

# REDUCING ENVIRONMENTAL IMPACT

Climate change, environmental pollution, resource scarcity and increased urbanisation can contribute to significant and indelible changes to the communities and environment. In all of our business operations, we strive to lower the amount of pollution and waste we generate, conserve and protect water supplies, protect biodiversity, curb unnecessary energy usage and reduce carbon emissions. In this section, we report on our environmental performance and actions taken in this reporting period.

Our Construction and Industry Divisions comply with the latest environmental management system ISO 14001:2015. The Property Division is also in the midst of obtaining ISO 14001:2015. The new format for ISO 14001:2015 addresses the importance of senior leadership commitment to business management and risk-based thinking.

01  
02  
03  
04  
05  
06

Sustainability Statement

## PREVENTING POLLUTION

We are committed to controlling and preventing environmental pollution in our operations to preserve a healthy ecosystem. All Divisions adhere to the Environmental Pollution Control Guidelines on air and noise pollution control in line with the objectives of our HSE Policy.

Our Construction Division regularly monitors air and noise quality to comply with the Environmental Quality Act 1974. Controls put in place include periodic monitoring of air quality, noise and vibration levels at project sites; dampening sites and access routes with water to contain dust; using press-in piling methods during foundation works and noise curtains to prevent noise pollution; as well as prohibiting open burning to prevent emission of smoke, particles and toxic gases.



The road sweeper and road water jetter during a routine road cleaning activity at the Port



Ambient air monitoring

The Plantation Division upholds the Zero Burning Policy for all operations. In view of possible fire occurrences in spite of the strict policy implementation, the Division has in place fire emergency response teams at each operating unit.

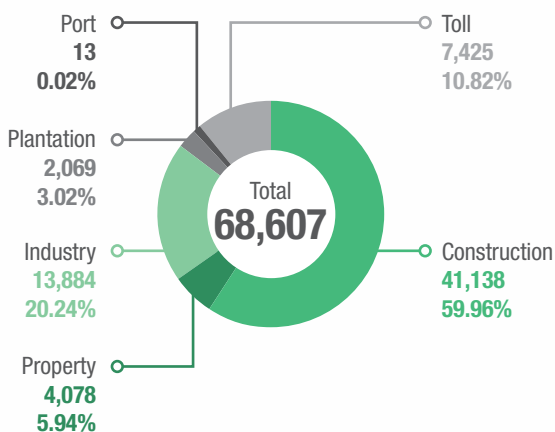
The Industry Division monitors air, water and noise quality issues. At our quarries, apart from the sprinkler system applied at our production areas, dust pollution is minimised by using road spraying exercises with collected rainwater. Fugitive dust are also controlled by limiting vehicle speeds at 15km per hour at operating areas. Similarly, power sweepers, water jets and road spraying exercises are used to ensure the cleanliness of Kuantan Port's operations area. Nine-metre high airborne mitigation panels are erected in the port area to prevent dust from polluting the surrounding areas.

## REDUCING AND MANAGING WASTE

In FY2018, resource and waste management was identified as an important matter for all of our business Divisions and stakeholders. As a Group, we generated over 68,600 tonnes of waste during the reporting period. The highest volume of waste generated in FY2018 were from the Construction Division (41,138 tonnes), Industry Division (13,884 tonnes) and Toll operations (7,425 tonnes) which mainly comprised of waste concrete, cement, timber, rebar as well as highway pavement waste and milling waste. These operations are continuing their recycling efforts to divert more wastes from landfills. Around 22% of our total waste footprint was recycled in FY2018.

Our Construction Division is committed to protecting the environment and incorporates a more sustainable approach by applying a lifecycle perspective in their projects from the design and planning stage to the end product and disposal stage to reduce waste generation. This approach helps us identify the gaps and gives rise to opportunities to maximise positive environmental impacts where we operate.

### Total scheduled and non-scheduled waste generated (MT)



The Division has adopted the principle of waste hierarchy in our operations to minimise waste in landfills. To achieve this, we adopted methods of work that produce less waste such as the Industrialised Building System (“IBS”) for building projects and the use of steel moulds and formwork systems instead of conventional construction methods. Efforts have been made to reduce waste generation by recycling the residue from concrete pumps to make concrete blocks as vehicle barriers at project sites.

## CONCRETE RECLAMATION

Our Industry Division continues to reclaim concrete waste generated from operations since January 2016. The concrete reclaimer is used to segregate sand, aggregates and slurry effluent from unused concrete resulting in cost savings and effective waste management. A new concrete reclaimer was installed at the ready mix concrete batching plant in Nusajaya in this reporting period.

In FY2018, the system reclaimed 858 tonnes of sand and 841 tonnes of aggregates for production use instead of landfilling. The recovered sand and aggregates are mixed into the stockpile and reused in production. Slurry effluent from the concrete reclaimer flows into the tank and allows suspended particles to settle out of water as it flows slowly through the tank, thereby providing recycled water. Water separated by this method, totaling 3,919 m<sup>3</sup>, is reused for concrete batching, truck washing, sprinkler system and cleaning purposes.



