

ENVIRONMENT

PROTECTING OUR
PLANET THROUGH
INNOVATIVE PRODUCTS
AND OPERATIONAL
EXCELLENCE

60% GHG Emission
(Scope 1 & 2)
Reduction Target
Set for 2030

Undertook Formal
Physical Climate
Risk Assessment

Expanded
Tool Repair/
Refurbishment
Program

Environment

ENVIRONMENTAL MANAGEMENT STRATEGY

Our strategy focuses on clean technology innovation, decarbonization and circular economy.



MATERIAL TOPICS

Climate Change [P.52](#)

Resources, Materials and Waste [P.60](#)

Sustainable Products [P.66](#)

Protecting our planet is critical for the long-term environmental sustainability of our communities and business.

Our approach to environmental sustainability is closely tied to our quest for innovation. Since our early days, we have aimed to embed disruptive technologies into our products, delivering cordless, battery-powered alternatives and energy-efficient options. TTI is not only committed to managing our impacts across our product range but also our global operations and value chain. We accomplish this by conserving resources, maximizing efficiencies and prioritizing innovation. By setting clear targets that keep us accountable and encouraging everyone — employees, suppliers, customers and communities — to do things differently, we strive to lead and effect positive change.

Environmental Management

Understanding that environmental sustainability is fundamental to the achievement of our long-term success, TTI has long been committed to fully integrating an environmental strategy into our business. All our manufacturing sites have comprehensive Environmental Management Systems (EMS) in place, and are compliant with ISO 14001 EMS and 9001 quality standards. We focus our efforts through our strategic drivers of Innovative Products and Operational Excellence for impact. Our approach to increasing transparency and accountability throughout our value chain is outlined in the sections below on Climate Change, Resources, Materials and Waste and Sustainable Products. To ensure

all our business units (BUs) are unified in implementing continual improvement and sustainability practices, we have established a number of key policies, procedures and accountability mechanisms at the global level.

TTI's ESG Executive Committee is responsible for setting our environmental management strategy based on the material topics identified, with oversight provided by the Board of Directors. The Committee, Environmental, Health Safety (EHS) Functions and BU leaders are tasked with identifying and providing resources needed for implementing our EMS and ensuring that the importance of achieving our EMS targets is understood by all relevant employees. They also monitor and evaluate the progress of systems and define the responsibilities of each department to further improvements in performance.

In addition, our ESG Working Committee, global EHS teams and EMS committees oversee the development and implementation of awareness-raising and training programs for employees. Training on EHS is delivered to all relevant employees through both e-learning and in-person sessions. In 2021, 103,317 employees were trained on EHS.*

* This figure includes those who left the Company as of Dec 31, 2021.



Environmental Manual

TTI's Environmental Manual meets the ISO 14001:2015 standard requirements, including legal compliance. It outlines the framework for setting and reviewing environmental objectives and targets and describes our leadership's commitment to improving our environmental performance. The Environmental Manual also sets out our Safety and Responsibility Policy covering Quality System Assurance (QSA) and EHS functions, including those pertaining to the prevention of pollution and incidents, along with the conservation of resources. It is consistently updated to reflect evolving environmental management guidelines.

In addition to the Manual, we are also guided by a number of standard operating procedures (SOPs) that cover the topics in the table below, and are established to outline procedures for complying with all applicable legal requirements.

Standard Operating Procedures

- **Chemical Management** – ensures the transport, storage and use of chemicals effectively prevents the accidental release of chemicals, fire or explosions
- **Waste Collection and Disposal** – identifies the process for recycling materials, and disposing unrecyclable and hazardous waste (including medical waste)
- **Water Pollution Management** – outlines the management of wastewater discharge, treatment and recycling to meet discharge standards
- **EHS Objective, Target and Program Management** – comprises documented EHS objectives, targets and programs to achieve our commitment to pollution prevention and continual improvement
- **Emergency Preparedness and Response** – ensures proper coordination and control in emergency situations to minimize loss and impact, and prevent or reduce adverse environmental impacts that may occur

These procedures are complemented by Management/Operating Instructions on chemical handling. For more information, please see the section on Chemicals on p.60-61 [📄](#).

Managing our Impact

All our operations met all applicable compliance requirements in 2021. For a full list of legal and regulatory requirements that have the potential to have a significant impact on our operations and performance, please refer to Appendix A of our HKEX ESG Reporting Guide Content Index on our website [📄](#). Enhancing the measurement of our environmental impact remains a vital aspect of our environmental management effort; detailed data on our progress can be found in the Performance Metrics on p.100 [📄](#) of this Report. Any stakeholders who are concerned with our environmental practices are encouraged to report issues through the grievance mechanisms described in the Ethics and Integrity section of this Report [📄](#).

Key Environmental Priorities

Our priority in 2021 has been to manage our footprint by accelerating our course towards decarbonization. This effort is supported by the implementation of circularity practices across our operations and value chain. We have also embarked on a comprehensive exercise to analyze the risks and opportunities we face due to climate-related impacts.



DECARBONIZATION

Our decarbonization pathway will reduce Scope 1 and 2 GHG emissions by 60% by 2030 as compared to 2021.



CIRCULARITY

We are integrating circularity models in our designs and choice of materials to turn waste into valuable inputs in our product life cycle.



CLIMATE RISK ANALYSIS

We have commenced a detailed analysis to identify the physical and transition risks and opportunities that climate change poses on our business.



SPOTLIGHT

OUR PATH TO DECARBONIZATION

Target-setting Approach and Roadmap

In response to a global shift towards achieving net zero emissions by 2050 following the Paris Agreement, TTI has set a Scope 1 and 2 emissions reduction target to demonstrate our commitment and create a roadmap to drive our decarbonization efforts. We have followed best practice guidelines and methodologies, including the Science-based Targets initiative to support our goals and implement a robust action plan.

To determine our pathway, we first mapped our Scope 1 and 2 GHG emissions. Following this and to determine how far we could drive down emissions by 2030, we conducted market research, a series of internal interviews across our BUs and assessments of energy efficiency opportunities and renewable energy availability. While the assessments showed that focusing on energy efficiency was the priority, we also considered various measures, and proposed the following other options to our regional BUs:

- Onsite renewable energy

- Offsite renewable energy
- Fleet hybridization and electrification
- Energy Attribute Certificates (EAC)
- Carbon offsets

As part of the process, we completed a comprehensive energy audit of all manufacturing sites in the PRC and chose 2021 as our baseline to have a more complete and accurate baseline. We also provided decarbonization guidance to BUs across all regions, requesting them to conduct their own internal energy audits, to assure the assessments were accurate and complete. Understanding that operations in different regions are unique, the regions proposed their own internal targets within the GHG reduction program. By shifting our allocation of resources to support a mix of measures, our Group target was set at 60% reduction of our Scope 1 and 2 GHG emissions by 2030 compared to our 2021 baseline.

Our Strategy

A 60% reduction of Scope 1 and 2 GHG emissions compared to 2021. Upon careful assessment, we have determined that the main contributors to achieving this will be:

- Energy efficiency
- Onsite solar photovoltaics
- Offsite renewable energy procurement such as green tariffs, green power procurement and Power Purchase Agreements in key markets
- Energy Attribute Certificates (EAC), where other options are not available
- Electric vehicle conversion
- Operational improvements

As our business involves providing energy-consuming products to end-users, our Scope 3 emissions are a significant part of our footprint. In 2021, we started expanding our mapping of Scope 3 emissions, including those from raw materials, capital goods, transportation as well as employee commuting, and we are now finalizing the assessment of emissions arising from the usage and the end-of-life treatment of sold products. As a next step we intend to set Scope 3 targets in line with the Science-based Targets methodology to achieve net zero emissions as soon as possible.

