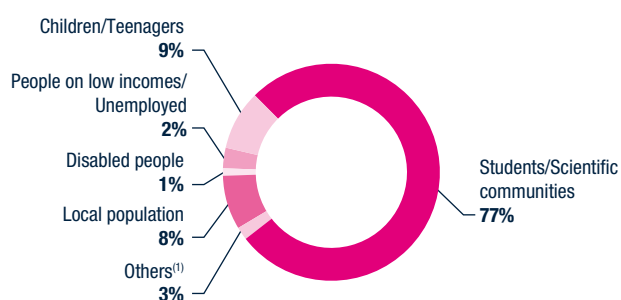
	2019			
	Gold	Tantalum	Tin	Tungsten
Number of smelters	102	39	72	40
Smelters which are RMAP ⁽¹⁾ validated (%)	100%	100%	100%	100%
Smelters which are active in the RMAP ⁽¹⁾ but were not RMAP validated as of 31 December 2019 (active smelters) (%)	0%	0%	0%	0%
Active smelters which have declared sourcing from L1/L2 ⁽²⁾ countries or recycled or scrap sources ⁽³⁾ (%)	0%	0%	0%	0%
Active smelters which have not provided a declaration regarding country or origin of recycled or scrap sources (%)	0%	0%	0%	0%

⁽¹⁾ Responsible Minerals Assurance Process (formally Conflict Free Smelter Program).

⁽²⁾ Level 1 countries are not identified as conflict regions or plausible areas of smuggling or export from the Democratic Republic of Congo and its nine adjoining countries. Level 2 countries are known or plausible countries for smuggling, export out of region or transit of materials containing tantalum, tin, tungsten or gold.

⁽³⁾ Based on information presented by suppliers and subcontractors.

Direct beneficiary groups in 2019



⁽¹⁾ Includes mainly people with poor health.

Community involvement – inputs | 201-1 |

	2015	2016	2017	2018	2019
Number of community involvement initiatives	338	307 ⁽¹⁾	335	374	389
Total contribution (evaluated in US\$m)	6.9	6.6	8.2	8.0	7.9

⁽¹⁾ From 2016 onwards, multiple activities linked to the same program count as one initiative.

Community contribution⁽¹⁾

	2015	2016	2017	2018	2019
Cash donations (%)	9%	4%	10%	15%	23%
Staff time volunteering (%)	83%	84%	84%	75%	66%
In-kind (%)	2%	4%	5%	7%	9%
Management costs (%)	6%	7%	1% ⁽²⁾	2%	2%
Number of employees engaged in volunteering ⁽³⁾	7,680	6,182	6,712	5,663	6,065
Number of hours contributed inside Company time	138,520	125,616	139,003	124,154	145,498

⁽¹⁾ The sums may not add up to 100% due to rounding of the figures.

⁽²⁾ Including time spent on awareness and reporting. From 2017 onwards, management costs related to the logistics of events are included in cash donations and staff time volunteering.

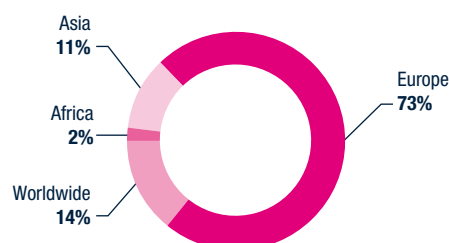
⁽³⁾ Employees are counted for each initiative, so the same employee may be counted several times.

Reason for community contribution⁽¹⁾

	2015	2016	2017	2018	2019
Community investment	88	91	95	97	97
Charitable donation (gift)	10	8	4	3	3
Commercial initiative	1	1	1	0	1

⁽¹⁾ The sums may not add up to 100% due to rounding of the figures.