The recovered aggregates and sand are mixed into the stockpile and reused in production

## MONITORING OUR WATER FOOTPRINT

Water availability is crucial for the continuity of our business operations. Our use, diversion and discharge of water into the environment impacts people and natural ecosystems. Understanding the way we use our water in our business operations is a step to determining potential issues not only for our operational use, but also the community and natural ecosystem who rely on surface water such as rivers, lakes, reservoirs and groundwater resources.

As a Group, we reduced our water consumption by 10% from 3 million m<sup>3</sup> in FY2017 to 2.7 million m<sup>3</sup> in FY2018. Our Plantation Division and Port operations were the largest consumers, accounting for 69% of our total water footprint.

## REDUCING ENVIRONMENTAL IMPACT

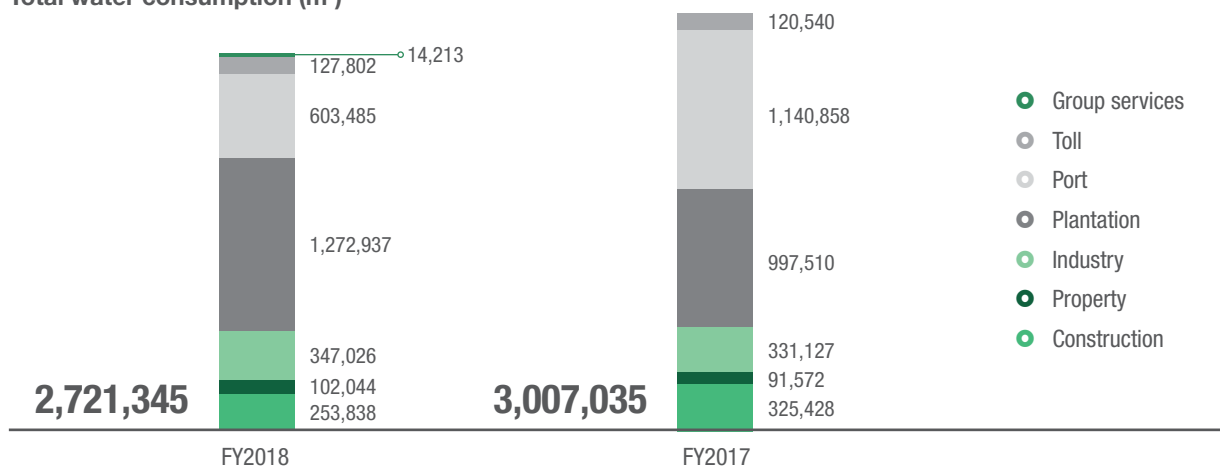
Our Plantation Division used over 1.2 million m<sup>3</sup> in this reporting period, with 725,684 m<sup>3</sup> and 547,253 m<sup>3</sup> from the Malaysian and Indonesian operations respectively. The processed water sourced from catchment ponds is largely used for the processing of fresh fruit bunches (“FFB”) in our mills.

Our Port operations halved its amount of water consumption in FY2018 as compared to the last reporting period with total water consumption of

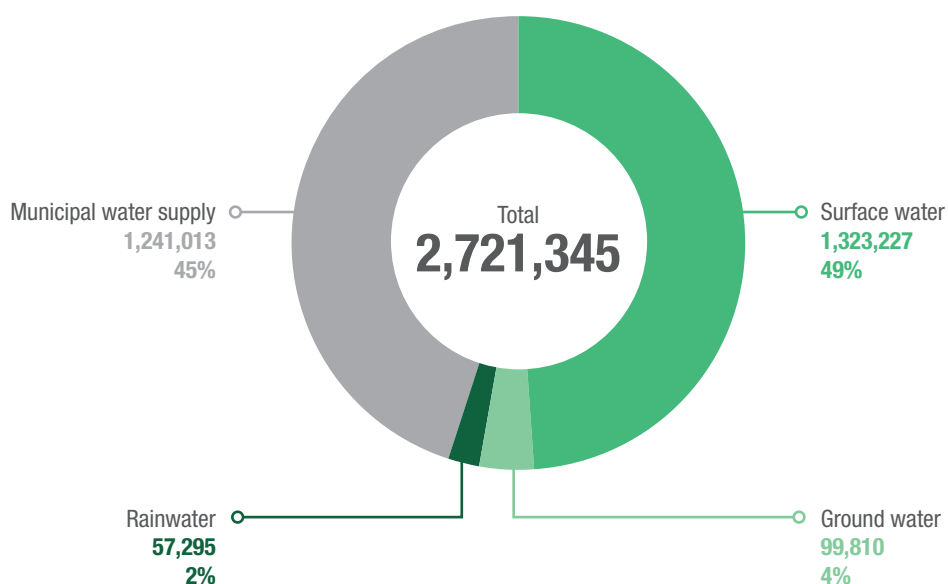
603,485 m<sup>3</sup>. This included 50,290 m<sup>3</sup> of surface water, 50,290 m<sup>3</sup> of rainwater and 502,905 m<sup>3</sup> of water from municipal sources that was largely used for domestic purposes and cleaning exercises at the operation areas.

