

# Our footprint reduction initiatives

## Offices

- Retrofitting T-8 and halogen lighting with energy-efficient LED, T-5 and CFL alternatives and maintaining appropriate lux levels
- Refurbishing modular working areas to create aesthetically-pleasing, open-plan office spaces that maximize natural light and feature ergonomically-sound stand-up work desks, spaces for collaboration and accessible meeting areas
- Refurbishing areas with carpets, tiles and paints that emit zero or very low levels of volatile organic compound (VOC) emissions and flooring that is phthalate-free
- Using energy-efficient variable refrigerant volume (VRV) air conditioning systems
- Optimizing performance and energy-efficient retrofits of chillers and ventilation systems
- Consolidating equipment and installing energy-efficient blade servers and virtual machines in our server rooms, as well as conserving energy by improving airflow and enclosing areas that have high-intensity cooling requirements
- Turning off lights, computers, monitors and printers when not in use
- Implementing an automatic computer and lighting shutdown policy outside of working hours
- Maintaining office and server room temperatures at levels that minimize energy use
- Using renewable energy where feasible; photovoltaic panels generate a portion of our Istanbul office's electricity demand
- Collecting materials for recycling, including glass, metal, paper, and plastics in our offices in Hong Kong, and those other materials in other locations depending on what can be recycled in local markets

## Distribution Centers (DCs)

- Three DCs in China, Singapore and Thailand are certified to the ISO 14001 EMS standard, with more in the pipeline
- Continuing to implement Logistics' Lean Transport initiative that includes:
  - > Optimizing the proximity of DC facilities to supplier and customer locations
  - > Maximizing vehicle loads, minimizing truck mileage, reducing empty vehicle returns and consolidating customer deliveries
  - > Phasing out pre-Euro IV diesel commercial vehicles with the phased introduction of Euro V and VI vehicles
  - > Improving route planning to reduce fuel consumption and GHG emissions
  - > Operating electric delivery vans in Hong Kong and Mainland China, with plans to expand our electric vehicle fleets
  - > Awarding drivers that consume less fuel than the monthly fuel consumption standard
- Directing ocean freight to marine transport operators that provide more environmentally-responsible fleets with reduced air pollution, greenhouse gas emissions and waste generation
- Operating a DC in China that sources a portion of its power from the building's rooftop photovoltaic solar system
- Using environmentally-responsible materials in building construction and refurbishment, including building materials, non-toxic and ultra-low VOC paint and carpet tiles with pre- and post-consumer recycled content

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- Reducing energy consumption by:
  - > Maximizing natural light with skylights
  - > Installing high-efficiency induction lighting, motion sensors and infrared automatic induction lighting in high-self areas and voice-controlled lights in corridors
  - > Equipping non-air-conditioned areas with large and energy-efficient ceiling fans to enhance air ventilation
  - > Installing LED lighting in newly-built warehouses and replacing existing halogen lighting with LED in restructured warehouses
  - > Changing the control sequence of the conditioning to use less units, and aligning the heater workload and water spraying control valve
- Reorganizing DC operations to streamline processes, increase automation and reduce waste, and adopt more energy-efficient equipment
- Operating forklift vehicles with rechargeable electric batteries and safely reusing fit-for-purpose parts from retired forklifts for vehicles in operation
- Using handheld monitoring devices with rechargeable batteries that are linked to centralized databases to monitor inventory and thereby reduce paper consumption and enhance the efficiency of warehouse operations
- Reducing waste by reusing boxes and hangers, providing reusable dishware and cutlery, increasing the capture of recyclables, and installing filtered water stations that meet required drinking water standards to reduce waste arising from plastic water bottles
- Using machines and rope to reduce the consumption of plastic shrink wrap in the warehouse, and bundling packages for delivery to reduce packaging waste
- Planting trees and vegetation to reduce heat and dust in warehouse areas and capturing rainwater for landscape irrigation to reduce water consumption. During non-rainy seasons, rainwater captured and stored at our DC in Taiwan is able to provide a month's supply water
- Our Logistics business operates a one-million-square-foot logistics facility in Singapore that received LEED<sup>1</sup> Gold and BCA<sup>2</sup> Green Mark Platinum certifications in recognition of its achievements in environmental design and performance in 2016. This nine-story, multi-temperature facility is Singapore's largest, automated and customs-bonded warehouse, leveraging a suite of best-in-class technologies and product-handling methods, including an automated storage and retrieval system (ASRS), semi-automated pallet shuttle system, robotics, put-to-light pick systems and market-leading e-commerce logistics solutions. It also consumes 30% less energy than a facility we previously operated in Singapore, despite being four times larger. Key features of the facility include:
  - > An intelligent lighting system, combining motion sensors and LED lights, reduces electricity consumption, greenhouse gas emissions and cost. The LED lights are 45% more efficient and last 25 times longer than florescent lights and they emit much less heat compared to traditional metal halide lamps, which also reduces air-conditioning demand
  - > A mix of air cooling and ventilation systems that reduce energy consumption and improve air flow in large areas of the warehouse with varying temperature requirements. The building facade has composite panelling and glazing to minimize solar heat gain, acting as insulation to keep the interiors cool, which enhances the comfort and productivity

1 Leadership in Energy and Environmental Design (LEED).

2 Building and Construction Authority of the Government of Singapore.

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of workers on hot days. With only half of the building being air-conditioned, the rest is cooled by seven-metre-wide, high-volume, low-speed fans that circulate extremely high volumes of air using much less energy than would be consumed by air-conditioning systems. Louvered windows are also used to maximize natural ventilation and air circulation

- > Energy-efficient variable speed chillers that are 20% more energy efficient than conventional systems as well as air-conditioning systems that are 40% more efficient with CO<sub>2</sub> demand control ventilation sensors
- > High-efficiency, zero-emission handling equipment was fully adopted to avoid the indoor air pollution that arises from traditional, diesel-powered equipment and to conserve energy.