60%↓

REDUCTION IN GHG EMISSIONS (SCOPE 1&2) BY 2030

Main Contributors to Achieving our Reduction Target

- 1 Energy efficiency
- 2 Onsite solar photovoltaics
- 3 Offsite renewable energy procurement
- 4 Energy Attribute Certificates (EAC)
- 5 Electric vehicle conversion
- 6 Operational improvements



MATERIAL TOPIC

Climate Change

Understanding the effects of the changes in the climate related to increased heat, drought, coastal flooding and others, and what these mean for business, society and ecosystems, allows us to formulate climate actions and strategies that mitigate risk and build resilience.



How We Are Managing It

The impacts of climate change are ever increasing, making the need for a cohesive climate resilient strategy imperative. As outlined below, we have undertaken a holistic and comprehensive approach, based on research, science, technology and market realities, to develop our strategy for climate action.

Energy and Emissions

Managing our emissions is an important aspect of our carbon reduction strategy. Our manufacturing processes, transportation, office operations and supply chain are all sources of air and GHG emissions¹. These are emitted when fossil-fuel based combustion processes are used to generate electricity for manufacturing, heating and cooling, lighting and building management systems, and to operate cars, trucks and other small machinery. In addition, we use fluorinated gases, such as R-404a, as refrigerants.

As part of our decarbonization program, we have reviewed our Scope 1, 2 and 3 GHG emissions: Scope 1 emissions arise from onsite operations and company-operated vehicles; and Scope 2 result indirectly from

purchased electricity; and Scope 3 emissions arise from the materials we purchase, business travel, upstream and downstream transportation, waste generation, water consumption and also downstream sources such as energy utilized to operate our products. In this past year, we have mapped out a decarbonization pathway with concrete plans to reduce Scope 1 and 2 GHG emissions by 60% by 2030 as compared to 2021. We are also striving to address our wider Scope 3 emissions beyond our direct operations through various initiatives such as circular economy practices. TTI's approach to circularity initiatives implemented and the overall strategy going forward can be found on p.72 [📄](#). More detail on our journey to decarbonization can be found in the Spotlight on p.50 [📄](#).

Energy management is key to our strategy as increased production requires higher levels of energy input. Maximizing efficiency is our priority and an essential step to reducing our emissions. Energy-efficiency measures include timely maintenance of air-conditioning, heating, ventilation and building management systems, along with

the utilization of LED lights, setting lighting levels based on occupancy and availability of natural light and implementation of energy management systems. Renewable energy production and procurement is also an important element of our energy management plans. There are four levels in our energy strategy:

- Energy efficiency
- Renewable energy production
- Renewable energy procurement
- Fleet electrification

We will continue to ensure that new manufacturing sites include environmental considerations such as energy efficiency, use of renewable energy and water conservation in the design and construction of buildings, as well as systems and equipment.

Diversification

Another way that we reduce GHG emissions and manage climate risk is by diversifying and localizing our manufacturing and supply chains. Through diversification, we are able to source and produce goods closer to market, reducing the transportation required and thereby the emissions generated. This also

allows us to build closer ties with new markets as we engage local suppliers. In this way TTI strives to work with business partners around the globe to upgrade environmental and safety standards across our value chain. In addition, we can contribute to local community development, creating a positive impact on their economies, living conditions and educational prospects.

Climate Risk Analysis

To further build our resilience, we have put significant effort into understanding the risks that climate change poses on our business. Working with experts in the field, we have looked at both physical risks affecting key sites and the transition risks we will face, to inform our risk management and strategic planning processes moving forward. This

analysis was conducted in line with the HKEX's "Guidance on Climate Disclosures" (November 2021)² and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

The physical climate risk analysis entailed modelling the impacts of eight acute and chronic physical risks under three future climate scenarios. This analysis was conducted on 13 key TTI sites across five global markets. A map of TTI key manufacturing sites can be found on p.54 [📄](#). Following the completion of this analysis under all climate scenarios, a portfolio- and asset-level financial analysis was run. This took into consideration potential financial losses from physical asset damage and potential business interruptions (i.e. operational losses). Markets and specific

assets were ranked and prioritized in terms of their financial climate value-at-risk (CVaR) to TTI. Preliminary analysis determined that for the identified portfolio, TTI is the most exposed to acute climate events such as typhoons, storm surges and flooding from rainfall and river expansion, and will be impacted by chronic events such as extreme heat.

We also conducted a detailed transition risk analysis to identify the risks and opportunities involved with transitioning to a low-carbon economy. The analysis was conducted under the following climate scenarios published by the International Energy Agency (IEA)³:

- Net Zero Emissions by 2050 Scenario (NZE), which is a stringent pathway; and
- Stated Policies Scenario (STEP), which is a business-as-usual pathway.

GOALS

- Become a net zero organization

- Ensure full compliance with climate-related frameworks and regulations

- Implement a climate adaptation and resilience strategy

TARGETS

- Reduce Scope 1 and 2 GHG emissions by 60% by 2030
- Set energy consumption reduction targets

- Full disclosure on climate action performance and plan

- Conduct a climate risk assessment of both physical and transition risks on all key sites

1 Air emissions include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulphur oxide (SO_x), fine particulate matter (PM) volatile organic compounds (VOC), hazardous air pollutants (HAP) and hydrochlorofluorocarbon (HCFCs).

2 HKEX's "Guidance on Climate Disclosures" https://www.hkex.com.hk/-/media/HKEX-Market/Listing/Rules-and-Guidance/Environmental-Social-and-Governance/Exchanges-guidance-materials-on-ESG/guidance_climate_disclosures.pdf?la=en

3 IEA's World Energy Outlook 2021 at <https://www.iea.org/topics/world-energy-outlook> as of February 2022.

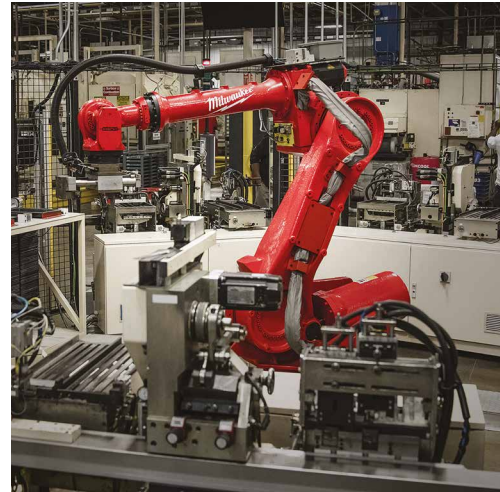
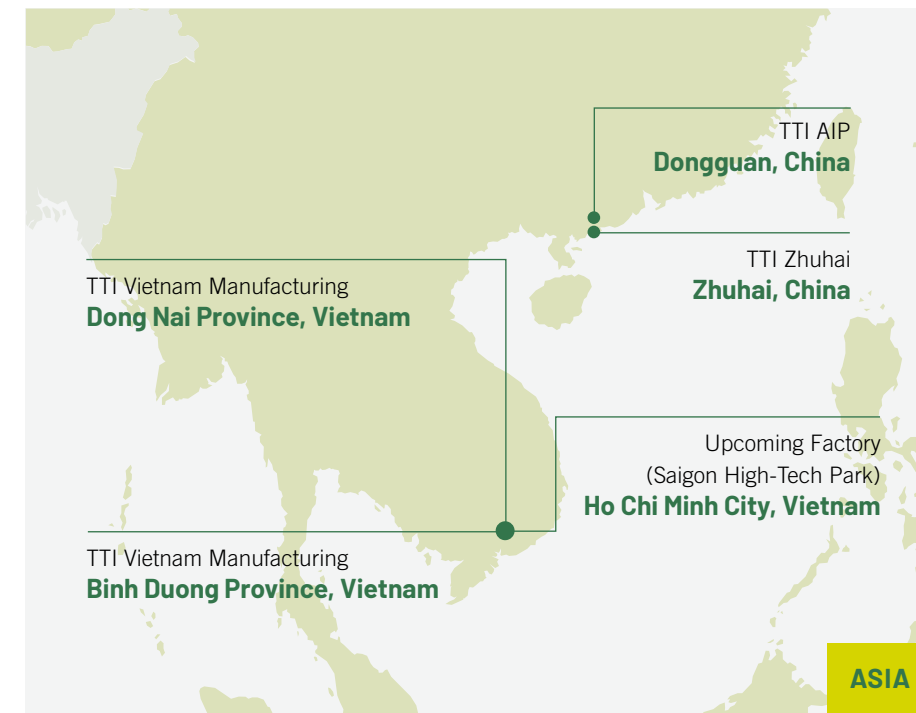
Key Global Manufacturing Sites



Based on the selected scenarios, government policies and standards as well as market and technology trends were reviewed to identify a list of transition risks and opportunities. They were further prioritized according to their impacts to TTI's business and operations and are as follows:

- **Increased carbon price.** Carbon pricing mechanisms through carbon taxes or emission trading systems and emerging carbon regulations will be introduced to all operating markets. This will increase expenditure for compliance or enhancement of energy efficiency in operations.
- **Introduction of energy efficiency labels.** More mandatory energy-efficiency product labeling schemes will be implemented in markets. As a result, the cost of product development will be increased due to efficiency testing requirements.

