

SHAPING A SUSTAINABLE TOMORROW

SUSTAINABILITY REPORT 2019/2020



Indah Water
New Life for Water



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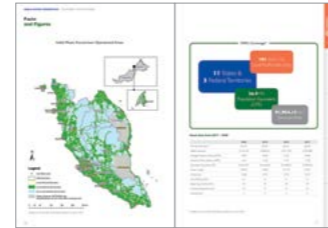
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PURPOSE



- Shaping a Sustainable Tomorrow
- About This Report
- Who We Are
- Facts and Figures
- Our Purpose
- Vision, Mission and Core Values

Shaping a Sustainable Tomorrow



■ 林仁丹 (左2起) 与阿末佐斯达签署谅解备忘录, 改善班底谷生态公园命名为“树林宝库”的社区项目。

英達麗水愛好自然協會 簽備忘錄 “領養植樹”

【吉隆坡10日訊】英達麗水(Indah Water Konsortium)與英達麗水愛好自然協會(INS)簽署谅解备忘录, 通过“領養植樹”计划, 改善班底谷生态公园命名为“树林宝库”(Khanjama Binba)的城市森林项目, 并合作加强使用回收材料, 以保护环境。

双方签署仪式在班底谷“领养植樹”计划启动仪式, 由英達麗水与英達麗水自然协会代表共同主持, 并开放给个人、团体或企业公司捐款认领, 在今年年底计划在种植区进行。

英達麗水自然协会主席阿末佐斯达, 在会上进行签署。



■ Menteri Alam Sekitar dan Air Datuk Seri Tuan Ibrahim Tuan Man (dua, kanan) bersama Menteri Besar Kelantan Datuk Ahmad Yakub (dua, kiri) melakukan penyerahan dalam memperingati penandatanganan antara Kelantan Utilities Muarakan (KUMU) Holding Sdn Bhd, yang diwakili oleh Pengarah Eksekutif Majlis Perancang Bandar Wan Zawawi Wan Ismail (M) kepada Ketua Pegawai Eksekutif Indah Water Konsortium Sdn Bhd Narendran Maranan (kanan) sempena Majlis Penyerahan Persefahaman Sistem Pembinaan Awam Negeri Kelantan Daripada Majlis Perancang Bandar Sdn Bhd kepada Indah Water Konsortium Sdn Bhd, hari ini.

KOTA BHARU, 19 Dis -- Perkhidmatan membabitkan sistem pembetulan awam di Kelantan kini diserahkan kepada Kerajaan Persekutuan melalui Indah Water Konsortium Sdn Bhd (IWK) yang akan bermula pada 1 Jan 2021, kata Menteri Alam Sekitar dan Air Datuk Seri Tuan Ibrahim Tuan Man.

Berlaku berkuatkuasa Kerajaan Negeri Kelantan menerusi Majlis Perancang Bandar Sdn Bhd (Majlis) menyerahkan sistem pembetulan kepada Kerajaan Persekutuan melalui Indah Water Konsortium Sdn Bhd (IWK) yang akan bermula pada 1 Jan 2021, kata Menteri Alam Sekitar dan Air Datuk Seri Tuan Ibrahim Tuan Man.

"Penyerahan sistem pembetulan awam di Kelantan ini juga bertujuan untuk mengerahkan operasi perkhidmatan pembetulan di seluruh negara.

"Di samping itu, ia juga bagi memastikan air sisa kumbahan yang dirawat mencapai tahap piawaian tinggi khususnya dalam usaha pemuliharaan sumber air serta alam sekitar," katanya pada sidang media selepas menyaksikan penyerahan kontrak antara dua syarikat tersebut yang ditandatangani Pengarah Eksekutif Majlis Perancang Bandar Wan Zawawi Wan Ismail dan Ketua Pegawai Eksekutif IWK Narendran Marani di sini hari ini.

IWK, Air Selangor tandatangi MoU bekalan air kepada pengilang



KUALA LUMPUR - Indah Water Konsortium (IWK) dan Air Selangor telah tandatangi Memorandum Persefahaman (MoU) bagi menyediakan bekalan air kepada pengilang di seluruh negeri Selangor.