Our Industry Division consumed 13% of the IJM Group’s total water consumption, with 259,441 m<sup>3</sup> from municipal sources, 80,585 m<sup>3</sup> of ground water and 7,000 m<sup>3</sup> of rainwater.

**Total water consumption (m<sup>3</sup>)**



**Total water consumption by source (m<sup>3</sup>)**



Note: Water consumption data for FY2018 does not include that of external subcontractors for Construction Division

## WATER MANAGEMENT, RECYCLING AND REUSING

In line with SDG Goal 6 to ensure the availability and sustainable management of water, we are making efforts to increase water-use efficiency across our businesses. Through the Environment Quality Monitoring Programme (“EQMP”), we also assess the quality of the environment surrounding our operations and ensure water sources are not affected by our business activities.



Wastewater treatment system implemented at the construction site to ensure water quality complies with the stipulated limits

### Monitoring of water quality

Our Plantation Division has in place a water management plan at all its sites, including stringent periodic audits to ensure the adherence of the environmental management plans and policies. The Division continues to monitor the Palm Oil Mill Effluent (“POME”), wastewater generated from palm oil milling activities, and agrochemical use. POME requires

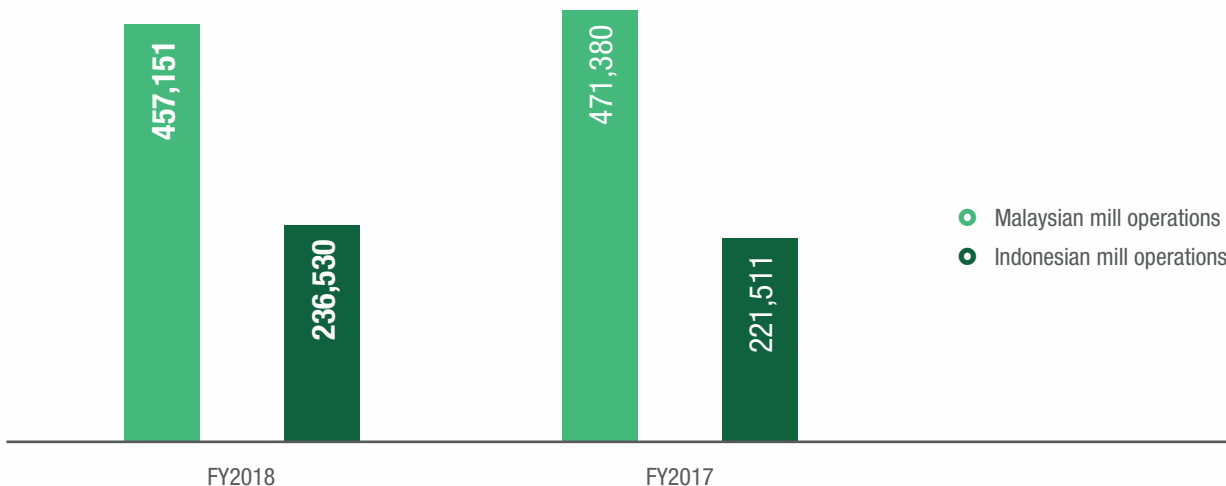
effective wastewater treatment via ponding systems and tertiary treatments to achieve the discharge quality as stipulated by local regulators. In FY2018, total POME generated from our Plantation Division’s Indonesian mill operations increased by 7% due to an additional mill operation and an increase in production. Rich in nutrients, treated POME is discharged to the fields for irrigation. A zero waste discharge policy is adopted at the mills.

Our Port operations abides to all local and international regulations, including the Marine Oil Pollution Convention (MARPOL 73/78 Convention) and the International Safety Guide for Oil Tankers and Terminals (“ISGOTT”). All oil tankers docking at our Port must adhere to the ship-shore safety checklist. Our Port conducts oil spill drills and the Oil Spill Emergency Response Team is always on standby for emergencies. No significant spills were reported in this reporting period.



Environmental monitoring

### Total POME generated from Plantation’s mill operations (m<sup>3</sup>)



# REDUCING ENVIRONMENTAL IMPACT

## Rainwater harvesting

Several Divisions have implemented rainwater harvesting systems to reduce our consumption of water.

DIVISION	EXAMPLES OF HARVESTED WATER USAGE
Property	Landscaping at The Light Waterfront, Penang and The Arc at Bandar Rimbayu, Selangor
Industry	Road cleaning at all quarries and factories
Plantation	Mill processing, nursery irrigation and domestic use
Port	Washing bays
Toll	Landscaping and road cleaning at Loke Yew and Eco Majestic Toll Plaza

01

02

03

04

05 Sustainability Statement

06

## PROTECTING LAND AND BIODIVERSITY

Our business operations can affect local natural habitats and the communities that depend on them. Where our operations have affected biodiversity and the communities who rely on biodiversity for their livelihoods, we apply stringent standards and take measures to protect habitats or ecosystems.