- **Increased demand for energy-efficient products, electrification and switching to low-carbon sources.** Higher energy prices will drive demand for efficient products. Households will also be less reliant on oil and gas to meet their energy needs, thanks to efficiency improvements and electrification. Increased investment in product research and development may be required. We see this risk as an opportunity to gain further reputation and market share while meeting customer's expectations.
- **Rise of electric mobility.** Adoption of electric heavy trucks will increase, and the supply of internal combustion engine (ICE) cars and vans will cease. As a result, the cost of purchasing or replacing electric vehicles will increase.





▶ KEY INITIATIVES AND PROGRESS IN 2021

Energy Management

Progress in energy management in 2021 is outlined below.

Energy Audits

Comprehensive energy audits were conducted at our main sites in the People's Republic of China (PRC) and the United States of America (USA). We investigated usage of alternative energy sources and energy-saving opportunities, with emphasis on finding short-payback measures and many major scale savings through assessments at individual manufacturing plants. This process included site inspections to assess operations, support machinery and maintenance activities. In the PRC, over 20 energy-efficiency measures were identified and will be implemented as part of our decarbonization program. In the USA, a number of energy efficiency measures were identified and will be implemented in the next few years.

Regenerative Testing

Our Milwaukee Tool business develops a number of battery and battery charger products every year. To guarantee the reliability and longevity of the products, a comprehensive development process has been established. Every stage of development is supported by relevant testing procedures, utilizing significant sample sizes, testing times and specific testing applications. To minimize the impact of the testing on energy consumption, our PRC Milwaukee Test Lab has developed dedicated test systems based on regenerative electronic loads. As a result of this technology, up to 92% of the energy needed to validate and qualify the products can be recovered. In 2021 alone, this newly designed testing system generated a net energy saving of 69,000 kWh over 62,000 test cycles with the potential to generate much more in years to come.

Energy Efficiency

In addition, our BUs took the following steps to decrease emissions and improve energy efficiency in 2021:

- Installing LED lights and light sensors in meeting rooms and offices
- Turning down heating, ventilation and air conditioning (HVAC) when not in use, resealing windows and updating equipment for energy and noise reduction
- Monitoring the status of air compressors through a mobile application, allowing for the regular shut down of the compressors, resulting in expected savings of 82,125 kWh of electricity per year at TTI AIP

- Replacing air compressors with two power saving permanent magnet frequency conversion air compressors
- Replacing a 37 kW air pump at a wastewater treatment station with a 30 kW air suspension pump, resulting in a 20% saving in electricity, equivalent to 126,144 kWh per year
- Installing time-controllers for 46 sets of extractor fans resulting in potential electricity saving per year of 171,648 kWh and for 36 sets of extractor fans in production workshops with a potential electricity saving of 181,440 kWh per year
- Implementing a duct system combined with fans to evacuate the heat generated from chillers in buildings, reducing the energy required to cool the building in summer and to heat the building in winter at Milwaukee Tools

Going forward at TTI AIP, the following initiatives will be implemented while additional steps are under review:

- Turning off unnecessary overhead lights in production workshops to save 518,400 kWh of electricity every year
- Removing the exhaust fan in air compressor rooms and improving the exhaust pipe
- Regularly checking air filters in compressor rooms to avoid drops in pressure and replacing air outlet filter elements
- Reducing the use of compressed air by interlocking the air nozzle of printing machines in the paint shop
- Improving the lamp control circuit of our research and development (R&D) center to save 96,250 kWh of electricity every year

Renewable Energy

We continued to assess the generation of onsite renewable energy through solar photovoltaic panels at a number of our manufacturing sites. Implementation will start in 2022 at our main manufacturing site in the PRC and we are working on the implementation of other onsite renewable energy programs in Vietnam, Europe and the USA. In addition, we have assessed different offsite renewable energy procurement opportunities such as Power Purchase Agreements, green tariffs as well as green procurement and renewable energy certificates.

Initiatives focused on renewable energy included:

- Replacing streetlights with solar lights saving 52,385 kWh of electricity per year at TTI AIP. In 2022, we are planning to do the same in our second largest factory in PRC
- Transitioning from the electricity grid to renewable energy in EMEA and American markets
- Planning to install PV solar panels on the rooftop of TTI AIP
- Planning to implement 1,111 solar panels (7.4 ft long, 3.7 ft wide) in Mexico in 2022, with the expectation of saving an estimated 337 tonnes of CO₂ per year
- Applying to the Tennessee Valley Authority to begin procuring renewable energy at the Olive Branch distribution hub
- Working toward procuring renewable energy for all Wisconsin based Milwaukee Tool locations

SPOTLIGHT

Renewable Energy

With renewable energy procurement being a key measure in our decarbonization pathway, we have initiated both onsite and offsite projects.

Solar Energy in the PRC

We are preparing to install solar rooftops at our facilities in the PRC and are now in the final stages of selecting an external partner for this project. Our aim is for our first installation at our main location in Dongguan in 2022 with all phases scheduled to be completed by 2026. The total area covered by solar panels will be over 120,000 sqm, generating an estimated 13.92 MWh of energy by 2027 for TTI AIP, which represents 18% of the electricity consumed at this location in 2021.

Green Energy in the USA

We are also pursuing an offsite project in the USA to help meet our target. Our Milwaukee Tool BU engaged experts at their main energy provider, WE Energies, to perform energy audits at all locations in Southeastern Wisconsin. After review of their projected consumption, Milwaukee Tool entered into a green energy commitment with WE Energies that provides 100% renewable energy at all Southeastern Wisconsin Milwaukee Tool locations. The agreement commenced in February 2022 and makes Milwaukee Tool one of the early adopters of the Energy for Tomorrow program.



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**ENERGY-EFFICIENCY
MEASURES
IDENTIFIED IN PRC**



TTI's total energy consumption in 2021 amounted to 424,677,328 kWh. This was 25% higher than 2020 figures due to higher levels of production to meet demand. However, TTI saw a decrease of energy consumption intensity of 7% based on sales value US\$ million over 2020.

At TTI AIP, the total energy consumption was at 91,633,162 kWh in 2021, this increased by approximately 14% over the previous year, however, intensity decreased by 15%.

