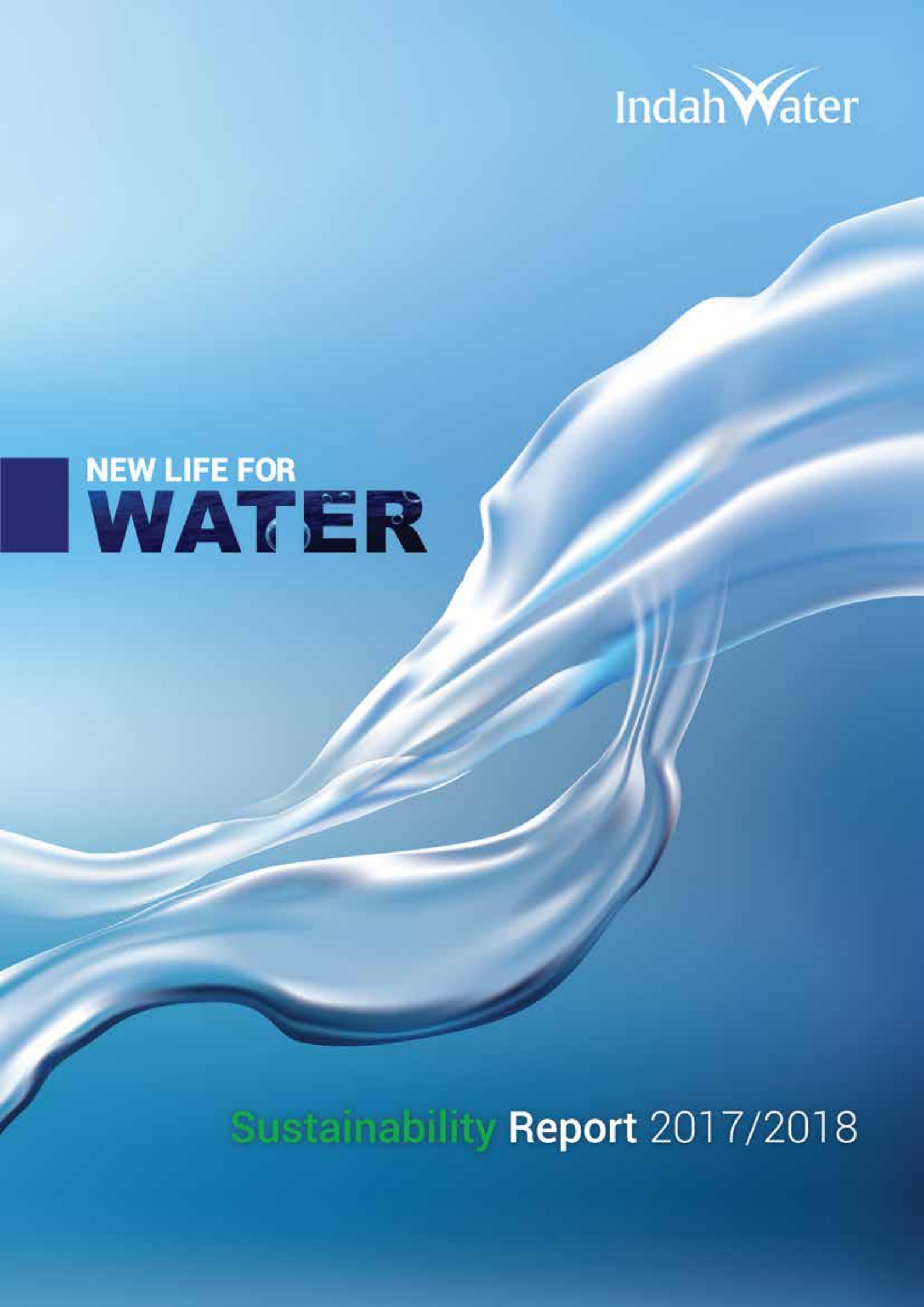
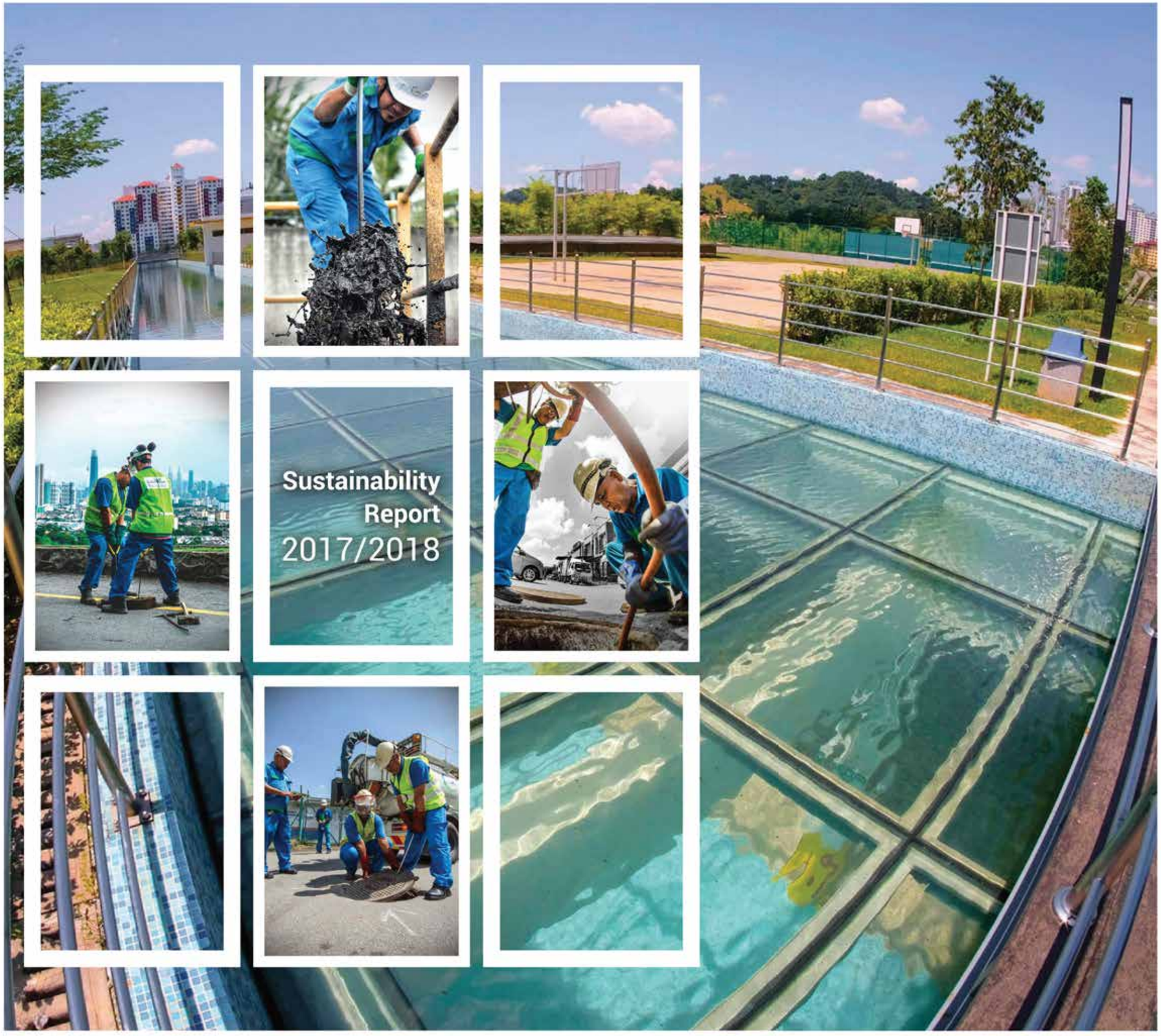
Indah Water



Sustainability Report 2017/2018



Indah Water Konsortium Sdn Bhd ("IWK") continues to be the driving force and catalyst behind the realisation of greater sustainability within Malaysia's wastewater industry and in Malaysia as a whole. For over 25 years, IWK has delivered an efficient, safe and modern wastewater system that has safeguarded the nation, the environment and society.

From our state-of-the-art Regional Sewage Treatment Plant Pantai 2 at Lembah Pantai, to our constant resource recovery efforts, and to sharing best practices with other nations as well as public outreach and more, we continue to respond proactively towards cultivating a sustainability culture and implementing best practices that create new life for water while contributing to national water security.

Through technological innovation and the optimisation of the diverse talents and capabilities of our workforce, we are poised to become the premier wastewater company by 2020.

Indah Water
The Premier Wastewater Company

OUR VISION AND MISSION

VISION

The Premier Wastewater Company

MISSION

To provide excellent, efficient and innovative services for safe and sustainable water and environment

OUR CORE VALUES

INDAHAN SHOULD HAVE...

INTEGRITY

Indahan always strive to uphold professional responsibilities and continuously practise good ethics and corporate governance in delivering our services to the community.

WORK ETHIC

Indahan are visionary and consists of specialised and well-trained individuals who are experts in each of the business functions they serve in IWK and committed to ensure that the works delivered are efficient, ethical and of high quality to achieve well-being of the people and environment.

KNOWLEDGE

The spirit of Indahan's togetherness drives us to be well-informed and conversant in all the areas and scopes of wastewater management (planning, design, construction, legislation, operations, maintenance, training, consultation, billing, collection and customer service) in applying knowledge towards achieving the vision to become the premier wastewater company.

At the Heart of National Progress, At the Forefront of Nation-Building

With IWK serving the nation by providing first-rate wastewater operations and services, Malaysia has met the UN Millennium Development Goal to provide basic sanitation services for the *rakyat*.

72.2% of the nation's population residing in IWK-managed areas have access to connected wastewater services, with the rest having some form of on-site facilities that secure public health and protect our environment.

Malaysians enjoy clean water and rivers due to the concerted efforts of many stakeholders including IWK whose role has been effective in preventing the pollution of water sources.

Indah Water Konsortium Sdn Bhd
Sustainability Report 2017/2018

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IWK's Regional Sewage Treatment Plant ("RSTP") Pantai 2 at Lembah Pantai, Kuala Lumpur is Asia-Pacific's largest underground wastewater treatment plant covering a site of 178,311m². It is designed for a population equivalent ("PE") of 1.423 million in order to meet the needs of Klang Valley's growing number of residents. As at December 2018, RSTP Pantai 2 serves a PE of 826,600.

The plant has been designed to maximise green energy recovery through the installation of solar panels and biogas utilisation. It is also equipped with rainwater harvesting capabilities and final bio-effluent reuse for non-potable use and is an excellent example of IWK's continued efforts to set new industry benchmarks.

The rainwater harvesting system allows IWK to store up to 80 cubic meters of rainwater per day, which yields a yearly savings of approximately RM67,000 in water supply charges. The reuse of final bio-effluent for non-potable applications generates an additional RM2 million in yearly savings from reduced water consumption.

A 12 hectares EcoPark is built above the sewage treatment plant. It features waterways, abundant greenery and consists of sport facilities such as football field, futsal court, volleyball court, sepak takraw court, jogging track together with cafeteria and a multipurpose hall. The EcoPark is built for the recreational activities of the public besides serving the Pantai Dalam community.

RSTP Pantai 2 is an excellent example of IWK's continued efforts to set new industry benchmarks.

[1] *Population Equivalent or PE is a measure of sewage facilities capacity.*

SECTION

01

ABOUT INDAH WATER KONSORTIUM

Sustainability Report
2017/2018

ABOUT INDAH WATER KONSORTIUM

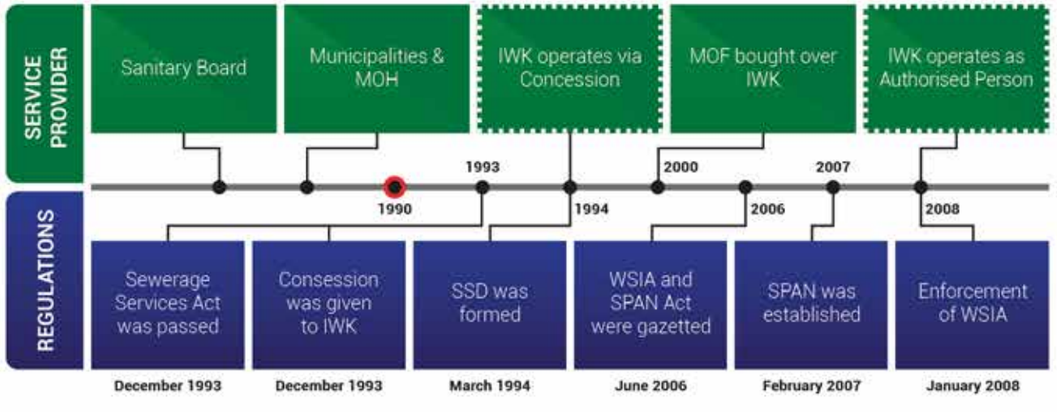
Indah Water Konsortium Sdn Bhd ("IWK") plays a significant role in ensuring a safe, modern and convenient system for the treatment, management, disposal and recovery of wastewater for Malaysia.

We are at the forefront in the preservation of water ways and the environment which contributes towards the nation water security as well as health and safety of Malaysians.

In 1993, the Federal Government awarded the concession for the provision of nationwide wastewater services to a single corporate entity, Indah Water Konsortium Sdn Bhd ("IWK"), which was established for this purpose. Prior to this, wastewater services nationwide were managed by local authorities ("LAs"). In June 2000, the Government acquired the entire equity stake in IWK from its then shareholders via the Minister of Finance Incorporated ("MOF Inc").

IWK has been providing sewerage services for the past 24 years

The Company was appointed as a Sewerage Services Concessionaire by the Federal Government pursuant to the Concession Agreement dated 9 December 1993. It now operates as an Authorised Person pursuant to the Water Services Industry Act 2006.



Note: SSD: Sewerage Services Department WSIA: Water Services Industry Act, 2006 SPAN: National Water Service Commission

OUR FRONTLINE ROLE IN MALAYSIA'S WASTEWATER INDUSTRY

Over the years, IWK's role has expanded and evolved to extend beyond serving Malaysia as a utility provider (sewage services).

We stand tall as a leader for research and development ("R & D"), an international leader for knowledge transfer and talent development, for development of the local wastewater industry and also embarking into resource recovery (the recycling of treated waste into commercially viable applications).

PRINCIPAL BUSINESS ACTIVITIES

- OPERATION AND MAINTENANCE OF PUBLIC WASTEWATER SYSTEMS
- WASTEWATER CAPITAL WORKS AND REFURBISHMENT MANAGEMENT
- DESLUDGING SERVICES
- MONITORING OF EFFLUENT QUALITY AND SLUDGE DISPOSAL ACTIVITIES
- WASTEWATER MANAGEMENT TECHNICAL TRAINING & CONSULTING AND OPERATIONAL SKILLS TRAINING
- RESEARCH AND DEVELOPMENT ("R & D") WORK IN THE WASTEWATER SECTOR
- SEWERAGE TECHNICAL AND ENVIRONMENTAL SERVICES / CONSULTANCY WORKS
- SEWERAGE PLANNING, SEWERAGE ASSET DATA MONITORING AND CERTIFYING SERVICES
- RESOURCE RECOVERY

Kindly refer to Appendix One for a detailed description of our business activities and the key role we play in championing the progress of Malaysia's wastewater industry.

HIGHLIGHTS AND ACHIEVEMENTS

IWK BY NUMBERS

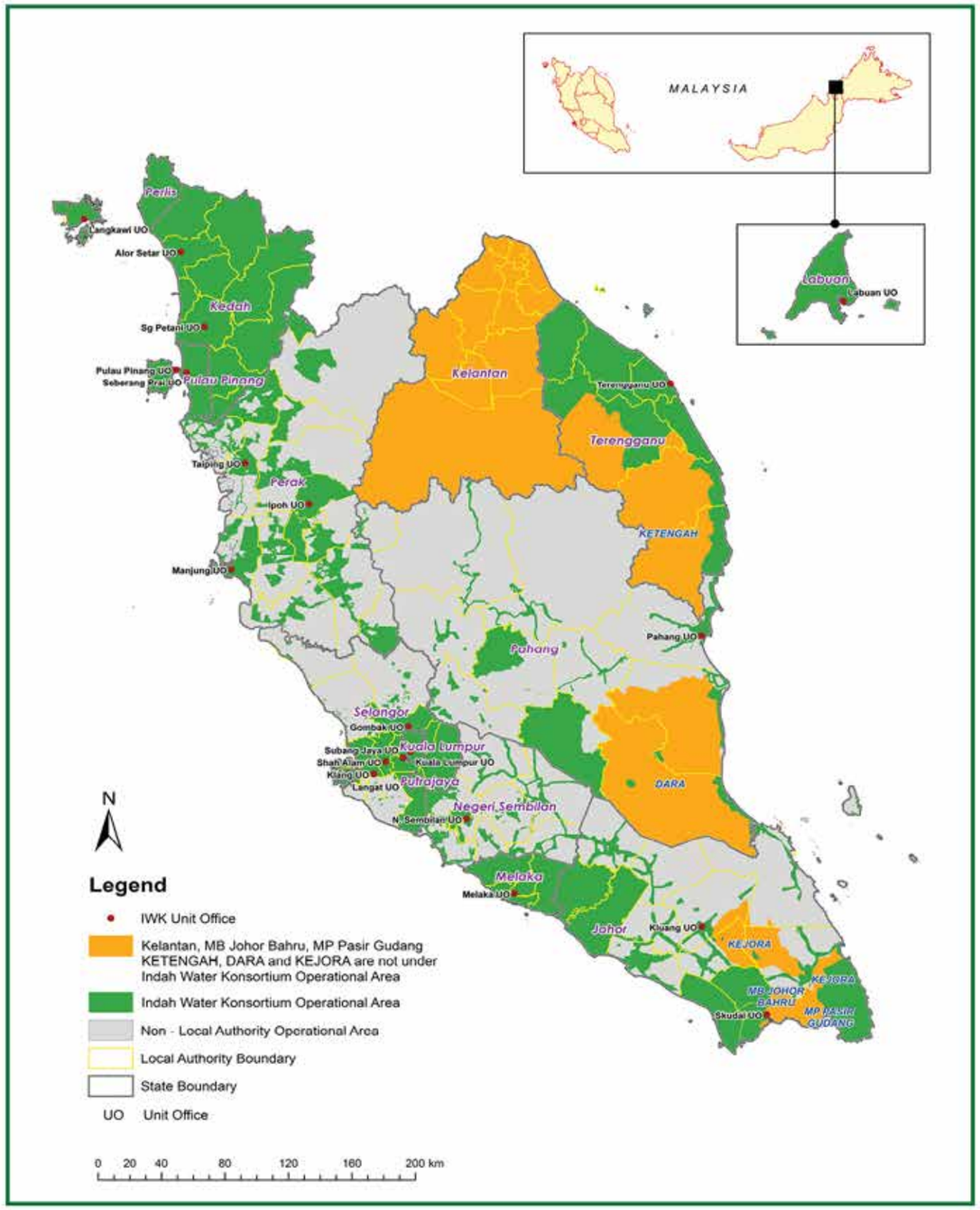
Presently, IWK operates in 88 out of 155 LAs (as at December 31, 2018) nationwide, except in the States of Kelantan, Sabah and Sarawak. Our existing service coverage area measures 66,741 km². We employ 3,318 people serving a population equivalent ("PE") of 25.24 million with the numbers growing annually.

TYPE	2016	2017	2018
Service Area (km²)	64,943	64,943	66,741
Vehicles	606	595	614
Billed Customers	3,676,371	3,799,988	3,912,378
Employee Headcount	3,352	3,327	3,318
Sewage Treatment Plants ("STPs")	6,577	6,690	6,745
Unit Offices ("UOs")	21	21	21
Network Pump Stations ("NPSs")	1,072	1,133	1,188
Reporting Centres	59	59	58
Population Equivalent ("PE")	23,917,369	24,358,564	25,240,867
Certifying Agencies	10	10	10
Sewer Length (km)	18,348	19,031	19,134
Laboratories	5	5	5

BUSINESS AND OPERATIONAL PRESENCE

(As At December 31, 2018)

Indah Water Konsortium Operational Area



OUR STAKEHOLDERS

Governance Structure of Sewerage Services in Malaysia

Ministry of Water, Land and Natural Resources

Undertakes refurbishment or upragding projects funded by Government

Ministry of Finance Incorporated

Ministry of Energy, Science, Technology, Environment and Climate Change

SPAN
www.span.gov.my

National Water Services Commission

Implement the policies and controls of the Government's National Sewerage Agenda

Regulates Sewerage Services

Indah Water
New Life for Water

Regulates Effluent Discharge

Department of Environment

Ensure the management of the nation's natural resources and environment is well-balanced and suitable

AWARDS AND ACCOLADES

IWK is proud to have gained recognition for its operational excellence, for providing services of world-class quality, and for being a preferred employer amongst many other benchmarks. These are the awards we have received in recent years:

IWK receiving its 2016 MyCarbon Award along with other award winners.