Geographical spread of community contributions in 2019



Community involvement – outcomes

	2015	2016	2017	2018	2019
Number of beneficiary organizations	1,832	1,487	1,722	1,384	1,856
Number of direct beneficiaries	157,281	57,702	105,117	103,703	117,136

ST supports the SDG



SDG	Target	ST Sustainability program	Indicators page
3 GOOD HEALTH AND WELL-BEING 	Good health and well-being 3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	Health and Safety	50
	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Waste and Effluents Chemicals	68
4 QUALITY EDUCATION 	Ensure inclusive and quality education for all and promote lifelong learning 4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	Development and Engagement Education and Volunteering	49 76
5 GENDER EQUALITY 	Achieve gender equality and empower all women and girls 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Diversity and Inclusion	44 and 48
6 CLEAN WATER AND SANITATION 	Clean water and sanitation 6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	Waste and Effluents Chemicals	68 and 69
	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	Water	60 and 69
7 AFFORDABLE AND CLEAN ENERGY 	Ensure access to affordable, reliable, sustainable and modern energy for all 7.3 By 2030, double the global rate of improvement in energy efficiency	Energy and Climate Change	68
8 DECENT WORK AND ECONOMIC GROWTH 	Promote inclusive and sustainable economic growth, employment and decent work for all 8.7 Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms	Labor and Human Rights Supply Chain Responsibility	40 and 50 77 and 78
	8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	Health and Safety Labor and Human Rights Supply Chain Responsibility	50 and 77
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	Build resilient infrastructure, promote sustainable industrialization and foster innovation 9.5 Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Innovation	26 and 27
10 REDUCED INEQUALITIES 	Reduce inequality within and among countries 10.2 By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	Diversity and Inclusion	48 and 49
12 RESPONSIBLE CONSUMPTION AND PRODUCTION 	Ensure sustainable consumption and production patterns 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	Chemicals	69
13 CLIMATE ACTION 	Take urgent action to combat climate change and its impacts 13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	Energy and Climate Change	56 and 68

Awards 2019 overview

Each year we receive external recognition for our sustainability practices.

ST CALAMBA RECOGNIZED FOR ITS SAFETY PRACTICES

ST Calamba (the Philippines) received a Meralco Kuryenteng Ligtas (K-Ligtas) award, the Philippine's first recognition program for electrical safety best practices. The site was recognized for its comprehensive programs on health and safety, emergency preparedness, energy efficiency and conservation, and electrical safety programs.



PREMIO BRIANZA SCUOLA LAVORO, ITALY

The human resources teams at our Agrate and Castelletto sites (Italy) were awarded the 'Premio Brianza Scuola Lavoro' in the Industry 4.0 category for their work with schools and students. The award is in recognition of the 'School-Work' project, which provides innovative Industry 4.0 experiences to students.



REDUCING WASTE IN FRANCE

The 'Touraine Propre' organization in France commended our Tours site in the 'large company' category, for its elimination of plastic cups and paper receipts in the canteen. The plastic cups were replaced by reusable mugs for all employees.



MOST ATTRACTIVE EMPLOYER IN ITALIAN ELECTRONICS SECTOR

ST Italy was ranked as the most attractive company in the electronics sector in Randstad's 'Employer Branding 2019' survey. The survey, which had more than 2,000 respondents in Italy, placed ST first in eight of the 10 key factors: good work-life balance, job security, attractive salary and benefits, interesting job content, use of the latest technology, career progression, good reputation and pleasant work atmosphere.

GOLD PRIZE FOR FIAM PROJECT

ST received a gold prize in France, at the Lyon edition of the 'Victoires des leaders du capital humain' awards, in the category 'Corporate Social Responsibility policy'. This was primarily in recognition of ST's work on disability inclusion, and the FIAM project, a 10-year multi-enterprise professional education program to train disabled people in new skills and increase their chances of finding a job.



ST WINS THREE 'INNOVATOR OF THE YEAR 2019' AWARDS

The German trade magazine Design & Elektronik asked its readers to nominate the most innovative electronics products and solutions. ST was named 'Innovator of the Year' in three categories: Development Kits for its SensorTile development kit, Analog and Power Management for its voltage regulator finder, and Power Supply Subsystems for its plug-and-play wireless charging kit.



