

As We Innovate and Flourish, We Prosper Together

2019 Sustainability Report

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Welcome

President's Message and Report Highlights

Welcome to our third Sustainability Report. At Samsung Austin Semiconductor, LLC, (Samsung Austin Semiconductor) we continue to demonstrate our commitment to Central Texas and want to share our progress toward sustainable solutions. As a subsidiary of one of the world's best brands, we are humbled to carry on the tradition of Samsung, for as we innovate and flourish, together we prosper. We have been an integral part of the Central Texas landscape for more than 23 years, advancing our industry with innovative technology, while creating new job opportunities and contributing to the success of the region by being a catalyst for growth and prosperity. As you will see throughout our report, Samsung Austin Semiconductor continues to achieve leadership by being:

- **A Technology Innovator and World's Best Foundry**

- We design, create and manufacture innovative technologies that impact everyday life around the globe. See our latest story on our exciting 5G Innovation Zone!

- **An Economic Driver for Central Texas**

- Since 1996, Samsung Austin Semiconductor has invested more than \$17 billion to date — the largest foreign investment in Texas history – and one of the largest investments in the U.S. In 2018, Samsung Austin Semiconductor also pumped \$4.7 billion into the central Texas economy and provided thousands of jobs to the community.

- **A World-Class Workplace**

- We are a premier employer providing valuable experience and advanced training and skills to our thriving employees. Samsung Austin Semiconductor also has a practice of hiring veterans. With our continued recruiting efforts, we have hired more than 500 veterans since 2016.

- **A Company Committed to Community**

- Our internal volunteer programs yield thousands of hours for student mentoring, organize citywide cleanups and fundraise for a variety of causes. Our charitable giving focuses on Early Childhood Investment, Youth Development, STEM Education, Environmental Stewardship and Workforce Development.
- We are proud to be recognized as the number one fundraising team for the American Heart Associations' walk in 2017 and 2018, respectively.

- **Involved in Collaborative Efforts for the Environment**

- We believe that businesses have a responsibility to address climate change and support environmental sustainability. We are proud that we achieved our goal of sourcing 100% renewable energy to match our electricity use two years ahead of schedule.

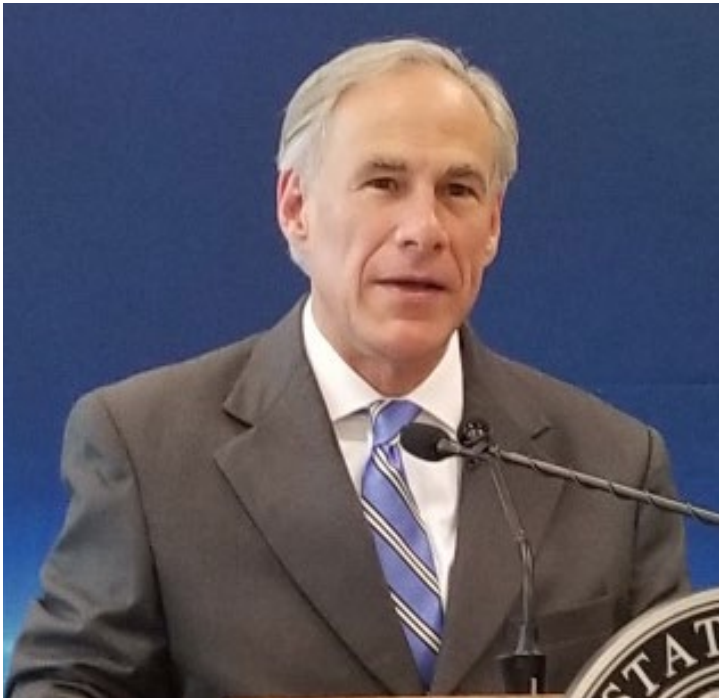
Together we reduce our environmental impacts and help our community and our employees flourish, grow and prosper. We hope you are inspired by the creativity, innovation and impactful investment that Austin and Samsung Austin Semiconductor bring to each other.



Gil Heyun Choi

Senior Vice President,
Samsung Electronics

President,
Samsung Austin Semiconductor



Training workers with technical skills and recognizing the importance of industry certifications is an important factor in business success both for Samsung Austin Semiconductor and for other top employers in Texas.

Samsung Austin Semiconductor hosted Texas Governor Greg Abbott on April 27, 2018, who made an exciting announcement for a new *Texas Talent Connection* program. The program gives grants for middle-school Science, Technology, Engineering, Mathematics (STEM) internships created by local workforce boards across the state. The *Texas Talent Connection* program, supporting innovative education and workforce training programs, is managed by the Texas Workforce Investment Council in the Governor's Economic Development and Tourism Division.



Awards and Certifications



Samsung Austin Semiconductor Wins Local Employer of the Year

Nominated by Workforce Solutions Capital Area, Samsung Austin Semiconductor won the award for Local Employer of Excellence in 2018. In addition to winning the award, the Texas Workforce Commission also selected Samsung Austin Semiconductor as one of three finalists from across the state for the Large Employer of the Year Award!

New Certification

Our foundry business continues to improve in quality and customer commitment. That's why we are happy to share that **we are certified to IATF 16949:2016**, the Automotive Quality Management System standard. This certification enables us to compete in the global automotive industry, which is an exciting new growth opportunity for Samsung Austin Semiconductor's foundry business.



Workforce Development Award

Bestowed by the Career & Technical Association of Texas and Association for Career and Technical Education (CTAT/ACTE), Samsung Austin Semiconductor received the "**Business of the Year**" **Image Award** which recognized our efforts in workforce development in the greater Austin area in 2018.

In addition, the Texas Workforce Commission (TWC) announced Samsung Austin Semiconductor as a finalist for the 2018 **Texas Workforce Solutions Large Employer of the Year Award**. Plus, they honored Samsung Austin Semiconductor with the "We Hire Vets" award for our commitment to hiring veterans into our organizations.

Update on 2018 Materiality Assessment

Samsung Austin Semiconductor conducted its first materiality assessment in 2018 with internal and external stakeholders to best prioritize the unique aspects of corporate responsibility. We selected topics found in global best practices as well as those recommended by The Sustainability Accounting Standards Board (SASB) and the Global Reporting Index (GRI). The top priorities from the stakeholder surveys and interviews included *diversity and talent; health and safety; environmental operations; and risk management*. From the narrative contained inside this report, you will see where we are making strives to improve and to flourish within those areas.



Who We Are

Innovation – Who We Are

A Driving Force for the Fourth Industrial Revolution

Samsung's goal is that our foundry business, the factories that provide cutting-edge technologies, will continue to play an increasingly important role as total solutions providers in the era of the 4th Industrial Revolution. This includes new and exciting applications such as Artificial Intelligence (AI), cloud computing, autonomous vehicles, and smart homes that require high-level technologies, such as sophisticated design and system level optimization.

During a keynote speech at the 2018 IEEE International Electron Devices Meeting (IEDM), Dr. ES Jung, president and head of Foundry Business at Samsung Electronics, shared his vision that the next industrial revolution can only happen by the continuous evolution of semiconductor technology.

In his presentation "Fourth Industrial Revolution and Foundry: Challenges and Opportunities", Dr. Jung explained that the evolution of advanced foundry technologies will be crucial to enable the design and manufacture of innovative semiconductor products that will take our everyday life into new and previously unthought-of directions.

