

TTI AIP: Electricity consumption was reduced by 18% per USD million of production value

TTI HK: 7% reduction in greenhouse gas (GHG) intensity per employee

TTI AIP: 22% reduction in GHG intensity from 2017 (tonnes of CO<sub>2</sub>e per USD million production value)

TTI Canada reduced air emissions by 4% by switching to more efficient engines for its workforce vehicles

Eliminated all plastic packaging bands in our operations

# Environment

## Overview and Highlights

TTI is a product manufacturer that utilizes a wide range of base materials. Responsibly managing our environmental impact is therefore a substantive priority, not only in the manufacturing process but throughout the life cycle of our products and across our value chain. Our goal is to minimize negative environmental impact and provide industry leadership through responsible sourcing and the innovative use of materials, long-term product planning, manufacturing, research and development, attention to how people interact with our products, and establishing systems for battery recycling.

We are committed to ensuring that our operations and those of our suppliers are in compliance with all relevant legal and regulatory requirements related to environmental practices that have the potential to have a significant impact to our operations and performance. These include but are not limited to PRC Environmental Protection Law, PRC Atmospheric Pollution Prevention Law, PRC Water Pollution Prevention Law, PRC Environmental Noise Pollution Prevention Law, PRC Prevention and Control of Environmental Pollution by Solid Wastes Law and PRC Prevention and Control of Soil Pollution Law. For a full list of significant legal and regulatory requirements, please refer to Appendix A of our HKEX ESG Guide Content Index on our website.

In this section, we present the environmental performance data of all our manufacturing sites, with the exception of our new facilities in Vietnam and the Czech Republic, and of other plants and offices where identified.

## Environmental Management

We adopt industry best practices and constantly look for ways to improve on them by enhancing our environmental and hazardous substance management system<sup>2</sup> and endeavoring to produce defect-free products to reduce waste. Our manufacturing sites in Asia have a number of policies and procedures relating to the environment, including energy and greenhouse gas inventory management. We invest in new technology and equipment that improve the environmental performance of our facilities, ensuring that our operations not only adhere to local laws and regulations but also meet the high expectations of our customers. We actively set environmental management objectives and targets to better measure and improve our performance, and invest in raising the awareness and skills of our people.

<sup>&</sup>lt;sup>2</sup> Our manufacturing process is certified to ISO 9001 and QC 080000 for quality, health, safety, environment and social responsibility management.

# Our key goals include:

- 1. Reduction in GHG emissions
- 2. Reduction in energy consumption and adoption of renewable energy
- 3. Increase the volume of battery collection and recycling
- 4. Require suppliers to collect environmental data
- 5. Reduction in GHG emissions in the supply chain
- 6. Reduction in water consumption at TTI's operations and in the supply chain
- 7. Reduction in packaging material at TTI's operations and in the supply chain



In 2018, we continued to enhance our environmental strategy across the Company with the following priorities:

## TTI AIP Electricity and Natural Gas Consumption

	Electricity			Natural Gas		
	Consumption (kWh)	US\$ million production value	Intensity (kWh per USD million production value)	Consumption (m <sup>3</sup> )	US\$ million production value	Intensity (kWh per USD million production value)
TTI AIP (2018)	64,946,273	2,692	24,127	595,410	2,692	221
TTI AIP (2017)	60,357,750	2,062	29,278	541,990	2,062	263
TTI AIP (2016)	57,961,443	1,759	32,943	527,692	1,759	300
Changes in % (2018 vs 2017)	8%	31%	-18%	10%	31%	-16%
Changes in % (2017 vs 2016)	4%	17%	-11%	3%	17%	-12%

Electricity Consumption of TTI Manufacturing, R&D and Assembly Plants Globally (excluding TTI AIP, TTI Vietnam Manufacturing TTI Czech Republic and Milwaukee Tool – Brookfield)

Electricity Consumption of TTI Sales,	Marketing and R&D Offices
and Headquarters by Region	

Electricity	consumption	(kWh)
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	Electricity consumption (kWh)
TTI Zhuhai	8,171,580
DreBo	9,137,262
Empire	5,743,800
Milwaukee Tool	37,306,619
TTI PE	17,995,938
Total	78,355,199

Total	11,992,509
North America (including TTI FC NA, Milwaukee Tool – Brookfield)	5,179,624
Europe (including France, Iberia, Germany, Eastern Europe)	946,552
Australia & New Zealand (including five offices and warehouses of TTI ANZ)	5,244,211
Asia (including TTI HK, TTI Macao, TTI Taipei, TTI Taichung, TTI Thailand, TTI Philippines, TTI Korea)	622,122

#### **Data Collection and Audit**

Measuring environmental performance data continues to be challenging as TTI has many facilities around the world and an expanding geographical presence year on year. We continue to improve both the collection process and quality of our data and, whenever possible, we engage with external parties in the process.