CEO FACULTY APPRECIATION NIGHT 2019

CS Tan, Group Vice President and General Manager of ST Muar (Malaysia), was recognized by the Malaysian Ministry of Higher Education for his participation in the Academia Industry Talent Exchange Program (AixCHANGE). The program brings top CEOs and industry players into Malaysian universities to share their knowledge and expertise with students and the university community. CS Tan participated in many programs with local universities. One of the most notable achievements was the creation of the first ST IoT lab in a Malaysian university, at the Technical University of Malaysia Malacca (UTeM).



Photo: Stéphane Cojot-Goldberg

FRENCH AWARD FOR BEST DUE DILIGENCE PLAN

ST was awarded the prize for 'Best Due Diligence Plan' by the French Sustainable Investment Forum (FIR) and A2Consulting. The award recognizes companies in the French stock market index (CAC 40) with the best due diligence plan in accordance with the French Duty of Vigilance law, taking into account the human rights and environmental impacts in their operations and supply chain.

ST EXECUTIVE RECOGNIZED AS AN INNOVATION PIONEER

Joël Hartmann, Executive Vice President, Digital & Smart Power Technology and Digital Front-End Manufacturing, received a European SEMI Award for his work in the field of low power technology, in particular FD-SOI technology. The award was presented by Laith Altimime, President of SEMI Europe. The awards, established nearly 30 years ago, celebrate those who make significant contributions to the European semiconductor, microsystems, photovoltaic or display manufacturing industries.



SEAGATE REWARDS ST FOR CORPORATE CITIZENSHIP

ST received the 2019 Corporate Citizenship award from Seagate for our excellence in integrity, inclusion and innovation. This award is considered to be the most prestigious because it encompasses all three of Seagate's key principles. ST was the only company to receive this award out of the 150 companies invited to Seagate's Suppliers Day event.



ITALIAN NATIONAL INNOVATION AWARD

ST received the prestigious National Innovation Prize 'Premio dei Premi' from the President of the Italian Senate, Maria Elisabetta Alberti Casellati. The prize was awarded in recognition of our constant commitment and investment in research and innovation, confirming ST as a leader in the global microelectronics market.

BEST EMPLOYER BRAND IN THE PHILIPPINES

The Employer Branding Institute (EBI) in the Philippines named ST as one of the country's 'Best Employers'. The EBI awards recognize the country's leading organizations for excellence in human resources and effective use of marketing communications for human resources. Winning this award highlights the commitment of our Calamba site to delivering the best employee experience and to being recognized as an employer of choice.



WATER EFFICIENCY AWARD IN SINGAPORE

Singapore's Public Utilities Board awarded our Ang Mo Kio site a 'Water Efficient Building' certificate for its commitment to water conservation, in recognition of the water efficiency measures and water saving actions it has implemented.



GRI Content Index | 102-55 |



For the GRI Content Index Service, GRI Services reviewed that the GRI content index is clearly presented and the references for all disclosures included align with the appropriate section in the body of the report.