Air and GHG Emissions

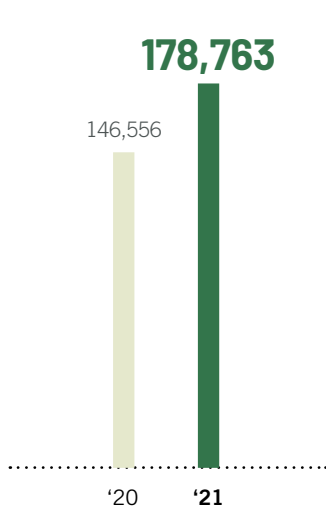
In 2021, TTI did not have any incidents of non-compliance with air emission regulations. Our GHG emissions (Scope 1 and 2) totaled 178,763 tonnes of carbon dioxide equivalent

(tCO₂e), an increase of 22% in absolute emissions and a decrease of almost 9% in intensity based on sales value US\$ million over 2020. This increase in absolute emissions was due to growth in the business and the expansion of our footprint to support this. In 2021, we continued monitoring air emissions. We have assessed which air pollutants are produced, and at what level at the applicable sites. The results show that these air emissions are not significant.*

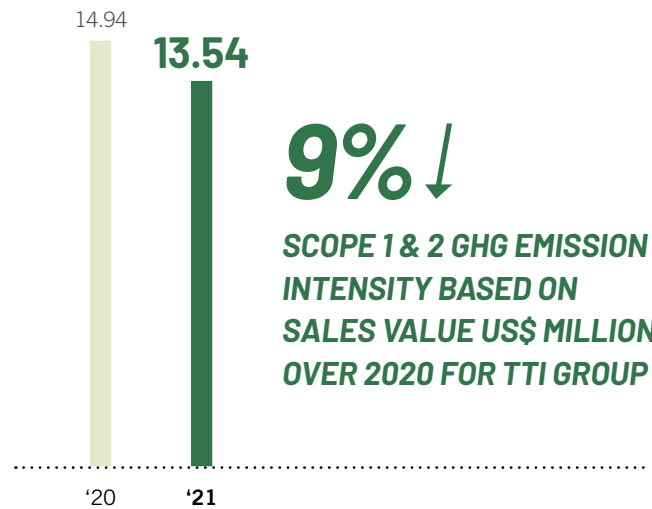
TTI AIP GHG Emissions

In 2021, TTI AIP's total GHG emissions (Scope 1 and 2) totaled 54,735 tCO₂e, an increase of 13% in absolute emissions and a decrease of 16% in intensity based on sales value US\$ million over 2020.

Total Scope 1 & 2 GHG Emissions (tCO₂e)



Total Scope 1 & 2 GHG Emissions Intensity (tCO₂e per sales revenue, US\$ million)



* Total volume of air emissions in 2021.

i. Nitrous Oxides (NOx): 2,098 kg
 ii. Sulphur Oxides (SOx): 135 kg

iii. Volatile organic compounds (VOC): 5,617 kg
 iv. Hazardous air pollutants (HAP): 2,965 kg

v. Particulate matter (PM): 4,027 kg
 vi. Hydrochlorofluorocarbon (HCFCs): 233 kg

Building Certifications

We continue to strive to reduce impact on the environment. Accordingly, a number of our global locations that consist of leased and owned properties have been or are in the process of being certified in Leadership in Energy and Environmental Design (LEED), the WELL Building Standard and other sustainability building standards.

TTI NA is LEED EBOM-Gold Level certified. TTI Anderson is a Energy Star Partner (USEPA) and working towards WELL Building certification for the Innovation Center and LEED Operations for our campus. TTI Canada has earned a BOMA Gold Certificate of Excellence and TOBY Building of the Year and is BOMA Best, Energy Star, WiredScore and FitWel certified. TTI Australia has been awarded 4 Star, Green Star Performance by the Building Council of Australia, while TTI Vietnam is targeting LEED Gold certification.

TTI VIETNAM: A CLOSER LOOK

Our new factory, which will commence operating in Ho Chi Minh City, Vietnam in 2023, is designed to be energy- and resource-efficient and will be certified to LEED Gold. A number of sustainability features and measures are being adopted at this new Ho Chi Minh site, including:

- Parking designed for bicycles and electric cars to encourage green transportation
- Installing both a shaded roof and light-colored pavements with high solar reflectance index to combat the heat island effect
- Designing effective landscape lighting by eliminating excessive uplights to reduce light pollution
- Rehabilitating the site's landscaping with native and climate-adapted vegetation, thereby requiring 55% less water for irrigation and simultaneously enabling workers to connect with nature, reducing stress and enhancing wellbeing
- Reducing indoor water consumption by 40% with low-flow sanitary fittings activated by motion sensors

- Reducing total energy consumption by 25% through demand-tailored design that adopts insulated glazing units, roof insulation, efficient chillers with high Coefficient of Performance, a variable-speed drive integrated ventilation system, and photo and motion sensors controlled lighting with timers to not only ensure users' comfort but also minimize consumption
- Designing indoor environments and systems according to the ASHRAE55 standard for guaranteed thermal comfort
- Contributing to healthy air quality by designing the production facility's ventilation system according to the ASHRAE62.1-2010 Standard with dust filters at the entrances and selecting low-emitting materials for fit-outs with audited environmental product declarations
- Adopting sustainable construction practices, including erosion control, waste management, and indoor air quality controls for construction workers' safety
- Planning for material recycling and reuse





MATERIAL TOPIC

Resources, Materials and Waste

The long-term sustainability of our business is dependent on the responsible consumption of resources and materials and proper management of waste. We need a robust approach to maintaining healthy ecosystems, our natural capital and the safety of colleagues, business partners and communities.



How We Are Managing It

TTI remains committed to reducing our consumption of natural resources, utilizing materials responsibly and ensuring the safe management of unavoidable waste. We prioritize R&D projects that employ cutting-edge technology, equipment and systems to conserve, recover and reuse wherever possible.

Natural Capital – Water and Biodiversity

Natural ecosystems provide a variety of renewable and non-renewable resources that our business depends on. One such resource is water. All of TTI's water needs are met locally by municipal sources, and we remain compliant with all local regulations on water withdrawal and wastewater discharge as per our SOP on Water Pollution Management, without any issue in sourcing water that is fit for purpose. Our water management strategy is focused on the efficient usage of this shared resource and the proper oversight of wastewater discharge. We aim to reduce our absolute water withdrawal every year. Particularly in places where water is scarce, we closely monitor usage and implement conservation initiatives throughout our operations.

Our water reduction methods vary by BU. Some common practices include using recycled water for flushing, collecting rainwater for gardening and cleaning outdoor areas, carrying out regular inspections to check for hidden water leakage along buried water pipe networks and installing motion sensors and timer-controlled taps on washbasins.

We also endeavor to promote water conservation projects with partners and NGOs. Together with our NGO partners, we provide access to safe water and sanitation training in the communities where we operate. As the COVID-19 pandemic continues, clean water and hygiene remain essential. More details on these programs can be found in the Community Investment and Engagement section of this Report [\[2\]](#).

Apart from water, our wider ecosystems that support air and soil quality, as well as species and habitat diversity, must be safeguarded. To this end, we are working to restore and protect biodiversity both within our business and through our suppliers, customers and consumers. This means going beyond resource conservation to implement careful

material selection and sourcing and to adopt renewable energy as well as design products and processes for circularity. By prioritizing sustainable materials and clean technology, we strive to manage our footprint and reduce our impact on habitats and species throughout our value chain.

Chemicals

As with all other materials, our aim remains to reduce the use of chemicals and hazardous substances in our value chain. Chemicals that are unavoidable are managed through internal policies shaped by the strictest industry regulations. Our SOP on Chemical Management outlines the various responsibilities of individual departments in ensuring the safe handling of chemicals. This includes the purchasing, transport, storage and usage of hazardous and non-hazardous substances. It also covers emergency response in the event of leakage, contamination or fire and provides relevant data sheets, regulations and procedure documents.

TTI is diligent about meeting all industry requirements including REACH (Registration, Evaluation and Authorization of Chemicals),

a regulation of the European Union (EU) that addresses the production and use of chemical substances as well as their potential impacts on both human and environmental health. This regulation requires that all companies manufacturing or importing chemical substances into the EU in quantities of one tonne or more per year, register these substances to the European Chemicals Agency (ECHA). We also adhere to the Restriction of Hazardous Substances (RoHS) requirements in Europe and parts of Asia, as well as the Toxic Substances Control Act (TSCA), US EPA Clean Air Act and Internal Revenue Code in the USA. Our production processes avoid the use of REACH's substances of very high concern wherever possible, and verification testing for RoHS substances is conducted by our in-house laboratories. At the start of all our projects, any potentially hazardous components are identified as part of our risk analysis and suppliers must provide test reports through TTI-approved, third-party certified laboratories to verify the safety of these components and finished products. Test reports are maintained in a database.