"None of these technological advancements would have been possible without collaboration across the entire semiconductor industry. This collaboration is paramount between material, equipment, electronic devices, government, universities, research centers, and consortiums, to ensure the success in the upcoming 4th industrial revolution."

Dr. E.S. Jung

As one of the world's most advanced manufacturing facilities, Samsung Austin Semiconductor continues in its quest to become the World's Best Foundry. We know that the Fourth Industrial Revolution will have an impact on connected manufacturing. The products we "Make in Austin" potentially have the power to unlock new experiences in augmented reality, powerful machine learning, AI applications, intelligent robotics, automation and predictive maintenance. We hope to prove how smart manufacturing can evolve even further and strengthen the overall industry.

Industrial IoT: 4th Industrial Revolution

1st:
Steam power
Mechanization






2nd:
Electrical Power
Mass Production

3rd: Computing Power
Automation

4th: Internet of Things (IoT)
Connecting Everything

**Innovation –
Who We Are**
(continued)

Process Offerings for Every Application

				
IoT	Consumer	Mobile	Networking, HPC	Automotive
<p>Billions of devices</p> <p>Ultra low power</p> <p>Ultra low cost</p> <p>Fusion (RF/NVM/Sensor)</p>	<p>Leading edge</p> <p>Low Power</p> <p>High performance (Vision processor)</p> <p>Fast TTM</p> <p>Low cost</p>	<p>Fastest TTM</p> <p>Long battery life</p> <p>High performance (compute/visual)</p> <p>Connectivity</p>	<p>Leading edge</p> <p>Performance/Watt</p> <p>More bandwidth</p> <p>2.5D + HBM</p> <p>Performance kicker</p>	<p>Advanced nodes</p> <p>Higher reliability</p> <p>Longevity support</p> <p>Automotive grade design enablement</p>

Samsung Austin Semiconductor’s broad semiconductor process technology serves customers in various applications.



Samsung and AT&T Business Launch 5G Innovation Zone

In 2018, we began to think differently about the future of manufacturing. AT&T Business, Samsung Austin Semiconductor and [Samsung Electronics America](#) announced the first [manufacturing-focused 5G Innovation Zone](#) in America to demonstrate 5G's Impact on the Smart Factory with use cases that include robotics, industrial IoT and mixed reality.

The 5G Innovation Zone is located in Samsung Austin Semiconductor and was designed for AT&T Business and Samsung to explore ideas and technology for improving manufacturing environments and creating smarter factories. With a private 5G network, Wi-Fi and other wireless connectivity technologies, we anticipate incorporating new technologies as additional 5G devices become available.

"Samsung is honored and humbled to host this innovative testbed that we believe can drive advanced manufacturing facilities like ours with an understanding of how to improve employee productivity and safety, mobile performance, massive device connectivity and to think about smart factory solutions like never before," said Jonathan Taylor, corporate vice president of Fab Engineering, Samsung Austin Semiconductor.

The Mayor of Austin and executives from Samsung Austin Semiconductor and AT&T Business participate in the grand opening of the 5G Innovation Zone.



**Innovation –
Who We Are**
(continued)



One use case scenario focuses on the potential of 5G in providing near real-time motion tracking for more accurate monitoring, issue detection and preventative maintenance of robot arms.

The background features a close-up of tall, thin grasses in shades of green and yellow, set against a blurred natural background. A semi-transparent blue geometric pattern of overlapping triangles is overlaid on the entire image. A solid blue rectangular box is positioned in the lower-left corner, containing the word "Environment" in white text.

Environment

Caring for our Environment

Striving for a Positive Impact on the Planet

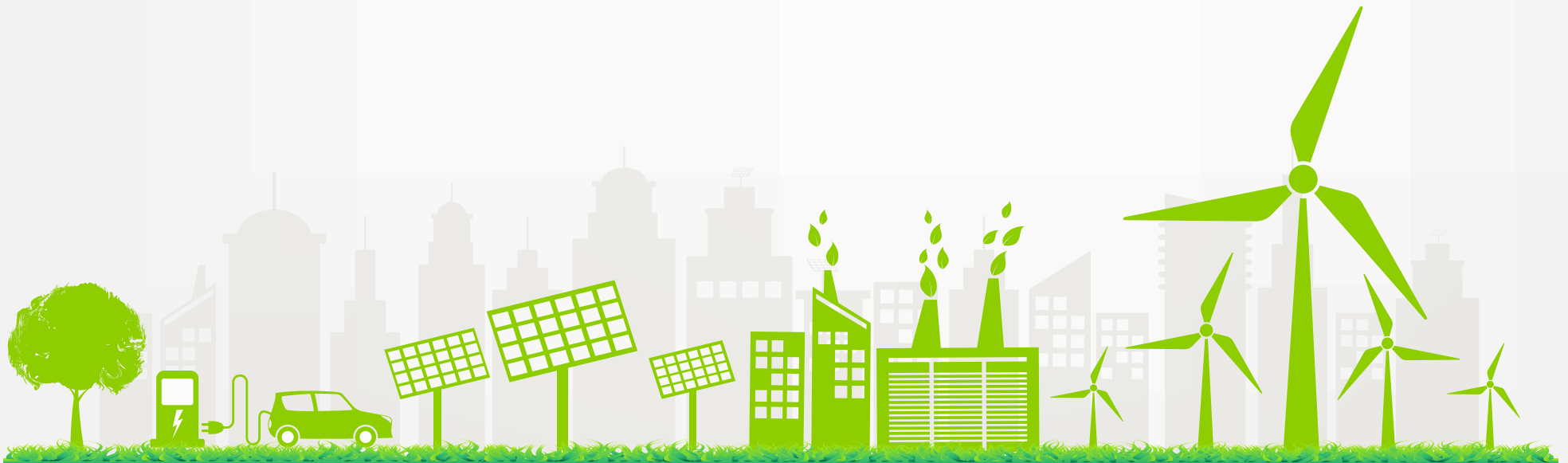
Samsung Austin Semiconductor's approach to Sustainability is to create a better future through sustainable practices. This includes our target on 100% renewable energy and our zero waste by 2020 target.



Here are some of the new programs within Samsung Austin Semiconductor that show our dedication to the environment:

Climate Change

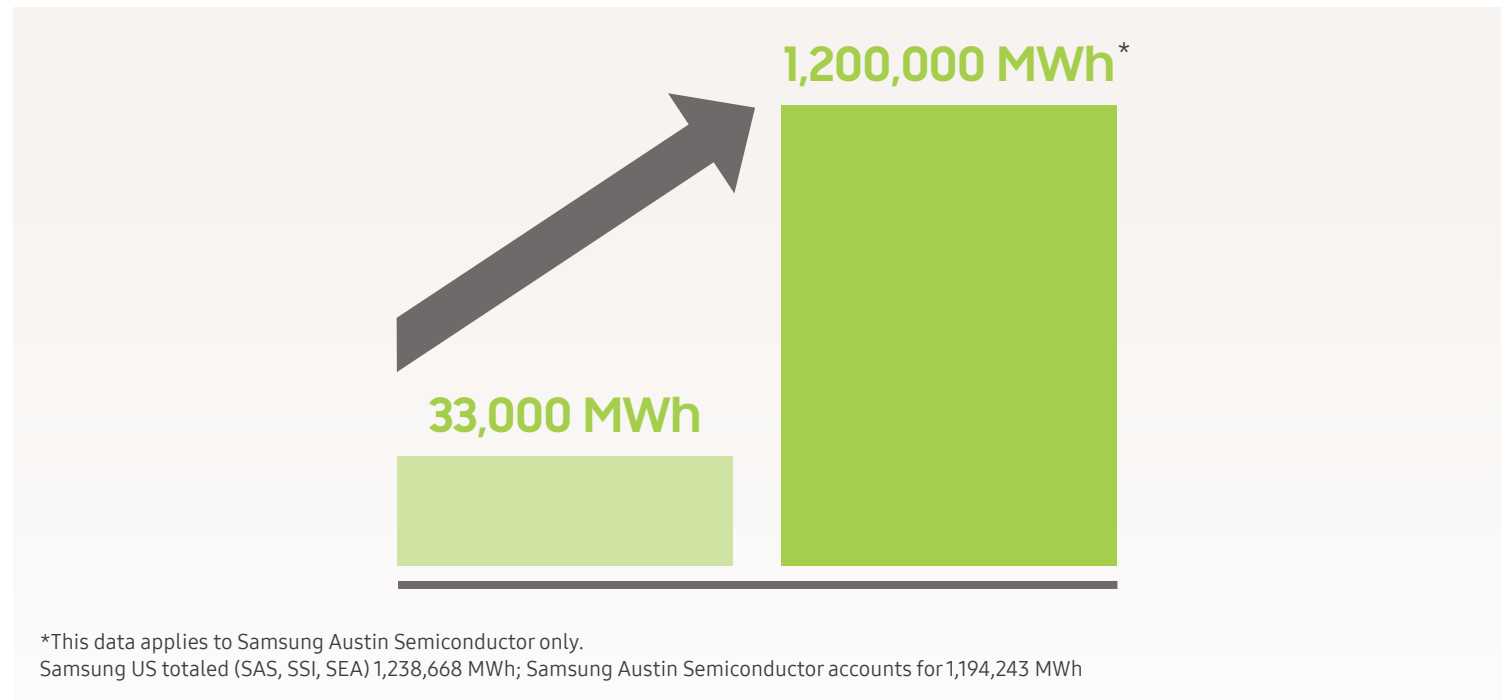
We have developed programs that address the unique needs of the beautiful community in Central Texas. Because we believe that businesses have a responsibility to address climate change and support environmental sustainability, we always consider resource efficiency and look for ways to reduce our environmental footprint in both our operations and supply chain.



Caring for our Environment

(continued)

Together with Samsung Electronics America, Inc. (SEA) and Samsung Semiconductor Inc. (SSI), Samsung Austin Semiconductor has increased our green power usage more than 56% from 2017-2018. This resulted in an increase of green power from 33,000 MWh in 2017 to 1,200,000 MWh in 2018, which allowed us to achieve our goal of sourcing 100% renewable energy two years ahead of schedule!



As part of its Green Power Program, we also purchased Green-e RECs for its 2018 electricity consumption from the Texas ERCOT market via 11 different wind farms. Sourcing across multiple projects allowed us to reach our renewable energy goal of 100% fossil-free footprint and made a positive local impact. We also purchased renewable energy from Austin Energy's GreenChoice program.

All of Samsung's North America subsidiaries — Samsung Austin Semiconductor, Samsung Electronics America, Inc. and Samsung Semiconductor Inc. — collectively drove clean energy successes in the United States. Samsung became the No. 8 purchaser of renewable energy in the United States and set a strategic tone for its path forward towards sourcing 100% renewable energy by its 2020 goal.



Caring for our Environment

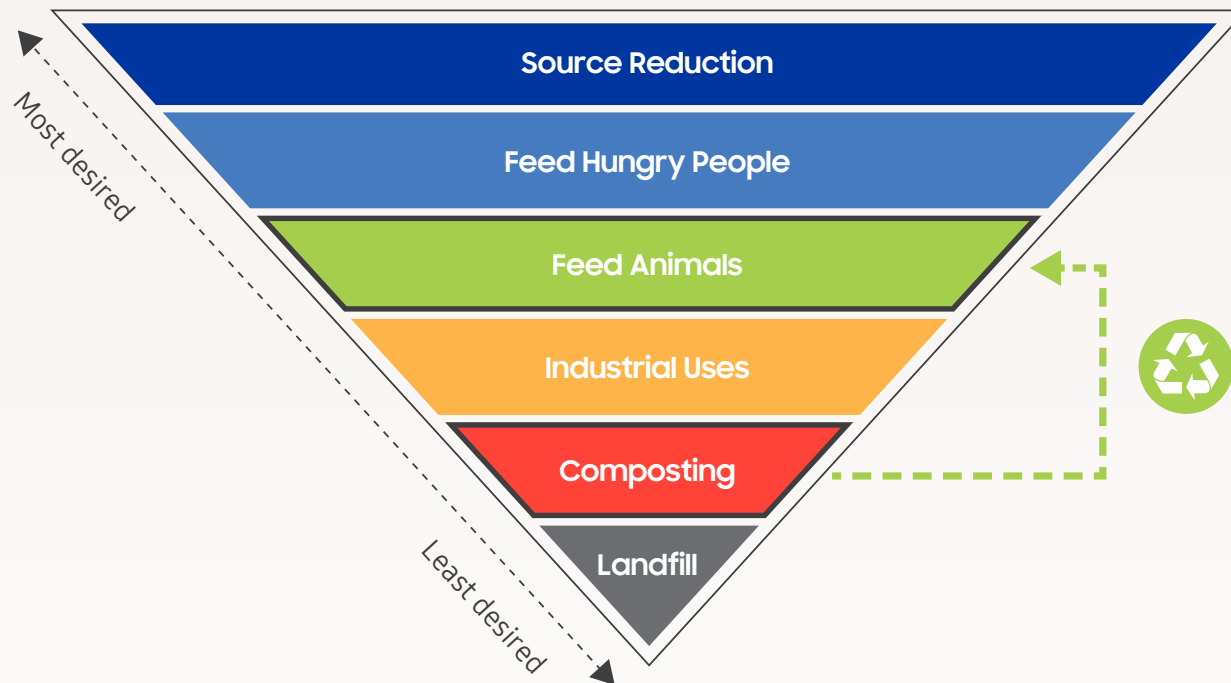
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Circular Economy and Food Waste



Samsung Austin Semiconductor believes in circular economy models and has a focus on food waste. Current economic waste models are dominated by a linear approach to consumption and production. Materials are grown or extracted, made into products which are consumed, and then the resulting waste is left to be disposed. In the US, uneaten food accounts for a large economic and environmental impact — [approximately 63 million tons of food is wasted every year.](#)

Environmental Protection Agency's Food Hierarchy



The natural resources used to produce that food, including water, fertilizers and land, are also lost as a consequence of this amount of waste. Furthermore, this wasted food typically ends up in landfills where, as it breaks down, leads to significant emissions of methane, a potent greenhouse gas with 56 times the atmospheric warming power of carbon dioxide. Samsung Austin Semiconductor is interested in evolving our waste models to a circular economy model where resources are recovered at their highest potential quality and kept in circulation or re-used for another purpose.