GRI 101: Foundation 2016

General Disclosures	Disclosure	Page number(s)/URL(s)
GRI 102: General Disclosures 2016	Organization profile	
	102-1 Name of the organization	About this report (page 2)
	102-2 Activities, brands, products, and services	ST at a glance (page 4) / Business model (page 7) / ST Products and Solutions (page 8) / 2019 Annual Report (Form-20F) at http://investors.st.com (page 20)
	102-3 Location of headquarters	About this report (page 2)
	102-4 Location of operations	ST at a glance (page 4)
	102-5 Ownership and legal form	Governance (page 12)
	102-6 Markets served	ST Products and Solutions (page 8) / Business indicators (page 33) / 2019 Annual Report (Form-20F) at http://investors.st.com (pages 20 and 23)
	102-7 Scale of the organization	ST at a glance (page 4) / Business indicators (page 33) / 2019 Annual Report (Form-20F) at http://investors.st.com (pages 20 and 23)
	102-8 Information on employees and other workers	People indicators (page 47)
	102-9 Supply chain	Business model (page 7) / Supply Chain Responsibility (page 71)
	102-10 Significant changes to the organization and its supply chain	About this report (page 2)
	102-11 Precautionary Principle and approach	Our approach to the environment (page 53) / EHS decalogue at www.st.com/ehs-decalogue
	102-12 External initiatives	About this report (page 2) / Innovation (page 27) / Our approach to the environment (page 54) / International Standards (page 84)
	102-13 Membership of associations	Governance (page 13) / International Standards (page 84) / Involvement in Industrial and International Organizations at www.st.com
	Strategy	
	102-14 Statement from senior decision-maker	Foreword by our President and CEO (page 5)
	Ethics and integrity	
	102-16 Values, principles, standards, and norms of behavior	Ethics and Compliance (page 14) / ST's Code of Conduct on www.st.com
	Governance	
	102-18 Governance structure	Governance (pages 12 and 13)
	Stakeholder engagement	
	102-40 List of stakeholder groups	Stakeholder engagement (page 20)
	102-41 Collective bargaining agreements	People indicators (page 49)
	102-42 Identifying and selecting stakeholders	Stakeholder engagement (page 20)
	102-43 Approach to stakeholder engagement	Stakeholder engagement (page 20)
	102-44 Key topics and concerns raised	Stakeholder engagement (page 20)
	Reporting practices	
	102-45 Entities included in the consolidated financial statements	Governance (page 12)
	102-46 Defining report content and topic boundaries	About this report (page 2) / Sustainability Strategy (page 18)
	102-47 List of material topics	Sustainability Strategy (page 19)
	102-48 Restatements of information	About this report (page 2)
	102-49 Changes in reporting	About this report (page 2)
	102-50 Reporting period	About this report (page 2)
	102-51 Date of most recent report	About this report (page 2)
	102-52 Reporting cycle	About this report (page 2)
	102-53 Contact point for questions regarding the report	About this report (page 2)
	102-54 Claims of reporting in accordance with the GRI Standards	About this report (page 2)
	102-55 GRI content index	GRI Content Index (pages 82 and 83)
	102-56 External assurance	About this report (page 2) / Assurance statement (pages 86 and 87)

Material topics	Disclosure	Page number(s)/URL(s)	Omission
Sustainable Profit			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundaries	Sustainability Strategy (page 19)	
	103-2 The management approach and its components	Sustainable Profit (page 23)	
	103-3 Evaluation of the management approach	Sustainable Profit (page 23)	
GRI 201: Economic performance 2016	201-1 Direct economic value generated and distributed	Our business model (page 7) / Business indicators (page 33) / People indicators (page 48) / Partnerships indicators (page 78) / 2019 Annual Report (20F) at http://investors.st.com (pages 38, 43, 48, 167)	Payment to government by country not applicable as considered not relevant
Energy & Climate Change			
GRI 103: Management Approach 2016	103-1 Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Energy and Climate Change (page 55)	
	103-2 The management approach and its components	Our approach to the environment (page 53)	
	103-3 Evaluation of the management approach	Our approach to the environment (page 53)	
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Environmental indicators (page 68)	
	302-3 Energy intensity	Environmental indicators (pages 68 and 69)	
	302-4 Reduction of energy consumption	Energy and Climate Change (page 57) / Environmental indicators (page 68)	
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Energy and Climate Change (page 55) / Environmental indicators (page 68)	
	305-2 Energy indirect (Scope 2) GHG emissions	Energy and Climate Change (page 55) / Environmental indicators (page 68)	
	305-3 Other indirect (Scope 3) GHG emissions	Energy and Climate Change (page 55) / Environmental indicators (page 68)	
	305-4 GHG emissions intensity	Energy and Climate Change (page 56)	

