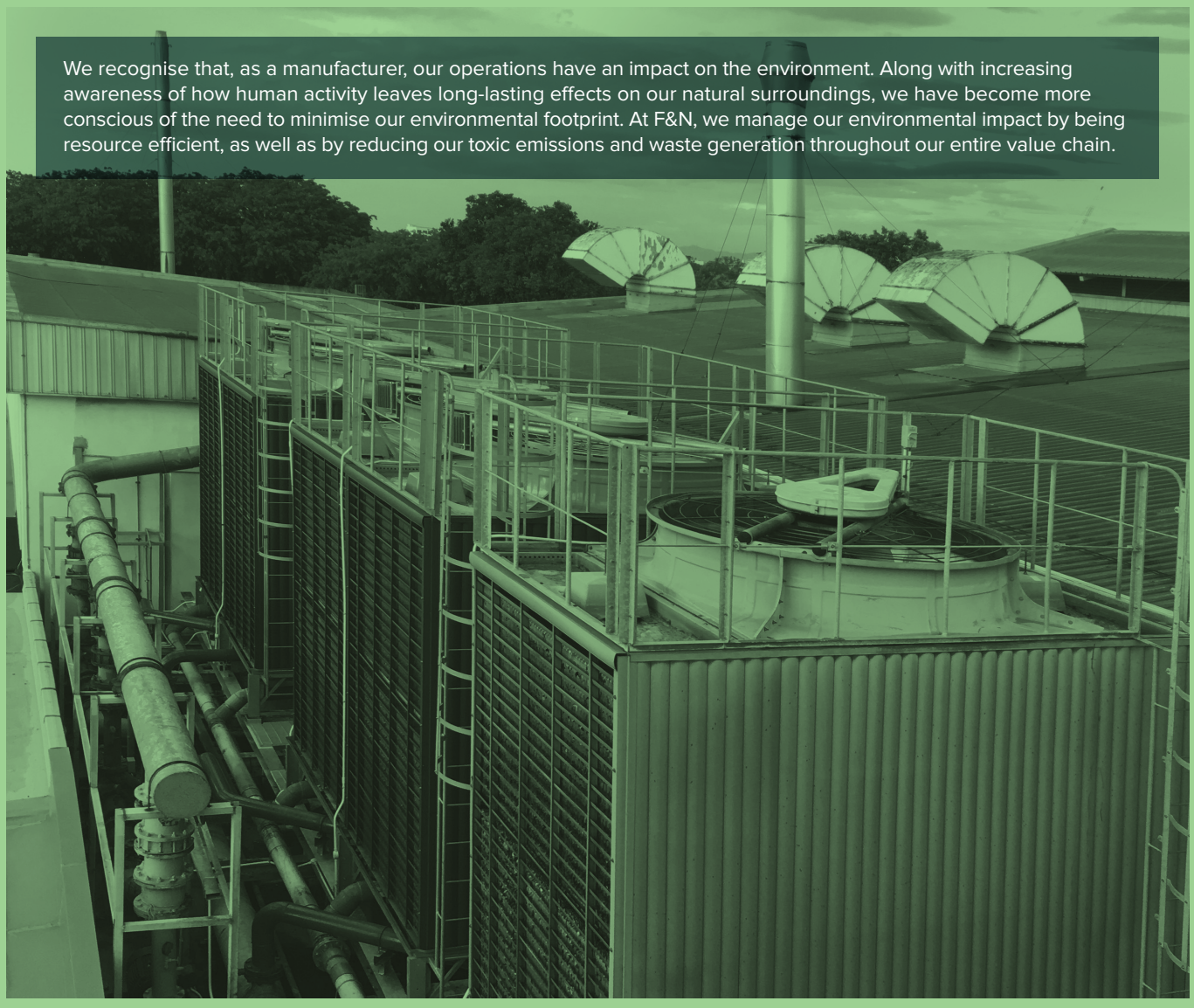
RESPONSIBILITY TO THE **ENVIRONMENT**

MATERIAL ISSUES

- Water Stewardship
- Effluents and Waste
- Energy and Climate Change
- Route Planning
- Packaging

We recognise that, as a manufacturer, our operations have an impact on the environment. Along with increasing awareness of how human activity leaves long-lasting effects on our natural surroundings, we have become more conscious of the need to minimise our environmental footprint. At F&N, we manage our environmental impact by being resource efficient, as well as by reducing our toxic emissions and waste generation throughout our entire value chain.



WATER STEWARDSHIP

Water is essential in our production lines, hence is a critical natural resource for us. Given that it is also scarce, we are committed to sustainable water management. As outlined in our Environmental Policy, we strive to improve our processes and procedures so as to continuously reduce our water consumption.

In FY2017, the total water withdrawal was about 2.9 million m^3 at the Group level.

Singapore

Singapore has several ongoing water reduction initiatives:

Water Reduction with New Evaporative Condenser
The ice-bank chilled water system uses ammonia to supply chilled water for process cooling and milk tankers. After evaporation, ammonia is compressed and condensed in evaporative condensers. Our milk tankers are cooled using a glycol system. To achieve better energy efficiency, we integrated an ice-bank into the glycol system in December 2014. Subsequently, a higher capacity evaporative condenser was installed. The new evaporative condenser replaces the two older condensers, cutting down on the need for water from lower evaporation loss.