The 2016 MyCarbon Award

Awards And Accolades

2018:

The Water Efficiency Awards @ the Golden Globe Tigers Award

EPF award entitled 'Majikan Yang Bertanggungjawab Dalam Pembayaran Caruman KWSP Secara Teratur Bagi Tempoh 2017/2018'

IWK's Batu Ferringhi Sewage Treatment Plant received the Malaysia Water Industry Achievement Award 2018 for Best Sewage Treatment Plant from MWA.

MWA presented IWK with 2 Special Mention Award-Malaysia Water Award for Management 2018 and Malaysia Water Award for Research 2018.

2017:

Leadership Award for Water & Wastewater Efficiency - CMO Asia Awards Good Corporate Governance Award from Malaysia Canada Business Council ("MCBC") Awarded ISO 9001:2015 certification (organisation-wide)

2016:

Water Industry Achievement Award (Best Sewage Treatment Plant Award) by Malaysian Water Association ("MWA")

MWA award (Best STP award) for effective STP with successful resource recovery system-Pantai 1 STP

International Business Review Infoniaga Awards under The National Development Award category for Sewage Treatment at the International Business Review Summit 2016

The Golden Globe Tigers Award (Leadership Award for Outstanding Contribution to Water Efficiency) 2016 MyCarbon Awards (National Corporate GHG reporting Programme for Malaysia) – Second Runner Up

2015:

The Inaugural ASEAN PR Excellence Award 2015 (Bronze Award for Media Relations)

2014:

Shortlisted for ACCA Malaysia Sustainability Awards ("MaSRA") 2014

OUR PURSUIT OF QUALITY AND EXCELLENCE

IWK is an ISO 9001:2015 certified organisation. Beyond this globally recognised benchmark, we have also met the requirements for many other International Standards Organisation ("ISO") certifications:

	ISO Standards
1	Quality Management System BS EN ISO 9001:2015
2	Energy Management System ISO 50001:2011
3	Environment Management System ISO 14001:2015
4	Occupational Health & Safety Management System ISO 45001:2018
5	Laboratory Accreditation Scheme of Malaysia MS ISO/IEC 17025 • Northern • Central • Southern
6	Quality Management Customer Satisfaction & Complaint Management System ISO 10002:2014
7	Information Security Management System ISO/IEC 27001:2013
8	Asset Management Systems ISO 55001:2014

These certifications are part of our quality improvement roadmap and we look forward to achieving further progress in our subsequent quality journey.

Leading Via Groundbreaking Research

In collaboration with research partners as well as by itself, IWK continues to actively undertake groundbreaking research and development activities that pave the way for further industry improvement.

Results of Pilot Project in 2007 Between IWK and Rubber Research Institute Malaysia on Application of Biosolids Showed Approximately 17% Increase In Growth Rate of Rubber Trees.

In June 2018, IWK produced a product called BioPellens, a fertiliser churned out from recycled biosolids in collaboration with Universiti Putra Malaysia ("UPM"). BioPellens is just one of our notable achievement, among others, which resulted from many years of relentless research & development ("R&D") efforts. BioPellens is well received with growing commercial appeal based on its effectiveness as used thus far, on non-edible crops.

Trial Design	Effects on Growth	
	Height (cm)	Girth (cm)
Control (1)	*284*	*77*
With Bio-solids (2)	*332*	*90*

(1) 100% Soil
(2) 40% Biosolids + 60% Soil

BioPellens offers a higher nutrient (N-Nitrogen, P-Phosphorus, K-Potassium ratio) and at prices much lower than conventional fertilisers. Benefits include easier handling, stronger water retention, better aeration, easy commercial application, reduced usage of chemical fertilisers, among others.

SECTION

02

LEADERSHIP & GOVERNANCE

Sustainability Report 2017/2018

LEADERSHIP & GOVERNANCE

A MESSAGE FROM THE CHIEF EXECUTIVE OFFICER

NARENDRAN MANIAM

Chief Executive Officer

Since our previous sustainability report, we have made considerable progress on our journey as Malaysia's national wastewater company.

Despite facing tremendous financial constraints and operational challenges, IWK has exemplified resilience, innovation and ingenuity in its many industry achievements as measured across various economic, environmental and social indicators. Beyond merely reducing operational expenditure, we have achieved excellent compliance levels with regulatory standards and have made further inroads into resource recovery.

In 2017 and 2018, we made encouraging progress in recycling and commercialising treated biosolids and bio-effluent, while biogas was used for our own power consumption. One of our pioneering efforts is the supply of biosolids and bio-effluent to Majlis Perbandaran Port Dickson ("MPPD") for landscaping purposes since 2012. MPPD recorded significant cost savings due to decreased dependency on fertilisers and lower water bills from the water operator.

With this, IWK is fast progressing from just being a utility-based sewage services provider to moving into the exciting space of holistic wastewater management and resource recovery. As we pursue this new direction, we will continue to fulfil our core mandate of providing quality sanitation and sewerage infrastructure management despite mounting challenges, most of which are unfortunately beyond our control.

Among our many and increasing challenges are expanding business dimension, scope and more stringent environmental regulatory standards coupled with inflationary pressure. Most of all, having to operate with a tariff that was set in 1997 essentially means that IWK cannot achieve financial sustainability. On our part, we endeavour to the best of our capabilities to set an industry benchmark billing collection rate of 90%, to control opex and to bolster our collection via joint billing mechanisms, aggressive desludging activities and commercialisation of resource recovery efforts.

Serving The Nation Amidst Mounting Costs & A 21-Year Old Tariff

The tariff for sewerage charges in Malaysia for households that are connected to our sewerage system is just RM8 monthly per household – one of the lowest in the world. Invariably, the disparity between revenue and mounting operating costs is having a significant financial impact on IWK. IWK receives government compensation due to tariff deferment, but continued reliance on such assistance is not viable in the long-term.

As such, we continue to push for a more equitable, market-driven tariff that will enable IWK to become financially sustainable so as to continue providing first-rate wastewater services to the nation. In this regard, we continue to engage the government towards a rebalancing of the tariff while also exploring other forms of financial and non-financial support.

Leading In Biotechnology Solutions

Our joint research with Universiti Teknologi Malaysia ("UTM") to remove nitrogen and phosphorus from by-products has resulted in us being able to isolate and identify beneficial bacteria. In a separate venture with Universiti Malaya ("UM"), a study on anoxic zones and nitrogen removal revealed the presence of microbes for efficient nitrogen removal ("SND") in IWK's STPs.

Other in-house research efforts were also undertaken to screen, isolate and identify potential beneficial microbes for fat, oil and grease removal as well as facultative anaerobic bacteria for the removal of ammonia, which subsequently, could reduce energy demand in sewage treatment processes. The indigenous (naturally occurring) bacteria that was isolated from IWK's STP has been successfully made into a solution of mixed bacterial cultures and is now available for use as a wastewater treatment bio-product.

We hope to leverage on our research results to introduce improvements within our operations towards reducing costs and enhancing productivity.

Joint Billing

In 2016, IWK initiated its maiden joint billing programme with Jabatan Bekalan Air Labuan ("JBAL"). This initiative, which was very successful, focused on Labuan residents whose premises are connected to the public wastewater system.

Spurred by the successful implementation of this programme, we further engaged with water operators nationwide and in 2018, a second joint billing agreement was achieved with Ranhill SAJ Sdn Bhd for water and sewerage services in the state of Johor (except for Johor Bahru and Pasir Gudang) where services are managed by their respective Local Authorities ("LA").

Joint billing effectively addresses a national problem i.e. the issue of non-payment of sewerage services as the charges are now included in a single bill along with water consumption.

The Future Of IWK

Our tagline "New Life For Water" reflects our desire to embrace greater innovation and dynamism in wastewater management towards creating a zero waste industry. This includes exploring IWK's potential and capabilities beyond wastewater treatment.

While our STP's effluent compliance levels stand at an excellent 95%, the truth is that treated discharge from IWK's STPs only account for a small portion of total discharge into our rivers. There are numerous cases of untreated or inadequately treated discharge from private plants, septic tanks, commercial operations, agricultural activities and villages finding their way into our rivers, which can potentially have adverse effects on the nation's water supply as well as the health of millions of Malaysians.

IWK has the capacity to address the aforementioned to contribute significantly to national water security. For instance, we have competent talent to monitor private plants and ensure regulatory compliance for effluent discharged.

On a separate note, we hope to also achieve improved parity between our 87% residential and 13% non-domestic customers. This will reduce some of the financial pressures on IWK as non-domestic rates are higher than the monthly RM8 charged to households. There are many commercial assets, which can come under the purview of IWK including government assets, thus, expanding the revenue base. In addition, joint billing as well as e-billing will further improve our collection rates.

Our other initiatives are to continue pursuing our resource recovery efforts, while working closely with all stakeholders to address major operational aspects such as plant rationalisation, capital expenditure for STPs and others.

As we focus on the tangibles, we will also focus on people, encouraging Malaysia's future generation to step forward to embrace the challenge of serving the nation by contributing their talent to the wastewater industry. The wastewater industry is an exciting, fast-growing sector with tremendous employment opportunities. We will continue to reshape the perceptions of people by going to schools and universities to ensure that the country has a sufficient supply of talent to meet Malaysia's future needs.

Acknowledgments

On behalf of the Board of Directors and Senior Management of IWK, I would like to convey our appreciation to all stakeholders who have contributed to our growth and progress. In particular, the Ministry of Finance, the Ministry of Water, Land and Natural Resources, SPAN, government agencies and regulators for their continued support.

I also would like to thank all IWK employees whose dedication, professionalism and commitment have been instrumental to our continued success. I wish to specifically mention our field staff, who are the heroes of the nation - we are indeed proud of their sacrifices and professionalism.

The future is bright for IWK and together we can aspire to greater heights. May we work together to realise a better future for all Malaysians.

Malaysia's sewerage system has progressed rapidly throughout the years, evolving from very basic infrastructure to the modern state-of-the-art system of today. Beyond effectively channeling and treating wastewater, Malaysia's sewerage system has played a key role in safeguarding both society and the environment, thereby contributing to socio-economic advancement.

Today, Malaysia stands tall as a leader in successful and effective sewage management with its expertise sought after across the globe. IWK, as a key industry player, continues to take the lead in sharing its experience and insights with various countries.

IWK Chairman En. Amiruddin Abdul Aziz hosted a visit with stakeholders in Pantai 2 Regional Sewage Treatment Plant.

GOVERNANCE STRUCTURE

IWK's governance structure is driven by its Board and Senior Management team, which provide oversight on our Economic, Environmental and Social ("EES") matters as well as corporate governance, risk management and business operations. The involvement of both Board and Management ensures that related EES aspects are given due priority and consideration. All of our present Board of Directors and Management personnel are Malaysian.

Narendran Maniam *Chief Executive Officer*

INDAH WATER KONSORTIUM SDN BHD
MANAGEMENT STRUCTURE • STRUKTUR PENGURUSAN

CHAIRMAN *Pengerusi*
Amiruddin Abdul Aziz

BOARD INTEGRITY COMMITTEE (BIC) *Jawatankuasa Lembaga Integriti*
Datuk Siti Zainab Omar
Dato' Dr Ir Hj Abdul Rashid Maidin
Dr. Ching Thoo a/l Kim
Arumugam A/L Kalimuthu

BOARD NOMINATION & REMUNERATION COMMITTEE (BNRC) *Jawatankuasa Lembaga Pencalonan & Imbuhan*
Mohd Nizam Mohd Arshad
Datuk Siti Zainab Omar
Dr. Ching Thoo a/l Kim
Albert Quah Chei Jin

BOARD OF DIRECTORS *Lembaga Pengarah*
Albert Quah Chei Jin
Datuk Siti Zainab Omar
Dr. Ching Thoo a/l Kim
Dato' Dr Ir Hj Abdul Rashid Maidin
Mohd Nizam Mohd Arshad
Arumugam A/L Kalimuthu

BOARD RISK COMMITTEE (BRC) *Jawatankuasa Lembaga Risiko*
Dato' Dr Ir Hj Abdul Rashid Maidin
Dr. Ching Thoo a/l Kim
Arumugam A/L Kalimuthu

BOARD PROCUREMENT COMMITTEE (BPC) *Jawatankuasa Lembaga Perolehan*
Albert Quah Chei Jin
Mohd Nizam Mohd Arshad
Datuk Siti Zainab Omar

CHIEF EXECUTIVE OFFICER *Ketua Pegawai Eksekutif*
Narendran Maniam

AUDIT COMMITTEE (AC) *Jawatankuasa Audit*
Albert Quah Chei Jin
Dato' Dr Ir Hj Abdul Rashid Maidin
Mohd Nizam Mohd Arshad
Arumugam A/L Kalimuthu

CHIEF OPERATING OFFICER *Ketua Pegawai Operasi*
Ir. Mohamed Haniffa Abdul Hamid

INTERNAL AUDIT *Audit Dalaman*
Abdul Halem Mohd Salleh (Acting)

Human Capital & Administration Dept *Jab. Modal Insan & Pentadbiran*
Zaiton Shaari

Finance Dept *Jab. Kewangan*
Chua Tiong Leong

Procurement Dept *Jab. Perolehan*
Azmi Idris

Corporate Communications Dept *Jab. Komunikasi Korporat*
Wan Esuriyanti Wan Ahmad

Corporate Planning Dept *Jab. Perancangan Korporat*
Syamsul Anwar Abdul Aziz

Information Technology Dept *Jab. Teknologi Maklumat*
Suzinor Kamaralzaman

Legal Dept *Jab. Perundangan*
Nordiana Idris

Integrity Unit *Unit Integriti*
Azhan Mohd Lazim

Risk Management & Compliance Unit *Unit Pengurusan Risiko & Pematuhan*
Gobi Palaniandy

Business Development Unit *Unit Pembangunan Perniagaan*

Operations & Maintenance Dept *Jab. Operasi & Penyelenggaraan*
Ir. Mohd Zainal Zakaria

Planning & Engineering Dept *Jab. Perancangan & Kejuruteraan*
Ir. Mohd Adnan Md Dom

Customer, Billing & Collection Dept *Jab. Pelanggan, Pengebilan & Pemungutan*
Gunasekar Veerappan

Capital Works Dept *Jab. Kerja-kerja Kapital*
Ir. Mohd Zuki Muda

Note: Corporate Structure As At 1 August 2019

The Board assumes the following responsibilities as defined by the Malaysian Code on Corporate Governance 2017 ("MCCG 2017"):

- Reviewing and adopting a strategic plan for the Company
- Overseeing the conduct of the Company's business to ensure it is properly managed
- Succession planning including appointing, training and determining Senior Management remuneration
- Communicating the Company's performance to the shareholders
- Reviewing the adequacy and the integrity of the Company's internal control system and management information systems
- Identifying and managing strategic risks

IWK CODE OF CONDUCT

Our Code of Conduct sets behavioural standards for everyone who works for or on behalf of IWK. The Code not only helps define how we should conduct our business but also reiterates our commitment to the Company, the Management, each other and to our customers.

IWK CODE OF CONDUCT

- **Standardises a general Code of Conduct which is comprehensive in shaping the expected business conduct and behaviour of employees in the Company**
- **Inculcates a high level of personal integrity and professionalism among IWK employees**
- **Improves IWK's image as a responsible corporate entity**
- **Builds good relations between the Company and its customers**
- **Inculcates public trust and confidence in our business**

Strong Anti-Corruption Stance

We abide by the governing law with regard to anti-corruption i.e. the MACC Act (Act 694) where the Act stipulates four (4) main offences:

1. Soliciting / Receiving Gratification (Bribe) [Section 16(a) & 17(a) MACC Act 2009]
2. Offering / Giving Gratification (Bribe) [Section 16(b) & 17(b) MACC Act 2009]
3. Intending to Deceive (False Claim) [Section 18 MACC Act 2009]
4. Using Office or Position for Gratification (Bribe) (Abuse of Power/Position) [Section 23 MACC Act 2009]

The Company signed the Corruption-Free Pledge on 23 November 2017. The pledge ceremony was led by the then IWK Chairman, Tan Sri Abu Zahar Ujang, who held the chairmanship from 6 September 2016 to 9 August 2018, former IWK's CEO, Mr. Faizal Othman, Senior Management, followed by 150 staff members of IWK and witnessed by the then Chief Commissioner of the MACC, Tan Sri Dzulkifli Ahmad.

The Corruption-Free Pledge, which is voluntarily taken, holds accountable each member of an organisation's leadership and its employees in an individual capacity to carry out their duties with the highest level of integrity and to not engage in any form or corruption.

Whistleblowing Policy & Channel

IWK complies with the Whistleblower Protection Act 2010 ("Act 711"). A whistleblower who chooses to disclose any improper conduct (conduct that may be contrary to our values and ethical business standards) that has been committed or is about to be committed within IWK by any IWK employee (via phone, email, IWK's official website, postal mail or in person) will be accorded with confidentiality of identity, to the extent reasonably practicable, as long as the disclosure is made in good faith.

The whistleblower shall be protected from victimisation, harassment or disciplinary action for his / her disclosure. The whistleblower channel is managed by IWK's Integrity Unit.

No Gift Policy

IWK implemented a **No Gift Policy** in 2018 to avoid any perception of impropriety via the receipt or giving of gifts, which may be construed as a reward or inducement, from any parties who have a business relationship with IWK.

Parties are referred to as existing or potential vendors, suppliers, contractors, business partners and customers. Gifts include supplier-provided food, beverages, meals or any form of entertainment including tickets to sporting events.

Conflict Of Interest

Employees must not engage in any other occupation, business or have an interest in any business or activity that conflicts with their positions in IWK. This covers capacities of an employee, agent, consultant, director, advisor, shareholder, partner or any other position. Employees are required to report any conflict of interest to Management. Private matters should not be in any conflict whatsoever with the duties of employees or the interests of IWK.

Employees should not derive any profit or advantage in the course of discharging their duties. They are prohibited from competing or becoming rivals to the business interests of the Company. They are also discouraged from associating with any organisation that competes with the business interests of IWK.

Data Privacy

IWK adheres to the PDPA Act 2010 and thus safeguards all private and confidential information of employees, suppliers and customers. All personal data of customers and other parties are kept secure via the latest information security infrastructure. Company trade and intellectual property information are also protected. IWK has not encountered or experienced any case of breach of data from 2016 to 2018.

Achieving Our Second Joint Billing Agreement

In 2018, IWK inked another joint billing agreement with Ranhill SAJ Sdn Bhd for water and sewerage services in the state of Johor (excluding Johor Bahru City and Pasir Gudang). The agreement in Johor provides a best practice model that can be emulated across Malaysia and is supported by the Ministry of Water, Land and Natural Resources ("KATS").