Material topics	Disclosure	Page number(s)/URL(s)	Omission
Water			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19)
	103-2	The management approach and its components	Water (page 59)
	103-3	Evaluation of the management approach	Our approach to the environment (page 53)
GRI 303: Water 2016	303-1	Water withdrawal by source	Water (page 60) / Environmental indicators (page 69)
	303-3	Water recycled and reused	Environmental indicators (page 69)
Waste & Effluents			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19)
	103-2	The management approach and its components	Waste and Effluents (page 62)
	103-3	Evaluation of the management approach	Our approach to the environment (page 53)
GRI 306: Effluents and Waste 2016	306-1	Water discharge by quality and destination	Environmental indicators (page 69)
	306-2	Waste by type and disposal method	Waste and Effluents (page 62) / Environmental indicators (page 69)
	306-3	Significant spills	Environmental indicators (page 69)
Chemicals			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19)
	103-2	The management approach and its components	Our approach to the environment (page 53) / Chemicals (page 65)
	103-3	Evaluation of the management approach	Our approach to the environment (page 53) / Chemicals (page 65)
Supply Chain Responsibility			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Supply Chain Responsibility (page 71)
	103-2	The management approach and its components	Supply Chain Responsibility (page 71)
	103-3	Evaluation of the management approach	Supply Chain Responsibility (page 72)
GRI 308: Supplier Environmental Assessment 2016	308-1	New suppliers that were screened using environmental criteria	Partnerships indicators (page 77)
	308-2	Negative environmental impacts in the supply chain and actions taken	Supply Chain Responsibility (page 72) / Partnerships indicators (page 77)
GRI 414: Supplier Social Assessment 2016	414-1	New suppliers that were screened using social criteria	Partnerships indicators (page 77)
	414-2	Negative social impacts in the supply chain and actions taken	Supply Chain Responsibility (page 72) / Partnerships indicators (page 77)
Development & Engagement			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Development and Engagement (page 43)
	103-2	The management approach and its components	Development and Engagement (page 43)
	103-3	Evaluation of the management approach	Development and Engagement (page 43)
GRI 401: Employment 2016	401-1	New employee hires and employee turnover	People indicators (pages 47 and 48)
GRI 404: Training and Education 2016	404-1	Average hours of training per year per employee	People indicators (page 49)
	404-3	Percentage of employees receiving regular performance and career development reviews	People indicators (pages 48 and 49)
Health & Safety			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Health and Safety (page 35)
	103-2	The management approach and its components	Health and Safety (pages 35 and 36)
	103-3	Evaluation of the management approach	Health and Safety (page 37)
GRI 403: Occupational Health and Safety 2016	403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Health and Safety (pages 36 and 37) / People indicators (pages 49, 50 and 51)
Diversity & Inclusion			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Diversity and Inclusion (page 44)
	103-2	The management approach and its components	Diversity and Inclusion (page 44)
	103-3	Evaluation of the management approach	Diversity and Inclusion (page 44)
GRI 405: Diversity and Equal Opportunity 2016	405-1	Diversity of governance bodies and employees	Diversity and Inclusion (page 44) / People indicators (pages 47 and 48)
Labor & Human Rights			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Labor and Human Rights (page 38)
	103-2	The management approach and its components	Labor and Human Rights (page 39)
	103-3	Evaluation of the management approach	Labor and Human Rights (page 39)
GRI 412: Human Rights Assessment 2016	412-1	Operations that have been subject to human rights reviews or impact assessments	People indicators (page 50)
Sustainable Technology			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Sustainable Technology (page 31)
	103-2	The management approach and its components	Sustainable Technology (page 31)
	103-3	Evaluation of the management approach	Sustainable Technology (page 31)
GRI 417: Marketing and Labeling 2016	417-1	Requirements for product and service information and labeling	Sustainable Technology (page 32) / Business Indicators (page 33)
Innovation			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Innovation (page 25)
	103-2	The management approach and its components	Innovation (pages 26 and 27)
	103-3	Evaluation of the management approach	Innovation (page 26)
Quality			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19)
	103-2	The management approach and its components	Quality (pages 28 and 29)
	103-3	Evaluation of the management approach	Quality (pages 29 and 30)
Education & Volunteering			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its boundaries	Sustainability Strategy (page 19) / Education and Volunteering (page 74)
	103-2	The management approach and its components	Education and Volunteering (page 74)
	103-3	Evaluation of the management approach	Education and Volunteering (page 76)

International standards

| 102-12 | 102-13 |



ST has been a signatory to the Global Compact since 2000 and a member of the Responsible Business Alliance since 2005. In addition to following these standards, we also adhere to the following international guidelines and standards: International Labor Organization Conventions; United Nations Global Compact Principles; United Nations Guiding Principles on Business and Human Rights; Organization for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises; International Organization for Standardization (ISO) 26000; Occupational Health and Safety Assessment Series (OHSAS) 18001; ISO 14001; Eco-Management and Audit Scheme (EMAS); ISO 50001; ISO 31000; ISO 22301 and International Electrotechnical Commission Quality Assessment System for Electronic Systems (IECQ) QC 080000 Hazardous Substance Process Management (HSPM).