Our Construction Division, through its Erosion and Sedimentation Control Plan, enhances project aesthetics and eliminates damage to natural resources. Best management practices, include usage of sand bunds for land reclamation works along the seaside to prevent sea pollution, control of surface water run-off by constructing temporary drainage systems to prevent flooding and use of temporary measures such as groundcover, turfing, vegetation and hydroseeding to prevent slope erosions.

We have found ways to incorporate biodiversity into our property projects. A prominent feature of The Light Collection project in Penang is the waterways teeming with marine life. As opposed to having courtyards, the 1.5 acres salt-water waterways weaving around the clusters of residential buildings conserves corals and fish species such as baby sharks, blue tang, angelfish, clownfish, pomfret, stingray and threadfin. Marine aquatic experts are engaged to ensure that the water flowing in from the sea is suitable for the marine life. We have recently handed over the development and surrounding waterways to The Light Joint Management Body (“JMB”) who will collaborate with the relevant authorities to maintain the marine ecosystem.

Our Plantation Division is committed to no deforestation of High Conservation Value (“HCV”) areas. HCV areas have critical and outstanding importance due to their high ecological and social value. About 4,255 hectares

or 7% of the total planted land bank in our Malaysian and Indonesian operations have been set aside for conservation, biodiversity enhancement, research and education. When rare and endangered species are found through biodiversity surveying means, the habitats are conserved as HCV areas. To prevent illegal poaching, measures such as putting up appropriate signages on prohibiting wildlife hunting and patrolling are carried out in areas bordering forest reserves.

We have been working with smallholders through the Rurality programme, an initiative of The Forest Trust (“TFT”), an NGO aimed at driving innovation at the small farmer level. Previously, smallholders in Ulu Muanad village in Beluran, Sabah who supply to the Plantation Division’s Desa Talisai Palm Oil Mill faced elephant encroachment issues at their oil palm estates. Through the Division’s facilitation of human-elephant conflict dialogues, the stakeholders in the vicinities have grouped together and formed a patrolling team in handling the human-elephant conflict issues. As a result of this constant smallholder engagement, trust is established and efforts are collaboratively put in by the Division and TFT to support and develop these smallholders in raising their working knowledge, productivity and living conditions.



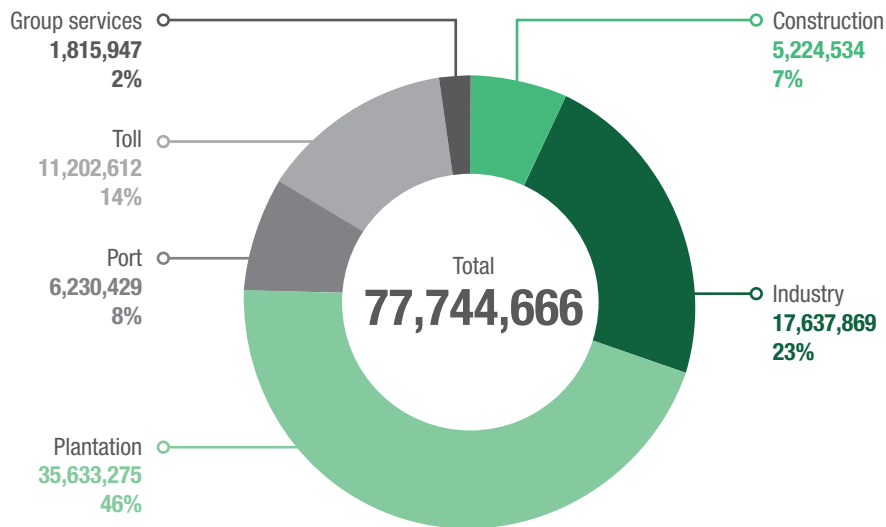
Waterways at The Light Waterfront, Penang

## ENERGY AND CLIMATE CHANGE

We consume a significant amount of energy in our business operations. The use of energy can create negative environmental impact in the form of greenhouse gas emissions, whether direct or indirect, which contributes to global warming and air quality deterioration.

As a Group, we used over 77.7 million kWh of electricity in the reporting period. The biggest consumption of electricity was by our Plantation Division (35.6 million kWh), Industry Division (17.6 million kWh) and Toll operations (11.2 million kWh). Each Division has its own specific guidelines on strategic initiatives, performance standards and specific requirements relating to energy efficiency and climate change mitigation measures.