One way we are exploring engaging in the circular economy is for food that follows the Environmental Protection Agency's food hierarchy. According to the EPA hierarchy, wholesome, edible food should be kept in the human food supply if possible.

Caring for our Environment

(continued)

When that is not possible, it should be used as feed for animals. Samsung Austin Semiconductor is focused on a circular model with its cafeteria food program. We are taking the food waste and using it to produce compost or animal feed. This way it stays out of the landfill (the least desirable part of the hierarchy). We are also looking at additional measures to feed people and promote food source reduction.

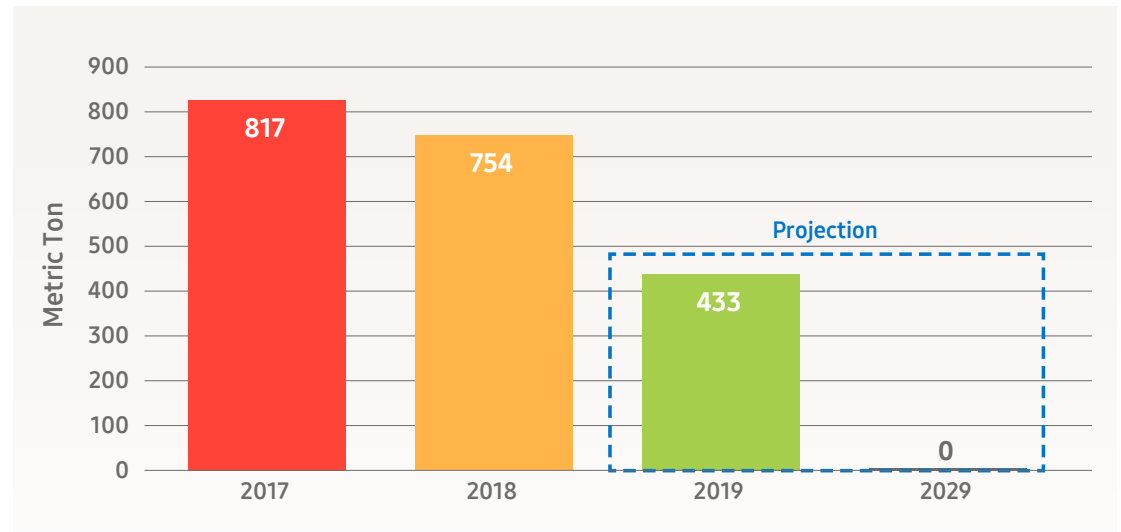


Copper Wastewater Waste



Another example of circular economy within Samsung Austin Semiconductor is our new wastewater treatment technology that eliminates waste into a by-product. Previously, our manufacturing process produced wastewater with copper elements that were removed before being sent off-site to the City of Austin’s Walnut Creek Wastewater Treatment Plant. The Samsung Austin Semiconductor site’s wastewater pre-treatment method produces a filter cake by-product that was sent to Texas landfills. Now, we use a new treatment system that uses ion exchange resin for the removal of copper elements called Copper Ion Exchange. It uses less chemicals and generates minimal waste by-product, cleans the water more effectively and generates a copper product that can go towards reclamation rather than landfill disposal.

Since the implementation of the Copper Ion Exchange for baseline 2017, we have reduced over 60 metric tons of wastewater by-product CU waste in 2018 and we are projecting to reduce 100% of the waste by 2020.

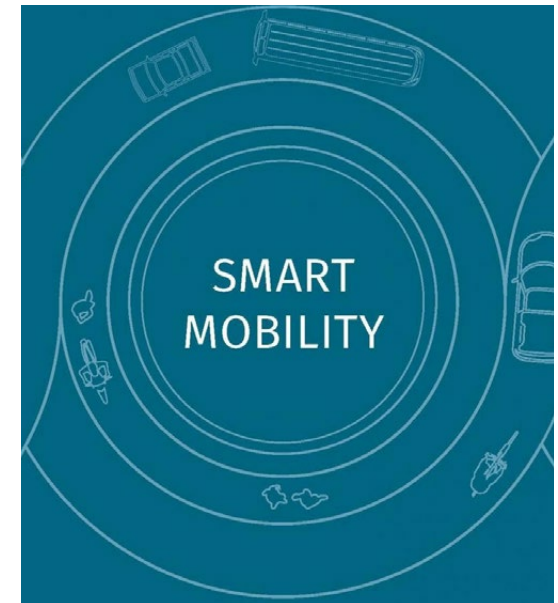


Caring for our Environment

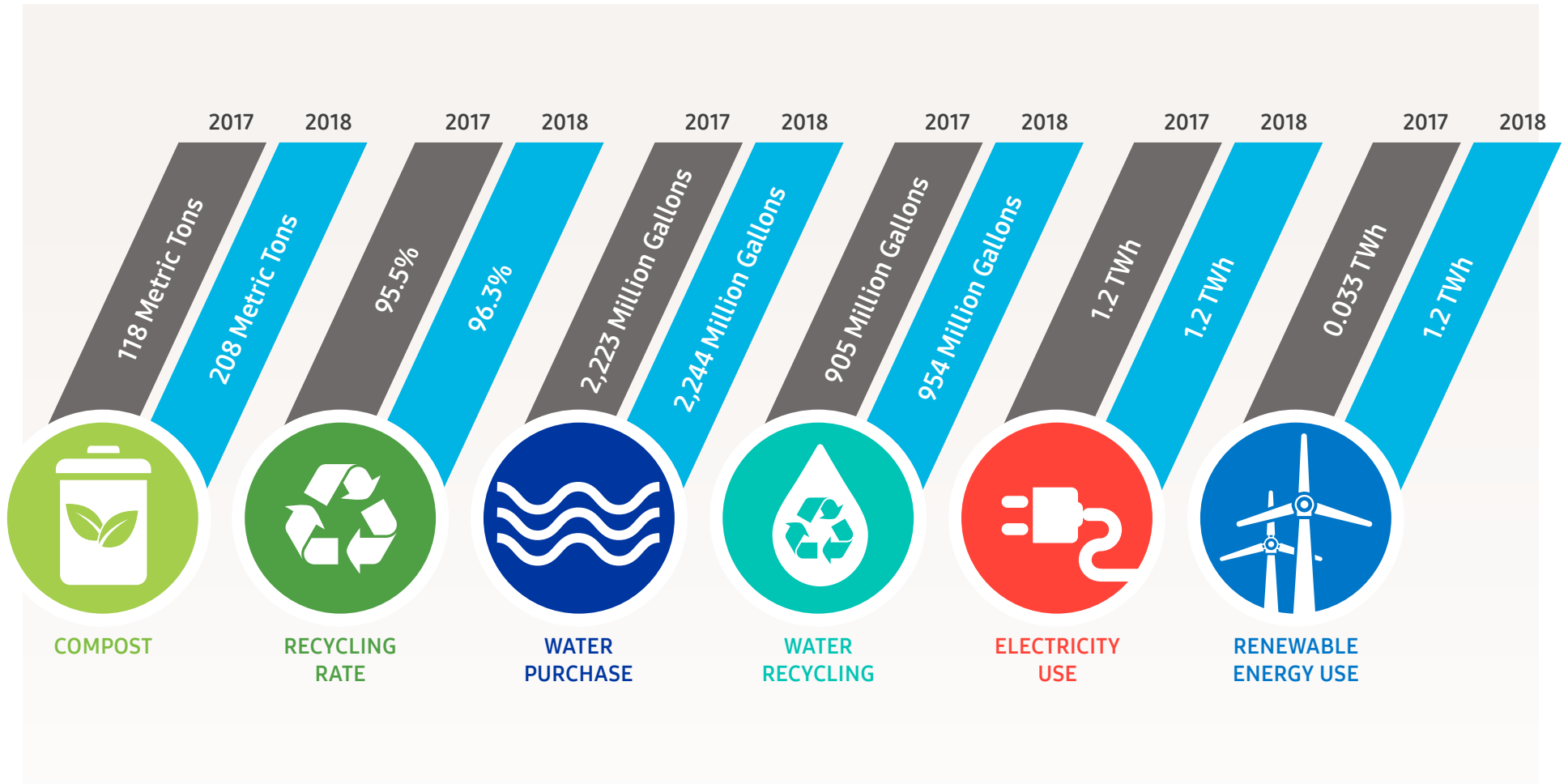
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Mobility Innovation to Lower Our Carbon Footprint