Alignment of ST sustainability programs with the United Nations Global Compact (UNGC) 10 principles

United Nations Global Compact 10 principles			ST Sustainability programs
Human rights	Principle 1	Businesses should support and respect the protection of internationally proclaimed human rights; and	• Labor and Human Rights • Supply Chain Responsibility • Education and Volunteering
	Principle 2	make sure that they are not complicit in human rights abuses.	• Labor and Human Rights • Supply Chain Responsibility
Labor	Principle 3	Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;	• Labor and Human Rights • Supply Chain Responsibility
	Principle 4	the elimination of all forms of forced and compulsory labor;	• Labor and Human Rights
	Principle 5	the effective abolition of child labor; and	• Labor and Human Rights
	Principle 6	the elimination of discrimination in respect of employment and occupation.	• Labor and Human Rights • Development and Engagement • Diversity and Inclusion
Environment	Principle 7	Businesses should support a precautionary approach to environmental challenges;	• Sustainable Technology
	Principle 8	undertake initiatives to promote greater environmental responsibility; and	• Energy and Climate Change • Water • Waste and Effluents • Chemicals • Sustainable Technology
	Principle 9	encourage the development and diffusion of environmentally friendly technologies.	• Innovation • Sustainable Technology
Anti-corruption	Principle 10	Businesses should work against corruption in all its forms, including extortion and bribery.	• Ethics and Compliance

Alignment of ST Sustainability programs with the ISO 26000 guidelines

ISO26000:2010 standards	ST Sustainability programs
6.2 Organizational governance	• Governance
6.3 Human rights	• Labor and Human Rights • Supply Chain Responsibility • Diversity and Inclusion • Education and Volunteering
6.4 Labor practices	• Development and Engagement • Health and Safety
6.5 The environment	• Energy and Climate Change • Water • Waste and Effluents • Chemicals • Sustainable Technology • Supply Chain Responsibility
6.6 Fair operating practices	• Ethics and Compliance • Supply Chain Responsibility
6.7 Consumer issues	• Quality • Sustainable Technology
6.8 Community involvement and development	• Education and Volunteering • Innovation • Sustainable Profit

Glossary

20-F	Annual report filed with the United States Securities and Exchange Commission (SEC)	IPCEI	Important Project of Common European Interest
3TG	Tantalum, tin, tungsten and gold	KPI	Key Performance Indicator
AC	Alternative Current	LBG	London Benchmark Group
ADAS	Advanced Driver Assistance System	LWDC	Lost Workdays Cases
AI	Artificial Intelligence	MEMS	Micro-Electro-Mechanical Systems
ASSP	Application Specific Standard Products	MOFSET	Metal Oxide Semiconductor Field Effect Transistor
Back-end (BE)	Second phase of manufacturing during which the silicon chip is mounted in a package	MTCE	Metric Tons of Carbon Equivalent
CDP	Carbon Disclosure Project	NFC	Near Field Communication
CEO	Chief Executive Officer	NYSE	New York Stock Exchange
CMOS	Complementary Metal Oxide Semiconductor	OECD	Organization for Economic Cooperation and Development
CSR	Corporate Social Responsibility	OEM	Original Equipment Manufacturer
DC	Direct Current	OHSAS	Occupational Health & Safety Assessment Series (OHSAS 18001)
DJSI	Dow Jones Sustainability Indices	PFCs	Perfluorinated Compounds
ECOPACK®	Lead-free labelling for RoHS-compliance	PFOA	Perfluorooctanic Acid
EHS	Environmental, Health & Safety	PMS	Project Management System
ELV	End of Life Vehicles	QMS	Quality Management System
EMAS	Eco-Management and Audit Scheme	R&D	Research & Development
EMEA	Europe, Middle East & Africa	RBA	Responsible Business Alliance
ERM	Enterprise Risk Management	REACH	Registration, Evaluation and Authorization of Chemicals
ESG	Environmental, Social and Governance	RF	Radio Frequency
ESIA	European Semiconductor Industry Association	RF-SOI	Radio Frequency Silicon-On-Insulator
FD-SOI	Fully Depleted Silicon-On-Insulator	RLI	Responsible Labor Initiative
Front-end (FE)	First phase of the production cycle involving the manufacturing of circuits on a silicon wafer	RMI	Responsible Mineral Initiative
GaN	Gallium Nitride	RoHS	Restriction of Hazardous Substances
GWP	Global Warming Potential	SAQ	Self-Assessment Questionnaires
GHG	Greenhouse Gases	SDGs	Sustainable Development Goals
GRI	Global Reporting Initiative	SiC	Silicon Carbide
HSPM	Hazardous Substance Process Management	STEM	Science, Technology, Engineering, Mathematics
IC	Integrated Circuit	SVHC	Substances of Very High Concern
IECQ	International Electrotechnical Commission Quality	UNGC	United Nations Global Compact
IGBT	Insulated Gate Bipolar Transistor	UPW	Ultra-pure Water
IoT	Internet of Things	WEEE	Waste Electrical and Electronic Equipment
IPCC	Intergovernmental Panel on Climate Change	WSC	World Semiconductor Council