In 2018, TTI AIP audited its environmental performance data as well as its ISO 14001 Environmental Management System (EMS), which has been audited since 2011. In Germany, TTI GmbH, TTI ELC GmbH, TTI Germany GmbH conduct energy assessments every four years, applying the EN 16247-1:2012 guideline. The last audit took place in 2015 for 2014 energy consumption.

#### **Energy Consumption**

Given the critical, global need to reduce GHG emissions and to mitigate and adapt to the impact of climate change, TTI is committed to consume energy efficiently and to explore and adopt less polluting and renewable sources of energy.

Reducing absolute energy consumption at a factory level is challenging as our production volumes continue to grow, so we focus on improving efficiency. At TTI AIP, our biggest production factory, consumption intensity of both electricity and natural gas per million USD of production value reduced by 18% and 16%, respectively. However, total electricity and natural gas consumption increased 8% and 10%, respectively, due to increased production volume. Our increased efficiency is due, in large part, to the Continuous Improvement Program (CIP). In 2018, a total of eight projects were implemented under the CIP, including upgrading water pumping systems, installing filter screens in 792 sets of indoor air-conditioning (AC) units, shutting down air compressors during lunch time, and improving our compressed air supply installation. We reduced our electricity consumption by 695,364 kWh (~1% of 2018 consumption), thereby avoiding 347 tonnes of  $CO_2$  equivalent GHG emissions and saving a total of US\$362,000 in operating costs.

In Canada, new light duty trucks were purchased with a stop/start feature installed to reduce fuel consumption while idling. A total of emission reduction of 4% was reported. In TTI FC NA, motion sensor lighting was installed in all warehouses, restrooms, conference rooms and offices.

DreBo has taken steps to reduce its energy consumption, including replacing old cooling units and installing new compressors with heat recovery systems to supply heating for the facility. A new project to capture geothermal energy is underway.

We will continue to review the energy performance of all our facilities and to seek opportunities to reduce energy consumption.

### Global Manufacturing Footprint



## Air and GHG Emissions

Minimizing and responsibly managing air emissions is a priority. Throughout TTI's business, air and GHG emissions arise from energy consumption for office operations, transportation and our manufacturing processes.

Air emissions include carbon dioxide ( $CO_2$ ), methane ( $CH_4$ ), nitrous oxide ( $N_2O$ ), sulphur oxide (SOx) and fine particulate matter (PM) emitted from cars, trucks and other small machinery, and from combustion processes to generate electricity for manufacturing,

lighting and building management systems, and heating and cooling. Fluorinated gases, such as HCFC-22, R-410a and R-404a are also consumed as refrigerants.

In 2018, TTI AIP's Scope 1 and 2 GHG emissions increased by 12% and 0.5% respectively due to an increase of production value by 31%. Due to the CIP effort to reduce energy consumption in our operations, emission intensity reduced by 22% from 2017. This is the second year of reduction in emission intensity since 2016.

## TTI AIP GHG Emission Data<sup>3</sup>

	Scope 1 (tonnes of CO2e)	Scope 2 (tonnes of CO₂e)	Total Emissions (tonnes of CO₂e)	USD Million Production Value	Intensity (tonnes of CO₂e per USD million production value)
TTI AIP (2018)	7,790	54,341	62,131	2,692	23
TTI AIP (2017)	6,968	54,075	61,043	2,062	30
TTI AIP (2016)	6,779	51,928	58,707	1,759	33
Changes in % (2018 vs 2017)	12%	0.5%	2%	31%	-22%
Changes in % (2017 vs 2016)	3%	4%	4%	17%	-11%

<sup>3</sup> TTI AIP calculated its GHG emissions based on ISO 14064 -1:2006



Scope 1 TTI AIP direct GHG emissions, include:

GHG Emissions of TTI Manufacturing and Assembly Plants Globally (excluding TTI AIP, TTI Vietnam Manufacturing, TTI Czech Republic and Milwaukee Tool – Brookfield)

	Scope 1 and 2 GHG Emissions (tonnes of CO <sub>2</sub> e)
TTI Zhuhai	5,868
DreBo	6,260
Empire	3,620
Milwaukee Tool (excluding Imperial Blades for Scope 1)	27,967
TTI PE	23,393

#### GHG Emissions of TTI HK

-	Scope 1	Scope 2	Scope 3⁵	Total	Intensity per employee	
TTI HK (2018)	123	194	25	342	0.8	
TTI HK (2017)	115	202	29	346	0.9	
Changes in %	+7	-4	-14	-1	-7	

## CHC Emissions (tonnos of CO o)

In our Hong Kong headquarters, the emission intensity per employee has reduced by 7% due to the implementation of various energy reduction measures, including applying power controls for lighting, fan-coil units to be turned off after office hours and maintaining the office temperature to an optimal level to minimize energy use.

In France, our vehicles have switched from diesel to gasoline, emitting less toxic emissions, like NOx.

The sales, marketing and R&D office of Milwaukee Tool-Brookfield recorded a total of 72 and 3.254 tonnes CO<sub>2</sub>e for Scope 1 and 2 emissions, respectively, while TTI ANZ generated 2,241 tonnes of Scope 2 emissions.

In six of our offices<sup>4</sup> in Asia, Scope 2 GHG emissions totaled 139.6 tonnes of CO<sub>2</sub>e and Scope 3 emissions totaled six tonnes of CO<sub>2</sub>e. For Canada, Scope 1 emissions totaled 2,838 tonnes of CO<sub>2</sub>e and 652 for Scope 3 emissions.

TTI is working on expanding its disclosure of GHG emissions to include other sales and marketing offices in the future.

## Water Management

With growing global concerns over water scarcity, consuming water efficiently and maximizing its beneficial use are increasingly important. Water for all TTI locations is sourced from local municipalities, and we have not experienced any issues with water sourcing.

We actively identify opportunities to improve water management. At TTI PE, water-efficient fixtures are installed in all new construction projects and filtering stations are being installed to encourage the use of reusable water bottles over single-use bottles. At our

Water Consumption of TTI Manufacturing and Assembly Plants (excluding TTI Vietnam Manufacturing and TTI Czech Republic and Milwaukee Tool – Brookfield)

	Mater consumption (m )
TTI AIP	1,050,000
TTI Zhuhai	62,400
DreBo	2,309
Empire	625
Milwaukee Tool	2,742
TTI PE	4,410

Water Consumption (m<sup>3</sup>)

TTI FC NA facility, we use water in the process of cooling injection molding machines and to wash parts in the refurbishing operation. Injection molding coolant water is in a closed-loop system so there is no discharge. The refurbishing operation uses water mixed with a biodegradable cleanser that can be disposed of into the municipal sewer system for treatment.

At TTI AIP, our largest facility, we consumed more than one million m<sup>3</sup> water in 2018. We invested in technology to enable wastewater recycling to reduce consumption of fresh water and to reduce wastewater discharge to the municipal sewage system. A total of 131,000 m<sup>3</sup> of water was reused at AIP in 2018.

All of our operations are in compliance with regulatory requirements for water usage and wastewater discharges and we are actively improving our management of water consumption and wastewater discharges.

4 Includes sales and marketing offices for TTI Macao, TTI Korea, TTI Taichung, TTI Taipei, TTI Thailand and TTI Philippines.

Scope 3 GHG emissions include methane generation at landfill due to disposal of paper waste, GHG emissions from electricity used for fresh water processing by the Water Supplies Department and GHG emissions from electricity used for sewage processing by the Drainage Services Department.