Waste

For waste that cannot be avoided, we are working to set global reduction targets. Across our markets, building management facilities provide recycling and disposal options for hazardous and non-hazardous waste. In addition, we always ensure that licensed professionals collect hazardous waste for safe disposal. We have comprehensive waste management guidelines with training provided to our employees on the correct handling of waste. Guidelines are outlined in our SOPs on Waste Collection and Disposal. Our EHS teams are responsible for ensuring offices have the appropriate resources to comply with all policies and regulations. To improve our management, we continue to monitor waste types and quantities. We also conduct internal audits of our management processes and periodically work with third-party auditors to review these.

We are expanding our partnerships with a number of organizations and recyclers. This not only diverts waste from disposal, but also establishes circular economy practices for the capture and reuse of valuable resources. More information on

our initiatives can be found in the Circular Economy section on p.72 [\[2\]](#) and in our Spotlight on FUTURE FORWARD on p.65 [\[2\]](#).

Material Management

Choosing materials that are reusable, recyclable and less harmful for the planet continues to be a priority. Our R&D teams are focused on utilizing sustainable materials whenever possible and at all stages of our product life cycle. To come up with innovative ways to approach materials, in the PRC we also dismantle surplus products and items used for reliability testing to assess the components for suitability of reuse or recycling. In line with our circularity strategy, we maintain our partnerships with recyclers that have patented a technology to recover valuable materials from products.

Packaging and Paper

Packaging materials remain a key challenge as our global production volumes increase. The bulk of our packaging includes paper for boxes, cartons and die cut sheets, and plastic for polybags, bubble bags, clamshells and tool bags. We are constantly looking to reduce the amount of materials to conserve

GOALS

- Ensure the responsible consumption of resources across our business
- Improve waste treatment and efficient waste management
- Implement programs for biodiversity protection and restoration

TARGETS

- Achieve a water consumption reduction target of 6% per year at our PRC factory site
- Set a Group waste and water reduction target by 2023
- Increase the number of material management programs and facility development plans that consider biodiversity impacts



resources and make transportation more efficient. We do this by opting for reduced-impact materials and biodegradable options, including corrugated cardboard, 70% of which is made of recycled paper pulp, honeycomb board, chipboard, paperboard and/or molded pulp. We continue our programs to remove Expanded Polystyrene (EPS) foam from our packaging, implement soya ink printing and reduce packaging material weight. We also reduce the use of polybags by replacing polybag packaging for batteries with biodegradable bags and substituting paper bags for polybags that hold manuals, leaflets and accessories.

Management of paper is important; we continue to use 100% recycled paper and reduce the page count of instruction and safety manuals. We also reduce volume by applying new templates featuring condensed, simplified content, more graphics as well as decreased paper weight.

Batteries

Battery materials have long been a key focus of our environmental efforts. By designing our rechargeable battery packs to be interchangeable within each product network, we have been able to stem excess consumption, production and wastage. More detail on our interchangeable battery network can be found in the section on Clean Technology on p.68.

KEY INITIATIVES AND PROGRESS IN 2021

Our approach to natural resources, materials and waste management in 2021 was centered on assessing our consumption practices and setting reduction targets.

Water

Our Dongguan site in the PRC (TTI AIP) is our biggest water consumer, mainly due to the use of water at workers' dormitories. In 2021, we conducted a water audit at this site and proceeded to set reduction measures and a water withdrawal reduction target of 6% per year compared to our 2021 baseline.

In the reporting period, there were no incidents of non-compliance with water management regulations across our operations. TTI's total water consumption amounted to 433,413 m³, a 28% increase from the previous year due to growth in the business and the expansion of our footprint to support this. Total water discharge produced amounted to 1,283,204 m³, an increase of 21%, when compared to 2020. Consumption of recycled water was 253,316 m³, an increase of around 16% from the previous year. TTI Group's water consumption intensity decreased by 5% based on the sales value US\$ million compared to 2020.

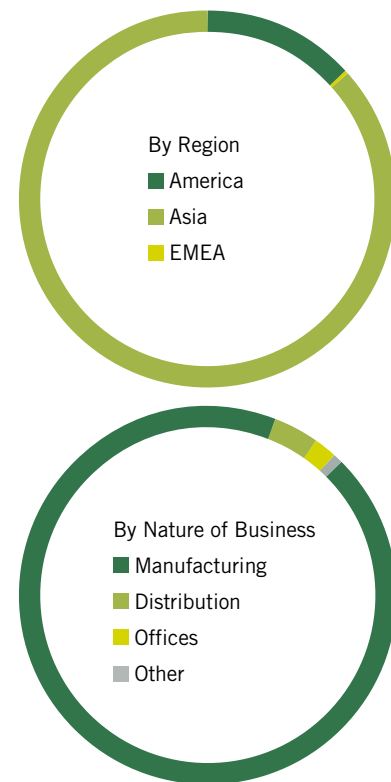
TTI AIP Water

TTI AIP's water consumption amounted to 378,638 m³, this was a 27% increase from the previous year due to growth in the business. Total discharge produced amounted to 853,924 m³, an increase of 14%. Consumption of recycled water was 252,066 m³, an increase of 15% from the previous year. In 2021, we committed to enhancing the insulation of hot water pipes, installing water saver shower heads and faucet water savers in our workers' dormitories to conserve resources.

The estimated annual water savings from these measures will be 76,050 m³, representing a 6% reduction in consumption compared to the baseline year of 2021.

433,413 m³
TOTAL WATER CONSUMPTION IN 2021

Water Consumption in 2021



Biodiversity

In 2021, we strived to manage our biodiversity impacts through various programs and partnerships. We partnered with organizations such as Responsible Minerals Initiative (RMI) and Responsible Business Alliance (RBA), that are working across different industries to promote sustainable procurement of minerals and metals, including from an environmental and biodiversity protection standpoint. We also worked with NGOs such as African Parks to conserve critical ecosystems; detail on this project can be found in the Spotlight on African Parks on p.99. Through engagement with multi-stakeholder entities like these, we hope to effect positive change and expand environmental accountability globally.

Looking forward, our individual BUs are also striving to invest in projects that safeguard our natural ecosystems. Milwaukee Tool plans to distribute saplings in 2022 as part of a tree-planting initiative in the state of Wisconsin, USA. Milwaukee Tool Middle East has committed to planting 100 trees in 2022 at a certified forest in Madagascar every time an end-user purchases a product from its MX FUEL range across the Middle East, Africa and South Asia regions. With a target of 20,000 trees during the five month campaign, the equivalent offset will amount to more than 1,000 tonnes of CO₂.

Chemicals and Waste

In this reporting year, we implemented a program for relevant suppliers to complete a survey on ozone-depleting substances (ODSs) and ozone-depleting chemicals (ODCs) to understand the type and amount of these materials used in supply chain.

To better manage waste, in 2021 we initiated a global assessment and implemented the following initiatives:

- Providing recycling training for employees and working with trade associations to develop content on proper recycling of our products
- Implementing programs for recycling, including for paper, cardboard, scrap metal, bottles and cans, plastic, oil, wood pallets, lightbulbs, printer cartridges and toners and food waste
- Utilizing electronic filing systems to save paper where possible
- Recycling batteries and power tool skins to recover materials such as steel, copper and aluminum, which are then returned to the manufacturing sector to produce mixed metal dust
- Participating in government initiatives for the safe disposal of WEEE electrical equipment

There were no incidents of non-compliance with waste management regulations. TTI produced 56,689 tonnes of non-hazardous waste and 1,181 tonnes of hazardous waste in 2021. Our overall hazardous waste increased by 45%, this was due to growth in the business and the expansion of our footprint to support this. Total recyclable waste increased by 45% compared to 2020.