MoU ini ditandatangani oleh Ketua Pegawai Eksekutif IWK, Narendran Marani dan Ketua Pegawai Eksekutif Air Selangor, Datuk Seri N. Suresh Kumar.

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Air Selangor, IWK in industrial treated water tie-up

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IWK, SAMB bangunkan air pulih guna di Melaka



MELAKA - Indah Water Konsortium Sdn Bhd (IWK) dan Syarikat Air Melaka Berhad (SAMB) telah menandatangani Memorandum Persefahaman (MoU) untuk bekerjasama menyediakan air pulih guna di negeri ini pada Rabu.

MoU ini ditandatangani oleh Ketua Pegawai Eksekutif, Narendran Marani dan Ketua Pegawai Eksekutif, Abd Rashid Abd Rahman.

Majlis menandatangani MoU berkenaan di bawah Timbalan Menteri Alam Sekitar dan Air (KASA), Senator Datuk Dr Ahmad Mawardi Muhammad dan Ketua Menteri Melaka, Datuk Seri Ustaz Dr Sulaiman Md Ali. Turut hadir Timbalan Pengarah SAMB, Datuk Zaidi Atan dan Exco Keraja, Pengangkutan, Datuk Roslan Ahmad.

Narendran berkata, kerjasama ini merupakan salah satu inisiatif bagi meningkatkan industri perkhidmatan air yang lebih mampan.

Menurutnya, melalui MoU berkenaan, IWK bertanggungjawab untuk mengenal pasti lokasi dan kapasiti yang sesuai untuk projek Loji Rawatan Air Puluhan Guna (LRAP), menyediakan data serta maklumat teknikal yang diperlukan.

"SAMB menjalankan pengurusan

At Indah Water Konsortium (IWK), we are committed to creating value for the nation through innovative and sustainable wastewater and sewage services management. We have been contributing to nation development and improving the lives of the rakyat as Malaysia's leading wastewater management company for the past 27 years. Throughout the years, we remain committed to evolving and keeping pace with changes and innovation to be sustainable for the future.

The theme 'Shaping a Sustainable Tomorrow' resonates with our efforts to make meaningful strides in transforming IWK today to face a sustainable tomorrow. This Report shares the transformative efforts and initiatives that are critical to shaping a resilient and sustainable future, for the rakyat, the country and the company. Our ongoing journey is shaped by our commitment and belief to achieve Malaysia's ultimate aim of protecting water and the environment for the nation's water security and health and safety.

About This Report

Bukan sebab loji IWK

Efluen terawat dilepaskan ke Sungai Kayu Ara patuhi piawai JAS

JAS ambil tindakan undang-undang pencemaran Sungai Kayu Ara

NUR FARHANA ABDUL MANAN

KUALA LUMPUR

Indah Water Konsortium Sdn Bhd (IWK) menafikan loji kumbahan di bawah seliaan mereka menjadi punca pencemaran di Sungai Kayu Ara, Petaling Jaya.

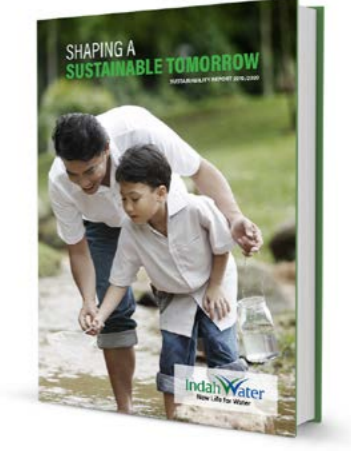
Jabatan Komunikasi Korporat IWK menafikan semua laporan media mengaitkan IWK sebagai punca pencemaran sungai tersebut berada dalam keadaan baik dan mematuhi piawaian ditetapkan Jabatan Alam Sekitar (JAS).

Menurut kenyataan itu, sebelum ini beberapa laporan media mengaitkan IWK sebagai punca pencemaran sungai tersebut berada dalam keadaan baik dan mematuhi piawaian ditetapkan Jabatan Alam Sekitar (JAS).

"JAS mengambil tindakan undang-undang pencemaran di Sungai Kayu Ara, Petaling Jaya, kerana efluen terawat yang dilepaskan ke sungai itu tidak mematuhi piawaian JAS," katanya.