STMicroelectronics NV – 2020 Sustainability Report – 2019 Performance Independent Assurance Statement

Introduction

DNV GL Business Assurance France Sarl ('DNV GL') was commissioned by the Management of STMicroelectronics NV ('ST') to undertake an independent assurance of the Company's 2020 Sustainability Report - 2019 Performance ('Report').

ST is responsible for the collection, analysis, aggregation and presentation of information contained in the Report. The assurance engagement assumes that the data and information provided in good faith by ST are complete, sufficient and authentic.

Our responsibility in performing the work commissioned, in accordance with the terms of reference agreed on with ST, is solely towards ST's Management.

This Independent Assurance Statement is intended solely for the information and use of ST's stakeholders and is not intended to be and should not be used by anyone other than these specified parties.

Scope of Assurance

The scope of work agreed on with ST includes the following aspects:

- Analysis, in accordance with a *Moderate level* of Assurance, of data and activities related to sustainability between January and December 2019, as contained in the Report.
- Evaluation of GRI Sustainability Reporting Standards principles and requirements.
- Evaluation of specific sustainability performance with regards to disclosures defined by the GRI Sustainability Reporting Standards, for the "Core" option.

We understand that the financial data and information reported, are based on data from the "2019 Statutory Annual Report including IFRS Financial Statements", available on ST's website (<http://investors.st.com>). The review of financial data from the Annual Report and Accounts was not within the scope of our work.

Verification methodology

Our assurance engagement was conducted in accordance with the DNV GL protocol for verification 'VeriSustain', which is based on our professional experience and international assurance best practice. These documents require, inter alia, that the assurance team possesses the specific knowledge, skills and professional competencies needed for an assurance engagement regarding sustainability information, and that the team complies with ethical requirements to ensure its independence.

In accordance with the Protocol, available on demand on our website*, the Report was evaluated by considering the following criteria:

- Adherence to the principles of GRI Sustainability Reporting Standards.
- ISAE 3000, for the assessment of non-financial information.

Our verification was carried out from 12th February to 26th March 2020. As part of this engagement we audited selected sites based on their contribution which represents 20,2% of the Group's consolidated environmental data and 20,6% of consolidated social data:

- The Corporate functions (meeting conducted in Rousset, France)
- The Front-end manufacturing in Crolles (France)
- The Back-end manufacturing in Calamba (the Philippines)
- The Back-end manufacturing in Bouskoura (Morocco)

Site audits in Crolles and Bouskoura were conducted remotely, in light of the COVID-19 pandemic and in consideration of the welfare of all individuals participating in this verification program.

We reviewed the sustainability-related statements and claims as part of the verification made in the Report as well as assessing the strength of the underlying data management system, information flows and controls.