TTI AIP

At TTI AIP, non-hazardous waste generation increased by 64% and hazardous waste increased by 146%. Total waste intensity increased by 23% based on sales value US\$ million in 2021 compared to 2020. Total recyclable waste increased by 70% compared to 2020.

Material

In 2021, we continued ongoing efforts to reduce material consumption, adopt reduced impact alternatives and further reuse and recycling, with substantive progress made on circular economy initiatives.

Packaging and Paper

In 2021, TTI saw an increase of 21% in packaging used compared to 2020. Total packaging used was 72,913 tonnes, out of which 64,518 tonnes were recycled materials. Packaging measures that resulted in significant environmental benefits as well as cost savings for our business in 2021 included:

- Replacing our EPS foam trays across 65 models with degradable paper trays, avoiding 72 tonnes of plastic and 428 tonnes of CO₂e per year
- Further implementing half-sleeve packaging designs for 114 models that resulted in savings of 89 tonnes of paper, equivalent to 2,148 trees*. This avoided 95 tonnes CO₂e and the consumption of 2,595 tonnes of water
- Redesigning our clamshell packaging for dual battery packs by placing the batteries on the top and bottom instead of side-by-side, thereby eliminating 15 tonnes of plastic and avoiding 68 tonnes of CO₂e each year
- Reducing over 300 tonnes of outer corrugate packaging and over nine million polybags
- Reducing product packaging size, replacing materials with environmentally-responsible alternatives and increasing the shipping capacity of products
- Implementing a recycling initiative for brown paper towels

* Ecoinvent Swiss life cycle data set for 2022 <https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2016-introduction/sources/timber/conversion-factors/>



Batteries

We have robust partnerships in place with organizations that help us increase the rate of capture and recycling of our batteries. As part of the recycling process, batteries are broken down into components and chemistries. For our lithium batteries, the metal cylindrical can components are reused in steel and stainless steel products and lithium, cobalt and other materials are reused in new battery chemistries. 95% of all materials in a lithium-ion rechargeable battery are recyclable.

We have made significant strides with our partners, Call2Recycle® in North America, Envirostream in Australia and New Zealand and Stiftung GRS Batterien in EMEA and other partners globally.

TTI and Call2Recycle® Partnership

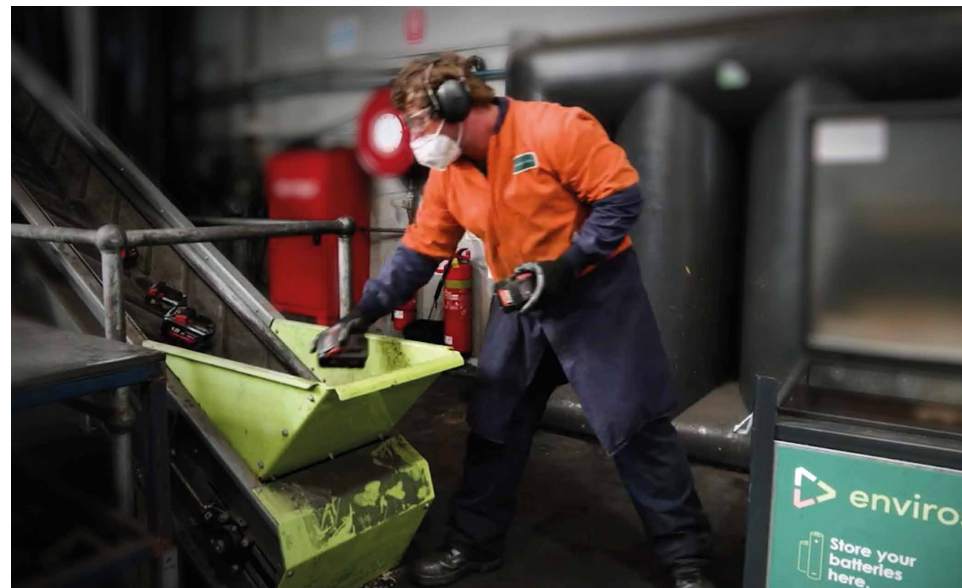
TTI has partnered with Call2Recycle® for over 20 years to ensure that our batteries and products containing batteries are responsibly recycled when they reach their end of life.

Call2Recycle®'s North American network has over 16,000 collection sites, including local household hazardous waste sites and national retailers where consumers can drop-off their batteries for recycling. TTI has also implemented a number of recycling incentive schemes in partnership with Call2Recycle®. These have included issuing battery safety and recycling guides and a safe battery disposal video to customers, developing infographics showing end-users the impact of battery recycling over the years and creating a pilot 'at home' recycling kit for online battery purchases through retailers. TTI pays stewardship fees to Call2Recycle® based on North American battery and battery product sales.

95%
RECYCLABLE MATERIALS
IN LITHIUM-ION
RECHARGEABLE
BATTERY

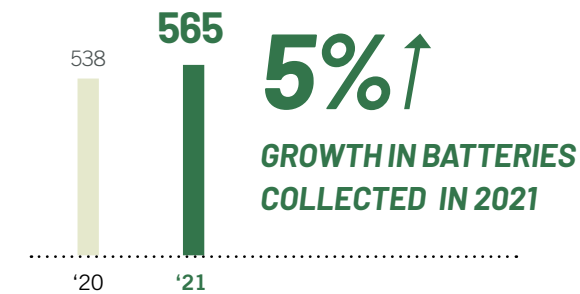
call2recycle®
Leading the charge for recycling.™

Recycled by
envirostream



In 2021, we collaborated with partners to collect and recycle more than 565 tonnes of batteries. Compared to the previous year, this represents an increase of 27 tonnes or 5%.

Batteries Collected and Recycled (tonnes)



Milwaukee Tool was once again designated as a Top 100 Leader in Sustainability for diverting more than 89 tonnes of batteries through the Call2Recycle® battery collection and recycling program. In addition they provided an at-home battery recycling solution with Call2Recycle® sending 1,892 recycling kits directly to customers.

Our battery recycling efforts are a key part of our circularity program. For more details on our approach to product end-of-life impacts, please see the Circular Economy section on p.72 [📄](#).



SPOTLIGHT



Leveraging Brand Power to Drive Sustainability

In 2021, our Milwaukee Australia BU partnered with local recycling partner Envirostream to launch FUTURE FORWARD™. Going beyond simply making battery recycling available to users, the new initiative involves a targeted campaign that seeks to leverage our Milwaukee Australia brand and embed sustainability into our identity.

We chose to work with Envirostream as it had established a first-of-a-kind in Australia, environmentally safe lithium-ion battery recycling facility. By processing onshore, Envirostream is adding value back into the Australian manufacturing sector and growing the local sustainability industry by creating jobs — a factor that was identified as important to our users.

Following state-level pilot programs tested in the previous year, Milwaukee launched nationwide retail collection units in June 2021. We also identified key clients and executed several pick-ups at job sites. At the nationwide launch in June, the campaign collected 20 kg of batteries. The volume continued to increase month on month and by November, monthly collections reached 76 kgs of lithium-ion. Currently, the team is using collection data to gauge market reception of the program. Looking forward, the FUTURE FORWARD™ team aims to tailor the next phase of marketing and communications about the project to be more targeted towards different facets of the market. The ultimate goal of the campaign is to fully integrate FUTURE FORWARD™ into the Milwaukee brand and cement battery recycling as part of our central value proposition to users.



MATERIAL TOPIC

Sustainable Products

Investing in clean technologies, and creating products with sustainability attributes that are reliable, repairable, recyclable and reduce our overall environmental impact, help to mitigate our business risks and build stakeholder trust as we strive to create shared value for people and the planet.



How We Are Managing It

Innovation is embedded in TTI's cultural DNA. We have been designing energy efficient products for decades, starting with battery technology as early as 1994. In subsequent years, we have also developed products that generate low-carbon emissions and reduced noise while in use, as well as LED lights.