"Kami sentiasa berusaha memastikan efluen terawat yang dilepaskan ke sungai itu mematuhi piawaian JAS," katanya.

"Kami sentiasa berusaha memastikan efluen terawat yang dilepaskan ke sungai itu mematuhi piawaian JAS," katanya.



SHAPING A SUSTAINABLE TOMORROW

RECYCLING INITIATIVE

AIR SELANGOR, IWK IN WATER TIE-UP

SPV to produce non-potable treated water for distribution to industrial businesses

IndahWater Air Selangor

FAHMI KHALIL

KUALA LUMPUR

Indah Water Konsortium Sdn Bhd (IWK) dan Air Selangor telah tandatangi Memorandum Persefahaman (MoU) bagi menyediakan bekalan air kepada pengilang di seluruh negeri Selangor.

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The IWK Sustainability Report 2019/2020 covers initiatives and relevant information for the year in review, covering our operations in Peninsular Malaysia and Wilayah Persekutuan Labuan where we predominantly operate. The contents of this Report covers IWK's performance and its strategies to build a sustainable business and improve the quality of life of our communities through providing vital wastewater treatment services towards a cleaner, greener and healthier environment. We take a long-term and holistic approach to sustainability with a view to building a resilient company that creates long-term value.

We take guidance from several frameworks to drive our sustainability strategies. These include policies and priorities set by the Ministry of Environment and Water (KASA), the Green Technology Master Plan Malaysia 2017-2030 (GTMP), Bursa Malaysia's Sustainability Reporting Guidelines and the United Nations Sustainable Development Goals. These guidance inform our reporting on key priorities towards progressing IWK's sustainability initiatives.

The IWK Sustainability Report is done on a voluntary basis and covers the progress of our activities every two years. The Sustainability Report is part of our proactive efforts to elevate the awareness of our business contribution for nation building, as well as highlight the sustainability journey that IWK has undertaken.

We rely on our robust internal processes to verify the accuracy of the performance data and the information presented in this report.

The data and information presented in this report are divided into five key segments of Purpose, Performance, People, Planet and Progress. Each segment provides meaningful insights of the headline discussed and how IWK assumes its responsibility in the context of sustainability. Among some highlights in the report include IWK's shift from a traditional sewerage service provider to a key player in the circular economy, its talent development progress and its contribution to communities and the environment. While this is a review of the activities and development in 2019 and 2020, there are also inclusion of several latest development from January to August 2021 during the time of publishing. In the following pages, readers will be guided through informative and insightful accounts, excerpts, and optics of the company's position. IWK recommends our readers to adopt a critical view and objective outlook of the content.

Indah Water takes over in Kelantan

Move to boost modernisation of state's sewerage system

By KO THIRUGODI

INDAH WATER Konsortium has taken over the management of public sewerage services in Kelantan, marking a significant milestone in the state's infrastructure development.

The takeover is part of a long-term plan to modernise the state's sewerage system and improve the quality of life for its residents.

Indah Water Konsortium (IWK) has been awarded the contract to manage the state's sewerage system for a period of 20 years, starting from 2021.

The state government has expressed its confidence in IWK's ability to deliver high-quality services and ensure the sustainability of the sewerage system.

The takeover is expected to bring about significant improvements in the state's sewerage services, including better maintenance and more efficient operations.

Indah Water Konsortium is committed to providing world-class services to the people of Kelantan and ensuring the long-term sustainability of the state's sewerage system.

Guna air sisa dirawat atasi isu bekalan

Kuala Lumpur: Malaysia bakal memanfaatkan air sisa dirawat untuk dijadikan sumber air kedua negara sebagai antara langkah penyelesaian bekalan air, terutama pada musim kemarau, kata Menteri Alam Sekitar dan Air, Datuk Seri Tuan Ibrahim Tuan Man.

Katanya, kerjasama Indah Water Konsortium Sdn Bhd (IWK) dengan Syarikat Air Selangor Sdn Bhd (Air Selangor) dalam membangunkan projek penggunaan semula air sisa dirawat turut membuka kembara baharu di dalam industri air negara yang mampu menajua ekonomi.