Examples include:

- > Best-in-class, electric-powered forklifts, cranes, conveyors and semi-automated pallet shuttles that move goods throughout the warehouse
- > An electric-powered, high-density ASRS with narrow aisles that uses 25% less floor space than conventional storage systems, requiring less energy for lighting and temperature control
- > Cooling towers consume NEWater – reused wastewater that has been treated through both dual-membrane (via microfiltration and reverse osmosis) and ultraviolet technologies and conventional water treatment processes, thereby reducing overall water consumption
- > A Building Management System (BMS) integrated with the electrical, water and plumbing, mechanical ventilation and fire protection systems that optimize temperature control and operating times within the building. Sub-metering linked to the BMS monitors performance and detects leaks for all major water uses
- > Non-toxic paints and ultra-low VOC carpets used during the fit out of the indoor office areas benefit both indoor air quality and workers' health. Indoor air quality (IAQ) management plan implemented with air filters providing 80 to 85% dust spot efficiency for key working and staff areas
- > Sheltered bicycle racks and onsite showering facilities encourage people to adopt healthy and more environmentally-responsible transport options. Preferential parking for hybrid, fuel-efficient and car-pooling vehicles
- > Recycling of at least 50% of waste arising from the construction process and of paper, plastic, glass and carton boxes during operations

# Our footprint reduction initiatives

## Manufacturing Facilities

- Implementing environmental management systems (EMS) that are certified to the ISO 14001 EMS standard at our facilities in Bangkok, Dongguan and Jakarta
- Our facility in Trowbridge, which is audited to meet the Soil Association's organic standard, has been recognized as a Marks & Spencer ECO Factory since 2011 and as a Sedex<sup>3</sup> member since 2004. The facility is also annually audited to meet the requirements of the Sedex Members Ethical Trade Audit (SMETA). Our facilities in Bangkok, Dongguan, Jakarta and Tonawanda are also audited to meet SMETA requirements
- Adopting environmentally-responsible and efficient technologies and systems to reduce energy consumption and GHG emissions, which include:
  - > Overall and progressive retrofitting of existing lighting with LED throughout our operations with, for example in 2016, our Jakarta facility completed its conversion to LED lighting
  - > Replacing T8 lamps in outdoor lighting system with LED lighting
  - > Installing motion sensors to reduce electricity consumed for lighting
  - > Replacing the pump on a raw material storage tank to reduce the loading time from five hours to one hour, with the same motor power and up to 80% less energy consumed
  - > Operating a solar thermal project at our Bangkok facility that uses a hybrid system to combine energy from solar thermal collectors with waste heat from an economizer unit to generate hot water for the boiler that produces steam for use in the production process. Energy and water consumption is reduced and liquid petroleum gas (LPG) is no longer used for the boiler, resulting in savings of over US\$16,000 per year in fuel cost and reduced air and GHG emissions
  - > Operating purpose-built hot rooms with more efficient air circulation and thermostatic control
  - > Cooling product formulations below 35°C and automating the cooling schedule to reduce energy consumption
  - > Upgrading heating and cooling systems to improve efficiency and adopt cleaner energy sources; for example, our facility in Jakarta converted its boiler from diesel to natural gas
  - > Upgrading the dust extraction system in production areas and R&D laboratories
- Using inverters to control the speed of the air handling unit (AHU) fans, variable frequency drives (VFD) for air conditioning units and more efficient air compressors with software control
- Using a hot box to warm ingredients used in the manufacturing of personal care products at our Tonawanda facility to make the process both more energy efficient and safer than with electric-powered heating bands or steam collars
- Conducting energy assessments as part of all capital expenditure upgrades to ensure energy-efficient equipment, fixtures and features are adopted
- Reducing the consumption of water, oil and chemicals, by installing automatic water faucets, optimizing and upgrading production and wastewater treatment processes, retrofitting water pump motors and adopting oil-free compressors, which also require less maintenance

# Our footprint reduction initiatives

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- Raising awareness to reduce waste and implementing programs to collect and properly dispose of recyclables and hazardous waste
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- Changing the operation of the proportional–integral–derivative (PID) controller in the glade gel steam shrink tunnel line to use pressure from the steam shrink tunnel, instead of temperature, to control the opening level of the control valve, thereby reducing LPG consumption and GHG emissions
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- Reducing the consumption of water by the Fryma machine's cooling system by changing from an open loop to a closed loop system for the pump circulation
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- Our beauty research and development facility in Thailand was certified to LEED Platinum in 2015. The facility is projected to save over 68,165 kWh or the equivalent of 47 metric tons of carbon dioxide (CO<sub>2</sub>) per year through the adoption of environmentally-responsible features, including:
    - > Solar photovoltaic system to generate 48,214 kWh of electricity per year, representing 40% of the building's designed annual electrical power requirements, which is equal to a cost saving of over US\$5,000 per year
    - > Automation system that maintains optimum performance and efficiency levels for lighting, air conditioning and ventilation. The system uses high-efficiency, air-cooled water chilling equipment to provide 30% more fresh air than the minimum required standard, which maintains a healthy and productive environment for our people
    - > Sensor system that constantly monitors CO<sub>2</sub> levels in office and laboratory areas to ensure safe levels are maintained
    - > LED lamps consuming 34% less energy than CFL and T5 lighting
    - > Paints and coatings with zero or minimal VOC (volatile organic compound) content
    - > Highly-reflective paints and glazing, which cover over 90% of the wall and window areas and block 30% more solar heat radiance than ordinary glazing materials, save energy required for air conditioning and provide abundant daylight conditions in working areas