### Total energy consumption by business (kWh)

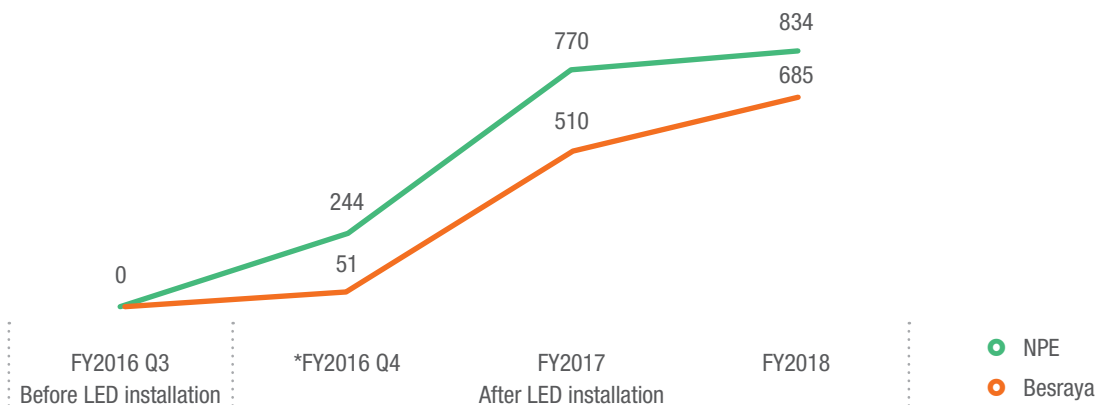


### Lighting up our Tollways for a greener future

Our Toll operations began implementing energy saving efforts since 2015 by installing light emitting diode (“LED”) lamps to replace high-pressure sodium vapour (“HPSV”) lamps at the toll highways. Typically, LEDs are energy efficient, last longer and contain no mercury. Since installation, we have seen consistent

financial and energy savings. In FY2018, we saw 51% and 39% cost savings for Besraya and New Pantai Expressway (“NPE”) respectively as compared to when HPSV lamps were used. This resulted in a cumulative reduction of 1,247 tonnes of CO<sub>2</sub> and 1,848 tonnes of CO<sub>2</sub> for Besraya and NPE respectively since installation of LEDs.

### Annual CO<sub>2</sub> emission reduction following installation of LED lighting



Note: \*Besraya and NPE LED savings were for two and three months in FY2016 respectively.

01  
02  
03  
04  
05 Sustainability Statement  
06

## CASE STUDY: REDUCING CARBON EMISSIONS IN PRE-TENSIONED SPUN CONCRETE (“PSC”) PILES PRODUCTION

Since FY2009, our Industry Division has been making conscious efforts to reduce carbon emissions in our 10 factories in Peninsular Malaysia. In this reporting period, the factories produced 1.8 million tonnes of piles.

We report our greenhouse gas (“GHG”) emissions of these manufacturing plants in line with the recommendations of the Intergovernmental Panel On Climate Change (“IPCC”). In the last 10 years, our Industry Division has shown a cumulative reduction of 224,200 tonnes of GHG emissions collectively from Scope 1, 2 and 3 by using additives to cure concrete in replacement of autoclaves and installing rooftop solar photovoltaic (“PV”) systems at our factories.

Based on the GHG Protocol, our GHG emissions are categorised into:

- Scope 1 – Direct CO<sub>2</sub> emissions that are emitted from sources owned or controlled by our organisation such as from stationary combustion of light fuel oil, diesel and natural gas to produce steam
- Scope 2 – Indirect CO<sub>2</sub> emissions that are consumed by our organisation such as purchased electricity for factory use, that may be offset by using renewable energy such as solar PV systems

- Scope 3 – Other CO<sub>2</sub> emissions related activities not owned or controlled by our organisation such as cement purchased for our consumption

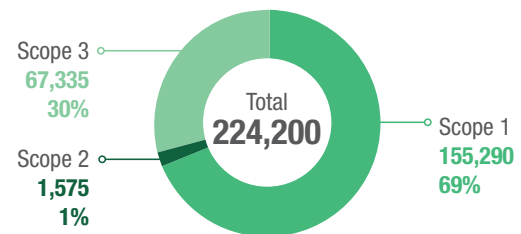
We have determined FY2008 as the base year of comparison since the introduction of additives in replacement of autoclaves began in FY2009.

In 2008, we discovered the use of Polycarboxylic Ether (“PCE”) additives in the manufacturing process of piles, thereby eliminating the need for autoclaves that consume large amount of fuel.