Water Reduction with Condensate Recovery
We have a York chiller to supply chilled water for the air-conditioning in our administration building and certain parts of the production area such as the UHT production corridor and filling areas. During the heat exchange, moisture in the intake air is condensed by chilled water in the Air Handling Unit (AHU). In this project, we installed a PVC pipe to recover the condensate water from the AHU to supply the cooling tower. The chiller is operated 24 hours, six days a week and is shut down on Saturday midnight when production operations stop, hence we expect to achieve significant savings. However, we are unable to quantify the actual reduction in make-up water to the cooling tower as there was no water meter in the cooling tower prior to installing this condensate recovery system.

Water usage in the washrooms of our premises is high due to high water pressure and less than optimal systems. However, we have started to replace our old toilet and tap systems with more efficient models.

As of April 2017, we have replaced 20 foot-pedal operated taps in the toilets and wash basins of our production facilities with sensor-operated models. In June 2017, we replaced three manual taps in the washrooms for the Finance department with spring-operated systems.

Although we are confident that the new taps will reduce our water consumption, we are unable to quantify our total savings as we have to date installed a water meter only in the production area, and not for all the washrooms.

Water Reduction with Small Diameter Hose
Our equipment and factory floors are hosed down for cleaning purposes. To reduce water wastage, we will be replacing the bigger diameter hoses (3/4” and 1”) with smaller 0.5” hoses. Nozzles have also been affixed at the hose end to cut off water flow when it is not needed.

RESPONSIBILITY TO THE ENVIRONMENT

Malaysia

We have been enhancing our water management efficiency in Malaysia by daily monitoring of consumption, collecting and storing rain and production water for utility purposes (e.g. cleaning, toilet flushing and watering plants), and implementing water saving projects at manufacturing plants.

Recovery of Condensate. Evaporated condensate[1] is recovered from the Evaporator in our Dairies operations and fed back to the feed tank at the boiler house. Conductivity sensors installed will ensure that only condensate of acceptable quality is reused at the boiler house feed tank. This decreases our water usage for steam production.

Retort Water Recovery. Our water needs are reduced by recovering water wastage from the retort process in our Beverages plant. Recovered water is channelled back into the retort process and recycled. Tank cleaning and weekly microbe testing on water samples are carried out to ensure the cooling system water's quality. The drainage setting was reduced from 5% to 3% in the second cooling process by installing a sensor and relay to further reduce water wastage. There is an estimated water savings of 94,000 m^3 annually, which translates to cost savings of about $70,000.

CIP System. As of the new financial year, a new Clean In Place (CIP) system will be implemented in our ice cream operations. Currently, our manual CIP system consumes a lot of water due to one-way flow, meaning that water flows directly to the drain. The new CIP system employs a two-way flow concept, enabling the circulation of water during the cleaning process which will reduce the volume of water consumed. It is will also shorten the cleaning time from five hours to four hours, saving time and labour costs. The system will be implemented in stages, and will be completed by FY2020.

Thailand

In Thailand, concerted efforts by our Dairies operations are made to reduce water consumption at the farm level as well as at our milk collection centre. With the exception of FY2012 when there were massive floods, water usage has been decreasing by approximately 10% every year since FY2010, when the Rojana plant was commissioned.

Bleeding of Evaporative Condensers. Previously, in order to maintain water hardness at an optimum level that prevents scale deposits from forming, some water would be released into drains from the evaporative condensers at our ice cream operations. Scale deposits undermine the performance of the evaporative condensers resulting in energy wastage. Now, we use chemicals to control water hardness. This is estimated to reduce water usage by 1.5%.

Extending CIP Cycle Time. In our Dairies operations, we extended the CIP cycle time. CIP is conducted after each production cycle to clean, rinse and sanitise the equipment. By extending the CIP cycle time for Sterilised Milk and Evaporated Milk products, CIP frequency can be reduced, translating into increased production output with less water usage.

OUR TARGET:

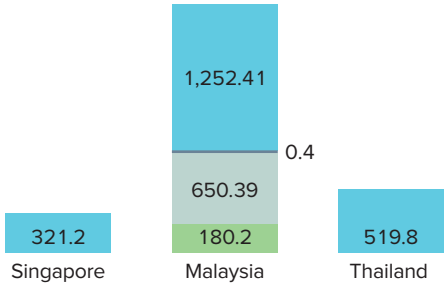
We intend to reduce the water intensity ratio at our plants across the Group by 5% from 2017 by 2020.

1 The water separated from evaporation processes.

Performance data (FY2017 baseline)

G4-EN8

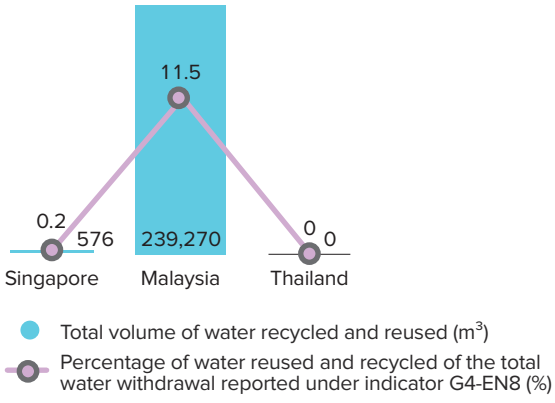
Total water withdrawal by source ('000 m^3)