		Non-hazardous Waste		Hazardous Waste
	Quantities (tonnes)	Intensity (tonnes per million USD)	Quantities (tonnes)	Intensity (tonnes per million USD)
TTI AIP 2018	14,900	5.5	122	0.045
TTI AIP 2017	7,239	3.5	120	0.058
TTI AIP 2016	8,077	4.6	70	0.04
Changes in % (2018 vs 2017)	+106	+57.6	+2.0	-22
Changes in % (2017 vs 2016)	-10	-24	71	45

### TTI AIP Non-hazardous and Hazardous Waste

In addition to managing our own water consumption, we also ensure that any legacy issues at the sites that we operate at are addressed. TTI PE continues to contribute to the Anderson and Pickens community by aggressively addressing legacy environmental issues created by previous owners of properties. To reduce risk to the community, all issues are currently contained and the cleanup is well underway. Since 2016, over 1,890 million liters of groundwater have been treated.

## Material Management

As a manufacturer of consumer products, it is our goal to reduce material consumption and waste production in our production process as well as our product packaging. Where waste production is unavoidable, we hire licensed handlers to dispose of our waste.

#### Waste Management

Our operations at different locations have their own mechanisms for handling hazardous and non-hazardous waste, depending on local laws and regulations and building management procedures regarding the disposal of materials.

The majority of our facilities' office and building management services provide separate bins for recyclables and properly dispose of non-hazardous and hazardous waste through local providers. Operations that generate hazardous waste have scheduled pick-ups by licensed haulers for safe disposal. We are working toward a method to track the types of waste disposed of by our business units. DreBo generated 2,767 tonnes of non-hazardous waste and 91.6 tonnes of hazardous waste in 2018.

TTI Zhuhai generated 513 tonnes of non-hazardou waste and 9.63 tonnes of hazardous waste, equivalent to 45.75 tonnes and 0.86 tonnes per million pieces of product, respectively.

In all our facilities, we recycle our waste wherever possible. At TTI PE, 1,292 tonnes of metal, 2,213 tonnes of cardboard, 1.5 tonnes of e-waste, 0.26 tonnes of lamps and ballasts and 35 tonnes of concrete were recycled in 2018.

At TTI FC NA, both hazardous and non-hazardous waste were collected by a licensed waste hauler. All hazardous waste is recycled and certification is provided to TTI with a record of its arrival to the recycling facility. Non-hazardous waste was sent to landfill and a total of 198 tonnes was produced in 2018.

In 2018, TTI AIP almost doubled its non-hazardous waste generation due to increases in production and in product testing, while hazardous waste intensity decreased by 22%.

#### **Battery Recycling Program**

TTI is a leader in the design and manufacturing of lithium ion batteries, and our batteries are designed to be interchangeable within each brand to reduce battery waste. To further reduce battery waste, we have partnered with third parties to responsibly recycle our batteries and our products with batteries.

For 20 years, we have partnered with Call2Recylce in North America, a third-party recycling company, to recycle batteries and products containing batteries received at our Factory Service Centers and offices responsibly when they reach end of life. Call2Recycle also collects batteries directly from TTI's North American sites. In 2018, 33 tonnes of batteries were collected at our sites in North America while 10 tonnes were collected in 2017.

To make recycling easier for customers, we have a licensing arrangement with Call2Recycle that grants TTI the right to apply the Call2Recycle battery recycling seals onto our batteries, products and packaging. A toll-free number on the seal allows customers to locate convenient public collection sites. Customers can also go to their website (wwwcall2recycle.org) to find out the locations of more than 25,000 collection sites located across North America.

In Australia, TTI started to have batteries collected through our repair centers and this has since expanded to service agents in partnership with a recycling company. Approximately 0.5 tonnes were collected between June to December 2018.

TTI also signed up to the industry-led voluntary program, Batteries 4 Planet Ark (B4PA) stewardship scheme in Australia in 2018. The scheme helps divert batteries from landfill and uses the resources recovered in markets where there is increasing pressure on commodity supply. B4PA utilizes an onshore processing capability that supports a circular economic model, returning material into manufacturing sectors and creating jobs in Australia.

For production in China, TTI has been partnering with a recycling company specializing in battery recycling for several years. In 2018, 49 tonnes of batteries and cells were collected and recycled from TTI's PRC sites.

In the future, we aim to implement battery recycling partnerships in all of our markets with the goal of increasing the recycling rate of batteries and products every year. We are also carrying out research on how to increase quantities of recycled materials into our own products while maintaining the quality of our tools and equipment.

In Europe, battery recycling is organized according to applicable national laws derived from the European Union Battery Directive. We have joined common collection schemes in each country that involve registering with the local authorities, reporting sales to authorities, joining a collection scheme and financing the recovery of batteries based on reported sales.