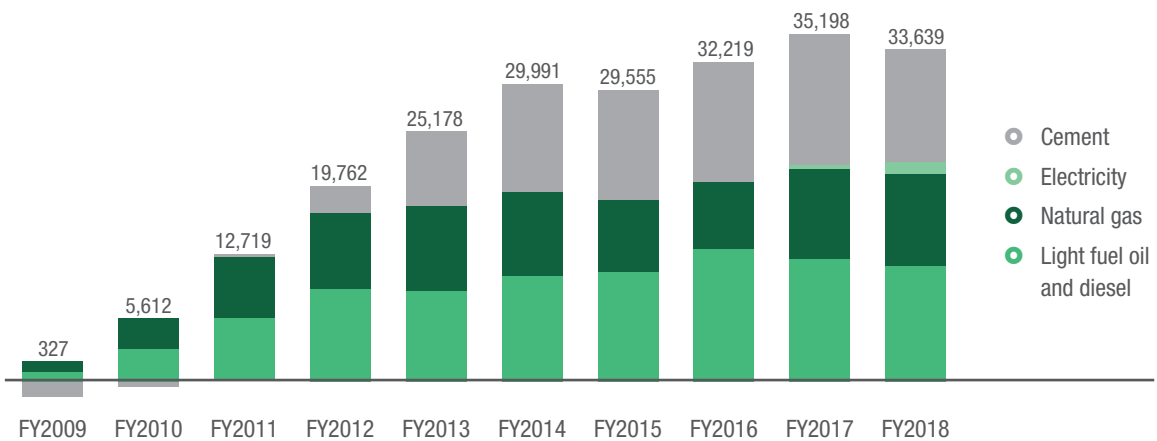
The Jawi, Klang and Kapar factories started using PCE additives in FY2009. By September 2012, all our factories utilise PCE additives in the concrete mix, contributing to a reduction in fuel consumption and an increase in productivity due to the faster curing time.

Since FY2009, our biggest reduction was seen in Scope 1 at 69% and Scope 3 at 30%.

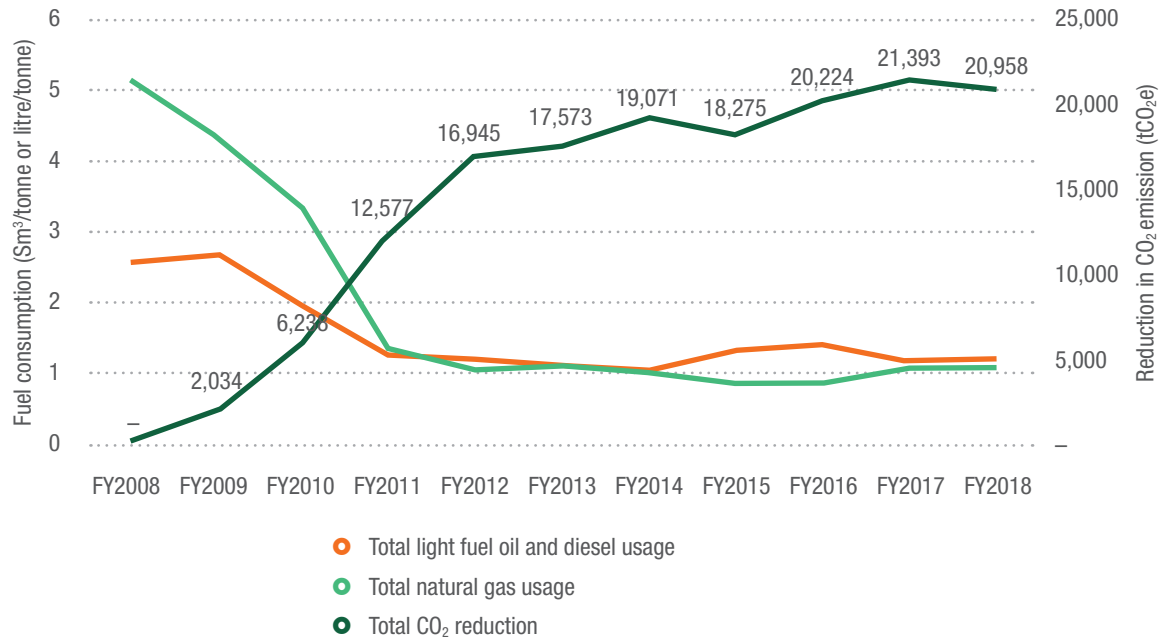
### Total CO<sub>2</sub> reduction from FY2009 to FY2018 (tCO<sub>2</sub>e)



### Total CO<sub>2</sub> reduction by source and year (tCO<sub>2</sub>e)



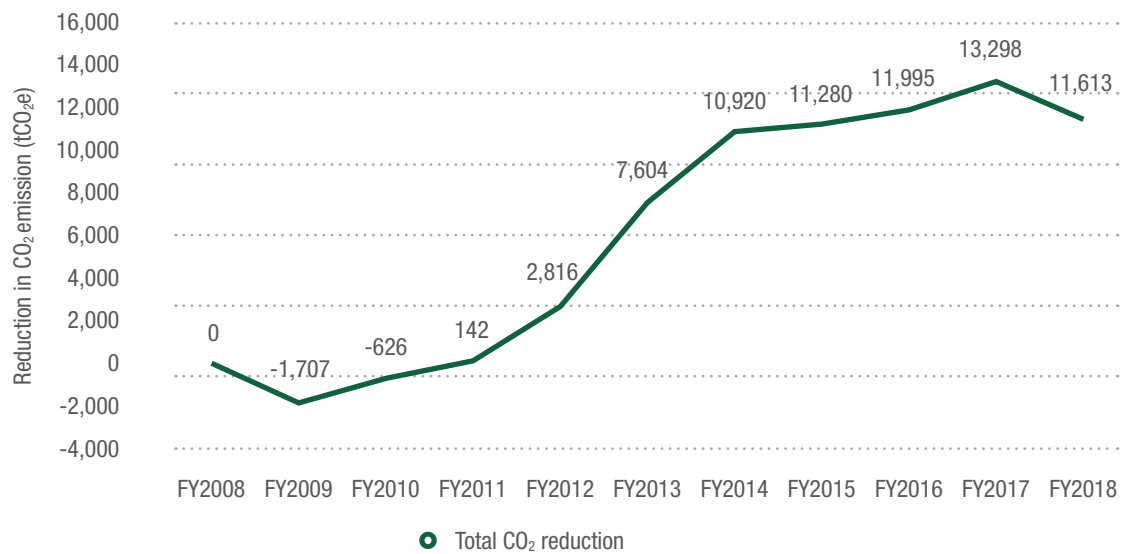
### Fuel consumption vs CO<sub>2</sub> reduction