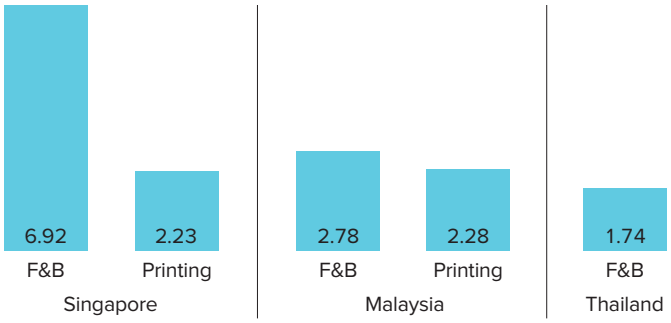
Note:
1 Water withdrawal (Surface water, Ground water and Municipal water) is measured through the use of a meter

G4-EN10

Percentage and total volume of water recycled and reused



Water intensity ratio (m^3/MT of product)



Note:
1 Water intensity ratio is calculated based on the total amount of water withdrawal (in cubic meter, m^3) per metric tonne of product

GUIDED BY AN ENVIRONMENTAL POLICY, WE SEEK TO:

- **Provide senior management support and resources to drive our environmental agenda.**
- **Comply with applicable environmental legislation and regulations and other requirements that we subscribe to.**
- **Continually enhance our environmental performance and standards.**
- **Use natural resources wisely and adopt best practices in our daily operations.**
- **Continuously improve our processes to reduce water & energy consumption and minimise waste.**
- **Prevent air, water and other pollution, and dispose of waste safely and responsibly.**

We ensure our employees, business partners and other stakeholders are aware of our Environmental Policy and play their part to support our goals. To keep relevant, we review this policy every three years and incorporate new knowledge and trends as these evolve.

RESPONSIBILITY TO THE ENVIRONMENT

EFFLUENTS & WASTE

Both our core businesses – F&B and P&P – use materials and/or resources, some of which ends up as waste. We ensure such waste does not have a negative impact on surrounding communities or the environment. At the same time, we recognise that the less materials we use, the less waste we generate. Hence, we engage in the 3Rs of reduce, reuse and recycle as far as possible. While minimising our environmental impact, this has the added benefit of also reducing our costs.

In FY2017, the Group total volume of wastewater discharged was 1.4 million m^3.

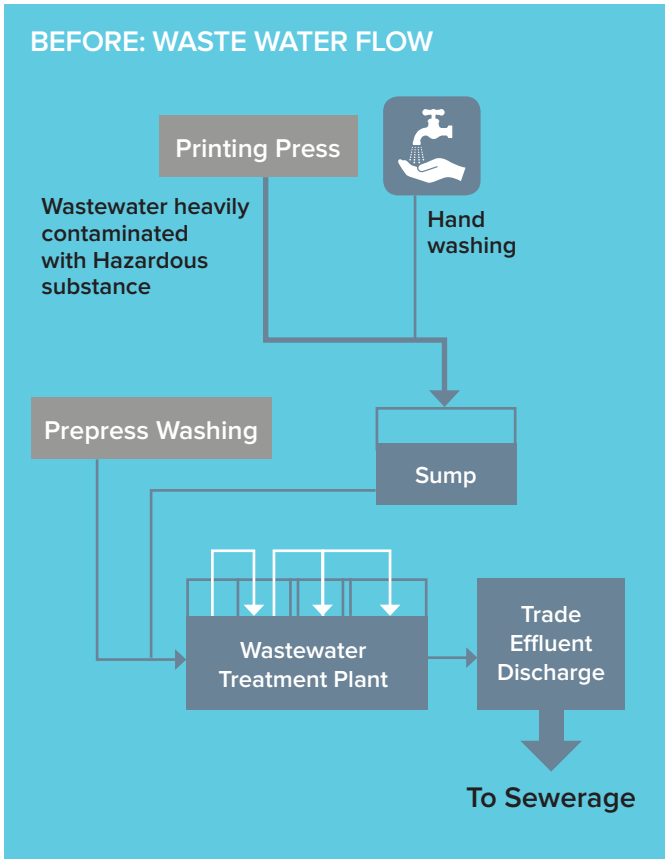
Singapore

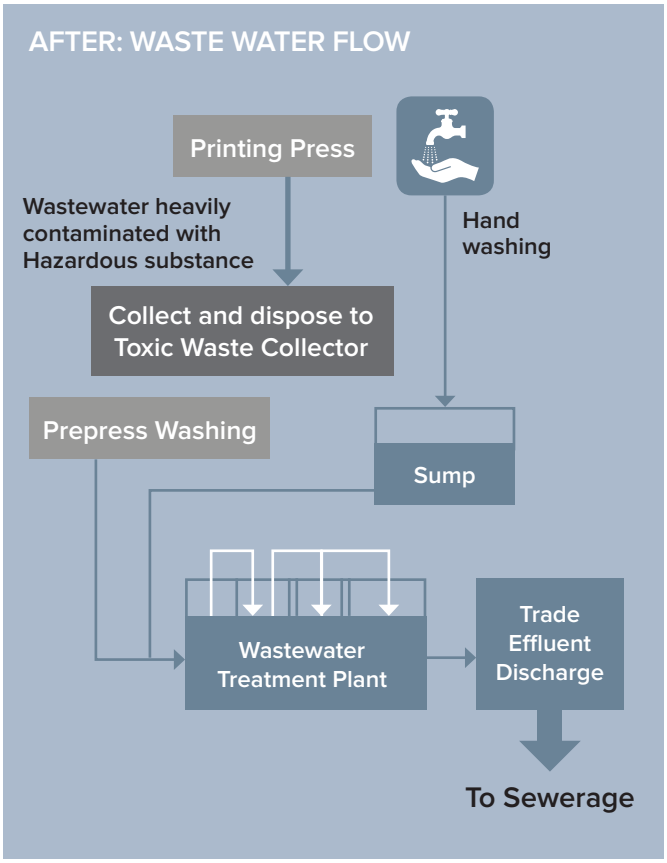
All recyclable waste at our F&B plant in Singapore is collected by third-party collectors and recycled as per National Environment Agency (NEA) regulations. Paper waste from our printing plant is similarly recycled and reused.