Research, Development and Design

With environmental impact being a key consideration of our product design principles, various teams across the Group have been collaborating to create a Sustainable Design Guide for our products. The Guide utilizes information from life cycle assessments that have been conducted on our key product categories since 2018 as

well as GHG footprint analyses. It will allow us to develop more products that meet EHS objectives while aligning with the principles of circular economy.

A range of checklists are also being continuously developed to provide guidance on the principles of sustainability and circular economy. These will help our associates make the right decisions when it comes to the choice of raw materials and the use of resources and substances of concern in the concept and manufacturing phases.

Our design process considers reliability, durability, repairability, refurbishing and recycling aspects that are further explored in the section on Circular Economy on p.72 [📄](#).

▶ KEY INITIATIVES AND PROGRESS IN 2021

Our business units continue to integrate environmental attributes into all aspects of design, impacting our sourcing, planning, manufacturing and post sales management. Initiatives in 2021 included:

- Incorporating recycled materials where possible in plastic, cardboard and metal components
- Striving to reduce the size and the number of parts and components in products
- Ensuring all key product categories undergo life cycle assessment
- Eliminating silk screen printing for logos on tools to save materials and costs
- Removing unwanted magnet trays in DIY drills to save materials
- Reducing the size and weight of tools without compromising on performance to reduce transportation emissions and material consumption

🔄 GOALS

- Promote circular business models by increasing service, repair, maintenance and refurbishment services
- Increase investment in clean technologies
- Develop products that improve living and working environments

✅ TARGETS

- Increase the number of tools being remanufactured, repaired and/or refurbished
- Increase the number of tools and batteries recycled
- Increase product efficiency
- Increase the number of products that reduce noise pollution
- Reduce/eradicate outdated technologies (petrol, pneumatic, hydraulic-powered products)

Product Development Framework (4Ds)



Product Design Principles (3Ps)



Safety
Resource, Material and
Chemical Management



Manufacturing and Product Use
Distribution



Life Cycle Extension
Repairability
Material Recovery

Clean Technology Products

Our investment in sustainable design features is showcased in our range of cleantech products. The products fall under the following categories.

Energy-efficient Products

One of our latest products featuring advanced technology is our line of brushless tools. Brushless motors are more efficient than brushed motors as they reduce mechanical energy loss due to friction. Brushless motors provide a longer product lifespan than carbon brushes. These motors also have advanced features that produce more power in compact sizes, resulting in smaller tools and increased run times with more efficient energy production.

1 POWERSTATE BRUSHLESS MOTOR

- MILWAUKEE designed and built brushless motor



M18 FUEL



2 REDLINK PLUS INTELLIGENCE

- Most advanced electronic system on the market for maximum performance
- Total system communication with overload protection increases tool life



3 REDLITHIUM BATTERY PACK FITS M18 TOOLS

- Most durable pack on the market
- Over 2X more recharges than leading competitor
- Fuel gauge displays remaining charge
- Operates below -18°C/ 0°F



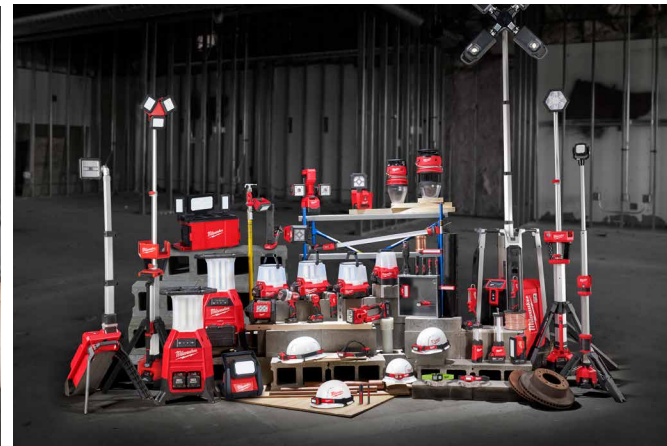
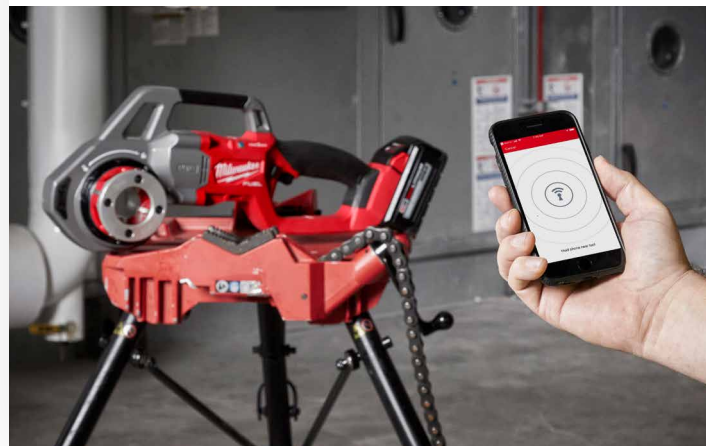
Smart, Digital Solutions

Our ONEKEY collaborative tool and platform is offering digitalized tools and equipment. By engineering smart tech in the best tools, the system provides tool tracking and security, enabling workers to dial in precision settings, view utilization data,

and be alerted before equipment needs repair. This initiative streamlines inventory management with a digital catalog, enabling more efficient management of tool usage and maintenance to promote product longevity and overall productivity.

LED Lights

TTI has also been focused on developing a line of LED lights as they are more efficient, have a longer life span and consume less power while providing brighter lighting for end-users than regular lights.



Batteries and Battery Systems

Another cleantech initiative is our battery technology. The key feature of this technology is removability and compatibility, allowing batteries and tools from a previous generation to be used with newer products. As a result, the same battery pack can be used with all the tools of each network, including:

- 251 tools for the MILWAUKEE M18 system
- 139 tools for the MILWAUKEE M12 system

- 13 tools for the MILWAUKEE MX FUEL system
- Over 260 products for the RYOBI 18V ONE+ system
- Over 75 products in the RYOBI 40V System

TTI's battery technology provides efficient storage and fade-free power. Our multi-use battery pack continues to improve in performance and efficiency due to consistent upgrades. Many of our batteries also have additional functions such as a

display showing the remaining charge available, and the ability to withstand sub-zero temperatures.

In addition, this technology provides a portable power supply, replacing generators and gas-powered generators in particular. Being cordless, this solution enhances product safety by eliminating the potential of tripping on tangled or knotted cords and other dangers posed by cut or unplugged cords at work sites. It can be used anywhere, there is no more noise at job sites and neighbourhood and no more fumes.

TTI Cordless Battery Systems





Reduced Noise Pollution

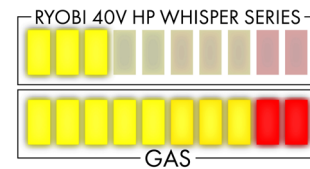
In the Outdoor Products business segment, we have developed innovative noise-reducing technology that tackles the inherent problems of noisy outdoor petrol-powered products. Awareness of this harmful issue is growing as local governments are increasingly enacting legislation restricting the use of loud and pollutive petrol powered outdoor equipment.

Since 2019, the RYOBI product and engineering teams have been focused on developing innovative, high performance products that deliver all the performance without the noise. Debuting in cordless blowers, the RYOBI WHISPER SERIES line of products was developed to provide users with an alternative to traditional noisy

petrol-powered products. Since inception, the product line has expanded into multiple categories where a reduction in noise benefits the end-user.

The WHISPER Product Line has now grown to over 19 products, including lawn mowers, blowers, string trimmers, fans, saws, pressure washers, snowblowers, and tillers. This WHISPER family is the only line of products on the market today, specifically engineered to deliver best in class performance without the noise. A team of dedicated engineers optimize product performance while focusing on tonality, pitch, and dB output. The team utilizes advanced noise dampening foam, strategic motor placement, and innovative advanced concepts to remove sound from traditionally loud products.