There was a slight increase in light fuel oil usage in FY2014 due to an additional manufacturing plant at Ulu Choh, Johor.

The use of PCE additives also resulted in a reduction of cement consumption, which is a major raw material.

### CO<sub>2</sub> reduction from lower cement content per m<sup>3</sup> of concrete





## REDUCING ENVIRONMENTAL IMPACT

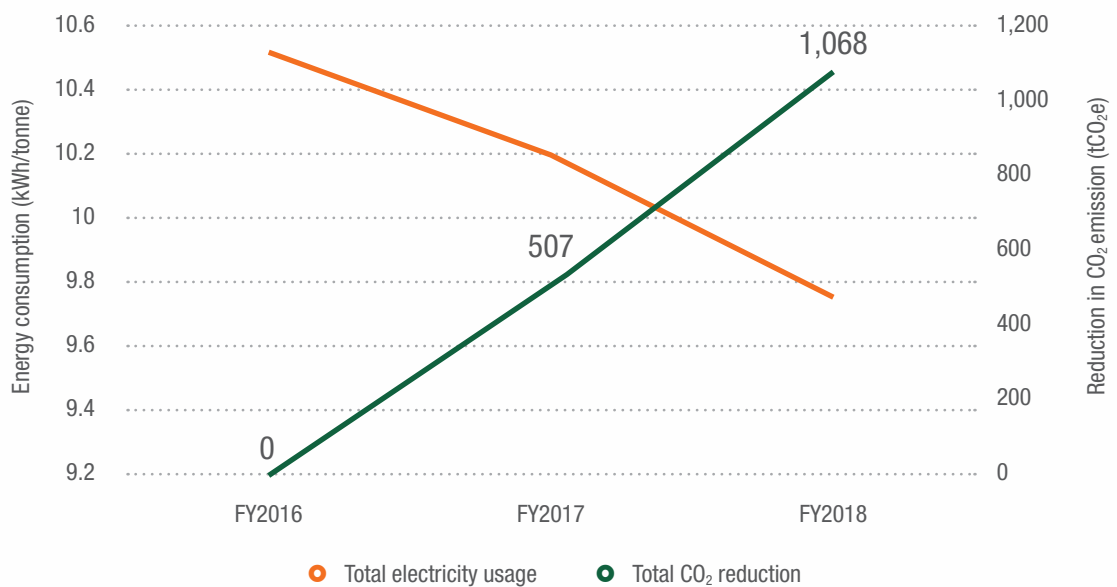
We installed rooftop solar PV systems at our Kapar factory in July 2016 and Jawi factory in October 2016. Having seen a reduction in CO<sub>2</sub> emissions by 506.7 tonnes, we expanded this effort to another three manufacturing plants – Senai,

Ulu Choh and Lumut factories in October 2017, January 2018 and February 2018 respectively. About 1,575 tonnes of CO<sub>2</sub> emission was avoided in the last two years due to the usage of renewable energy.

ICP factories	Kapar	Jawi	Senai	Ulu Choh	Lumut
Solar capacity (kWp)	445	700	666	900	776
Total solar energy generated (kWh)	476,397	780,611	299,731	172,833	112,354

05 Sustainability Statement

### Energy consumption vs CO<sub>2</sub> reduction



Rooftop solar PV system at Lumut factory

## PROMOTING GREEN BUILDINGS

In support of SDG's Goal 9 on building resilient infrastructure, promoting sustainable industrialisation and fostering innovation; we are working to meet the demands of the changing global climate and customers.

Our clients are demanding for green buildings, a label that recognises the best in class buildings and practices that are environmentally responsible and resource efficient. Green building certifications give recognition to buildings that reduce negative impacts and create positive impacts on our climate and natural environment.