Isolation of Waste Water. Printing generates wastewater which can be contaminated with hazardous substances resulting in high Chemical Oxygen Demand (COD) effluents. Before the water is released into the public sewerage system, therefore, it is processed at a Waste Water Treatment Plant (WWTP). As an additional measure, we isolate wastewater that is known to be heavily contaminated with hazardous substances for disposal through a licensed Toxic Industrial Waste collector.

OUR TARGET:

The Group has set to reduce our wastewater discharge by 5% from 2017.





Centralised Ink Pump System. We have also reduced our ink tin can waste with the installation of a centralised ink pump system. Ink for our Sheetfed printing machine traditionally comes in small tin cans (1kg or 2kg), with an average usage of about 2,000 cans per month. The ink contaminated cans have to be treated before being recycled, increasing the cost for disposal. To work around this issue, we installed a centralised ink pump system that transfers ink from larger drums into reusable small containers. This reduces our environmental impact as well as disposal costs.

To further reduce the toxicity of our waste, we use soya-based ink which is environment-friendly.

Malaysia

In Malaysia, wastewater from our manufacturing plants is treated and used for cleaning, toilet flushing and other functional purposes. Sludge from Pulau Indah is sent to a waste processing vendor where it is converted into fertilisers. Used batteries, chargers and toner cartridges are recycled while old newspapers, used packaging materials (such as containers, trays and bottles) are sold as part of a waste-to-wealth initiative.

Recycling Programme with Schools. F&NHB has also been partnering local municipal councils to run a recycling programme with schools in Shah Alam, Penang and, as of this financial year, Kuching, in Sarawak. The programmes in Shah Alam and Penang have been growing in terms of number of participating schools and the volume of recyclables collected. The programme in Shah Alam was launched in 2007 and Penang in 2012. Inclusive of the programme in Sarawak, a total of about 363,000kg of recyclables were collected in FY2017, marking yet another record. The involvement of children in this programme creates a stronger sustainable value, as the habit of recycling acquired in youth is likely to carry on throughout their lives. This year, to instil a culture of reuse, a new award category was introduced – for the most creative use of recyclable materials. To further promote the idea of re-use, we organised up-cycling workshops for 144 teachers in Seberang Prai and, separately, for residents and members of the Penang Deaf Association, Cheshire Home, Old Folks Association and several other NGOs.

Thailand

Our Thai operations are committed to zero discharge, zero waste and zero landfill.

Ultra-filtration System. To reduce the volume of wastewater discharged from the Dairies plant, an ultra-filtration system with a turbidity sensor was installed to recycle the effluent water. The production process has been designed to stop using the effluent water if it is dirty and resume only when it is clear. This initiative will not only help to reduce the volume of wastewater discharged, but will also lessen our water footprint.

Recycle Rejected Water. Taking their recycling a step higher, this year, the team started to recycle water rejected from the water treatment plant and boiler by channelling it into a recycle pond which serves as a source of water for utility purposes such as cleaning and watering the plants as well as grass.

Convert Sludge into Organic Fertiliser. Starting three years ago, sludge from our dairies production is turned into organic fertiliser which is then distributed to employees. This year, we started giving away these organic fertilisers to local farmers near our plant. The small effort is one way we help our suppliers and give back to the community where we can.

Internally, employees are encouraged to practice the 3Rs by, for example, double-sided printing and separating recyclable materials such as plastic and aluminum from general waste.

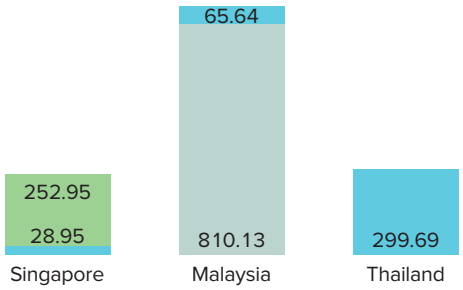
RESPONSIBILITY TO THE ENVIRONMENT

Performance data (FY2017 baseline)

G4-EN22

Total water discharge by geography and quality:

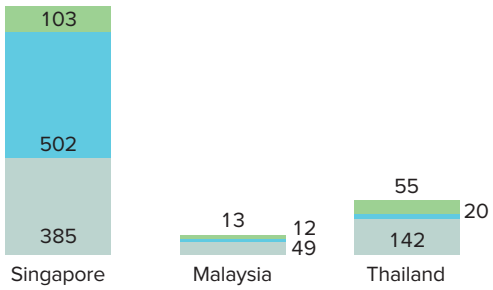
Overall Total volume of water discharged by geography ('000 m³)



- River
- Wastewater treatment system of industrial estate
- Others (Public Sewerage)

Notes:
1 The data for Malaysia excludes our two water plants in Matang and Bentong as they do not have Waste Water Treatment Plant and they are unable to measure the water discharged.
2 The total volume of planned and unplanned water discharges are not reused by another organisation.