The common collection scheme is acting on behalf of the producers who supply containers for battery collection to retail outlets, public institutions and commercial end users. The producers organize the transport of full containers to the sorting facilities where the batteries are sorted according to their various electrochemical systems. The batteries are then treated in recycling facilities to recover materials such as iron, manganese, nickel and lead. The whole process is controlled by the common recycling scheme.

## **Design Innovation**

Great design not only creates products that are easier and more pleasurable to use, it also helps TTI reduce our use of natural resources and overall impact on the environment. Our investment in research and development focuses on innovative product design. This is not only for improving the user experience but also for the safety of their production and use, resource efficiency, as well as their recycling properties to work towards a closed loop, circular economy.

Take cordless tools, our specialty, as an example. Quality cordless tools rely on cutting-edge lithium ion battery technology. Our batteries are designed to be interchangeable within brands, reducing resource consumption and waste.

#### TTI Product Packaging Data of All Brands

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Global

69.928 tonnes

#### **Packaging Materials**

Adopting packing and packaging materials with environmentallyresponsible attributes is an opportunity for innovation to reduce waste and impact in the sourcing, production and reuse of the materials. With millions of products sold each year, improvements in packaging also mean reductions in material and transportation costs.

The most common materials used for packaging include paper for boxes, cartons and die cut sheets, and plastic for polybags, bubble bags, clamshells and tool bags.

We make use of recycled packaging materials whenever possible. For our packaging, we use corrugated cardboard, honeycomb board, chipboard, paperboard and/or molded pulp, all of which are recyclable by the end user. We also use biodegradable packaging and paper in packaging products. In Canada, repaired products are generally returned to customers in the same packaging that they were shipped to us in.

In 2018, TTI AIP did reduce the total cost of packaging, equivalent to a reduction of 430 tonnes of paper and 6 tonnes of plastic. This saving initiative was part of CIP and amounted to USD 1.4 million saving.

We will continue to adopt packaging materials with positive environmental attributes, with a priority on biodegradable packaging.

## Biodiversity

As an international manufacturing company, TTI recognizes that its operations can have an impact on biodiversity, particularly in the sourcing of raw materials, along the supply chain and at product end of life. Our goal is to reduce TTI's impact through supply chain engagement and accountability, and responsible battery recycling and circular economy solutions. As outlined in our Supply Chain Management section below, the TTI Social & Environmental Responsibility (SER) Compliance Program adopts a rigorous process to ensure our suppliers and the sourcing of raw materials minimize environmental impact and comply with all legal requirements.

## Environmental Awareness and Action in our Offices

We encourage all members of TTI to adopt a sustainable lifestyle. At our offices, we raise awareness of environmental issues and ensure offices adopt measures that minimize environmental impact.

Regular maintenance of air-conditioning, heating, ventilation and building management systems is conducted to maintain facilities' energy efficiency and healthy indoor air quality. We provide regular communications to members of staff on environmental issues. For example, at TTI HK, our "Going Green in the Office" campaign provides practical tips and reminders to encourage employees to reduce their GHG footprint by conserving energy and adopting energy-efficiency measures. Other communications on topics such as "Housekeeping Guidelines", "Red Packet Recycling" and "Keep the Office Green During Your Holidays" are also sent to employees.

In Canada, a national program was launched allowing all our outside sales teams to recycle their printer toners free of charge at partner stores across the country. Furthermore, electronic waste is sold to a third party, Green Solutions Plus, for recycling with the money generated from this transaction donated to the Daily Bread Foodbank.

In 2018, we expanded our operations to Vietnam. We also completed the build-out of our Brookfield, Wisconsin office and began the design and construction of our new Anderson, South Carolina location and the design of TTI NA's new headquarters in Fort Lauderdale, Florida. We not only focused on energy conservation, but also encouraged behavioral change to create a more sustainable environment. Key areas included:

- Installation of LED lighting
- Purchase of Energy Star rated equipment
- Use of recycled building materials throughout buildings and for finishes
- Roof design to maintain high R-values with a reduction of construction cost
- Introduction of campus bicycles and electrical vehicles at Anderson, South Carolina
- Elimination of plastic water bottles from new buildings and the provision of reusable cups to each employee