Our project portfolios with green building certifications are:

PROJECT	LOCATION	TYPE	GROSS TOTAL DEVELOPMENT AREA	CERTIFICATION TARGET	CERTIFICATION STATUS
The Light Linear	Penang	Residential	44,927 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
The Light Point	Penang	Residential	18,895 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
The Light Collection I	Penang	Residential	27,275 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
The Light Collection II	Penang	Residential	34,376 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
The Light Collection III	Penang	Residential	53,870 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
The Light Collection IV	Penang	Residential	39,507 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
The Address	Penang	Residential	21,867 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
Bandar Rimbayu	Selangor	Township	1,879 acres	Green Building Index ("GBI")	Obtained
Kondominium Altitude 236	Kuala Lumpur	Residential	28,773 m <sup>2</sup>	Green Building Index ("GBI")	Obtained
Pantai Sentral Park (Parcel 2)	Kuala Lumpur	Residential	14,050 m <sup>2</sup>	Green RE – Gold	In progress
Menara Prudential	Kuala Lumpur	Commercial	52,038 m <sup>2</sup>	LEED Core and Shell	In progress



The Light City

01  
02  
03  
04  
05  
06

Sustainability Statement

## CASE STUDY: BRIDGING ENVIRONMENT AND THE COMMUNITY AT THE ARC, BANDAR RIMBAYU

At the heart of our Property Division's 1,879-acre township of Bandar Rimbayu is an award winning building, The ARC, which was named after its curved shape. The ARC functions as a focal point for the community and the township. Designed with green open spaces, the self-sustaining building incorporates many features such as a giant canopy, elevated green roof deck, rainwater harvesting systems and photovoltaic ("PV") cells.

### Green aesthetics and energy-saving features

The green canopy is designed to respond to the environment, in particular, the way it addresses and diffuses the effects of sunlight, heat, humidity and rain in our tropical climate. The canopy acts as a covered walkway to shelter intended community activities. The green roof keeps itself and the space below cool by sustainable means using soil and greenery as insulation. In doing so, the roof effectively replaces the original greenery on ground level with a new ecosystem on an elevated deck that not only provides an open space for recreation but offers higher vantage points for visitors and the community to enjoy the views of Bandar Rimbayu.

The orientation of the building was also optimised for energy saving. The ARC faces north-south with the western and eastern façade of the pavilion shaded by a green feature wall. This wall filters the sunlight and cuts down the heat transmission into the building. PV solar panels have also been installed on the metal deck roof of the current sales gallery building. The metal deck roof faces west to harness the energy of the sun and converts it into electricity. The energy generated is harvested for the maintenance and management of the building.



Elevated green roof with shade-providing curtain creepers

### Sole reliance on groundwater and rainwater for landscaping

The ARC is water neutral as it relies solely on groundwater and rainwater. The elevated green roof deck insulates and filters collected rainwater before discharging it into the canal waterways. It is channeled by means of dripping through columns covered with shade-providing curtain creepers such as the *Vernonia Elaeagnifolia* before ending up in the perimeter creeks and retention waterways. Here, water evaporates and acts as a cooling system. The creek system functions as a rainwater collection vessel, utilising gravity to induce a perpetual flow, reducing the need for pumps or other forms that requires energy. The water quality, flow rate and retention volume collectively function as a rainwater harvesting system, where water is harvested for landscape irrigation purposes.

Much thought was also given when constructing the man-made lake. The entire 20,000 m<sup>2</sup> lake was constructed with Ethylene Propylene Diene Monomer ("EDPM") membranes as pond liners that can be maneuvered easily to the shape of the designed creek and lake. The EDPM is easy and flexible to install allowing for faster construction of the lake without engaging too much equipment and heavy machineries, thus reducing the impact on the environment.

### Recycling and reusing waste materials

The inside of the sales gallery building is decorated with furniture and light fittings made from materials like recycled paper tubes, crushed aluminum cans and recycled Tetra Paks. Burned stained brick flooring, a vertical landscape and wall decorations made from recycled materials are part of the interior design. Excavated oil palms during the construction phase has been replanted to line the streets of the township.



PV solar panels installed on the sales gallery building roof



*The ARC, Bandar Rimbayu*

### Engaging with the neighbouring communities

Besides running environmental impact studies on prospective project locations, our Property Division also engages with local authorities and the communities. The Orang Asli community, squatters and farmers living in this area including the local authorities were engaged in dialogues to understand concerns they might otherwise have. As a result, the community of about 200 families willingly relocated to a permanent housing of 159 bungalow units and 34 terrace houses provided by the Property Division.

### Crime prevention through environmental design at Bandar Rimbayu

Understanding that safety and security are essential to our communities, Bandar Rimbayu incorporates elements of crime prevention through environmental design in the development of the area. The pedestrian walkways are separated from motorised lanes by a buffer to deter snatch thieves. To ensure quieter and safer neighbourhoods, we introduced cul-de-sac layouts, bright street lighting, speed bumps and other traffic calming devices to discourage speeding and pass through traffic.

## INCIDENTS OF NON-COMPLIANCE

Our Construction Division received a fine of RM12,000 in FY2018 due to a mosquito breeding site that was found at one of the projects. This fine was issued for non-compliance with the Destruction of Disease-

Bearing Insects Act 1975 under the purview of the Environmental Health Law and Regulations. To prevent future occurrences of such incidences, we have reviewed our processes and standard operating procedures to ensure compliance at all of our construction sites.