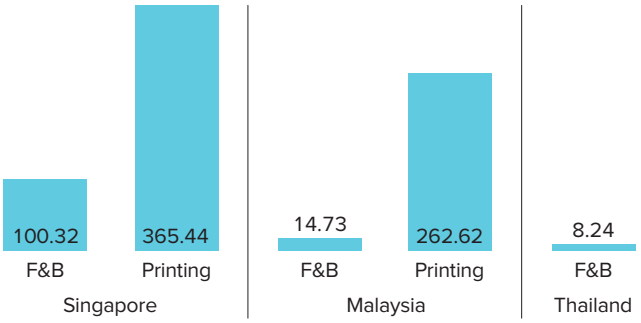
Average water discharged by quality (mg/L)



- Chemical Oxygen Demand (COD)[3]
- Biochemical Oxygen Demand (BOD)[4]
- Total Suspended Solids (TSS)[5]

Notes:
1 The data for Malaysia excludes our two water plants in Matang and Bentong as they do not have Waste Water Treatment Plant and they are unable to measure the water discharged.
2 The data for Singapore on COD excludes our Dairies & Beverages plant as only BOD is measured to align with the computation of trade effluent tariff by Singapore's Public Utilities Board (PUB).
3 COD is the measure of the amount of oxygen required to oxidise soluble and particulate organic matter in water. It provides an index to assess the effect discharged water would have on the receiving environment. Higher COD levels mean a greater amount of oxidisable organic matter which will reduce dissolved oxygen (DO) levels. Low DO levels are harmful to higher aquatic life forms.
4 BOD is the amount of DO bacteria will consume to break down organic material present in a given water sample at certain temperature over a specific time period. As with the COD, the higher the BOD, the less able the water body is to support healthy aquatic life.
5 TSS is the dry-weight of particles trapped by a filter. It is a water quality parameter used to assess the quality of wastewater after treatment in a wastewater treatment plant.

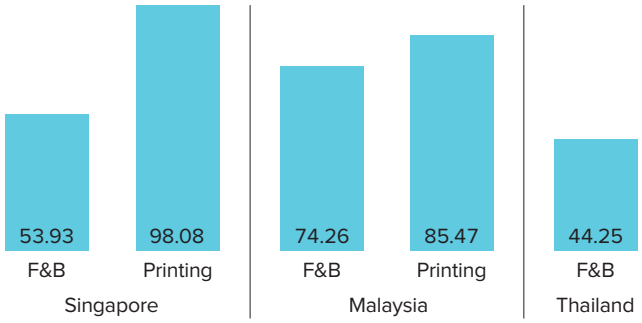
Solid waste intensity ratio (Waste generated in kg/MT of product)



- Solid waste intensity ratio

Notes:
1 Solid waste intensity ratio is calculated based on the total amount of waste generated (in kilogram, kg) per metric tonne of product

Solid waste recycled



- Percentage of solid waste recycled

Notes:
1 Solid waste recycled is the percentage of waste generated that was sent for recycling

ENERGY AND CLIMATE CHANGE

Given the nature of our operations, we feel a sense of responsibility towards environmental protection. This has grown stronger in recent years along with pressing global issues such as climate change.

The use of fuel and electricity releases greenhouse gases (GHG) such as carbon dioxide (CO_2) that contribute to climate change. As part of our commitment to protecting the environment under our Environmental Management Policy, we are making every effort to reduce our carbon footprint across our value chain from manufacturing to packaging and logistics by reinventing our procedures and adopting energy efficient systems as widely as possible. In addition, we are looking into replacing conventional hydrocarbon-based energy with cleaner sources of renewable energy.

Our efforts to preserve the environment have numerous benefits. While safeguarding quality of life for the current and future generations, they also establish F&N as an environment-conscious corporation.

Energy Management at F&N

Group-wide, we have started the process of greening our operations by progressively replacing conventional lights in our offices and production areas with light emitting diodes (LED), which consume less electricity. At the same time, various initiatives are being undertaken at our manufacturing plants to optimise energy consumption and minimise our environmental footprint.

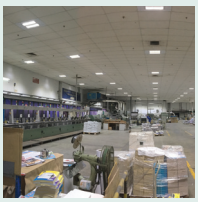
Energy Efficiency in Singapore

Since 2013, we have been reporting our energy consumption to NEA, as required, and have consistently exceeded its guideline of achieving an average annual energy savings of at least 1%, with savings of more than 2%. Our energy efficiency is the result of various initiatives, which include:

- **Overhaul of Solar System.** We installed a 4.8KWp solar system in 2010, which however did not function optimally. In 2015, the system was overhauled and electricity is now being generated more efficiently in the administration building.
- **Enhancing of Boiler Efficiency.** Operationally, in October 2016, we enhanced our boiler efficiency by optimising its air-fuel ratio – reducing the oxygen concentration in the flue gas from about 9.8% to 3%. This reduced the amount of diesel needed by about 80,000kg as compared to FY2016.

Although we expect our energy savings to be impacted significantly by the conversion of our milk tankers to refrigerated containers, we are optimistic that we will still meet NEA's target. We also expect to meet NEA's requirement for companies to implement the ISO50001 Energy Management System by 2019, ahead of the 2022 deadline.

Other energy efficiency initiatives include:



Conversion of Conventional Lighting to LED type

- Including production areas, offices, storage, facilities, and perimeter lightings.
- Reduced energy and improves the luminance of the workplace.