Samsung Austin Semiconductor is a corporate member of Movability, the transportation management association for Central Texas. Movability partners with the City of Austin to offer the Mobility Challenge, an invitation to employers to help change the "traffic jam math" by encouraging better use of our existing infrastructure and finding mobility solutions such as carpool, transit, and biking. As part of the Mobility Challenge since 2016, we have collaborated with other Tech Ridge companies to explore bringing more mobility options (e.g. specialized bus routes) to the area. In partnership with Movability, Samsung Austin Semiconductor has worked with the Texas Department of Transportation (TxDOT) to encourage connecting existing city sidewalks with sidewalks on the Samsung campus so that employees can walk and bike to Samsung from residential areas.



Environmental Updates from 2018 Sustainability Report



Caring for our Environment

(continued)

GRI 2018 Numbers

The Global Reporting Initiative (GRI) is an independent international organization that has pioneered sustainability reporting since 1997. GRI helps global businesses and governments understand and communicate their impact on critical sustainability issues such as climate change, human rights, governance and social well-being. The GRI Sustainability Reporting Standards are developed with true multi-stakeholder contributions and rooted in the public interest.

We have maintained the accuracy and reliability of our data as part of regulatory compliance requirements, as part of a third party Life Cycle Assessment (LCA) performed last year, and as part of the requirements to maintain certification within our environmental and energy management systems (ISO 14001 and ISO 5001 respectively). As shown in the GRI Appendix, Samsung Austin Semiconductor has voluntarily completed some of the Global Reporting Initiative (GRI) environmental section questionnaire to show the improvement in our emissions for air, water, waste and energy.





Community

Empowering Communities by Leveraging Our Passion

While our environmental footprint is a clear responsibility for a company our size, we are also concerned about our social impacts. We understand our responsibility to provide good jobs, keep workers safe, encourage acceptance and belonging within a diverse workforce, and give back to the local community.

Giving Back to the Local Community

Sponsoring Community Programs for Economic Development

Samsung Austin Semiconductor cares about investing in local programs that drive cultural awareness, economic development and business engagement. In addition to investing in organizations such as the Korean-American Association of Greater Austin, Asian American Culture Center, Great Austin Chamber of Commerce, Texas Association of Manufacturers and Greater Austin Asian Chamber of Commerce, in 2018 we were proud to sponsor the Austin Trail of Lights. [The Trail of Lights](#) is Austin's largest holiday tradition and 2nd largest event in the city. This annual event in Zilker Park celebrates the unique spirit and people that make Austin the place we love to call home and invites 400,000 people every year to come celebrate the holidays in the heart of Austin, Texas during the month of December. The event showcases everything that we love about Austin — from music and food to creativity and family fun.



Investing in Our Community

At Samsung, our Global Corporate Citizenship vision is 'Enabling People'. By providing Education for Future Generations, we empower future innovators to achieve their full potential and become the next generations of leaders to pioneer positive social change.

We are proud that our employees continue to give back through thousands of hours of volunteering through our educational initiatives with Manor Independent School District and dozens of other schools and charities.

Employee Engagement Makes a Difference

We want to make a positive impact on our local community. Our corporate citizenships efforts that focus on employee activation include:

- **Employee Engagement:** Our employees are passionate about serving the community and do so through our Samsung Gives programs.
- **Community Service & Team Building:** Many employees volunteer in teams or leverage a community service activity as part of building trust and communications.
- **Employee Giving:** Employees can provide financial support to any qualified charity of their choice.
- **Employee Matching:** Employees can get a year-round financial gift to a qualified charity matched up to \$1,000 by Samsung Austin Semiconductor.

Based on feedback from Samsung Austin Semiconductor's annual employee survey, in 2018 we developed a Volunteer Time Off policy that was launched in February 2019. Employees can now share their expertise and provide support to non-profit organizations with 16 hours of paid time to volunteer in the community.





Other opportunities for employee giving that help the Austin community to flourish and prosper along with our Samsung Austin Semiconductor family include:

Philanthropy and Employee Giving

American Heart Association Heart & Stroke Walk

For the second time, Samsung Austin Semiconductor was the number one fundraising company for the American Heart Association with more than \$248,000 in donations. Our Corporate Vice President, Michael Raiford, chaired the 2018 walk and led more than 300 employees and partners who participated.



Samsung Gives Campaign

Employees of Samsung Austin Semiconductor participated in our annual employee giving campaign in November 2018 — and through their efforts, with matching company dollars, we raised more than \$556,000 to support various charities around the United States.



#GivingTuesday with Pitch Competition for Nonprofit Organizations

Samsung Austin Semiconductor hosted a pitch competition for local nonprofit organizations and donated more than \$13,000 to the top ten charities. These included Central Texas organizations such as Austin Sunshine Camps, Colorado River Alliance, Breakthrough Central Texas, Boys & Girls Clubs of the Austin Area and Girlstart.



Veterans Day 5K Run

Veterans Day is a very special day to recognize the service and sacrifice made by our military's men, women, and their families. Much of what we hold dear in our country was made and sustained by people who believe in "Duty, Honor, and Country." As a way to celebrate, Samsung Austin Semiconductor's newly-formed Military Affinity Group hosted its first Veterans Day celebration in 2018. This celebration included a 5K run.



Cleaning Up Lady Bird Lake

Samsung Austin Semiconductor had a record showing of volunteers for the *Keep Austin Beautiful Clean Lady Bird Lake* cleanup in August 2018. Employees brought their friends and family members to help beautify the lakeshore and successfully picked up 12 full bags of trash and 8 full bags of recycling. This event is one of many ways our employees continue to give back to their communities.



National Manufacturing Day

As part of the National Association of Manufacturers seventh annual National Manufacturing Day, Samsung Austin Semiconductor opened its doors to more than 40 high school students. The visit showcased to students our cutting-edge technology as a way to engage the next generation of manufacturing leaders, and to excite students with industry career opportunities.



“Samsung Austin Semiconductor is a company I have gladly called home for the last 9 years. This organization has given me ample opportunities for leadership experience, professional development, and a strong network of amazing coworkers who work hard to improve and excel on a daily basis-opportunities that wouldn't have been possible anywhere else.”