SECTION

03

ECONOMIC ASPECTS & THE MARKETPLACE

Sustainability Report 2017/2018

ECONOMIC ASPECTS & THE MARKETPLACE

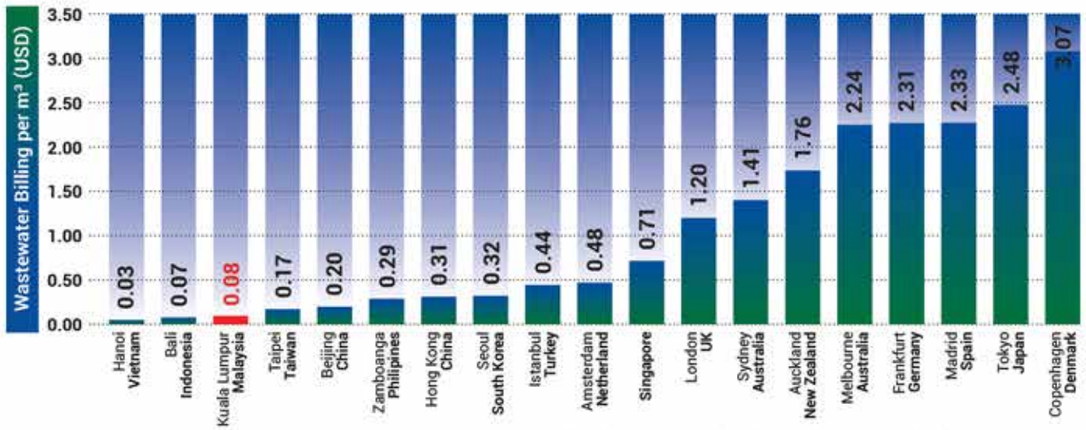
IWK continues to exemplify resilience against the many economic challenges it faces. Our challenges are numerous, from an unchanged, 21-year old tariff rate to plant rationalisation and refurbishment needs. Despite the challenges that impact the overall sustainability of IWK, we have risen above the odds to deliver excellent operational and maintenance performance as well as exemplary customer satisfaction and service.

OPERATING WITH ONE OF THE WORLD'S LOWEST FIXED TARIFFS FOR WASTEWATER SERVICES

While we continue to adopt various cost optimisation strategies, our total expenditure continues to increase annually. Rising costs are largely beyond IWK's control as with each year, the number of sewage treatment plants ("STPs"), Network Pumping Stations ("NPSs") and sewer pipelines increase steadily. Invariably opex increases as well.

IWK's situation is further compounded by having to charge a fixed tariff rate per household per month, which is one of the world's lowest tariff rates for wastewater services.

Kuala Lumpur's Position in Wastewater Billing per m³ for 25m³ Water Consumption



Note: The above rates are based on exchange rates dated 30 October 2018

Malaysia's domestic sewerage tariff is between RM2-RM8 per month and has remained unchanged since 1997. Given inflation over the years, the tariff of RM2-RM8 as of end 1997 should correspond to a revised rate of RM3.36-RM13.43 in December 2017 in tandem with the rising consumer price index ("CPI"). However, IWK is only allowed to charge the fixed 1997 rate even after 21 years.

In 2017, the average cost of providing wastewater services (Connected and IST) to one customer account is RM19.19 per month. However, IWK's domestic customers, which constitute 91% of our total number of accounts, only provide an average revenue of RM6.22 per account per month. As such, IWK is unable to recover the cost of providing its services.

↑	Cost of service provision, employee payroll and benefits, inflation, etc.
↔	Our tariff has remained unchanged for 21 years. With cost per household now standing at RM19.20 and revenue per household clocking in at RM6.23 each month respectively, we face a shortfall of RM12.97 each month per household.

Despite this most challenging situation, IWK continues to deliver excellent services while embracing newer and more modern technology, facilities, assets, and skilled manpower to meet the increasing demand for efficient and effective sewerage services.

Due to the low tariffs, IWK receives government support. However, a more sustainable, long-term strategy would be to rebalance the fixed tariff to a more competitive rate and to implement joint billing. We are also looking to transition from sewerage to more holistic wastewater management and resource recovery to increase revenue streams and ultimately achieve business sustainability.

RESOLVING CHALLENGES WITH BILL COLLECTION

With sewerage pipelines built underground and out of sight, many people are oblivious to IWK's important role in managing wastewater, without which, there would be serious health and social consequences.

Despite the lack of enforcement on non-paying customers, IWK achieved a commendable cumulative collection rate of 89% as of December 31, 2018. We continue to pursue all legal means to ensure prompt and full bill payment. However, even if we achieve a 100% collection rate, the revenue collected would still be insufficient to meet mounting operating costs due to the extremely low fixed tariff of just RM2-RM8 per household per month.

Joint billing, which we have successfully initiated in Labuan, will go a long way towards addressing the issue of non-payment. Joint billing will see customers receive a single bill for both water usage and sewerage services, rather than the present system of separate bills. IWK is looking to roll out further joint billing agreements nationwide going forward.

UPHOLDING CUSTOMER SERVICE EXCELLENCE

Despite the challenges we face, IWK has continued to provide excellent customer service. IWK's Customer Charter outlines the Company's commitment to provide wastewater services an to ensure a high level of service.

IWK is one of the first few companies in Malaysia to be ISO 10002:2014 certified in pursuit of better management and handling of customer satisfaction and complaints.

Supporting the Charter is the Customer Care Procedures manual. The manual provides SOPs for all interactions with customers and serves to help IWK staff provide a professional, consistent and positive outcome in all engagements.

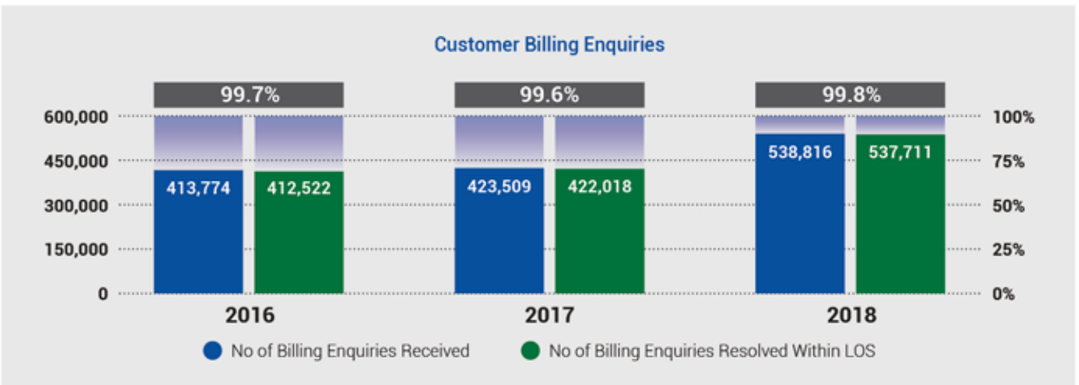
A significant step towards enhancing customers' experience was when IWK officially launched the e-bill service on 29 June 2018 for customers to obtain their sewerage service bill on time via email. IWK further drove this commitment forward when it launched the mobile application at the end of 2018. Through harnessing technology, IWK is able to remain connected with customers in every way with at the convenience of their fingertips.

IWK intends to go above and beyond expectations to ensure that all stakeholders are constantly connected to what IWK can offer for the convenience and satisfaction of the *rakyat*.

Customer Billing Enquiries Resolution

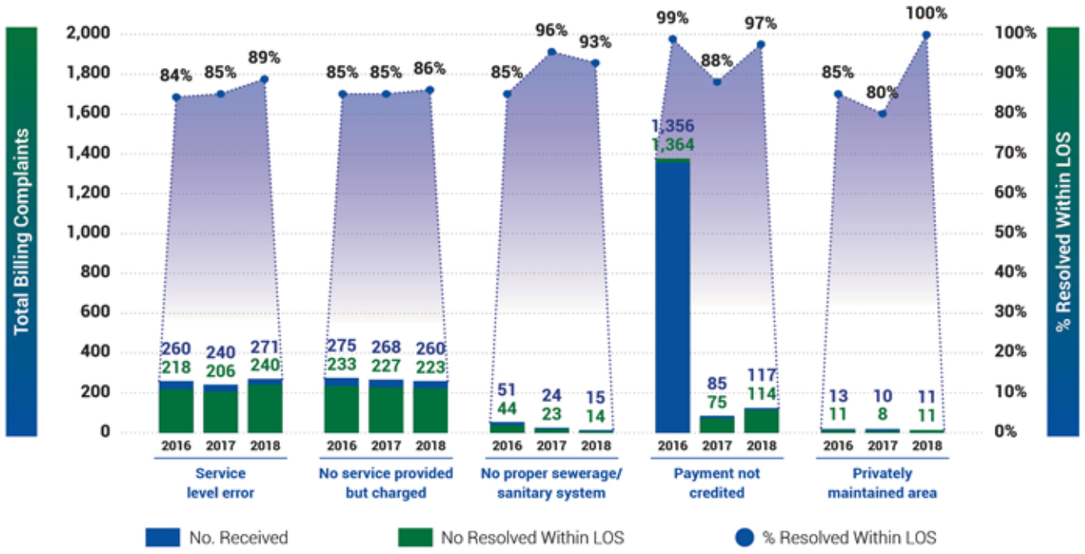
As we improve our customer service quality, we continue to see improved results, especially in resolving customer issues within the set Level of Service ("LoS").

Customer billing enquiries, requests and complaints can be made via telephone, letter, email, SMS, IWK's website or in person. Billing related calls are forwarded to our customer service centre, which attends to customers promptly and efficiently. Billing enquiries comprise customer enquiries, requests and complaints.



Billing Complaints Received

The majority of complaints received are related to cash in transit i.e. payment sent via post had not received by IWK, hence, customers' accounts are credited accordingly. The issue has been largely resolved by encouraging customers to make payments via electronic means such as internet banking, *JomPAY* or other means.



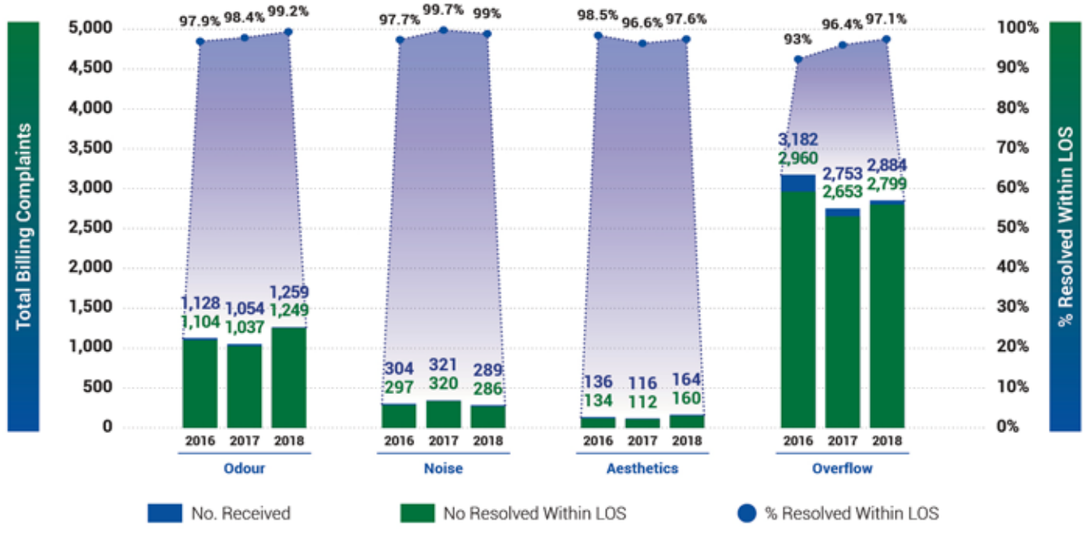
The lower figures for complaints about uncredited payments in 2017 (as compared to 2016) was a reflection of the separation of enquiries and complaints regarding the matter, which were previously all grouped together under complaints.

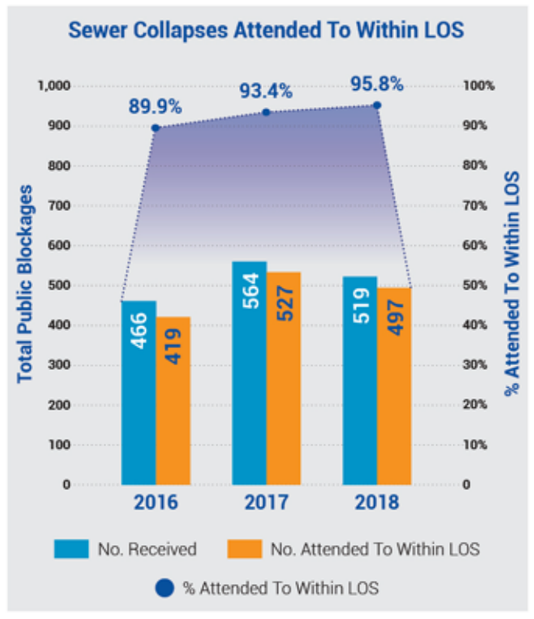
Customer Operational Enquiries Resolution

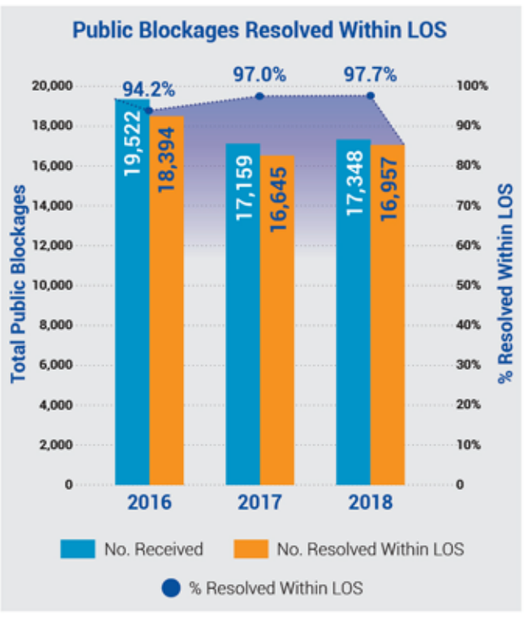
Service enquiries and complaints are categorised into 23 types and monitored based on the LoS. There are four groups of LoS: resolution of the complaint within 12, 24, 48 and 72 hours. The aim is to resolve all service complaints within the LoS. Major public service complaints resulting in environment impacts and public nuisances are grouped into odour, noise, aesthetics and sewage overflow.

In this regard, we have been able to maintain high scores of 96.4% to 99.7% for operational complaints resolved within LoS between 2017 and 2018. Enquiries/complaints can be reported via phone, walk-in, fax,

letter, e-mail or SMS. Customers can visit our service counters in seven Urban Transformation Centres (UTCs – Alor Setar, Ipoh, Kuala Lumpur, Melaka, Skudai, Kuantan and Kuala Terengganu) and 13 UOs located throughout Peninsular Malaysia States and one in Labuan for their operational enquiries. Besides traditional avenues, we also receive enquiries/complaints through Facebook and other social media channels.





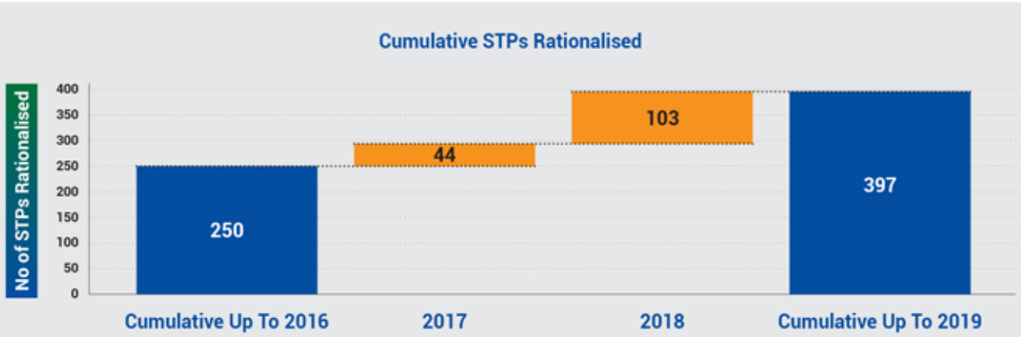


Our ability to resolve issues is due to adherence to a systematic complaints' management process cycle, which ensures that complaints received are captured effectively and channeled to the appropriate party for remedial action. Throughout this process, there is constant supervision and a mechanism for escalation (if required) to ensure that every customer's issue is professionally managed and addressed as best as possible in a prompt and appropriate manner.

PLANT RATIONALISATION, STANDARDISATION & OPTIMISATION

Plant Rationalisation

In 2018, 4,841 STPs or 71% of the total 6,745 STPs that IWK operates, are of capacity up to 2,000 PE and are classified as small plants. The 4,841 STPs accounted close to 14% of the total 25.2 million PE served by IWK while 60 large STPs above 50,000 PE band served 8.4 million PE or 33% of total PE served. Hence, there is a need to rationalise these small plants. Rationalisation refers to redirecting wastewater from small STPs to larger ones. Rationalisation yields significant economies of scale and ensures greater productivity and more efficient utilization of resources, especially pertaining to maintenance works, refurbishment and overall plant operations.



Going forward, 657 plants will be rationalised based on the Government's project commitments.

Equipment Standardisation

As we assume the operation of plants, we are increasingly faced with the unique challenge of standardisation. The task of standardising critical equipment such as pumps, blowers, aerators, filter presses and clarifiers at these plants is demanding, but we persevere as the benefits in the long-run far outweigh the initial difficulties and costs incurred.

The benefits of standardisation are reduced inventory for spare parts, cost savings via bulk-purchases, a more clear-cut or uniformed approach to maintenance works, reduced time and cost to train staff for operations and maintenance works, improved all round productivity and more.

Plant Optimisation

Beyond refurbishment and rationalisation, we continue to find ways to enhance our STPs. This includes the introduction of energy saving measures as per our Energy Management System ("EnMS"), grouping and outsourcing plant maintenance services for reduced cost and reduction of manpower i.e. replacing and reducing the number of static security ("SS") guards with Electronic Security Systems ("ESS").

Photo Caption: Use of Electronic Security Systems ("ESS") at IWK's STPs

Sewerage Catchment Plan

Regulations stipulate that all STPs must comply with Standard A or B for effluent discharge. Standard A compliance is for STPs located within water catchment areas while Standard B is applied to plants located outside of such areas.

However, the challenge of standardising STPs is indeed serious given the sheer volume of plants that need to be standardised within the given timeframes, not forgetting the costs involved. Given the importance of standardisation, there is certainly a more concerted effort by all stakeholders, including the government, to address this challenge, so as to ensure an effective, first rate sewerage infrastructure that is capable of addressing greater demand that stems from population growth, rural-urban migration and other factors.

The measures undertaken by IWK include moving to plant regionalisation and plant rationalisation as well as progressively introducing bigger PE capacity plants that are newer and more modern that are capable of meeting current requirements and are equivalent to several smaller plants. However, the construction of these newer plants would require government support as they would warrant large capital expenditure which is beyond the financial capability of IWK.

Regardless of the challenges, IWK remains committed to playing its crucial role in the modernisation of Malaysia's sewerage infrastructure, notably the improvement of existing STPs.

IWK as a wastewater service operator, is responsible for the maintenance and upkeep as well as replacement of plant equipment due to prolonged wear and tear. However, this excludes capital intensive, big-ticket refurbishment and upgrading activities, which come under the purview of the Malaysian government. The Malaysian government continues to upgrade old plants built by property developers to comply with regulatory standards under the 5-year Rancangan Malaysia (RMK).

It is estimated that close to 4,577 public STPs under the jurisdiction of IWK and serving a PE of some 18.39 million would require upgrading to achieve compliance with the new effluent discharge standards (Para I EQSR 2009). This number excludes STPs to be rationalised/ upgraded under the Greater Kuala Lumpur (GKL), committed RMK and Sewerage Capital Contribution (SCC) projects.

Theft And Vandalism At Plants

Theft and vandalism are serious issues as in addition to financial losses, such actions can seriously jeopardise public safety. STPs can be scavenged for scrap metal, which could potentially impair the capability of plants to treat wastewater. Non-functioning plants would lead to non-treated effluent finding its way into our rivers and waterways.

With increased security measures, we have seen an overall decrease in theft and vandalism. As at December 2018, 2,966 secure sites with electronic security system were installed.

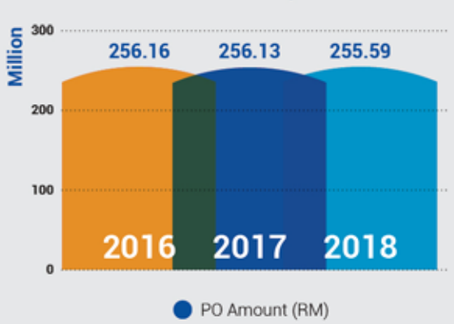
VENDOR MANAGEMENT & DEVELOPMENT

Over the years, IWK has instituted unique categories of vendors to cater for its specific needs such as Mechanical & Engineering term workshop (50 contractors), STP Operations & Maintenance (100 contractors) and Network (40 Contractors). Almost all of these vendors have been sourced within Malaysia. Hence, a significant portion of our procurement budget is spent on the local community.