Replacement of Inefficient Cooling Tower

- With the new highly efficient cooling towers, it improves the heat transfer of condenser water and results in a more efficient chiller system.
- Also reduces water consumption by minimizing and utilizing the feedwater

Improvement of Air Compressors configuration

- Isolated machines with high pressure(12 bar) requirement from centralized air compressors and setup stand alone Air compressor to these machines.
- Lowered down the pressure setpoint of centralized air compressors from 12 bar to 7.5 bar. Lowering the setpoint will reduce the energy consumption of Air compressors.

ANNUAL REDUCTION OF MORE THAN 500 TONS OF CO_2

RESPONSIBILITY TO THE ENVIRONMENT

Energy Efficiency in Malaysia

In Malaysia, we support the government's target of reducing the country's GHG emissions intensity (as a measure of GDP) by 45% by year 2030 from a 2005 baseline. Our initiatives include:

- **Heat recovery system in boiler.** Using an economiser to recover heat losses via hot flue gases helps to increase the water temperature fed into the boiler. This saves energy usage for boiler operations.
- **Steam Condensate Recovery.** Hot evaporated condensate (about 90°C), which is usually sent directly to the drain is fed back to the boiler. This reduces the amount of steam needed to be produced in the boiler. The decrease in natural gas usage is about 100 MJ per m^3 of condensate recovered.
- **Wafer and Cup & Cone (CNC) Machines.** Both machines, which have been in use more than 20 years, create wastage, have low yields, and require manual processes which means more manpower. Management will be replacing both the Wafer and CNC production lines to ice cream tubs by around mid-2018. The process of filling ice cream into tubs is easier, requires less manpower, and consumes less electricity as well as steam while reducing waste.

Energy Efficiency in Thailand

Thailand's Ministry of Energy has targeted a 30% energy intensity reduction by year 2036 from a 2010 baseline, as stated in its Energy Efficiency Development Plan (EEDP) 2015 - 2036. Our Thai operations has developed several initiatives to support the government's goals by reducing its environmental footprint.

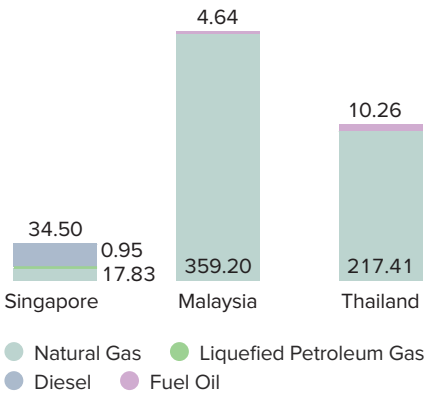
- **Heat Recovery Steriliser System.** The Steriliser machine consists of three shell segments, namely the Preheat, Cooker and Cooler. After products go through the Cooker at 123°C, they have to be cooled down to 40°C using water. Heat from water discharged from the Cooler is recovered and channelled to the Preheat shell. This has allowed for at least 50% reduction in steam consumption, while the lower load on the cooling tower will bring about additional energy savings and carbon reduction in our Dairies operations.
- **Moisture Content in Refrigeration System.** In our ice cream operations, we take care to monitor the moisture content in the refrigeration system. An increase of moisture content in the refrigeration system by 1% would translate to an increase in power consumption by about 2%. To help maintain our moisture content at less than 0.5%, we have installed an Ammonia Purifier which is to be implemented by October 2017.

Performance Data (FY2017 baseline)

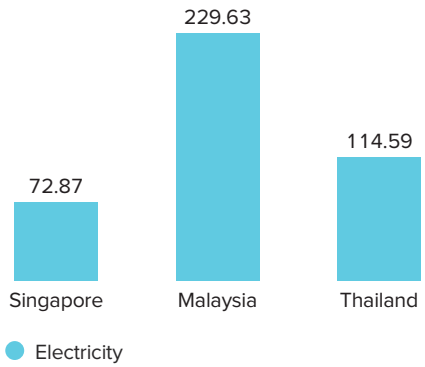
G4-EN3

Energy consumption within F&N:

Total fuel use from non-renewable sources in megajoules (million megajoules)



Electricity, heating, cooling and steam purchased for consumption[3] (million megajoules)



In FY2017, F&B Singapore self-generated 31.33 and 0.02 million megajoules of electricity[1] and steam[2] respectively.

1 Self-generated electricity is included in the calculations for energy consumption, energy intensity ratio and CO2 emissions as the energy (solar energy) consumed to generate it has not been accounted for
2 Self-generated steam is not included in the calculations for energy consumption, energy intensity ratio and CO2 emissions as the energy (fuel) consumed to generate it has already been accounted for
3 There is no heating, cooling and steam purchased for consumption

GROUP TOTAL NON-RENEWABLE FUEL CONSUMED

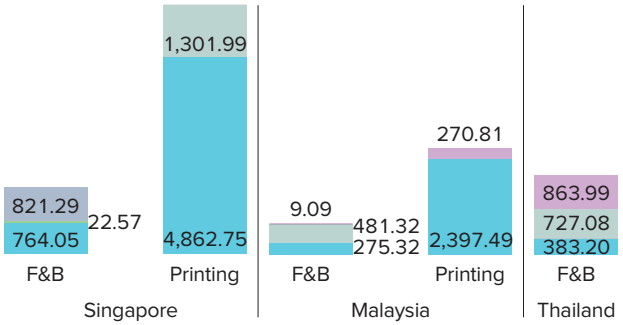
644.79 MILLION MEGAJOULES

OUR TARGET:

We target to reduce the Group's energy intensity by 5% between 2017 and 2020.