In 2021, RYOBI launched a core product in the WHISPER system, the 40V HP Brushless WHISPER SERIES Blower. This new tool is the industry's most powerful cordless handheld blower, delivering an impressive 730 CFM and 190 MPH airflow. In addition to the power, this blower features innovative noise reduction technology, operating at only 57 decibels, so users can clear leaves at any time of day.



Up to 85%
QUIETER THAN GAS



Reduced Emissions

To manage our scope 3 emissions, our strategy is to further expand our efforts in reducing the GHG emissions and carbon footprint of our products and in particular the emissions generated from products while in use.

TTI has continued to transform outdoor power equipment from petrol to battery-powered. Our strategy is to improve the performance of outdoor products while eliminating carbon emissions and reducing noise. Our outdoor power equipment products emits less carbon emissions and other type of GHG emissions while in use and provides a better use experience for our customers.

In 2021, usage of consumer electric string trimmers, blowers, walk-behind and riding mowers* sold in the USA resulted in total savings of 86,633 metric tonnes of CO₂e*, which is equivalent to driving a large passenger vehicle 218,217,932 km. This is equivalent to driving the iconic US Highway Route 66 60,599 times.†

CO₂e
Savings of
86,633 tCO₂e
IS EQUIVALENT TO DRIVING
US ROUTE 66: 60,599 TIMES†

- * Assumptions:
- Average CO₂e gram per year is from US EPA Database of certification data
 - Usage is based on an internal estimate/consensus
 - Average current during use is based on an internal estimate
 - Nominal voltage for 10S lithium/6*4S lead acid
 - Charger efficiency from CEC 24 hour charge test
 - Industry average for CO₂ generated per kWh

† ecoinvent LCA database v3.7.1 (2020.12.17). Transport, passenger car, large size, petrol, EURO 5 (GLO) market for I APOS, S.

SPOTLIGHT

Cordless vs Gas Powered Products

Consumer power equipment

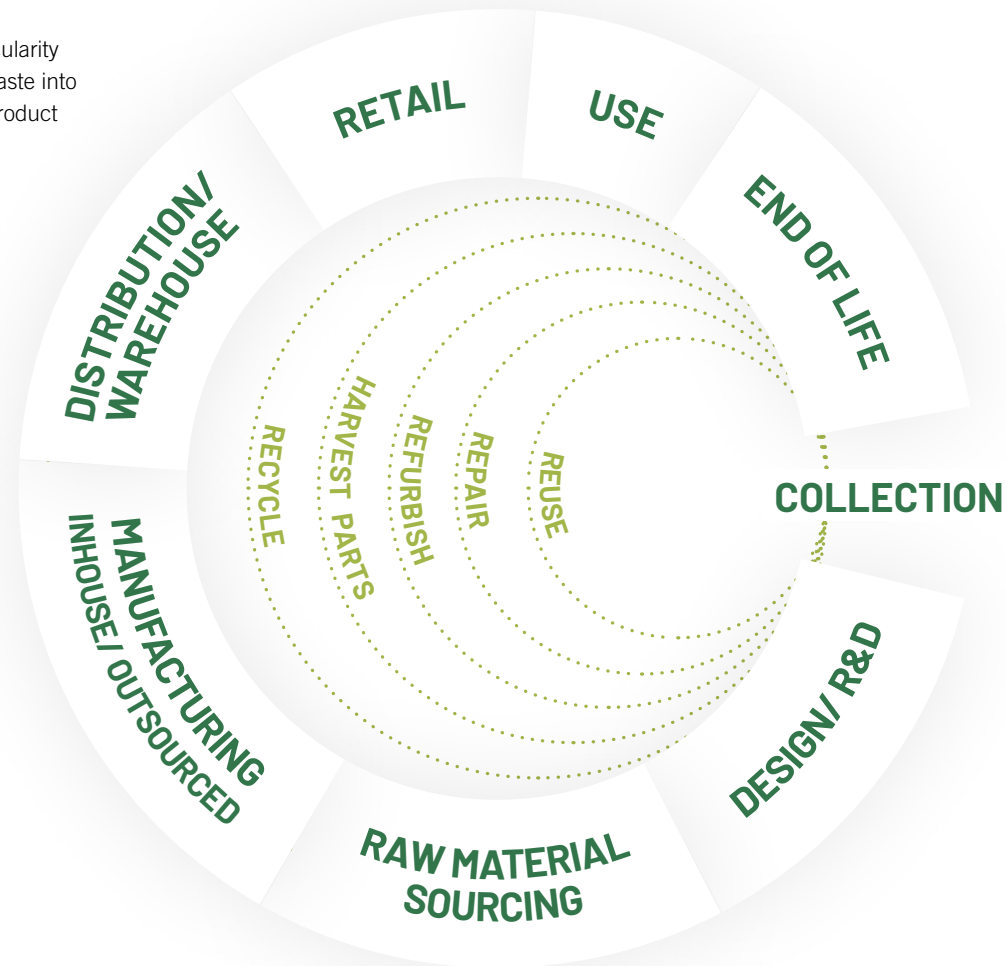
Another line of our products that emit less GHG emissions while in use, include the RYOBI cordless lawn mowers and outdoor power tools. We performed an analysis on our cordless lawn mowers conducted by an independent expert. The results showed that there is a reduction of 8% in the GHG emission footprint of the cordless lawn mower when looking purely at the products, namely as a result of their materials, manufacturing and assembly. However, an indicative scenario of 500 uses of the two products yielded different results. Testing showed that after 500 uses, the RYOBI Cordless Lawn mower had a significantly reduced GHG emission footprint, approximately 166% or 2.6 times lower than the gas-powered lawn mower equivalent.

-166%
A SIGNIFICANTLY LOWER
CARBON EMISSIONS
FOOTPRINT



Circular Economy

Our teams strive to integrate circularity models in our business to turn waste into valuable inputs throughout our product life cycle.



Our product design processes also take into account circular economy features. Circular economy is a systems solution framework based on three key principles: eliminating waste and pollution to reduce GHG emissions across the value chain, circulating products and materials to retain their embodied value and regenerating nature. This framework decouples economic activity from the consumption of finite resources by embedding resilience into its design.

At TTI, we understand that the opportunities for retaining and capturing value in our upstream and downstream operations are equally or even more significant than simply creating value from transforming raw materials and sub-assemblies into sellable products. By pursuing a direction that is steeped in circular models and designs, TTI will be able to maintain and push our cordless leadership.

While reducing resource consumption through repairing, reusing and refurbishing is our priority, we also pursue efforts aimed at harvesting parts, recycling and promoting

circularity in our operations and along our value chain. Our operations together with our research, development and design teams are striving to integrate circularity models in our design and choice of materials to turn waste into valuable inputs in our product life cycle.

As of 2021, a total of 2,448 repair and servicing centers that are owned by TTI or operated by third parties have been established across all our markets, thereby enhancing the following circularity initiatives:

Repairing

We ensure a high level of reparability in our tools, which can be repaired at local service centers.

> 900,000

TOOLS REPAIRED IN 2021

Reusing

We continuously assess products and components for possible reuse in the value chain.

Refurbishing

Our reconditioning program extends the longevity of our products without affecting quality. This is accomplished by prioritizing the reparability and refurbishment of what we put to market. Some of our refurbished products were sold through our 39 Direct Tool Factory Outlets in the USA, with a one-year warranty. To prepare refurbished products for consumer use, careful assessment of all components, including batteries and chargers, is carried out to check for mechanical issues. Manufacturer-trained technicians then complete repair work using replacement parts from TTI's factory. Testing is also conducted to verify that all standards are met. 80% of the original product can be reused.

> 400,000

TOOLS REFURBISHED IN 2021

Harvesting Parts

We retain value from returned, discarded products and utilize these parts for repairing and servicing products when possible, without compromising the quality of our products.

Recycling

We implement recycling initiatives within our own ecosystem to form a closed-loop system where possible. An example of this is our battery recycling global partnerships described on p.64-65 [📄](#).

565 tonnes

BATTERIES RECYCLED IN 2021