Bianca Covington

Engineer

Past Chair of Women in Technology at Samsung



People

Our People and Talent Drive Our Innovation

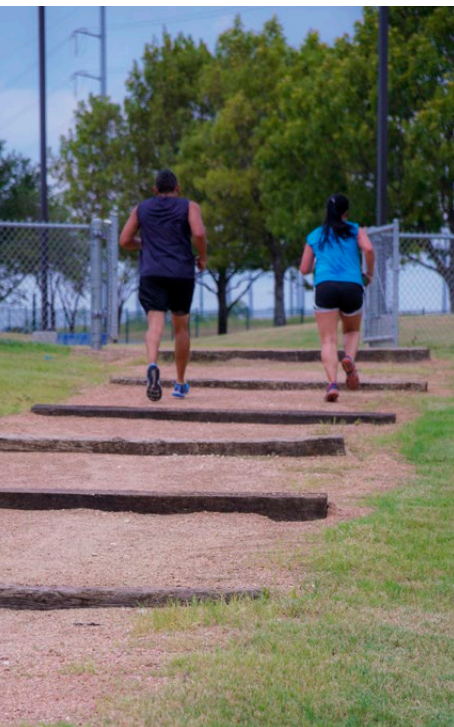
Samsung Austin Semiconductor has continuously proven itself as a world-class technology leader. The key to our success is our people's talent, creativity and dedication to creating innovative products and solutions. We believe that our most important value comes from our people; the employees who represent our ethics, our diversity, our inclusion standards and who are rewarded with outstanding benefits and engagement opportunities.

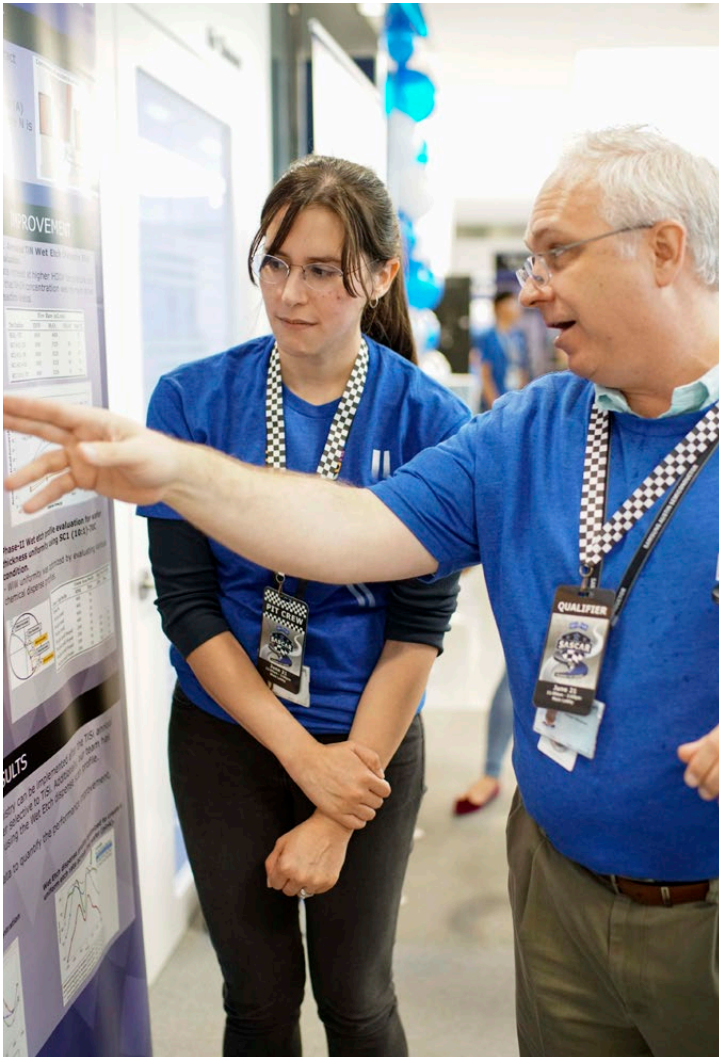
Our People, Our Talent

Since 2012, we have dedicated time and effort to formally capture crucial employee feedback through the Samsung Cultural Index (SCI) Survey. We believe in the importance of evaluating our strengths and identifying areas of improvement. This survey is a powerful tool for leadership to understand where we are now and how to build the best action plans for the future.

In 2018, through the SCI Executive Committee, the SCI Employee Engagement Committee and Night Shift Supervisors meetings, we listened to feedback and made several impactful changes that went into effect January 1, 2019.

- Compressed Work Week night-shift time off for jury duty
- Provided employee choice for date selection for two floating holidays
- Increased paid maternity leave to 12 weeks
- Increased paid parental leaves
- No change to our 2019 health insurance premiums for the seventh year in a row
- Improved transparency by creating more opportunities for two-way communications and better defined our company goals and objectives more regularly through monthly executive messages.





“I first came to Samsung Austin Semiconductor back in high school as a Leander ISD COOL (Career Opportunities on Location) Week attendee and instantly fell in love with the fast-paced environment. When I came back as an intern, I had the opportunity to push myself to find innovative solutions to problems, which was truly inspiring. Every day is different here, and that makes for an exciting and somewhat indescribable environment!”

Ayah Alomari
Engineer

In addition, some of the other outstanding impacts from our people included:



Seoul Sisters Conference

For the first time in Austin, our Women in Technology at Samsung (WITS) affinity group had the honor to host the Seoul Sisters Conference, a Samsung North America Regional conference that included other women's affinity groups across North American Samsung subsidiaries. Attendees discussed best practices, networked with women across the U.S., heard from inspiring speakers and learned how to help women advance in their careers.

Military Affinity Group launched

To demonstrate its commitment to our veterans, we launched a second affinity group whose mission is to support employee veterans by building esprit de corps through empowerment, development and networking within our communities. During its first year it participated in a Military Appreciation Night with a local hockey team, hosted several community events and held the first 5k run.

Samsung Austin Semiconductor Connecting Industry to K-12 Classrooms



NEPRIS is a cloud-based platform that helps connect K-12 classrooms with Samsung Austin Semiconductor industry experts to demonstrate

the range of opportunities and careers within our company. It's an excellent tool for helping bridge the gap between the classroom and the real-world, showing students the potential they have to improve our world. Samsung Austin Semiconductor employees volunteer their expertise on subjects ranging from interviewing to semiconductors to inform students of opportunities in manufacturing.





Governance

Responsible Business Practices/ Governance

Complying with legal and ethical standards is a fundamental business practice. We are fully committed to adhering to lawful practices and building an ethical organization. Our parent company provides a Global Code of Conduct to our suppliers, customers, and other external stakeholders as well as to our employees through its [ethics management website](#), which provides an anonymous channel to report any violations.

Responsible Business Practices

Suspected ethics, waste and abuse, human rights, governance and compliance violations can be reported through an internal process. Employees are expected to immediately report existing or potential violations to ensure Samsung upholds the highest level of corporate integrity. Whistleblowers are protected from any type of retaliation for reporting unethical or illegal behavior.