G4-EN5

Energy intensity ratio (MJ/MT of product)



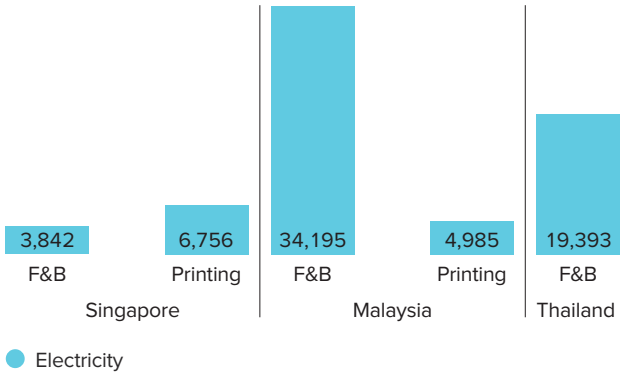
Notes:

1 Energy intensity ratio is calculated based on the total amount of energy consumed (in megajoule, MJ) per metric tonne of product

2. The Energy intensity ratio is for energy consumed within F&N only

G4-EN16

Indirect GHG emissions (MT CO_2)



Notes:

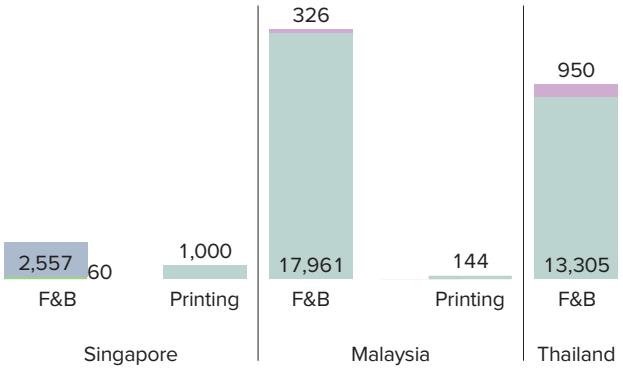
1 CO_2 emissions for Singapore estimated based on the conversion factor from Energy Market Authority of Singapore (EMA)

2 CO_2 emissions from Malaysia estimated based on the conversion factor from Green Building Index (GBI)

3 CO_2 emissions from Thailand estimated based on the conversion factor from Thailand Greenhouse Gas Management (Public Organisation) (TGO)

G4-EN15

Direct GHG emissions (MT CO_2)



Notes:

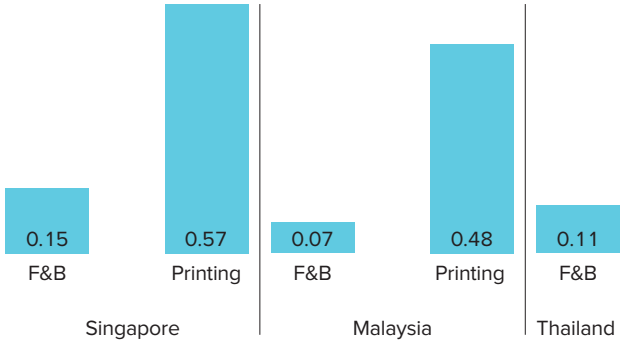
1 CO_2 emissions for Singapore estimated based on the conversion factor from Greenhouse Gas (GHG) Protocol

2 CO_2 emissions from Malaysia estimated based on the conversion factor from Green Building Index (GBI)

3 CO_2 emissions from Thailand estimated based on the conversion factor from Thailand Greenhouse Gas Management (Public Organisation) (TGO)

G4-EN18

Greenhouse gas (GHG) emissions intensity (MT CO_2/MT of product)



Notes:

1 GHG emissions intensity ratio is calculated based on the total amount of CO_2 generated (in metric tonne, MT) per metric ton of product

RESPONSIBILITY TO THE ENVIRONMENT

ROUTE PLANNING

We put much thought into our route planning because it has the potential to save time and costs, while also reducing our carbon footprint.

SINGAPORE

We are optimising the product load per truck. Two years ago, we increased the load from 20 pallets to 22 pallets and have been looking into more ways to increase the stacking load per pallet, without exceeding the maximum tonnage limits set by the Land Transport Authority (LTA) Singapore.

MALAYSIA

Rationalisation of Logistics. Since the Dairies and Soft Drinks operations in Malaysia were merged in 2015, there has been a rationalisation of logistics. While in the past there were separate distributors for products in the two different operations, today the same distributor manages the entire portfolio. This reduces the number of distributors and trips made for the country operations. In addition, the decentralisation of manufacturing and warehousing operations has resulted in shorter routes to the market.

Loading of 22 Pallets. During the year, our Beverages operations in Malaysia also embarked on an initiative to load 22 pallets as opposed to 20 pallets. This was implemented after the switch from 2-way to 4-way. The Dairies operations were already loading 22 pallets onto their trucks.

To date, the cost savings achieved are estimated to be about $90,000.

THAILAND

Thailand

Transportation Management System. Our ice cream operations in Thailand used to have two fleets of transporters delivering products in and around Bangkok, each fleet supporting different customer groups. Using a Transportation Management System, however, we believe we can plan our routes better and combine the two fleets into one. From October 2017, when the fleets are combined, we expect the number of trucks used a day to drop by about 20%, with an accompanying estimated $82,000 in savings per year.