While economic benefits remain a key thrust of our vendor management and procurement strategy, we also intend to develop better businesses; businesses that adopt IWK's business principles of strong corporate governance, accountability, equal opportunity employment and an unwavering commitment to adopt sustainable practices across EES parameters.

In 2017 and 2018, the overall purchase orders ("PO") amount awarded was RM256.1 million and RM255.6 million respectively. An average of 36,500 POs were issued yearly to 800 vendors with 99% of them being local vendors.

PO Amount Awarded, 2016-2018



Vendors are selected based on merit. Merit is defined not just on cost effectiveness, but also on efficiency, productivity, expertise and a proven record of accomplishment as well as business values that are aligned to our own (reflecting a strong socio-economic and environmental consciousness and good corporate governance practices).

Vendors with good potential and track record will be supported, where necessary, with training opportunities to develop required skills and expertise. We continue to transition from reactive and tactical sourcing to a procurement function that focusses on value creation beyond cost.

Transitioning Of Our Procurement Function Towards Delivering Business & Operational Advantage

A Pioneer In eProcurement

IWK was a pioneer among government-linked companies ("GLCs") to embrace eProcurement. This has enabled us to reduce procurement costs while increasing productivity, efficiency and transparency. Essentially, eProcurement has enabled IWK to adopt a strategic approach to procurement that drives value creation rather than the conventional reactive or tactical sourcing approach. eProcurement has served as a starting point for our digitalisation journey as a company.

In recent years, we embarked on a new Enterprise Resource Planning ("ERP") system that has enabled a Procure to Pay ("P2P") platform to further increase productivity, efficiency and compliance. The new ERP system comes with analytical tools to manage spending, suppliers and contracts in near real-time while providing insights and reports for strategic decision-making.

Because we value the relationships we are building with our suppliers, we make sure our new P2P platform incorporates a robust claim and payment system to ensure faster payment transactions to suppliers. We are committed to our digitalisation journey and the future will see further digitalisation and automation via eAuction, ePR, ePO and ePayment. We are also focusing on improving the user experience via mobile applications for purchase orders, work completion, invoicing and contract approvals.

Talent Development & Employment Initiatives

On a separate note, as one of our industry development initiatives, we continue to participate under SL1M by providing internship opportunities to unemployed graduates. In FY2018, we took in 18 graduates youths, of whom two were hired.

We continue to reach out to students across local universities via career talks, workshops and other engagement initiatives.

In Malaysia, as it is globally as well, rivers are a precious source of water. While IWK treats all incoming flow of wastewater before it is channeled into the rivers, a vast portion of wastewater from other parties, which is untreated, also unfortunately finds its way into said rivers.

To bring awareness to the importance of river water quality management and preservation, IWK launched its Friends of Rivers ("FoR") programme which is our commitment to proactively champion the health of our rivers.

Please refer to our FoR initiative in Section 5 for more information on the said programme.

SECTION

04

ENVIRONMENT

Sustainability Report 2017/2018

ENVIRONMENT

Based on Malaysia's river water quality trends obtained from the Malaysia Environmental Quality Report 2017 ("MEQR 2017"), the percentage of clean rivers increased from 21% in 1997 to 63% in 2007. However, from 2008, the percentage of clean rivers has been on a downtrend sliding to 46% in 2017.

The decline in the percentage of clean rivers from 2008 to 2017 can be attributed to the increase of various sources of organic pollutants including wastewater from industrial, domestic and commercial activities. The halt of the previous practice of scheduled desludging services of septic tanks by IWK also played a role. This halt to regular desludging was pursuant to the provision of the Water Services Industry Act 2006 (WSIA 2006), effective 1st January 2008, which specified that desludging/emptying of septic tanks shall be deemed to be the responsibility of owners/occupiers of premises. The cessation of scheduled desludging services by IWK eventually led to the decrease in the number of requests for desludging of septic tanks and contributed in some way to the increase of discharge of untreated sewage into rivers.

We place close attention to preserving the quality of our water resources, promoting sustainable water use and preventing potential groundwater contamination.

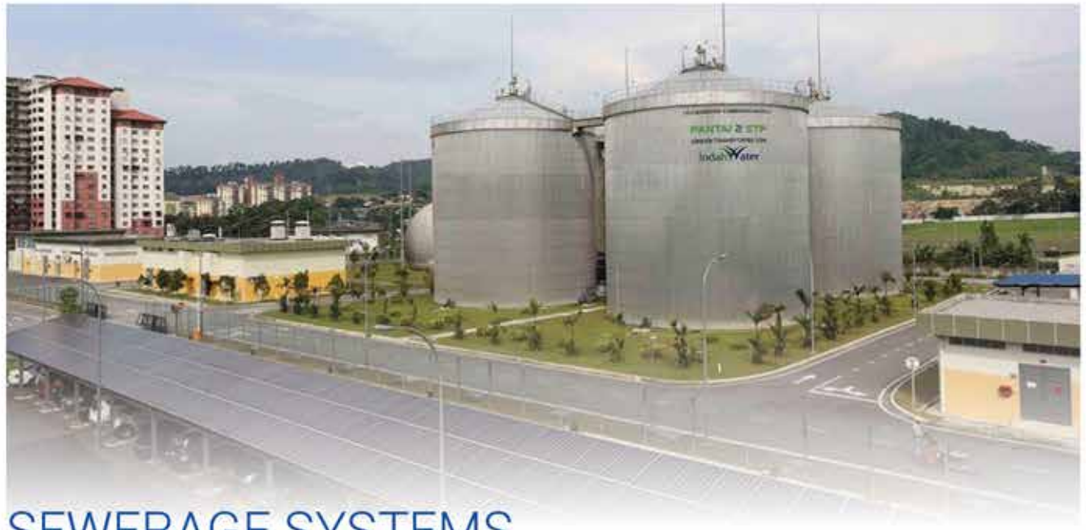
MANAGING ENVIRONMENTAL IMPACT

IWK ensures that its operations as well as treated bio-effluent, biosolids and biogas comply with the following laws and regulations:

- Water Services Industry Act 2006 ("WSIA")
- Sewerage Services (Charge) Regulations 1994
- Sewerage Services (Authorisation of Collection of Charges) Order 1994
- Sewerage Services (Authorisaton to Demand, Collect and Retain Sewerage Charge) Order 1995
- Sewerage Services (Authorisation to Demand, Collect and Retain Sewerage Charge) Order 1996
- Environmental Quality Act 1974
- Environmental Quality (Sewerage) Regulations, 2009
- Environmental Quality (Scheduled Wastes) Regulations 2005
- Environmental Quality (Clean Air) Regulations, 2014
- Environmental Quality (Control of Diesel Engines) Regulations 1996
- Environmental Quality (Presribed Activities) (Environmental Impact Assessment) Order 2015
- Solid Waste & Public Cleansing Act 2007
- National Guidelines for Raw Drinking Water (Revised December 2000)

Our Environmental Management System ("EMS") ISO 14001:2015 certification is the latest variant and is testament of our commitment to comply with an internationally recognised EMS approach. Our ISO-based EMS addresses environmental compliance and performance and other established environmental objectives, which include preventing environmental pollution and protecting public health.

As at 31 December 2017, the Operations & Maintenance Department at HQ and 19 UOs (Network Services, Desludging Services and two selected STPs within each UO) were ISO 14001:2015 certified. By end-December 2018, two more UOs (Labuan and Langkawi) were also certified. Going forward, our aim is to have the entire IWK ISO 14001:2015 certified.



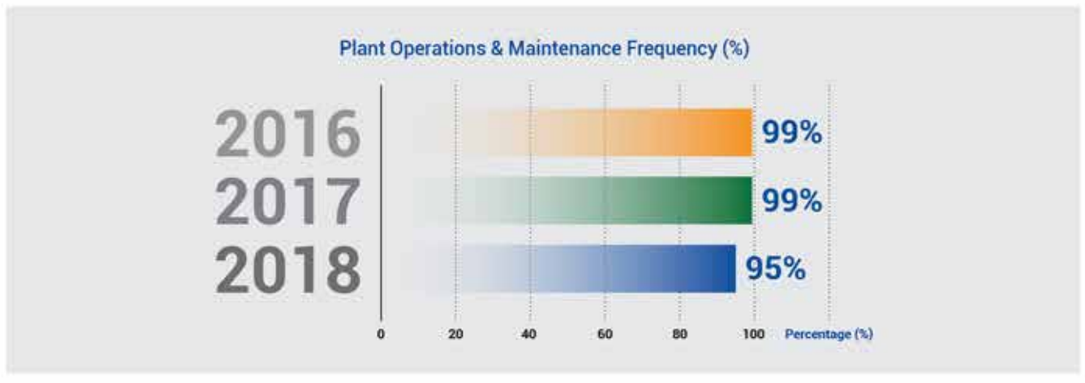
SEWERAGE SYSTEMS

Plant Operations & Maintenance

It is imperative that our STPs are functioning at optimal levels. This ensures that the quality of treated effluent and sludge conforms to set standards.

In undertaking operations and maintenance ("O&M") activities, we are guided by formal policies and procedures to ensure compliance with technical and quality systems requirements.

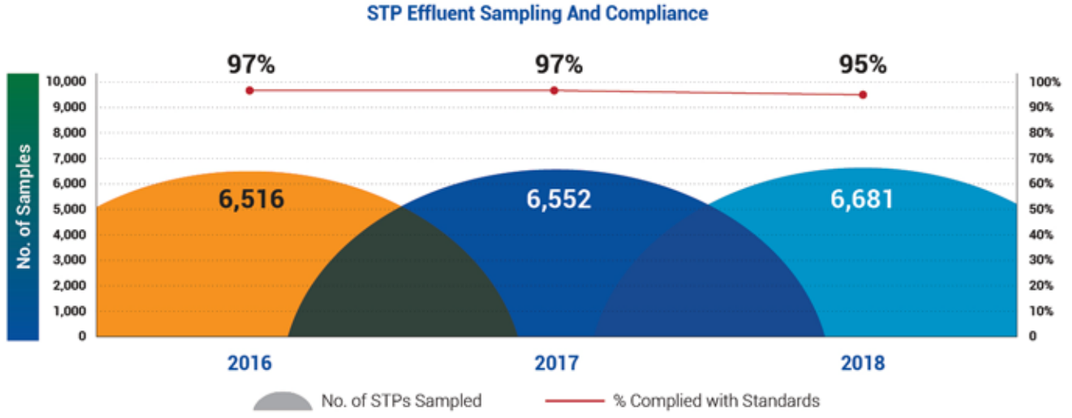
IWK conducts periodic plant maintenance frequency ("PMF") visits as well as equipment replacement and minor refurbishing works when necessary (extensive capex such as upgrades and major refurbishments is the responsibility of the Malaysian government). PMF is determined based on the plant PE as stated in the Operating Procedure Instruction ("OPI").

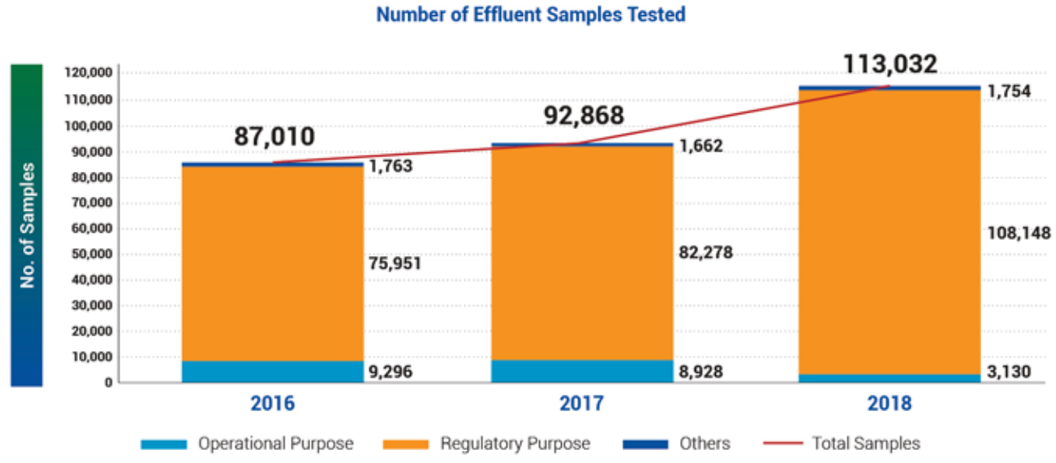


The high scores of 95% or above attained for PMF invariably contribute to our strong performance with regard to effluent compliance.

Plant Effluent Sampling And Compliance

IWK adheres to the Environmental Quality (Sewage) Regulations 2009 ("EQSR 2009") for monitoring and controlling treated sewerage effluent discharge. Effluent from our STPs is sampled and tested regularly with results reported to SPAN and DOE. The sampling frequency of a plant is based on the plant PE as stated in the regulations. Presently, IWK has five laboratories to test sampled effluent.





Network

Sewer Inspection And Maintenance

IWK maintains approximately 19,134 km of sewers with more than 365,623 manhole covers throughout Malaysia. The age of the sewers and manholes vary from new to over 50 years old. IWK faces problems from sewer overflows, sewer blockages, sewer collapses and defective sewers.

In order to ensure our sewer network remains in good functional condition, avoid manhole overflows or public inconvenience, a continuous sewer maintenance coupled with and inspection programmes are conducted to prevent sewer failures that are expensive to repair. Between 7% and 10% of total sewer lines (1,332 km to 1,903 km of sewers) are cleaned annually; with every sewer line cleaned at least once every 10-15 years

MONITORING ENVIRONMENTAL CONDITIONS AT OUR SLUDGE DISPOSAL SITES

We conduct regular environmental assessments ("EA") of our dedicated sludge treatment and disposal sites. The EA entails measuring groundwater and/or surface water at predetermined intervals according to conditions set by DOE.

Boreholes are provided at each site to monitor the groundwater quality against the baseline data and the National Guidelines for Raw Drinking Water Quality (Ministry of Health (MoH); Revised December 2000). The quality of the river water at selected sites is also monitored and compared with the National Water Quality Standards for Malaysia. It is observed that the majority of the monitored levels are still within the limit and do not show any increasing trend.

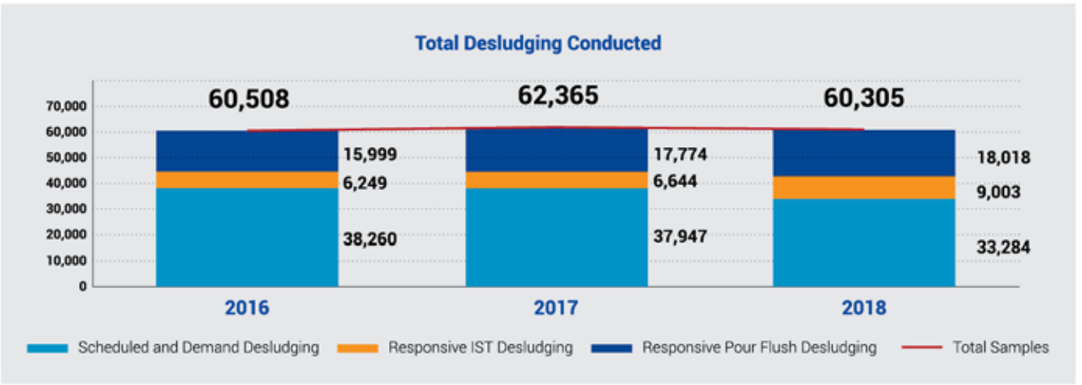
IWK will continue to monitor the performance of each site.

DESLUDGING ACTIVITIES

The importance of desludging cannot be denied. Regular desludging ensures there is no overflow into drains which could result in the contamination of water bodies, and thereby detrimental to the environment and the community at large.

The large majority of IST users are unaware that septic tanks need to be regularly desludged as stipulated in Section 65 of the Water Services Industry Act, 2006. It is the responsibility of the owner, occupier, management corporation of any premises to service the septic tank periodically.

IWK continues to encourage desludging at a set period of once every two years and is jointly working with Suruhanjaya Perkhidmatan Air Negara (SPAN) to promote this initiative. Subsequently, we saw a marginal increase in desludging activities undertaken in 2017 compared to 2016. Scheduled and demand desludging figures unfortunately dropped again in 2018, lowering the overall total desludging activities for 2018.



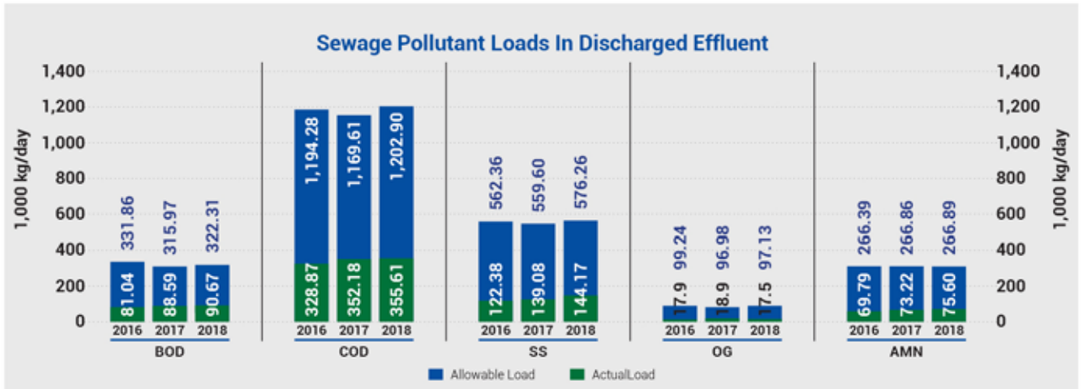
The potential for desludging remains bright given that our presently served user base only accounts for 6%-7% of the total 1.3 million septic tanks and 0.8 million pour flush in Peninsular Malaysia (excluding Kelantan) and Labuan. Our efforts thus far include but not limited to:

- Increasing marketing and outreach efforts such as bi-weekly activities (Jom Sedut Campaign) which is to be executed at our Operating Units
- Marketing activities at Regional level and the Desludging Business Unit headquarters.
- Joint awareness campaign with Communication Department at unit, regional or national level.
- Successfully piloting upfront payment for domestic septic tank users to improve revenue collection besides minimising debts.
- Widening the scope from initial domestic sludge to desludging of fat, oil and grease ("FOG") from food premises i.e. restaurants, fast food outlets, hotels, canteen etc.

SEWAGE POLLUTANT LOADS IN DISCHARGED EFFLUENT

Sewage pollutant loads refer to the weight of the pollutant released into waterways. The parameters measured are Biochemical Oxygen Demand ("BOD"), Total Suspended Solids ("TSS"), Chemical Oxygen Demand ("COD"), Oil and Grease ("O&G") and Ammoniacal Nitrogen ("NH3-N"). These pollutant loads must be below the allowable load, as anything higher would harm the aquatic ecosystem in waterways, exceed the self-purifying capabilities of rivers and waterbodies and eventually affect downstream activities.

As always, we monitor our sewage pollutant load as per parameters given in the EQSR 2009. We are happy to report that the pollution loading for all parameters based on our actual plants performance in year 2016, 2017 and 2018 were consistently below the allowable load for both Standard A and Standard B river catchments.



GREENHOUSE GAS EMISSIONS

In November 2012, IWK appointed Universiti Teknologi Malaysia ("UiTM") to develop a greenhouse gas ("GHG") emission inventory based on our activities via an eight-month study from 22nd November 2012 to 21st July 2013. We use this study as a basis to measure our carbon footprint annually.

We adopt a rolling base year approach to disclose our GHG emissions. The time interval selected for rolling the base year is set to be one year, with each inventory being compared directly to the previous year and the 2013 GHG inventory, which serves as the base year.