Political Action Committee

Samsung North America partnered with Samsung Austin Semiconductor to launch the Samsung Political Action Committee (S-PAC) in Austin. Eligible employees can voluntarily support federal, and where allowed by law, state candidates who support Samsung North America business objectives. These contributions are made in compliance with applicable federal and state laws and can be found at www.fec.gov. Samsung Austin Semiconductor does not make political contributions using business funds.

Creating a Mindset for Safety — *Journey to Zero*

Environment, health and safety is Samsung Austin Semiconductor's first and foremost business principle. We believe that providing a healthy and safe environment is important for all employees, contractors and visitors. We recognize that a safety culture is a human capital, risk management, and a business need. That is why we continue to invest in health and safety awareness throughout the year.

Compliance training is provided in Instructor led classes as well as computer-based application that are available online. Training completion is tracked to ensure compliance. In addition to basic compliance training, our Safty team has also developed multi-level proficiency training in Ergonomics, Risk Assessment, Lockout/Tagout, and Incident Investigation. Personnel that achieve Level 2 or Level 3 proficiencies are then able to supplement the standard Health and Safety programs for personnel.

This is through an evolution of our *Safety Conductor* program, where the Samsung Austin Semiconductor Health and Safety Department has developed and implemented multiple personal engagement tactics and actionable strategies, which in turn, enhance risk reduction measures throughout the facility. These are incorporated into KPI objectives for each employee. Samsung Austin Semiconductor's Ergonomics and Risk Assessment training programs provide personnel with the skills to identify risks, quantify those risks, and provide strategies to reduce them. These actions and other leading safety indicators will drive the Samsung Austin Semiconductor *Journey to Zero* program objectives of reducing risks throughout the company.

Additionally, Samsung Austin Semiconductor Safety's new *Commit to Act* Campaign is rolling out in order to challenge personnel to change their behaviors regarding distracted walking, handrail usage, and parking lot awareness. These and other initiatives will continue to challenge our personnel around potentially unsafe behaviors, with the objective of building an enhanced safety culture.

As we drive for more enhanced performance measures that help lead the organization to behaviors that drive performance excellence and elevate those behaviors with comprehensive communications, our "*Journey to Zero*" will be a robust initiative that will inspire and inform employees to take ownership of their personal safety and will tie to our business priorities of:

- Reduce safety incidents to zero
- Sustain momentum on safety culture (everyone is a safety leader)
- Improve risk management
- Develop a learning organization mindset



Responsible Business Practices/ Governance

(continued)

Conflict Mineral Update

The Organization for Economic Co-operation and Development (OECD) is an international organization that works to build better policies for better lives. The OECD Due Diligence Guidance provides detailed recommendations to help companies respect human rights and avoid contributing to conflict through their mineral purchasing decisions and practices. This guidance is for use by any company potentially sourcing minerals or metals from conflict-affected and high-risk areas. The OECD Guidance is global in scope and applies to all mineral supply chains. Samsung Austin Semiconductor is complying with OECD guidelines by conducting due diligence in validating our partners and suppliers using the Conflict Mineral Reporting Template (CMRT) information at their sites. We are also increasing our efforts to validate suppliers CMRT information and have plans to include the validation of Cobalt mining.



A photograph of an industrial facility, likely a refinery or chemical plant. The image shows several large, cylindrical storage tanks in the background, with a prominent one labeled 'B'. In the foreground, there is a complex network of white pipes and metal structural supports. The sky is clear and blue. A blue geometric overlay is present in the bottom-left corner, containing the word 'Goals' in white text.

Goals

Connecting to Global Sustainability with the United Nations Sustainable Development Goals

Connecting to UNSDGs

The United Nations General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs). Building on the principle of “leaving no one behind,” the Agenda emphasizes a holistic approach to achieving sustainable development for all. The Sustainable Development Goals (SDGs) were formally adopted to be carried out from 2016 to 2030 as means for governments, society and business to achieve the globally shared purpose of establishing a sustainable society across the world.



As a global corporate citizen, Samsung Electronics and all of their subsidiaries including Samsung Austin Semiconductor, will focus on how we can positively impact and align with these goals. Samsung Austin Semiconductor adopted Five SDGs and annually reviews all UN SDGs to determine how we might expand beyond these five goals. For 2018 and into 2019, Samsung Austin Semiconductor's efforts aligned with the following UN SDGs.



Goal 4

Quality Education

Ensure quality education and promote lifelong learning opportunities for all.

Samsung Austin Semiconductor continues its support for Manor ISD, a high needs district, and continue to contribute funds—direct and to nonprofit organizations—who can help provide resources that help students succeed.



Goal 7

Renewable Energy

Increase the use of renewable energy

Samsung Austin Semiconductor affirmed its alignment with this goal by achieving 100 renewal energy two years before the goal date.

Connecting to Global Sustainability with the United Nations Sustainable Development Goals

(continued)



Goal 8

Decent Work and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employments and decent work for all.

Samsung Austin Semiconductor continues to provide job opportunities and to increase our mentoring/ internship programs.



Goal 12

Goal 12 Responsible Consumption and Production

To promote resources and energy efficiency, in conjunction with Goal 7

Samsung Austin Semiconductor has continued obtain the goal of Zero Waste (essentially a 98% or more recycling rate) by recycling larger amounts of its waste and reducing landfill shipments, as noted in our circular economy programs for Copper filter cake waste reductions and with our food waste compost program.



Goal 13

Climate Action

Take action to combat climate change and its impacts.

Samsung Austin Semiconductor, in conjunction with UN SDG 7, is continuing to reduce its intensity-based GHG emissions and to work with its external partners to improve awareness and education on climate change mitigation, adaptation and impact reduction, through local education initiatives.



GRI Appendix

GRI Questionnaire Appendix

GRI 302 Energy		
301-1 Energy Consumption within the organization for 2018	Total fuel consumption within the organization from non-renewable sources, in KWatts-hour (kWh) or multiples, and including fuel types used.	NA — In 2018, SAS fuel consumed was from wind renewable sources
	Total fuel consumption within the organization from renewable sources, in kWh.	1,194,242,971 kWh
	Total Electricity consumption in kWh.	1,194,242,971 kWh
	Total Heating consumption in kWh.	NA
	Total Cooling consumption in kWh.	NA
	Total Steam consumption in kWh.	NA
	Total energy consumption within the organization in kWh.	1,194,242,971 kWh
302-4 Reduction of energy consumption	Provide the amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in Kwh.	8,444,130.74 kWh
	Types of energy included in the reductions, whether fuel, electricity, heating, cooling, steam, or all.	Electric: 8,444,130.74 kWh LNG: 15,768 scf
	Calculations reductions in energy consumption, such as base year or baseline, including the rationale for choosing it.	The base year is 2017

GRI 302 Energy *(continued)*

302-5 Reductions in energy requirements of products and services	Energy reduction from your chips manufacturing in 2018.	As a result of continuous improvement of existing recipes, reduction in energy consumption occurred across all nodes. In the applicable reporting period, step reductions took place for 28nm and 14 nm nodes at 6.59% and 9.96%, respectively.
	Reductions in energy requirements of sold products and services achieved during the reporting period, kWh.	NA
	Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it.	The base year is 2017

GRI 303 Water and Effluents

303-2 Management of water discharge-related impacts	<p>Minimum standards set for the quality of effluent discharge, and how these minimum standards were determined, including:</p> <ul style="list-style-type: none"> • How standards for facilities operating in locations with no local discharge requirements were determined. • Any internally developed water quality standards or guidelines. • Any sector-specific standards considered. • Whether the profile of the receiving waterbody was considered 	<p>The minimum standards set for the quality of effluent discharge as based on the Publicly Owned Treatment Works (POTW) permit allowable limits. The POTW considered the profile of the receiving waterbody.</p> <p>SAS has developed proprietary water quality standards and guidelines to ensure that the limits established on the POTW are met. SAS has met all permit limits in 2018. SAS awarded in 2018 the annual Excellence in Pretreatment Award.</p>
303-5 Water Consumption	Total water consumption from all areas in Million Gallons (MGal)	2,272.51 MG for 2018

GRI 305 Emissions

305-1 Direct (Scope 1) GHG Emissions	Gross direct (Scope 1) GHG emissions in metric tons of CO ₂ equivalent.	61,2511 metric tons CO ₂ e
	Gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.	CO ₂ emissions were consider for the calculations of scope 1. The other gases were calculated by the facility air permit.