We performed sample-based audits of the following:

- Mechanisms for the implementation of its sustainability policies, as described in the Report.
- Processes for determining the materiality of the contents to be included in the Report.
- Processes for generating, gathering and managing the quantitative and qualitative data included in the Report.

We interviewed the Corporate Sustainability Team and more than 50 company representatives (including data owners and decision-makers from various divisions and functions) who were involved in the operational management of matters covered in the 2020 Report.

In addition, we interviewed three different stakeholders on their relations with the Company.

We evaluated the performance data using the materiality, stakeholder inclusiveness, responsiveness, completeness, accuracy, reliability, neutrality & balance and sustainability context principles, together with ST protocols for how the data is measured, recorded and reported. The performance data within the scope was in the form of Key Performance Indicators.

Statement n. STAT-14926-2020-CSR-FRA-DNV

DNV GL Business Assurance France – Parc Technoland, ZI Champ Dolin, 1 allée du Lazio – 69800 Saint Priest - FR – www.dnvgl.fr

Conclusions

It is the opinion of DNV GL that the 2020 ST Sustainability Report is an accurate and impartial representation of the Company's sustainability-related strategies, management systems and performance.

Based on the work undertaken, nothing came to our attention to suggest that the Report does not properly describe ST's adherence to the Principles. Considering Key Performance Indicators, nothing came to our attention to suggest that this data has not been properly collated from information reported at operational level, nor that the assumptions used were inappropriate.

DNV GL believes that the report is in line with the "Core" option of the GRI Sustainability Reporting Standards. Further conclusions and observations on the adoption of reporting principles and specified performance information are made below, without affecting our assurance opinion.

Stakeholder Inclusiveness: The stakeholder engagement activities are well structured and shared within the Organization, with remarkable adherence of programs deployed at local levels with the CSR strategy.

Sustainability Context: The information and data shown in the Report adequately reflect the strategy, the commitments and the activities carried out by ST in relation to the sustainability context within which the Organization operates at global and local level.

Materiality: The Report includes the major material aspects concerning the Company's performance and stakeholders' concerns and adheres to the principle. The contents of the Report are the result of a consolidated mapping of stakeholders and a structured process for identifying the topics they considered relevant.

Completeness: The Report covers material impacts satisfactorily to enable stakeholders to assess ST's sustainability performance in 2019. The information contained in the report refers to the structure defined in the boundary; in the case of data attributed to a more limited boundary, the document identifies such restriction precisely by means of proper notes.

Accuracy: Based on our data analysis and on the business processes that generate them, the data reported in the Report appears to be the result of stable and repeatable activities. The information contained in the Report is therefore accurate and detailed.

Balance: The Report is an impartial description of ST's sustainability impacts. The document reflects the Organization's will to represent the activities and results for the reporting year in a way that is balanced and consistent with business strategies.

Clarity: The information presented in the report is understandable, accessible and usable by ST's stakeholders.

Comparability: The information reported enables stakeholders to analyse changes in the organization's current economic, environmental, and social performance against the organization's past performance.

Reliability: ST has developed an effective methodology for collecting information to be used in the Report. The data included in the Report subjected to our verification, was found to be identifiable and traceable.

Timeliness: ST reports regularly once a year making information available in a timely manner, to allow stakeholders to make informed decisions. No restatements were needed for previous disclosures.

DNV GL's Competence and Independence

DNV GL is a leading provider of sustainability services, including the verification of sustainability reports. Our environmental and social assurance specialists operate in over 100 countries.

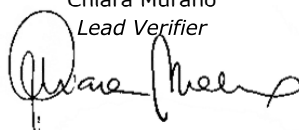
DNV GL was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV GL maintains complete impartiality toward stakeholders interviewed during the verification process.

DNV GL expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

For and on behalf of DNV GL Business Assurance France

08th, April 2020

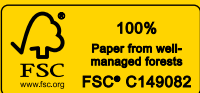
Chiara Murano
Lead Verifier



Zeno Beltrami
Reviewer



At STMicroelectronics
we create
technology that
starts with You



Reference: BRSTREPORTS2020

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