The corporate organisational boundaries for the GHG inventory were defined according to the requirements of Clause 4.1 of the MS ISO 14064-1:2007 standard. Eight GHG sources were determined to be relevant with IWK's boundaries as given in the following table:

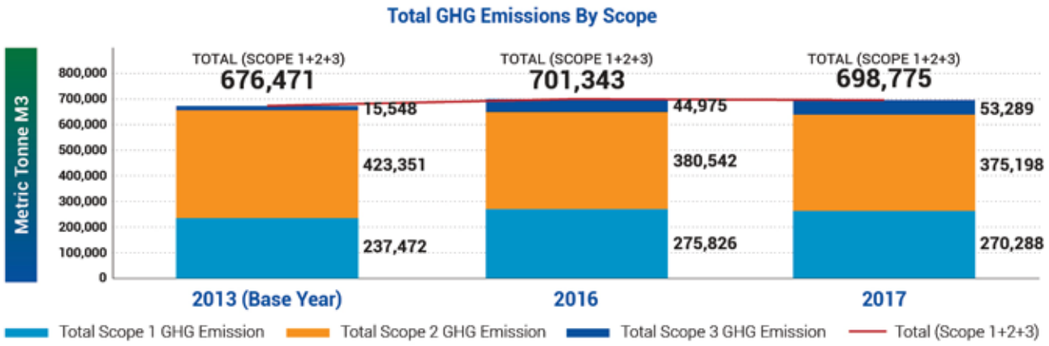
GHG Emission Sources	GHG Scope	CO_2e Emission (Metric Tonne)		
		2013 (Base Year)	2016	2017
Sewage treatment plant (STP) processes	Scope 1	225,111	260,150	255,690
Dedicated sludge treatment facilities and disposal site	Scope 1	6,808	11,320	10,293
Company vehicles (using either petrol or diesel)	Scope 1	5,487	4,313	4,266
On-site back-up electricity production using genset	Scope 1	66	42	39
TOTAL SCOPE 1 GHG EMISSION		237,472	275,826	270,288
Buildings i.e. STPs, offices and other facilities electricity consumption (offsite electricity production)	Scope 2	423,351	380,542	375,198
TOTAL SCOPE 2 GHG EMISSION		423,351	380,542	375,198
Employee Business Travel (Air travel)	Scope 3	79	67	81
Employee Business Travel (Mileage) – Senior Management via fuel card	Scope 3	336	427	408
Employee Business Travel (Mileage) – Staff via mileage claim	Scope 3	2,778	2,465	2,481
Dried sludge or biosolids disposed at municipal landfill sites	Scope 3	12,455	42,016	50,319
TOTAL SCOPE 3 GHG EMISSION		15,648	44,975	53,289
TOTAL (SCOPE 1 + 2 + 3)		**676,472**	**701,343**	**698,775**

Note: As specified in GHG Protocol, the direct and indirect GHG emissions have been categorised into 3 broad scopes as follows:

Scope 1: All direct GHG emissions from sources that are owned or controlled by the reporting entity.
Scope 2: Indirect GHG emissions from consumption of purchased electricity, heat or steam.
Scope 3: Other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the reporting entity, electricity-related activities (e.g. Transmission & Distribution losses) not covered in Scope 2, outsourced activities, waste disposal, etc.

Figures for 2016 & 2017 are audited. Given the extensive auditing process for GHG emissions, figures for 2018 are not ready at the time of the publishing of this report.

IWK's total GHG emissions in 2016 and 2017 were 701,343 and 698,775 metric tonnes of CO_2e respectively. The main contributors to IWK's total GHG emissions were purchased electricity consumption, followed by sewage treatment plant (STP) processes – accounting for about 54% and 37% respectively. Over 80% of public STPs operate on mechanical treatment systems, which consume large amount of energy.



Notes:

1) *The GHG calculation methodology and emission factors used are current and from reputable sources (i.e. IPCC 2006 Guidelines, GHG Protocol - World Resources Institute WRI 2015, United States Environmental Protection Agency, Department for Environment, Food & Rural Affairs, United Kingdom, GreenTech Malaysia etc.). Therefore, the level of uncertainty linked to this quantification methodology and subsequent calculations is considered low.*
2) *All of the above GHG data have been verified by SIRIM QAS International Sdn. Bhd.*
3) *The GHG emission from biosolids disposal at municipal landfill sites under Scope 3 shows increasing trend since the emission has taken into account the decay rate for total sludge disposed previously in Year 2013, 2014 and 2015.*

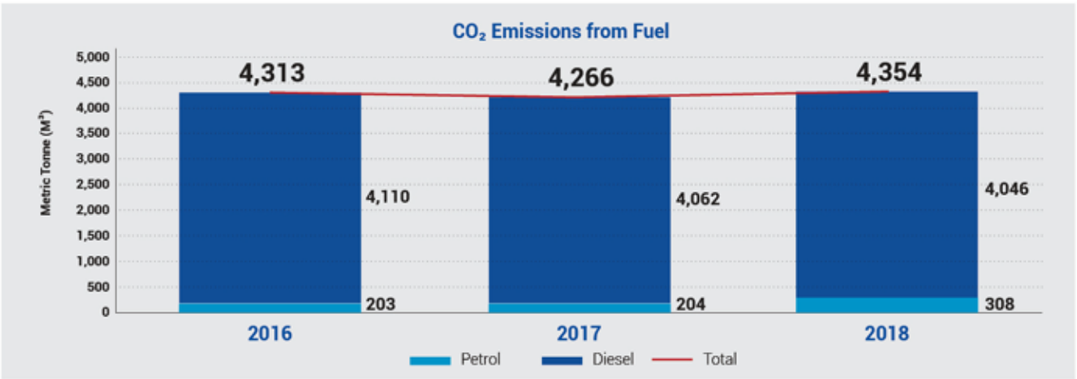
A review of the historical emissions indicates most of the GHG emission sources have shown an increasing trend due to population and development growth, proportionate to incremental number of public STPs and NPSs that IWK has taken over. Despite this, we have achieved total GHG emission reduction in 2017 compared to 2016 data with decreases in both Scope 1 and Scope 2 emissions.

A more accurate measurement that reflects the true state of our GHG emissions is to measure emissions intensity based on the PE served by the company during the respective year. This measurement clearly shows that due to our many and consistent corporate green-initiatives and strategies, we have successfully reduced our overall GHG emissions intensity by as much as 10% and 12% respectively for 2016 and 2017 for total CO_2e emission per PE compared to base year (2013) readings.

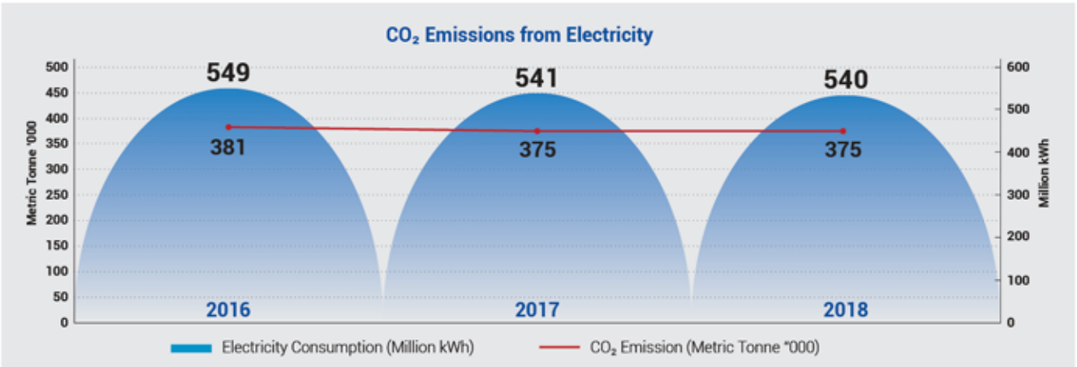
GHG Emission Sources	2015 (Base Year)	2016	2017
Total IWK's Corporate GHG emissions (CO_2e Emission in Metric Tonne)	676,472	701,343	698,775
Total PE served from Public STPs	20,612,443	23,917,369	24,358,564
Total IWK's Corporate GHG emissions per PE (CO_2e Emission / PE in Metric Tonne) - GHG Emission Intensity	0.0328	0.0293	0.0287
Percentage in Reduction (%) from Base Year (2013)	**N / A**	**10%**	**12%**

Among IWK's many green initiatives are our energy management system, vehicle tracking system and old vehicles replacement programme, reducing sludge volume and reuse of biosolids, conversion of biogas into electricity, etc.

GHG emissions from fuel consumption are calculated based on the 2006 Intergovernmental Panel on Climate Change ("IPCC") Guidelines for National Greenhouse Gas Inventories Vol. 2 Energy Guidelines with the emission factor of 0.0741 MT CO_2/GJ for diesel vehicles and 0.0693 MT CO_2/GJ for petrol vehicles. The GHG emissions showed a declining trend in parallel with the amount of fuel purchased. The implementation of a vehicle tracking system since 2009 and scheduled replacement programme for old vehicles has led to a reduction in fuel consumption and GHG emissions in 2017.



Note: Figures for 2016 & 2017 are audited, while 2018 figures are unaudited.



RESOURCE CONSUMPTION

Energy Consumption

Our approach to achieve greater energy efficiency is to practice our EnMS which was implemented in November 2012. IWK has also adopted the ISO 50001 standard to ensure best practices with regard to energy management.

IWK's challenge of reducing electricity consumption is significant as over 80% of public STPs employ mechanical treatment systems, which consume large amounts of energy. In addition, IWK continues to assume the operations of a large number of power-hungry mechanical STPs, which increases our overall electricity consumption profile.

Despite this challenge, we have registered significant savings for 56 STPs (where the EnMS has been implemented). Via the EnMS, in 2016, 2017 and 2018, the 56 selected STPs achieved power savings of 6.9% (0.341 kWh/m³), 10.2% (0.300 kWh/m³) and 36.7% (0.207 kWh/m³) against baseline in 2016, 2017 and 2018 respectively, well above the targeted 2%. Going forward we are moving towards EnMS implementation for the entire manned plants.

IWK's Total Power Consumption

Year	Electricity Consumption (KWh X 1 Million)	Cost (RM Million)
2016	548.63	RM241.49
2017	540.92	RM248.90
2018	540.29	RM248.19

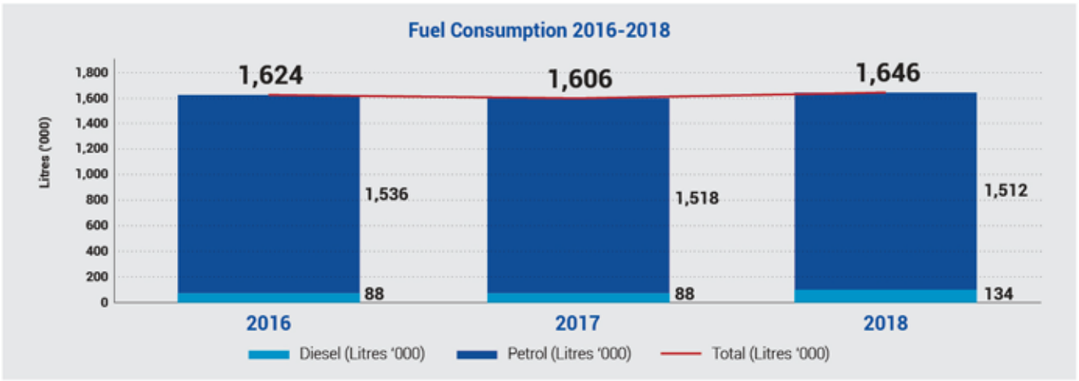
In 2018, IWK achieved a savings of RM703,257 on its total power bill on the back of a reduced power consumption of 0.63 million kWh.

Fuel Consumption

Fuel consumption is calculated from fuel purchases made for desludging tankers, jetting vehicles, box vans and other IWK owned vehicles throughout our services area. Year-on-Year (Y-o-Y), total fuel consumption has declined marginally (1.1%) between 2016 and 2017. The increase in 2018 was due to the addition of 19 vehicles to the fleet for the 3 Combined Team (3CT) projects.

Year	Type of Fuel	Fuel Consumption (Litres '000)	CO_2 Emission (Metric Tonne)	Total CO_2 Emission (Metric Tonne)
2016	Petrol	88	203	4,313
	Diesel	1,536	4,110	
2017	Petrol	88	204	4,266
	Diesel	1,518	4,062	
2018	Petrol	134	308	4,354
	Diesel	1,512	4,046	

Note: Figures for 2016 & 2017 are audited, while 2018 figures are unaudited.



Water Consumption

IWK continues to take measures to reduce its water consumption. Water used by IWK is treated water provided by respective State's water supply systems as well as recycled water harnessed from our wastewater treatment operations and rainwater harvesting. In conserving water, IWK continues to maximise the use of treated effluent for non-potable applications such as landscaping, general cleaning, watering plants and so on. This occurs mainly at regional plants with a PE of over 100,000.

Water is mostly used for plant operations as well as sewer line cleaning. STP water consumption continues to increase in tandem with the rise in the number of STPs and pipelines that come under IWK's purview.

Year	Consumption (million m³ of water)	Cost (RM Million)
2016	1.29	3.99
2017	1.45	4.03
2018	1.71	4.02

Note: 2018 figures are unaudited while 2016 and 2017 have been audited.

Serving a population of close to 26 million, IWK undertakes upon itself to understand its customers and their feedback.

While the nature of the service is technical in nature, it is important for the national sewerage company to understand the sentiment of the public towards the service provided.

Ensuring customer service excellence and satisfaction is crucial for the company to maintain its license to operate and gain public trust.

In 2017, IWK ran a survey with the customers on ground to and it is found that more than 90% of the participants agree that IWK provides the service as promised, with close to 90% agreeing that IWK does a good job at maintain the sewage treatment plants and pumping stations in the participants' areas.

As the national sewerage company operates and maintains the sewerage system efficiently, IWK will improve its services continuously.

SECTION

05

ENGAGING WITH SOCIETY

Sustainability Report
2017/2018

ENGAGING WITH SOCIETY

With more than 20 years of service under its belt for operating and maintaining the public sewerage system, IWK has, and continues to play a significant role in protecting public health, preserving the environment and contributing to national water security. This is in line with the vision to be the premier wastewater company, and the journey taken to materialise this vision requires effort from all parties to create a synergistic thrust.

The ecosystem consists of industry players, authorities and communities who play a crucial role into shaping how sewerage management would take its course. The society at large are the recipients of the imperative service that IWK provides, and it is important to heighten customer service satisfaction through operational excellence.

In view of that, multi-pronged community engagements were conducted through online and offline platforms. It is necessary to gather the feedback from customers and attend to queries and complaints efficiently, while providing impeccable level of service. Just as the sewerage network is incepted within the households of the Malaysian society, IWK is integral to the fabric of the society.

The various programmes include corporate social responsibility, desludging services for the religious homes, observation tours and school workshops to name a few, hosted on public forums and platforms to ensure that all facets of society are engaged.

IWK ebill

Another significant step in engaging with the society was when IWK launched the e-Bill service to provide convenience for customers in obtaining the sewerage service bill on time via email. IWK further drove this commitment forward when we launched the mobile application at the end of 2018. Customers are able to get in touch with us more promptly and with convenience at their fingertips.

IWK intends to go above and beyond to ensure that all stakeholders are constantly connected to what IWK can offer for the convenience and satisfaction of the people.

NON-CHARGEABLE SERVICES

As stipulated by law, IWK provides services without charge for welfare homes, mosques, temples, churches and other religious centres. In 2016, 2017 and 2018, our costs of providing desludging and connected services to such premises was RM2.02 million, RM2.13 million and RM2.32 million respectively.

The services rendered without charge despite facing revenue loss, is one that is essential to prevent pollution to the environment and harm to the health of the people. Without timely desludging service and proper maintenance of the connected network, the impact to the surrounding environment can be severe, contributing to water-borne diseases and other harmful elements.

The bare minimum that IWK can do is to alleviate this burden from the welfare homes and religious centres. We are committed to supporting the needy and being part of a much larger value creation process that benefits society.

COMMUNITY AWARENESS AND EDUCATION

IWK has been actively organising numerous initiatives to reach out to various communities and groups, which include school students, higher learning institutions, and members of the public and other stakeholders. Through these activities, we aim to educate the community at large about IWK, its role and the importance of proper wastewater treatment systems in safeguarding public health and wellbeing. Additionally, from these engagements IWK obtains feedback, while inculcating a stronger sense of responsilibity among the people when it comes to sewerage management. The effort are constant and consistent as IWK grows together with the society for a better future.

These programmes involve various activities such as briefings on the development and importance of wastewater services in Malaysia; video presentations, question and answer sessions and observation tours. During tours, visitors are given the opportunity to view the operation and maintenance processes of STPs.

COMMUNITY ENGAGEMENTS

Friends Of Rivers Programme

The hallmark of our community engagement programmes is our 'FoR', where we adopt 21 rivers across our 21 UOs together with the community to preserve the rivers. The programme, which ties back our responsibility to the community and the environment, was initiated in 2017 as a Corporate Social Responsibility ("CSR") programme. The FoR programme encourages staff nationwide to volunteer and care for the quality of rivers located close to their UOs. The programme has been a resounding success with all 21 adopted rivers seeing 100% completion of activities undertaken for river clean-up and preservation.

Through the FoR programme, we hope to showcase that the treated effluent released from nearby public sewage treatment plants (operated and managed by IWK) is released to the river body and environment without causing harm to it. We also hope to continuously foster our relationship with the targeted local stakeholders like resident associations, state government, education sector and also the Non-Governmental Organizations ("NGOs").

We also undertake various community activities in strengthening relationship with the local communities and carry out several CSR activities such as blood donation campaigns, free desludging for selected religious houses, communal clean-ups (gotong-royong), aiding flood victims, combatting dengue, installing streamers and making donations/ sponsorships in cash or kind to charitable organisations.

On top of that, in 2018, IWK desludged septic tanks for 61 charitable organisations and religious places in commemoration of Malaysia's 61st Independence Day anniversary. Basic sanitation and clean environment are fundamental for the wellbeing of the community, and IWK, in its capacity, will ensure that the people have access to them.

Additionally, IWK continues to engage various interested parties including NGOs such as WWF Malaysia when we participated in its "Journey of Water" campaign in 2018.

INTERNATIONAL KNOWLEDGE SHARING

We are proud to be recognised internationally as an industry leader whom others have chosen to learn from. We continue to share our expertise with the world, especially developing countries who wish to emulate our success story in transforming Malaysia's sewerage industry from a backwater to today's modern system that provides clean and safe sanitation across the country.

Working together with the Bill and Melinda Gates Foundation, we continue to provide knowledge transfer opportunities to many deserving delegates from around the world. We have designed and customised sessions for over 40 organisations, 6,800 participants and 7 countries all over Asia and Africa. All programmes meet with international and local standards in order to uphold the authenticity, principles and originality towards the education of sewerage awareness for economic advantages and environmental protection.

International Delegation / Visitation / Training 2018

No.	Countries	Date	No. of Participants
1	India- Leh	07-Feb-18	12
2	India – New Delhi	16-18 Apr 2018	15
3	Indonesia	23–26 April 2018	18
4	Senegal	2–4 May 2018	2
5	India, Nepal, Bangladesh	4–7 June 2018	12
6	India , Nepal, Bangladesh	3–6 September 2018	20
7	India , Nepal, Bangladesh	26–29 November 2018	17
8	Indonesia	3–6 December 2018	11
	Total		**107**

Our Toilet-To-Tap ("TTT") Programme has firmly placed IWK on the international map. We continue to share our experience with the world – especially with nations who are looking to emulate IWK's proven TTT model in their respective countries. In 2017 and 2018, there were 66 and 107 paid attendees respectively. TTT is an international customised programme on sewerage and faecal sludge management aimed at developing countries.

IWK has received many visitors from countries such as India, Indonesia, Kazakhstan, nations from the Middle East and Africa, all looking to learn how IWK manages wastewater in Malaysia. Some have even participated in our training workshops or established collaborations to facilitate the transfer of echnology and knowledge based on IWK's inherent industry experience and expertise.