GRI Questionnaire Appendix (continued)

GRI 305 Emissions (continued)		
305-1 Direct (Scope 1) GHG Emissions	Provide a base year for the calculation, if applicable, including: <ul style="list-style-type: none"> • The rationale for choosing it. • Emissions in the base year. • The context for any significant changes in emissions that triggered recalculations of base year emissions. 	SAS completed a Life Cycle Assessment (LCA) in 2017; therefore the base year for the calculations was also 2017. The emissions in the base year for scope 1 were: 604,797 metric tons CO ₂ .
	Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source.	SAS used emission factors from 40 CFR Part 98 Subpart C: General Stationary Fuel Combustion and Subpart I: Electronics Manufacturing.
	Consolidation approach for emissions; whether equity share, financial control, or operational control.	SAS has a Thermal oxidizer onsite to reduce emission from Volatile Organic Compounds (VOCs)
305-2 Indirect (Scope 2) GHG Emissions	Provide a gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO ₂ equivalent.	Water consumed: 840.83 CO ₂ e Natural gas consumed: 2448.40 CO ₂ e Electricity: 0.0 CO ₂ e - SAS' energy consumed on 2018 was 100% from wind renewable source 2018 Total Emissions Scope 2: 3,289.23 CO ₂ e
	If applicable, gross market-based energy indirect (Scope 2) GHG emissions in metric tons of CO ₂ equivalent.	N/A
	If available, the gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.	N/A
	Provide the base year for the calculation, if applicable, including: <ul style="list-style-type: none"> • The rationale for choosing it. • Emissions in the base year. • The context for any significant changes in emissions that triggered recalculations of base year emissions. 	SAS completed a Life Cycle Assessment (LCA) in 2017; therefore the base year for the calculations was also 2017. The emissions in the base year for scope 1 were: 532,631.97 metric tons CO ₂ .
305-2 Indirect (Scope 2) GHG Emissions	Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source.	Various sources including: Association from Gas Alliance, City of Austin — 2010 GHG Inventory Report, eGRID 2017, Austin Community Recycling and Disposal Facility, data for 2016 from EPA FLIGHT dB Municipal solid Waste in Texas: A Year in Review, and FY 2016 Data Summary and Analysis.
	Provide a consolidation approach for emissions; whether equity share, financial control, or operational control.	NA (Property boundary)

GRI 305 Emissions (continued)

305-3 Other Indirect (Scope 3) GHG Emissions	Provide a gross location-based energy indirect (Scope 3) GHG emissions in metric tons of CO ₂ equivalent.	2,692,459 CO ₂ e
	If applicable, gross market-based energy indirect (Scope 3) GHG emissions in metric tons of CO ₂ equivalent.	NA
	If available, the gases included in the calculation; whether	NA
	Provide the base year for the calculation, if applicable, including: <ul style="list-style-type: none"> • The rationale for choosing it. • Emissions in the base year; • The context for any significant changes in emissions that triggered recalculations of base year emissions. 	SAS completed a Life Cycle Assessment (LCA) in 2017; therefore the base year for the calculations was also 2017. The emissions in the base year for scope 3 were: 2,740,233 CO ₂ metric tons CO ₂ .
	Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source.	Emission factor source for scope 3 was Office of Transportation and Air Quality, EPA-420-F-18-008, March 2018.
	Provide a consolidation approach for emissions; whether equity share, financial control, or operational control.	NA (gate to gate)
305-5 Reduction of GHG Emissions	GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO ₂ equivalent.	The GHG emissions for scope 2 emissions were reduced. GHG Emissions for 2017 Scope 2 were 534710.7 CO ₂ e, and 2018 Scope 2 were 3289.23 CO ₂ e. There was a reduction of 99.4% of the GHG emissions for Scope 2, due to the change over to 100% renewable energy.
	Gases included in the calculation; whether CO ₂ , CH ₄ , N ₂ O, HFCs, PFCs, SF ₆ , NF ₃ , or all.	NA
	Base year or baseline, including the rationale for choosing it.	Samsung Austin did a lifecycle assessment in 2017; therefore, this year was selected as the baseline.
	Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3).	Emissions were not reduced in Scope 1. Emissions were reduced in Scope 2 and 3.

GRI Questionnaire Appendix

(continued)

306-2 Waste by type and disposal method		
<p>306-1 Water discharge by quality and destination</p>	<p>Total volume of planned and unplanned water discharges by:</p> <ul style="list-style-type: none"> • Destination. • Quality of the water, including treatment method. • Whether the water was reused by another organization. 	<p>The total volume of planned water discharge was 1,880,781,559 gal in 2018. There were no unplanned discharges in 2018.</p> <p>The destination of planned water discharge was City of Austin (COA) - Walnut Creek wastewater treatment plan as noted in SAS' Permit.</p> <p>The treatment methods include precipitation through chemical addition, and copper ion exchange.</p> <p>Rainwater and Outside Air (OA) condensate from air handling unit are used for irrigation. No recycling or reuse of wastewater.</p> <p>954 million gallons of Ultra Pure Water (UPW) was reused by SAS in 2018.</p>
<p>306-2 Waste by type and disposal method</p>	<p>Total weight of hazardous waste, with a breakdown by the following disposal methods where applicable:</p> <ul style="list-style-type: none"> • Reuse • Recycling • Composting • Recovery, including energy recovery • Incineration (mass burn) • Deep well injection • Landfill • On-site storage • Other <p>Provide the total weight of non-hazardous waste, with a breakdown by the following disposal methods where applicable:</p> <ul style="list-style-type: none"> • Reuse • Recycling • Composting • Recovery, including energy recovery • Incineration (mass burn) • Deep well injection • Landfill • On-site storage • Other 	<ul style="list-style-type: none"> • Reuse: NA • Recycling: 23,087 tons • Composting: NA • Recovery, including energy recovery: NA • Incineration (mass burn): 137 tons • Deep well injection : NA • Landfill: 622 tons • On-site storage: NA • Other: NA <ul style="list-style-type: none"> • Reuse: 8,049 tons • Recycling: NA • Composting: 230 US tons • Recovery, including energy recovery: NA • Incineration (mass burn): NA • Deep well injection : NA • Landfill: 433 tons • On-site storage: NA • Other: NA

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