PACKAGING

Attractive packaging draws consumers' attention. More than just focus on the visual aspects of packaging, however, we ensure it protects the integrity of the contents, and is user- as well as environment-friendly.

There is much scope for innovation in packaging, which we have been exploring over the years. This has helped us maintain a healthy packaging ratio, namely volume of packaging material used as a measure of quantity of product.

There is much scope for innovation in packaging, which we have been exploring over the years. The Group will continue to focus on packaging innovation. This has helped us maintain a healthy packaging ratio – namely volume of packaging material used as a measure of quantity of product.

Malaysia

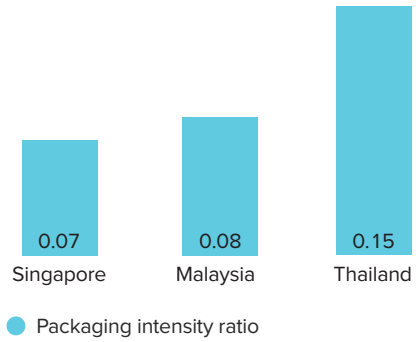
We are currently exploring packaging that could potentially reduce our environmental footprint significantly in Malaysia:

1. Change the packing of our 1.0L and 1.2L ice creams to recyclable carton boxes by 2018.
2. Reduce the thickness of the current plastic tub and lid of the 1.0L and 1.2L packaging.
3. In our Shah Alam plant, a Sustainability Pad project to convert carton tray to carton pad with naked shrink wrap packing for mineral and drinking water products would be launch in December 2017, starting with the range of 1.5L products. This project is estimated to reduce paper board usage for 1 pallet of 1.5L product by about 34m^2.
4. In Kota Kinabalu, under a Carton Pad Project to be completed by November 2017, we are converting half tray cartons into carton pads for all PET 1.5L & PET 500ml products. The conversion is expected to save about 66,000kg of carton paper and 3,800kg of shrink film, resulting in an estimated $50,000 in annual savings.
5. In Matang, we are converting full cartons to shrink wrap with half-tray for 500ml & 1.5L products (estimate to be implemented in December 2017) and PVC labels to OPP labels (March 2017). Labelling, packaging & palletising operations will also be automated thereby eliminating ergonomic issues encountered by workers on manual palletising works. Base on budgeted sales volume for FY2018, we will save an estimated $125,000 and $90,000 annually on label and carton box cost respectively, while reducing the volume of packaging materials used.

We also ensure that the packaging for pasteurised juices and milk are recyclable.

Performance Data (FY2017 baseline)

Packaging intensity ratio (MT of packaging material/MT of Finished Product)

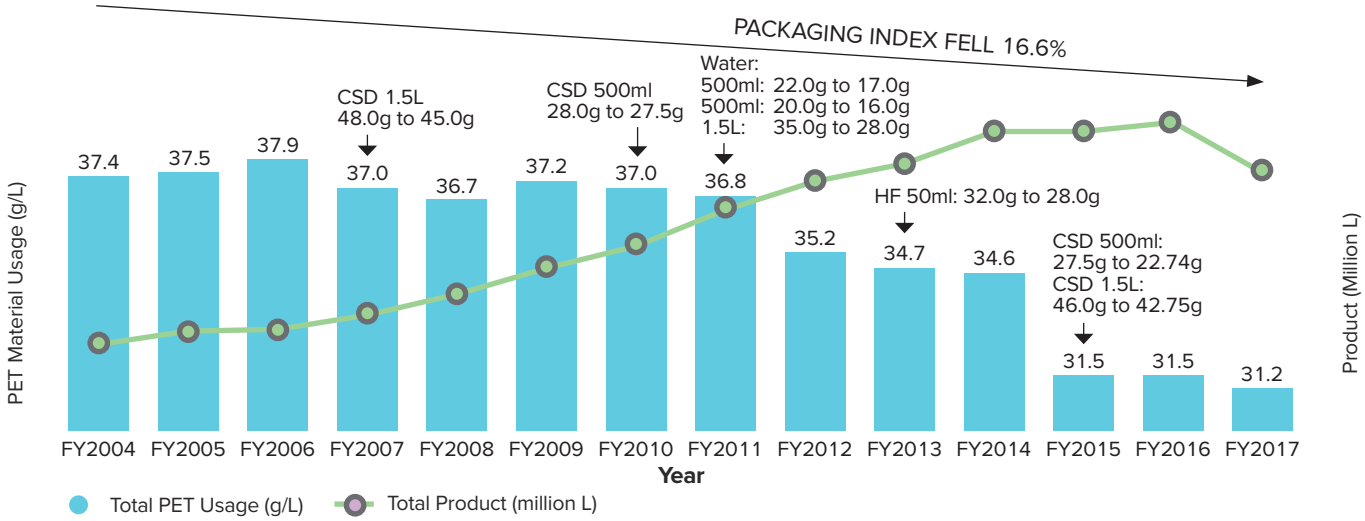


Notes:

1 Packaging intensity ratio is calculated based on the total amount of packaging material used (in metric tonne, MT) per metric tonne of product

2 Thailand produces more single serve packaging, which has a higher ratio of packaging used per tonne of product, as compared to Singapore and Malaysia.

Packaging Index for PET Beverages* (Singapore and Malaysia)



* Beverages include the 350ml, 380ml, 400ml, 500ml, 600ml and 1.5L of isotonic, carbonated soft drinks (CSD), Asian soft drinks and water range of products