2018				
No.	**Program**	**Date of Visit to IWTC**	**Highest Rank**	**No. of Participants**
1	International Study Visit on Fecal Sludge Management For Papua New Guinea on Port Moresby Wastewater Management Improvement Project 23-25 Jan 2018	24 Jan 2018	Operation Manager –PNG and Chief Advisor, Japan International Cooperation Agency	12
2	International Exposure Visit by Astana Su Arnasy Malaysia Sewerage Management 2-7 Jan 2018	3 Jan 2018	General Director	7

2016-2017			
No.	**Program**	**Date**	**No. of Participants**
1	International Technical Visit by PD Pal Jaya, Indonesia	10 Oct 2016	2
2	International Technical Visit by PD Pal Jaya, Indonesia	6 March 2017	30
3	International Technical visit by Sri Lanka Institute of Development and Administration (SLIDA) and Unimara	15 Nov 2017	20
4	International Technical Visit by Indonesian NICHE 186 Projects	17 Nov 2017	25

June 26, 2018

Appreciation of the International Exposure Visit to Indah Water (04 - 07 June, 2018) sponsored by Bill and Milinda Gates Foundation

Dear Sirs,

I and my colleague Sanjaya Adhikary, express our sincere appreciation to Indah Water, Malaysia and the sponsors of the exchange visit, Bill & Milinda Gates Foundation for providing us with a unique opportunity to learn from the Wastewater and Faecal Sludge Management experience (04-07 June 2018) in Malaysia.

The learning program was well structured in a compact module, and it is beneficial to policy-makers, management professionals and practitioners alike. The presentations were richly insightful, discussions were inspiring and field visits were carefully chosen to reinforce the understandings. We also enjoyed and learned from the interaction with SPAN, the regulatory agency. The peer to peer exchange between the three countries, provided us with sharing and learning opportunities from each other.

In many ways, the visit was eye opening for us, on how a complete process of collection, transport, treatment and discharge of human waste can be efficiently managed. The Malaysian sanitation journey provides strategic pointes for Nepal to develop a roadmap to effectively plan and manage sanitation in the coming days. Of particular interest to us was to learn how Indah Water, a company established under Ministry of Finance, was efficiently operating over 7000 treatment plants on a country wide basis. A small central catalytic support to Indah water was noteworthy for ensuring financial sustainability of the operator and showed that carefully targeted subsidy does really go out to produce far-fetching results. Appropriate acts, standards and certification protocols supported by carefully detailed guidelines and procedures were instrumental to drive the development of sewerage and faecal sludge management.

Upon our return, Sanjaya and I have started attempts to turning the learning into actions for wider sector application. We have started by sensitizing senior officials at the Ministry of Water Supply and the Department of Water Supply and Sewerage, where we have discussed on ways for bringing more senior government officials on board. Continued learning from the Malaysian policy experience, adaptation of your standards to the Nepalese context, regulatory process development, wastewater management, design and supervision by competent authorities, consultants and contractors, promoting construction of septage treatment plants and technical knowledge exchange are some areas where we see opportunities for collaboration besides training and exchange visits of policy makers and practitioners. We are highly interested to find fields of common interest in these areas, which can be advanced in partnership with Indah Water Konsortium.

Once again, we thank Indah Water Training Center for the brilliantly designed modules of the leaning visit that covered almost everything we wanted to learn in the first phase, appropriate site visits to demonstrate good practices, and inputs of richly experienced resource persons who made the learning an enjoyable experience. We must say the logistics, accommodation and travel arrangements were convenient and almost impeccable. We really enjoyed and are touched by the most welcoming Malaysian hospitality that you provided to us.

Our continued efforts in sharing our working knowledge with study tours from abroad have not only allowed us to showcase our success stories, but to also build bridges of co-operation that going forward, may pave the way for IWK to venture beyond Malaysian shores especially in ASEAN, in the provision of wastewater services.

STUDY VISIT ON SEPTAGE MANAGEMENT BY WATER & SANITATION FOR URBAN POOR (WSUP), NEW DELHI, INDIA in collaboration with INDAH WATER KONSORTIUM, MALAYSIA (16 to 18 April 2018)

Women At The Forefront: IWK's Female Head Of Operations

JAMALIAH BINTI RADZIAN is one example of many who personify IWK's policy of providing equal opportunity and rewarding career pathways for women. A civil engineering expert by professional qualifications, Jamaliah was recruited by IWK in 2006 as a Treatment Manager. Over the years, she climbed the rungs of the corporate ladder to now serve with distinction as Head of Operations at the Seberang Perai UO; a position she has held since her appointment in 2015.

Jamaliah leads a dynamic team of 182 Indahans.

AZIAN BINTI AHMAD is a qualified Electrical & Electronics Engineer and joined IWK in 2001. Her ambitious nature saw her promoted to Manager, Quality & Information Management in February 2016. Her career highlights include being in charge of operations and maintenance of RSTP Bandar Tun Razak and helped it to secure ISO 9001 Quality Management System and ISO 14001 Environmental Management System certification, won 'The Best Employee of the Year' in 2012 and aided RSTP Batu Ferringhi to win the prestigious Malaysia Water Industry Achievement Award 2018 by MWA for the Best Sewage Treatment Plant. After serving 2 years as Treatment Manager in Penang overseeing RSTP Jelutong and Batu Ferringhi, and with her valuable experience and passion, she returned and has been serving in KL UO since November 2018. Her current portfolio includes operations and maintenance of RSTP Pantai 2 and 94 plants under Multiple Plant Package covering Kuala Lumpur South.

SECTION

06

INSPIRATONAL WORKPLACE & CULTURE

Sustainability Report
2017/2018

INSPIRATIONAL WORKPLACE & CULTURE

Undoubtedly, people are at the heart of IWK and are our greatest asset. The collective expertise, experience and knowledge of our workforce has enabled us to continue delivering first-rate wastewater service to the nation.

Fittingly, our corporate theme for 2017 is Manpower Excellence and Optimisation as we seek to leverage on the fullest potential of our workforce towards becoming the Premier Wastewater Company in line with our roadmap for IWK Transformation IWK 2020 (TI2020), which is launched in January 2017.

MANPOWER EXCELLENCE FRAMEWORK

In continuing to cultivate our employees as an asset for IWK, we have developed our Manpower Excellence Framework ("MEF"). Under this framework, we aim to bridge the gap between **Core and Aspired Behaviours via Knowledge and Skills.**

Ultimately, the goal is to develop an informed, engaged and capable workforce by equipping them with the required knowledge and skills to close competency gaps and to cultivate desired behaviours.

Informed, Engaged & Capable Workforce

Knowledge and Skills	Area of Focus	Potential Benefits
Upskilling and Upgrading Capabilities	• 4 box model - reference materials - training courses - professional experiences - on the job training	• Malaysia's preferred employer • An enabling environment • Knowledge Sharing • Reduced attrition • Responsive, enthusiastic, literacy
Professional and Self Development	• Ownership of career and development • Shared accountability between employee and employer • Complex and diverse skills	• Empowered and Productive staff • Confident and Adaptable staff • Respected in Industry • Marketable with good CVs
Coaching and Mentoring	• Coaching Mentoring • People Management • Continuous Improvement	• Shared leadership • Best practice sharing • Increase staff potential
Recognition and Rewards	• Performance Management • Merit and incentives • Staff motivation • High employee engagement	• Performance Culture • Accountability and Commitment • Succession Planning • Consequence Management
Innovation and Automation	• Innovation Framework (SHIFT-Strategic Alliance, Harness, Incubate, Focus, Train and Develop) • Digital capability • Competitions and Showcasing	• New Business Development • Idea generation and Creative Mindset • Waste to Wealth (revenues to IWK) • International recognition • Sponsorship
World Class Processes, Tools and Systems	• Affiliation with Professional Bodies • Quality Management Systems • Health and Safety industry practies • 5S and Continuous Improvement	• Staff professional accreditation • Efficient and safe working practices • Standardised and streamlined processes, tools and systems

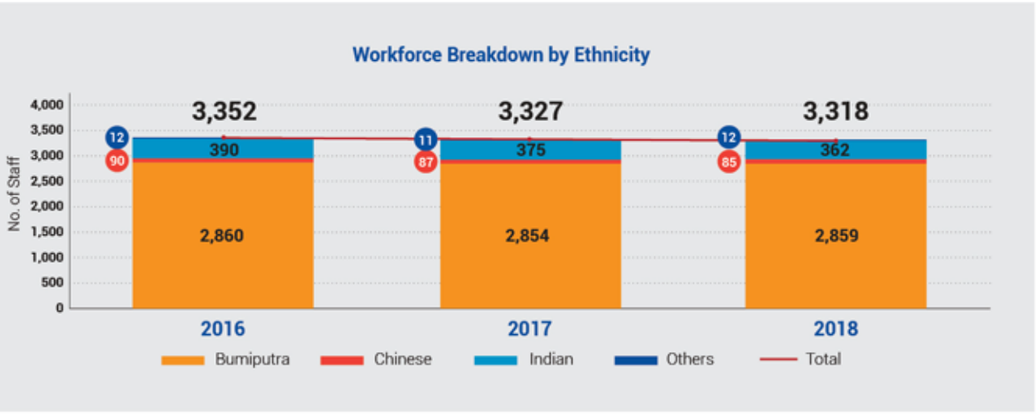
We continue to cascade the MEF to all staff across IWK, supported by relevant events and activities as well as information / material.

EMPLOYEE DEMOGRAPHICS AND STATISTICS

As mentioned earlier, IWK practices an equal opportunity work environment, where career advancement and remuneration are based on merit. We adopt a no-discrimination policy concerning gender, ethnic or social background when it comes to the recruiting, rewarding, promotion and training and development of staff. The criteria used are the employee's professional credentials, expertise, experience, work performance and overall contribution to the Company.

Workforce Breakdown By Ethnicity

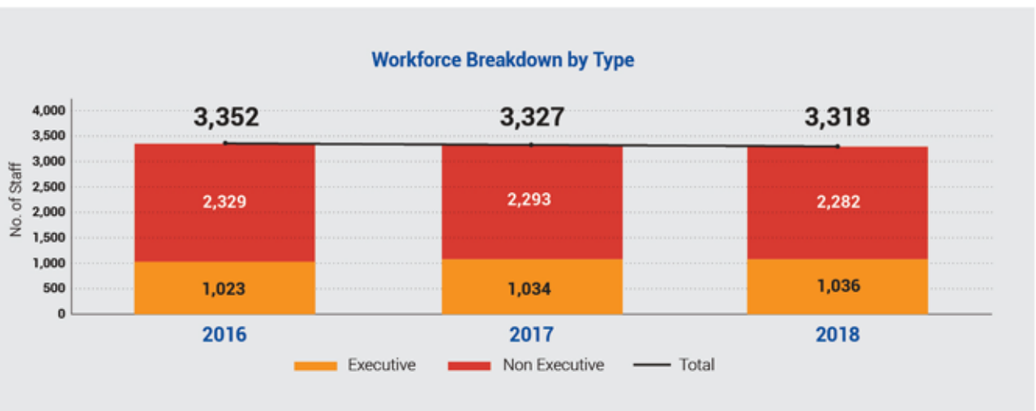
We draw pride in the multi-racial composition of our workforce, which is reflective of the diversity of the larger Malaysian society. We continue to stress unity in diversity in the development of our corporate culture where everyone, regardless of their ethnic or social background may have a sense of belonging to the company.



Workforce Breakdown By Type

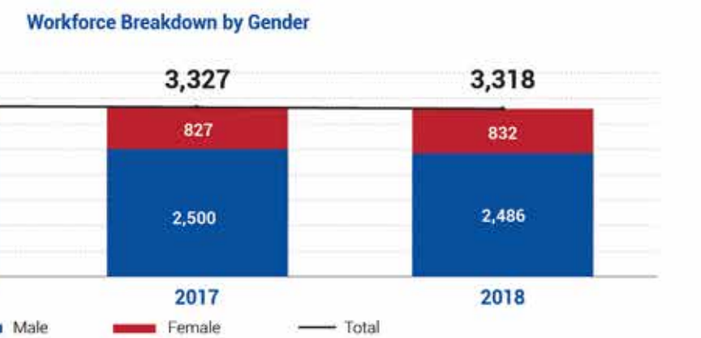
The majority of employees within IWK are non-executive personnel. This is natural given that a large portion of our business operations requires manual labour or technical work out on the field. A large portion of our non-executive staff are responsible for maintaining our STPs and sewer networks nationwide.

IWK values all staff and recognises their contributions and key roles irrespective of the jobs they do or their designations. Non-executive staff members are eligible to participate in collective bargaining via their respective union (please refer to subsection Collective Bargaining and Freedom of Association in this report for more details).



Workforce Breakdown By Gender

Given the nature of our business operations, there is a greater proportion of male employees compared to women, especially since a large number of the jobs involve manual labour or fieldwork and even 3D (Dangerous, Dirty and Difficult) jobs. However, at our HQ and in office or corporate environments, there is a more even ratio between men and women. We continue to provide opportunity to both men and women for all jobs at all levels across the organisation.

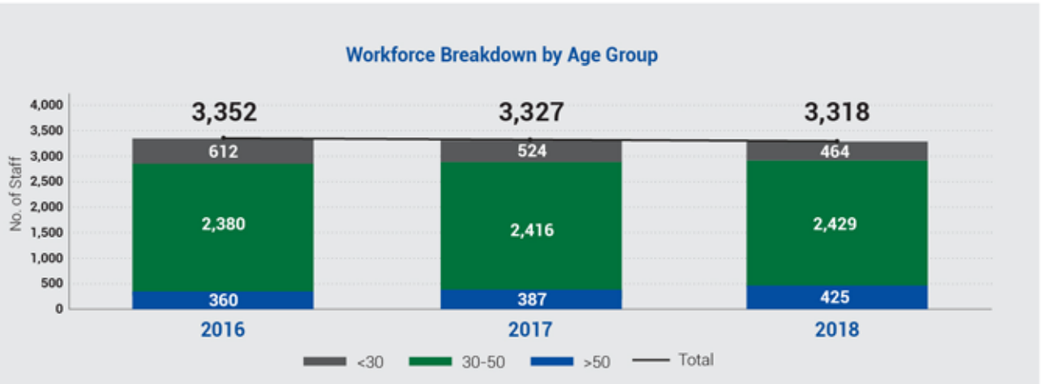


Workforce Breakdown By Contract

The vast majority of our staff comprise permanent employees who enjoy full employment benefits. Non-permanent staff members are hired on an as-and-when basis to meet specific or urgent requirements. We continue to prioritise hiring of staff on a permanent basis as much as possible to provide employees greater job security and welfare benefits.

Workforce Breakdown By Age Group

The larger section of our people is within the 30-50 years age bracket. This is a positive factor as employees within this age group provide IWK with the right composition of talent to support succession planning, and skills and leadership development across the organisation. Overall, IWK's staff, which comprises three main age groups, gives the organisation a strong blend of youth and experience, to drive our growth.



EMPLOYEE BENEFITS AND COMPENSATION

We continue to ensure that employees receive competitive wages and benefits that commensurate with the jobs they perform and their respective expertise, qualifications and experience. Remuneration will also depend on the number of years employees have served with IWK.

Full-time employees are entitled to the following health benefits:

- Statutory sick pay leave without hospitalisation depending on the period of service: 14 days for less than two years; 18 days between two and five years; and 22 days for more than five years.
- A period up to 60 days is granted if hospitalisation is necessary.
- All field employees receive biennial health check-up borne by IWK while HQ staff and other non-field employees above the age of 40 can enjoy such benefit too.

The company has also established a health / medical insurance plan for staff. There is also a prolonged illness programme plan that provides fully paid leave for six months and another six months with half a month's pay.

Employees are entitled to various types of paid and unpaid leave, which include annual, medical, maternity, compassionate, paternity, marriage, Haj and exam leave. Female employees are entitled to maternity leave for 60 consecutive days for each confinement period. Male employees are granted paternity leave: three days for executives and four days for non-executives. This leave is limited to five legitimate children.

In the event of death of an immediate family member (spouse, legal children, parents, parents-in-law, brothers, sisters and grandparents), employees are entitled to three days of compassionate leave annually for bereavement purposes. They are also granted funeral assistance. Paid time off is also given on compassionate grounds for serious illnesses and natural disasters.

EMPLOYEE TRAINING AND DEVELOPMENT

We continue to focus on training and development as a key aspect of improving the competencies and capabilities of our staff. While internal training programmes or courses comprise the bulk of our training activities, staff, where required are given opportunities to attend external courses.

Despite the decrease in our training budget, the number of training hours per employee has increased substantially. This achievement is due to the development of modules and programs, which were conducted by internal trainers under the Train-The-Trainers initiative. This direction reflects IWK's commitment to develop staff competency by providing ample training opportunities. A large portion of training is centred around developing employees' functional skills.

Despite increasing operating costs and a fixed tariff, we have never compromised on staff training and Management's support towards staff development remains a key strategy for IWK. In 2018, the total number of training course attended and average training hours per employee increased by 17.2% and 45.5% respectively compared to the previous year. This was achieved despite a reduction in total training spend for 2018.

EMPLOYEE ENGAGEMENT

Employee Events And Activities

Working in IWK is to be part of a community or even an extended family. As such, a wide range of social or non-work-related activities are organised annually for staff. These include festive celebrations, health-related events and also family days or outings with the goal of bringing staff together towards fostering closer interaction and strong bonds.

Management continues to initiate various team building and employee-related activities to foster *espirit de corps* and to develop the desired corporate culture within IWK. One key activity held in 2017 was a Management Retreat ("MR") held on 9-10 October 2017 at Colmar-Bukit Tinggi, Pahang. In 2018, another MR was held on 12-14 August 2018 at Janda Baik, Pahang.

Management Retreat

The purpose of the Retreat was to bring together IWK's Management to strategise on the way forward for the Company and to find ways to monetise assets. Attendees included Heads of Department, Regional and Senior Managers, Head of Operations and Unit Managers.

IWK Management Retreat 2017: 9-10 October 2017, Colmar Tropicale Bejaya Hills, Bentong Pahang.

All staff are encouraged to attend the town hall sessions and to ask questions or to share any issues they have candidly.

IWK's social and recreational activities are primarily driven by Kelab Indah Water ("KIW"), an informal internal establishment for staff and their families. KIW membership is open to all staff irrespective of whether one is management, executive or non-executive staff. KIW is an established committee for the benefit of staff that celebrates cultural festivals, organises sporting competitions and programmes, charitable activities and more.

KELAB SUKAN DAN REKREASI INDAH WATER (KIW)

Deepavali Celebrations


Sports Carnival 2016


Bowling Tournament 2017


White Water Rafting Excursion 2017

Dart Tournament 2017


Volleyball Tournament 2017


Deepavali Celebrations 2018


Friendly football match between UOs

Ping Pong Tournament 2017


Badminton Tournament 2017


Hari Raya Celebrations

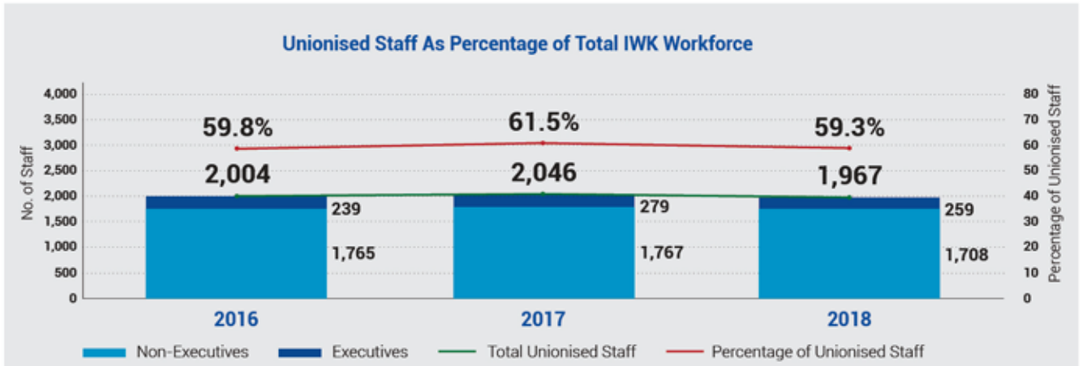

IWK Sports Carnival 2018

Collective Bargaining, Freedom Of Association & Grievance Procedures

Freedom of association and the right to collective bargaining are part of the four core labour standards recognised by the International Labour Organization (ILO) and the Universal Declaration of Human Rights. IWK works closely and enjoys good relations with the unions.

Employees are informed of their rights through Company communication channels. Open employee and management discussions are held regularly on any work-related issue. IWK management representatives have been actively engaging with employees since 1997 over issues raised by union members. The employees covered in our Collective Agreement are listed below.

Separately, IWK has a clear procedure for employees to raise any concerns, problems or complaints and to seek a resolution to these. While employees are encouraged to attempt to resolve issues informally, they are in no way prohibited or censured for using the grievance mechanism, which is their right as an employee of the Company.



Beyond tangible benefits, IWK continues to be sensitive to employees' needs. Where possible, a minimum notice period is provided when there are operational changes to enable staff to better adjust to changes without disrupting their work routines and daily lives.

Human Rights

IWK recognises its responsibility to protect employees' human rights. Relevant procedures are respected, implemented and executed throughout all operations.

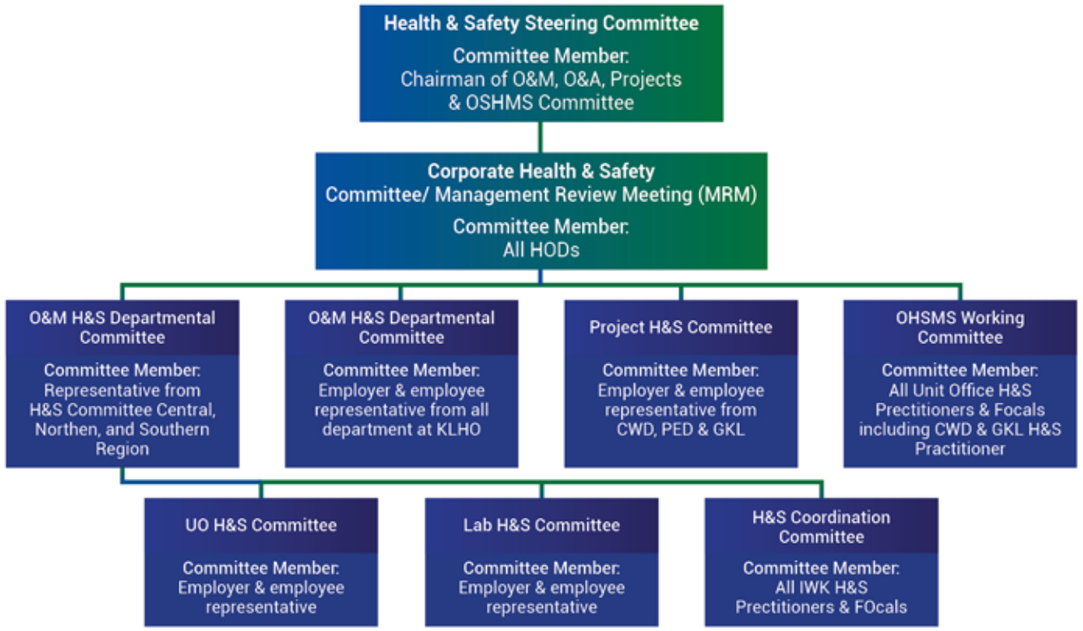
IWK's Human Resources activities adhere to human rights principles and values. They are structured around the Malaysian Employment Act 1955, which prohibits exploitative labour practices. The Company also adheres to the Children and Young Persons (Employment) Act 1966.

There have been no reported infringements of the rights of any persons, adult or child, not any incidents of, forced or compulsory labour. Neither has there been any violation of human rights involving the rights of indigenous people at any time in the Company's history.

OCCUPATIONAL HEALTH AND SAFETY

A large segment of our staff is potentially exposed to hazardous work conditions including 3D jobs. Therefore, IWK has made health and safety a priority with clear policies, systems and procedures established to ensure our people are safe and well when working and are able to return home to their families.

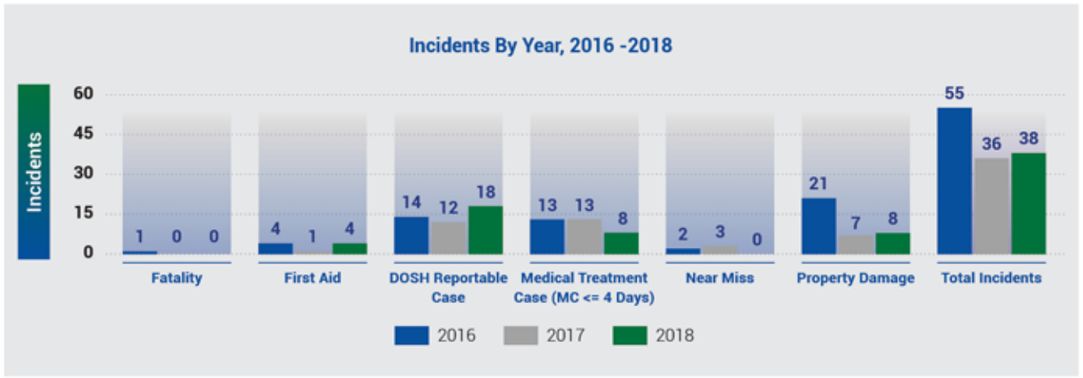
IWK adopts the MS1722:2011 and ISO 45001 standards as part of its Health and Safety Management System ("HSMS"). Overall stewardship of Health and Safety is under the IWK Health and Safety Committee as given below.



LTI is defined as lost-time due to injuries and is calculated based on the number of work days lost due to an individual's inability to work as a result of accidents and medical leave.

In 2017, we reduced the total number of LTI by 44.02% compared to 2016, bringing the figure down from 368 to 206 incidences. However, in 2018, this number rose again by 102 to clock in at 308. The increase was the result of the 5.5% rise in the number of reported incidents in 2018 as compared to 2017 with the figures standing at 38 and 36 respectively.

This marginal increase is attributed to the higher number of traffic accidents during working hours.



The decreasing trend in health and safety incidences is attributed to the strong commitment of both management and workers to ensure a safe working environment by adhering to our set management approach and adopting a health and safety-first mindset in the execution of duties.

The adoption of the MS 1722:2011 and ISO 45001 as part of our HSMS, enables IWK to effectively address all work-related hazards -- not only those covered by government standards. It also facilitates effective communication and the cascading of standards, SOPs and policies to all IWK staff. In addition, IWK's management continues to listen closely to staff feedback on health and safety matters and such input is constantly incorporated into existing systems and processes to ensure greater effectiveness.

All accidents are thoroughly investigated to determine the root cause(s) with remedial and preventive measures identified to avoid future incidences. These include a "lessons learned approach" whereby the investigation process and findings are documented to ensure easier reference in the future especially to serve as lessons learned for future training.

Several programs that were rolled out during 2017:

- IWK Health & Safety Passport Program for Contractors
- Health and Safety Accident Prevention Awareness Trainings
- Health and Safety Quiz and Competition
- Health and Safety Committee Conventions

We remain vigilant and continue to adopt proactive measures, with all our initiatives updated in the OPI. The OPI is a single manual - in accordance with ISO 9001 requirements - which document all the health and safety procedures of the Operations and Maintenance Department ("OMD").

IWK Health And Safety Event And Activity Highlights

Fire safety training with Jabatan Bomba

Fire drill at IWK's HQ building

Health and safety quiz and treasure hunt

One of many health and safety awareness campaigns held in IWK

Issuance of Safety Passports to Contractors. The passport is necessary for contractors to access IWK sewerage facilities or construction sites. It ensures that contractors have embraced IWK's health and safety mindset and culture towards reducing accident rates and incident-related costs.

IWK's HQ is deemed a non-smoking premise as part of its on-going campaign to encourage employees to live a smoke free lifestyle.

Key Highlights In 2018:

- Participated in the Mega OSH ToolBox Talk 2018, organised by the Malaysian Society For Occupational Safety & Health (MSOSH).








Launch of the IWK HSMS. This is an online reporting system for Incident Reporting and Investigation that was developed by in-house IWK's expertise.

- First Utility Company in Malaysia To Achieve the ISO 45001:2018 accreditation in November 2018. It is an internationally recognized Occupational Health & Safety Management System ("OHSMS").

IWK's Bright Future

As Malaysia transitions to a resource recovery-based model, IWK is now spearheading efforts to recycle wastewater and byproducts into usable resources. In the context of sustainable development, which IWK has adopted, bio-effluent, biosolids and biogas generated from wastewater treatment are recovered and reused.

By adopting this resource recovery approach, IWK achieves the goal of a closed water loop and creates an integrated urban water cycle that is in-line with best practices for efficient and environmentally friendly water resource management.

With climate change, the country's water resources could be affected but with IWK's expertise and technology in recycling bio-effluent for non-potable use, we could emerge as a key player in meeting the nation's growing needs with a clean and sustainable water supply while playing a role in ensuring national water security.

However, the extent of our success is tied closely to our ability to invest substantially in resource recovery efforts, especially at the initial stage where capex is required. Hence, invariably, a tariff revision will support our pioneering efforts to transition from a utility services provider into a true wastewater and resource recovery company.

SECTION

07

MOVING TOWARDS SUSTAINABILITY

Sustainability Report 2017/2018

MOVING TOWARDS SUSTAINABILITY

Following the landmark 14th General Election, IWK revised its Business Plan ("BP") 2018 – 2022 in line with the changes in policies and priorities set by KATS. In addition, IWK also supports other key environmental development aspirations of the Government as expressed in the Malaysia Green Technology Masterplan ("GTMP") consistent with United Nations Sustainable Development Goals ("UN SDGs").

Since inception, our fellow Indahans especially those in the field have been the source of inspiration by their sheer determination and toil, including 3D work, in order to deliver quality sewerage services to our valued customers and stakeholders. As IWK is committed to enhancing customer experience, satisfaction and well-being, it is prepared to listen and receive feedback to improve and optimise its operational performance, processes and productivity for the benefit of customers.

As custodian of the environment, IWK adheres to various statutory requirements and guided by management systems to ensure effluent complies with high standards to safeguard the waterways and preserve the environment for a better quality of life and for future generations.

To fulfil its vision and coupled with the commitment to operate with an environmental friendly agenda, IWK has embarked on a holistic approach to reduce its carbon footprint and impact on the environment through automation, R&D efforts, targeted application of technology, continuous innovation and resource recovery, among others, for the betterment of the community and society at large.

TARIFF REBALANCING AND JOINT BILLING FOR BUSINESS SUSTAINABILITY

IWK has proposed an appropriate tariff structure to re-balance wastewater services charges towards achieving business sustainability. In the near future, together with SPAN, we aim to conduct engagement sessions and consultations with our stakeholders in order to gain their buy-in for a tariff revision.

We have also proposed a joint billing effort with all State water operators. Under this system, customers will receive a single bill for their water consumption as well as for wastewater charges based on current tariffs.

IWK successfully implemented the first joint billing programme with Jabatan Bekalan Air Labuan ("JBAL") on 1 March 2016. With this, customers who are using the connected system receive a single bill incorporating water usage and wastewater services.

Joint billing is advantageous in that it assures the delivery of bills by the water meter readers right into the hands of customers. It also serves as a constant reminder to customers of the continuous service provided by IWK. This also will address the owner / occupier issue on who should pay the bill.

With the implementation of joint billing, IWK's collection for Labuan increased from 87% in 2015 to 89.7% in 2016 and progressing to 90.1% and 90.4% in 2017 and 2018 respectively. IWK will continue to pursue joint billing exercises with other States to increase collection.

EXTENSION OF SERVICE COVERAGE

Given our proven expertise and experience, IWK is best positioned to offer O&M services for all government-maintained wastewater systems.

We are also actively pursuing the feasibility of expanding into more LAs, which include Majlis Bandaraya Johor Bahru, Majlis Perbandaran Pasir Gudang, and across the State of Kelantan. This would effectively mean that IWK would be serving the whole of Peninsular Malaysia.

TREATING OF INDUSTRIAL WASTE

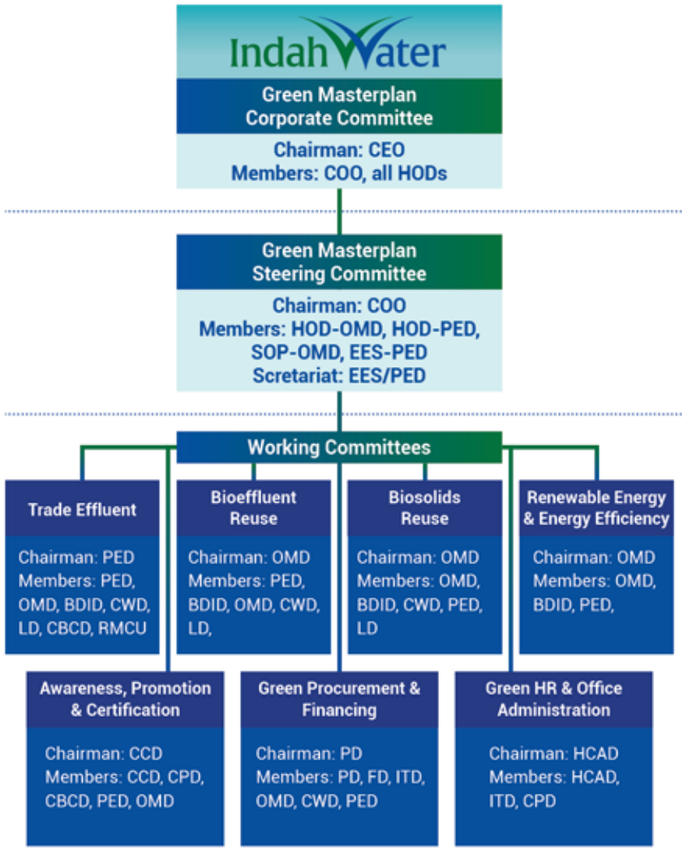
Another area that we are looking into is treating industrial effluent produced by factories and industrial operations. Under this arrangement, IWK will collaborate with factory operators to have their wastewater discharged into IWK's sewers, which will then be channeled to our regional STPs for the appropriate treatment. We await the results of our pilot effort and, if proven commercially viable, will look to develop our business potential in this area.

IWK'S GREEN MASTERPLAN

GTMP is essentially an outcome of the Eleventh Malaysia Plan (2016-2020) and was introduced to strengthen the role of the green economy and technology as catalysts to drive Malaysia's aspirations for sustainable growth.

GTMP focuses on six key sectors – Energy, Manufacturing, Transportation, Building, Waste and Water and attempts to harmonise the policy directions of each sector towards a common goal of sustainable utilisation of natural resources. IWK's purview comes under the ambit of water in which, the set targets are to recycle 100% of sludge and 33% of treated effluent by 2030. This is well aligned to UN SDGs.

IWK has responded to this national commitment towards green technology and has successfully established IWK's Green Masterplan ("IWK's GMP"):



Provide Strategic Direction

- Leadership & Management Commitment
- Define Vision & Mission (i.e. Environmental & Green Policy
- Setting up KPI & Performance Monitoring
- Approve Budget

Strengthen Initiative Planning

- Drive group objective
- Evaluate projects/ initiatives proposal
- Oversee implementation
- Performance Management
- Report the progress of the initiatives to Corporate Level

Planning, Budgeting, Execution, Monitoring and Reporting

- Prepare project proposals (action plan & gap analysis
- Evaluate technologies and proposal options and present to Steering Committee
- Prepare annual budget for green initiative includes planning budgeting
- Execute strategies and implementation
- Monitoring and reporting the progress and performance of the initiatives to Steering Committee
- Secure market demands

The IWK GMP sets the path and pace towards reshaping a better future for IWK and by extension, Malaysia's wastewater industry. In line with the GMP, IWK looks to pursue business diversification centred on related and unrelated diversification to increase revenue streams.

RESOURCE RECOVERY

IWK facilities produce green resources in the form of biosolids, bio-effluent and biogas.

Green Technology (GT) Initiatives - Biosolids to Nutrient for Land Application

Research & Development over the past decade had established the nutrient value (2- 5% Nitrogen Phosphorus and Kalium, NPK) that can be recovered from biosolids produced at IWK. Approximately 52,000 tons/year of biosolids is available to be utilised as biofertiliser. IWK currently has 2 types of this category, namely, biosolids as soil conditioner and BioPellens; a pelletised form of biosolids that has been proven through a study by Universiti Putra Malaysia to be good for landscape plants. Field applications and pilot studies similarly showed positive results in biomass yield in non-food crops as well as growth of landscape plants. It is also beneficial for the environment as nutrients are recycled in a sustainable manner.

Additionally, through stakeholder's engagement, IWK managed to promote the reuse of biosolids to Local Authorities for landscape plants. In 2018, around 18 tonnes of biosolids were recycled as BioPellens for beneficial use. With concerted efforts to promote green applications, it is anticipated the recycling rate will increase further.

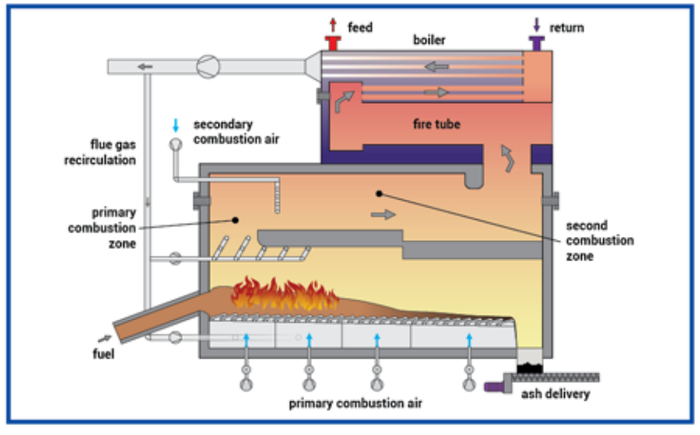
GT Initiatives - Biosolids to Building Material

Apart from nutrient recovery, biosolids can also be converted to building material such as bio-pavers and bricks for walkways. R&D into building material blending biosolids, clay and cement had been conducted and development of an economically sustainable product is being further explored with select players in the building material industry and a local university.

Biosolids as Biomass Fuel to Energy

The energy value contained in dry biosolids holds another potential for conversion to solid biofuel by mixing with coal for co-firing applications. Analysis of typical biosolids from IWK plants in Malaysia shows calorific value ranging from 2,000 to 3,500 kcal/kg. Approximately 52,000 tons/year of biosolids can be converted to solid biofuel to produce about 28 MWh of renewable energy/day.

This initiative will not only reduce waste disposal in landfills but also curb emission of greenhouse gases and reduce dependency on fossil fuel for the production of electricity. IWK is keen to explore opportunities via pilot projects with interested parties to install and operate Biomass Power Plant to convert biosolids to solid biofuel as feed stock for industrial applications.



Scheme of the biomass combustion plant and operating parameters.

GT Initiatives - Biogas to Electricity



In terms of energy recovery, one of the options explored is anaerobic digestion of liquid biosolids to produce biogas and conversion to electricity. The first sewage biogas to electricity demonstration project in Malaysia is at STP Jelutong, Penang with a 175kW Gas Engine to generate electricity for internal street lighting within the premise of the plant. The then Ministry of Energy Green Technology and Water (KeTTHA) through funding from Akaun Amanah Industri Bekalan Elektrik (AAIBE) had appointed UNITEN along with collaboration of IWK to undertake a R&D project to implement a biogas plant at RSTP Pantai 1. Installation of the 330 kW Biogas engine has since been completed and currently, the estimated biogas generation from RSTP Pantai 1 and RSTP Pantai 2 is 2,500m3/day.

Another 4 RSTPs, RSTP Georgetown, Bayan Baru, Titiwangsa 1 and Shah Alam 2, have potential to produce about 10,000m3/day of biogas. All-in, the electricity generation output for future use is estimated to be 20MW from the 6 RSTPs. Utilisation of biogas for power generation is a sustainable option to reduce the fossil fuel consumption that contributes towards reduction of GHGs.

Recycle of Bio-effluent



The reclamation of water and reuse of treated effluents (bio-effluent) from STPs is a proven green technology application which has been implemented in many countries around the world. At present, there is approximately a potential of 1,853 million litres per day ("MLD") of bio-effluent that is targeted for non-potable use. Bio-effluent reuse pilot projects were implemented with LAs since 2012 for landscaping purpose, municipality reuse such as for drain and vehicle washing, among others. Meanwhile, there is continuous R&D into reclamation technologies that will suit both low cost and local needs. Additionally, at IWK's regional STPs, approximately 5-10% of bio-effluent is reclaimed for plant washing and operational process consumption. Currently, the volume of bio-effluent recycled for non-potable use within the STPs is estimated to be 66 MLD.


Water Reclamation Plants were constructed by IWK's business partners at selected STP such as RSTP Pantai 1, RSTP Setia Alam and RSTP Medini to further treat the effluent to make it clean enough for non-potable reuse. The reclaimed water or bio-effluent becomes an alternative water source to meet demands by industries. Ultimately, it can be said that bio-effluent reuse can reduce stress or demand on raw water resources, lower the water footprint of a development i.e. reduce water abuse by recycling (fit for purpose).

Solar

The parking lot inside RSTP Pantai 2 is equipped with a panel designed to absorb sun rays as a source of energy for generating electricity for internal consumption at STP and Pantai Eco Park. A 60 kW solar panel is installed for Admin Building while a solar panel of higher wattage of 140 kW is for the usage of Pantai Eco Park.


STPs for the Future: Setia Alam (Selangor) & Medini (Johor)

Both our Setia Alam and Medini STPs are equipped with bioeffluent recycling capabilities. Setia Alam has a capacity of 8 MLD and will be supplying treated effluent to a nearby latex production factory from 2019-2028. Estimated revenue contribution is RM1.2 million per annum (2019-2022), RM1.5 million per annum (2023-2026) and RM2.1 million (2026-2028).

On a smaller scale, Medini with a 0.5 MLD capacity, has also inked 10-year contracts (2019-2029) with various surrounding commercial factories and facilities for the provision of treated effluent which will provide up to RM90,000 per annum.

The above two are in addition to our existing treated effluent operations at STP Pantai 1 (Kuala Lumpur).

RESEARCH & DEVELOPMENT

R&D Collaborations

Indah Water has been continuously committed towards research and innovation and our initiatives has progressed from the fundamental research collaboration towards applied research with more technology applications. It is hope that the development of research activities in IWK will lead to creative and innovative solutions for sewerage industry, with more practical solutions for immediate uptake and ready for implementation with new technology development that suit local condition. With that, IWK actively promotes research collaborations between IWK as industry player and universities as academia researchers to strengthen the development of research and treatment technology for wastewater industry.

Universiti Teknologi Malaysia ("UTM")

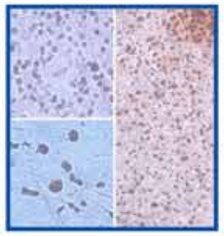
IWK has also entered into a collaboration with UTM in the effort to isolate and identify effective microbial consortiums in wastewater. The overall aim of the R&D project is to develop microbes which are effective in reducing nitrogen and phosphorus in wastewater treatment processes. The study resulted in the identification and isolation of two types of effective microbes for nitrogen and phosphorus removal from IWK's treatment process in STPs.

Methods of growth and production of effective microbes are investigated, and microbes from successful results are preserved and incubated for future studies. Other project highlights included the completion of process platform and SOP for production in a 16 L bioreactor.

Results from the study will be applied to scale up and develop the cultivation process to an industrial scale in due course. Moving forward, further development into a microbial consortia product to augment nitrogen and phosphorus removal in the wastewater industry is already being mooted for a possible venture in the future. By developing the consortia, IWK will have an in-house bio-product to improve treatment efficiency and protect our rivers from nitrogen and phosphorus pollution.

Pictures of studies:

Pelletised nitrogen and phosphorus removal bacteria



Nutrient Removal Microbe under light microscope

Universiti Malaya ("UM")

R&D Collaboration with UM on the Performance Evaluation of Extended Aeration (EA) Systems with Anoxic Zone

Another collaboration was with UM on the performance evaluation of extended aeration (EA) systems with anoxic zones. The study was undertaken to evaluate nitrogen removal performance of selected STPs with EA systems that are incorporated with anoxic zones. Anoxic zones are incorporated for the purpose of enhancing the nitrogen removal process at STPs, which are increasingly faced with stringent standards set by Department of Environment for discharge of final effluent.

Comprehensive sampling and analysis conducted at selected STPs yielded key findings where low values of dissolved oxygen (DO) are observed to be key in significant nitrogen removal via simultaneous nitrification and denitrification (SND) activities as well as not compromising on removal of other organic pollutant indicators.

UM researchers conducting on-site tests

The findings present an opportunity for energy savings because of the lower level of DO required to achieve nitrogen removal in the treatment process.

One of IWK's STP Sampling Points

IWK-UiTM Collaboration

The establishment of MOU collaboration with UiTM as one of the prestigious institution in Malaysia and multiple campus nationwide in their respective fields of expertise will be an advantage to facilitate satellite research activities between UiTM and IWK. This MOU will serve as an excellent platform for both industry - academia to explore any other areas of cooperation instead of research activities. UiTM and IWK's capabilities in the field of capacity development are also needed in enhancing the sewerage industry technical training program to produce and equip staff with the knowledge and ability to understand and manage sewage treatment systems efficiently.

The scope of MOU would include the following but not limited to:

1. Development of R&D activities for creative , innovative and practical solution for wastewater industry.
2. Adoption of technology advancement on wastewater and sewerage industry to suit local condition.
3. Establishment of academic programme related to wastewater and sewerage industry for researchers academia-industrial exchange.
4. Co-host environmental engineering education activities i.e. planning, managing and executing the activities.
5. Application for funding or local and international services in education, research and any other activities under the collaboration.
6. Provide professional facilitation, mentoring, education/ research teams in smart collaboration for capacity building in sewerage industry.
7. Jointly present and publish research findings in scientific meeting and publication.
8. Training of staff and student to enhance skills and knowledge on wastewater and sewerage industry and related studies program at UiTM.
9. Any other areas of co-operation to be mutually agreed upon by the Parties.

VENTURE INTO NEW NON-CORE BUSINESSES

We continue to seek ways to monetise our asset infrastructure and facilities. One of which is the leasing of our sewer lines for the laying of fibre optic cables for the provision of high-speed broadband services. Under this model, IWK is paid revenue by its business partner for the total kilometres of sewers used for the roll out of fibre optic infrastructure. This model has been successful as evident in some of our sewers in the Klang Valley.

We look to expand the revenue model further to new hotspot locations across the country.

As we think of new and unconventional means to venture outside our traditional and highly regulated business of wastewater services, we continue to pursue more conventional, low-hanging opportunities. These include placement of billboards and telecommunication towers in our operating sites (subject to regulations), take-over of Government sewerage facilities, and the development of comprehensive water reclamation plants.

Distribution And Feedback

The report is available for download via **https://www.iwk.com.my/corporate-profile/sustainability-reports**. Hard copies are available upon request. We welcome feedback and input on how we may further enhance our sustainability disclosure. Comments and suggestions may be sent to:

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4.	Azzura Mohd Amin	Customer Billing and Collection Department
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13.	Choe Sew Ho	Operations and Maintenance Department
14.	Izzati Tajuddin	Legal Department
15.	Gobi Palaniandy	Risk Management & Compliance Unit

SECTION

08

APPENDIX / ABBREVIATIONS

Sustainability Report 2017/2018

APPENDIX

APPENDIX ONE: IWK'S PRINCIPAL BUSINESS ACTIVITIES

Operation And Maintenance Of Public Wastewater Systems

- Provide scheduled operation and maintenance of public Sewage Treatment Plants ("STPs"), Network Pumping Stations ("NPSs") and public sewers within our service areas.
- Provide corrective and preventive maintenance of public sewers, STPs and sludge treatment facilities to meet regulatory requirements.

Monitoring Of Effluent Quality And Sludge Disposal Activities

- Carry out sampling, analysis and monitoring of effluent quality and sludge disposal activities.
- Submit effluent compliance data to the Department of Environment ("DOE") and SPAN.

Septage Management & Desludging Services

- Perform scheduled desludging services for septic tanks on government premises and demand desludging for septic tank users within our service areas.
- Provide responsive desludging to septic tanks users outside our service areas and to all pour flush users.

Sewerage Planning, Sewerage Asset Data Monitoring And Certifying Services

- Provide planning services: development and updating of nationwide sewerage catchment strategy, sludge management strategy, sewerage project planning and sewerage asset database.
- As Certifying Agency ("CA") appointed by SPAN (for all States in Peninsular Malaysia, except for Kelantan) to examine all sewerage proposals, provide recommendations and to inspect construction and arrange for commissioning of sewerage systems.
- Geographical Information System and Mapping.
- Facilitate Asset Management System throughout IWK.

Sewerage Technical And Environmental Services / Consultancy Works

- Undertake sewerage management, policy and public awareness consultancy.
- Conduct audits of sewerage system.
- Perform Hazard and Operability ("HAZOP") studies of water and wastewater facilities.

Wastewater Capital Works And Refurbishment Management

- Provide project management and monitoring of capital works for both Government (Jabatan Perkhidmatan Pembetungan ("JPP") and Suruhanjaya Perkhidmatan Air Negara ("SPAN" or the National Water Services Commission) funded wastewater projects and IWK internal projects.

Wastewater Management Technical Training & Consulting And Operational Skills Training

- Deliver professional technical and non-technical training with consulting on sewerage planning, design, operation or general strategies including master or national catchment and city planning initiatives.
- Develop environmental engineering expertise and providing / undertaking monitoring or analysis with reports;
- Consulting on regional wastewater treatment operations pertaining to related technologies including risk management or preventive maintenance;
- Health and safety assessments in wastewater systems including confine space or gas testing procedures; and
- Receive international groups who wish to visit or tour our facilities to learn from IWK's experience and expertise on fecal sludge management, assisting or presenting research papers and participation in water-related associations or government think tanks

Research And Development ("R&D") Work In The Wastewater Sector

- Perform in-house research and development ("R&D") work; Continuous Improvement Projects ("CIPs"); External Vendor Led R&D; Structured Institutional and Universities R&D; and Academia's Student Research Initiatives.

Resource Recovery

- Promote reuse and recycling of treated effluent by IWK and to other industries.
- Supply of treated final effluent for non-potable applications to other industries.
- Collaborate with external parties to develop water reclamation plants and to facilitate increased distribution of reclaimed water to various users.
- Promote recycling of biosolids as fertiliser and soil conditioner, or as composite material in building material and as biofuel for electricity generation to achieve the National Green Technology Master Plan ("GTMP") target of 100% biosolids reuse by 2030.
- Collaborate with higher learning institutions as well as construction and building material providers and related industries to produce and commercialise fertiliser and building material from biosolids.
- Collaborate with external parties to convert biosolids into biomass fuel for biomass plants and to explore the possibility of building electric power plants in IWK STPs that use biomass fuel and ultimately feeding into Malaysia's national power grid.

APPENDIX TWO: FATWA PROCLAMATION ON IWK'S BIOSOLIDS AND BIO-EFFLUENT PRODUCTION

Fatwa Berkaitan Penggunaan Semula Bioefluen Terawat dan Biosolid



Berdasarkan kaedah penyucian air yang dilaksanakan IWK dalam menghasilkan Bioefluen terawat dan Biopepejal dari loji rawatan kumbahan, maka Jawatankuasa Fatwa Negeri Kedah berpendapat sistem infrastruktur yang mengalirkan kumbahan itu berupaya menjadikan air kumbahan tersebut suci lagi menyucikan (mutlak) kerana berlaku proses perubahan untuk menghilangkan najis dan mengekalkan semula sifat asli air yang suci lagi menyucikan. Jawatan kuasa Fatwa Negeri Kedah bersetuju memutuskan pengunaan semula Bioefleun terawat dan Biopepejal bagi tujuan bukan makanan dan minuman adalah **harus**.

Dato' Paduka Syeikh Muhammad Baderuddin Bin Haji Ahmad
(Fatwa Negeri Kedah, 24 Ogos 2016)

Jawatankuasa Perundingan Hukum Syarak Wilayah-wilayah Persekutuan berpendapat sistem infrastuktur yang mengalirkan kumbahan itu berupaya menjadikan air kumbahan tersebut **suci lagi menyucikan (air mutlak)** kerana berlakunya proses perubahan untuk menghilangkan najis dan mengekalkan semula sifat asal air yang suci lagi menyucikan. Justeru, air tersebut boleh digunakan untuk siraman bahkan ia boleh digunakan untuk minuman kerana air tersebut telah kembali kepada sifat air yang asal.

Datuk Dr. Zulkifli Bin Mohamad Al-Bakri
(Pengerusi Jawatankuasa Perundingan Hukum Syarak Wilayah Persekutuan, 23 Mac 2017)

Harus menjual dan memperdagangkan najis (tahi manusia atau haiwan) yang ada padanya manfaat iaitu untuk dijadikan baja bagi tanaman.

Fatwa Negeri Sembilan, 27 Disember 2006)

Sekiranya air kumbahan ini dirawat dengan rawatan moden yang boleh mengasing dan menghilangkan kenajisannya sehingga air tersebut kembali kepada sifat asalnya, iaitu air ini tiada lagi kesan perubahan disebabkan oleh najis dari segi rasa, warna dan bau serta disahkan oleh pakar-pakar dalam bidang ini bahawa ia bebas dar kuman dan penyakit, maka air ini **diharuskan penggunaannya** untuk mengangkat hadas dan menyucikan najis dengannya.

Fatwa Negeri Kelantan, 4 July 2004)

Penggunaan semula sisa pembentungan adalah lebih bersih daripada najis babi. Amalan penggunaan semula sisa pembentungan dapat menjamin kelestarian alam sekitar maka haruslah diamalkan. Penggunaan air terawat sisa pembentungan adalah **dibenarkan** jika bentuk, rasa dan warna air tersebut dirawat dan diubah daripada bentuk asal.

Dr. Abdullah Al-Faqih
(Fatwa Antarabangsa, 28 Feb 2006)

Amalan kitar semula merupakan **amalan yang mulia**. Amalan ini berupaya memulihara serta mengekalkan kelestarian alam sekitar.

Muzammil Siddiqi
(Fatwa Antarabangsa, 5 Jun 2007)

ABBREVIATIONS / ACRONYMS

3D: dirty, dangerous, and difficult
ACCA: Association of Chartered Certified Accountants
Act 711: Whistleblower Protection Act 2010
ASEAN: Association of Southeast Asian Nations
AWA: Australian Water Association
BEIM: Business Ethics Institute of Malaysia
BIC: Board of Integrity Committee
BOD: Biochemical Oxygen Demand
CA: Certifying Agency
CAPABLE: Creative and Collaborative, Active and Analytical, Proactive and Performs, Agile and Adaptable, Bi-lingual and Business Savvy, Listens and Learns, Energised and Effective
Capex: Capital expenditure
CeIO: Certified Integrity Officer
CEO: Chief Executive Officer
CESTF: centralised enhance sludge treatment facilities
CIP: Creativity and Innovation Programme
CIP: Corporate Integrity Pledge
CHP: Combined Heat Power Plant
COD: Chemical Oxygen Demand
CPI: consumer price index
CSI: customer satisfaction index
CSR: Corporate Social Responsibility
CST: communal septic tank
DBKL: Dewan Bandaraya Kuala Lumpur
DBU: Desludging Business Unit
DOE: Department of Environment
DOSH: Department of Safety and Health
FY: Financial Year
EA: environmental assessment
EES: Economic, Environmental, and Social
EMS: Environmental Management System
EnMS: Energy Management System
ENSEARCH: Environmental Management & Research Association of Malaysia
EQ(S)R 2009: Environmental Quality (Sewage) Regulation 2009
ERP: Enterprise Resource Planning
ESS: Electronic Security Systems
EWS: Early Warning System
FOG: fat, oil, and grease
FoR: Friends of Rivers
FSM: fecal sludge management
GHG: greenhouse gases
GIS: Geographic Information System
GKL: Greater Kuala Lumpur
GSL: government support loan
GTMP: Green Technology Master Plan
H&S: health and safety
HAZOP: Perform Hazard and Operability
HMI: Human-Machine Interface
HQ: Headquarters
HR: Human Resource
HRDF: Human Resource Development Fund
HSMS: Health and Safety Management System
IAM: The Institute of Asset Management
IFS: Industrial and Financial Systems
ILO: International Labour Organization
IMS: Integrated Management System
IO: Integrity Officer
ISO: International Organization for Standardisation
IST: Individual Septic Tank
IU: Integrity Unit
IWA: International Water Association
IWK: Indah Water Konsortium Sdn Bhd (also called "the Company")
JBA: Jabatan Bekalan Air
JBAL: Jabatan Bekalan Air Labuan
JPP: Jabatan Perkhidmatan Pembetungan
KATS: Kementerian Air, Tanah dan Sumber Asli (Ministry of Water, Land, and Natural Resources)
KeTTHA: Kementerian Tenaga, Teknologi Hijau dan Air (Ministry of Energy, Green Technology, and Water)
KIW: Kelab Indah Water
KOL: key opinion leader
KPI: key performance indicator
KSU: Ketua Setiausaha Umum (Chief General Secretary)
LA: Local Authority
LoS: Level of Service
LTI: Lost Time Incident
MACC: Malaysia Anti-Corruption Commission
MaSRA: Malaysia Sustainability Awards
MCBC: Malaysia Canada Business Council
MCCG 2017: Malaysian Code on Corporate Governance 2017
MEF: Manpower Excellence Framework
MEQR: Malaysia Environmental Quality Report
MOF: Kementerian Kewangan (Ministry of Finance)
MSPC: Malaysia Service Providers Confederation
MWA: Malaysian Water Association
MyIPO: Intellectual Property Corporation of Malaysia
MyWP: Malaysian Water Partnership
NAD: National Audit Department
NDA: Non-Disclosure Agreement
NGO: non-government organisation
NH3-N: Ammoniacal Nitrogen
NIOSH: National Institute of Occupational Safety and Health
NPS: Network Pump Station
O&G: Oil and Grease
O&M: Operations and Maintenance
OHSMS: Occupational Health & Safety Management System
OMD: Operations and Maintenance Department
Opex: operational expenditure
OPI: Operating Procedure Instruction
PDPA: Personal Data Protection Act
PE: Population Equivalent
PED: Planning and Engineering Department
PLC: Programmable Logic Controller
PMF: Plant Maintenance Frequency
PR: public relations
PO: Purchase Order
ePR: electronic Purchase Requisition
QGIS: Quantum Geographic Information System
R&D: research and development
REHDA: Real Estate and Housing Developers' Association
RFP: Request for Proposal
RMCU: Risk Management Compliance Unit
RMK: Rancangan Malaysia
SAP: System Application and Products in Data Processing
SAP-EAM: System Application and Products in Data Processing - Enterprise Asset Management
SBR: Sequencing Batch Reactor
SAS: Stakeholders Assessment Survey
SCADA: Supervisory control and data acquisition
SCC: Sewerage Capital Contribution
SDG: Sustainable Development Goal
SHIFT: Strategic Alliance, Harness, Incubate, Focus, Train and Develop
SIRIM: SIRIM Berhad
SMS: Short Messaging Service
SND: efficient nitrogen removal
SOP: Standard Operating Procedures
SPAN: Suruhanjaya Perkhidmatan Air Negara (National Water Services Commission)
SR2017/2018: Sustainability Report 2017/2018
SS: Static Security
STP: sewage treatment plant
TGS: Tokyo Metropolitan Sewerage Service Corporation
TI2020: Transformation IWK 2020
TSS: Total Suspended Solids
TTT: Toilet-To-Tap Programme
TWG: Technical Working Group
UK DEFRA: UK Department for Environment, Food and Rural Affairs
UKM: Universiti Kebangsaan Malaysia
UM: Universiti Malaya
UN: United Nations
UNESCO: United Nations Educational, Scientific and Cultural Organization
UO: unit office
USEPA: United States Environmental Protection Agency
UTM: Universiti Teknologi Malaysia
UiTM: Universiti Teknologi MARA
UPM: Universiti Putra Malaysia
VMS: Vehicle Management System
WEF: Water Environment Federation
WRI: World Resources Institute
WSIA: Water Services Industry Act 2006

Indah Water

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