"Inisiatif berkenaan selaras usaha kerajaan mencapai sasarannya di bawah matlamat ke-9 Matlamat Pembangunan Lestari 2030 (SDG 2030), iaitu memastikan akses dan pengurusan mampan air serta sanitasi kepada semua," katanya.

Berlaku berkuatkuasa kerajaan negeri Kelantan menerusi Majlis Perancang Bandar Sdn Bhd (Majlis) menyerahkan sistem pembetulan kepada Kerajaan Persekutuan melalui Indah Water Konsortium Sdn Bhd (IWK) yang akan bermula pada 1 Jan 2021, kata Menteri Alam Sekitar dan Air, Datuk Seri Tuan Ibrahim Tuan Man.

"Penyerahan sistem pembetulan awam di Kelantan ini juga bertujuan untuk mengerahkan operasi perkhidmatan pembetulan di seluruh negara.

"Di samping itu, ia juga bagi memastikan air sisa kumbahan yang dirawat mencapai tahap piawaian tinggi khususnya dalam usaha pemuliharaan sumber air serta alam sekitar," katanya pada sidang media selepas menyaksikan penyerahan kontrak antara dua syarikat tersebut yang ditandatangani Pengarah Eksekutif Majlis Perancang Bandar Wan Zawawi Wan Ismail dan Ketua Pegawai Eksekutif IWK Narendran Marani di sini hari ini.

IWK celebrates customers through assortment of giveaways

SPAN sahan pelepasan sisa terlarang

Ujian sampel air sejuk baingan bulatan kumbahan

Indah Water Konsortium (IWK) telah merayakan pelanggan-pelanggan kami dengan mengadakan pertandingan giveaway yang menarik. Pertandingan ini bertujuan untuk mengiktirafkan komitmen kami terhadap keselamatan dan kualiti perkhidmatan kami.

Pelanggan-pelanggan kami telah diundang untuk mengambil bahagian dalam pertandingan ini dengan mengisi borang yang disediakan. Pertandingan ini akan berlangsung selama beberapa minggu dan pemenang akan diumumkan pada akhir pertandingan.

Hadiah utama pertandingan ini adalah RM5,000 x 2, manakala hadiah-hadiah lain termasuk alat-alat rumah tangga, peralatan dapur, dan produk-produk kecantikan. Pertandingan ini adalah peluang yang baik untuk pelanggan-pelanggan kami untuk memenangi hadiah-hadiah yang berharga.

Indah Water Konsortium berterima kasih kepada pelanggan-pelanggan kami yang telah mengambil bahagian dalam pertandingan ini. Kami berharap pertandingan ini dapat meningkatkan hubungan kami dengan pelanggan-pelanggan kami dan memastikan kami terus berinovasi untuk memberikan perkhidmatan terbaik kepada pelanggan-pelanggan kami.

Ada 1,127 kilang tak berlesen di Klang

Klang: Status kilang haram dan kilang berlesen di Selangor yang berada di kawasan berisiko tinggi untuk berkecukupan untuk memercamkan semua tingkat akan dipertihikan.

Pengusaha Jawatankuasa Tetap Kerajaan Tempatan, Pengangkutan Awam dan Pembangunan Kampung Baru negeri, Ng Sze Han berkata, semua kilang itu perlu berpindah ke tempat lain yang lebih selamat.

"Kilang-kilang itu terletak di riban sungai, sudah tentu kilang itu kerna pindaan, malah bilangan kilang tanpa lesen berlesen sahaja boleh mencemarakan sungai, ini kita perlu lihat."

"Kilang berlesen juga ada berkecukupan memercamkan semua peringkat mereka tidak mematuhi syarat ditetapkan pihak berkuasa tempatan (PBT) dan Jabatan Alam Sekitar (JAS).

"Jadi kami akan melihat kepada ini secara menyeluruh, kilang berlesen itu tidak sesuai, kami perlu lihat, mana mana kilang berlesen itu tidak mematuhi syarat keselamatan alam sekitar," katanya dalam sidang media selepas menghadiri Majlis Taklimat Program Pemugaran Syarat dan Pemugaran Kilang Tangki Kuching di Selangor di sini, semalam.

Menurutnya, kerajaan negeri akan menubuhkan sebuah badan khas untuk melihat kilang-kilang ini yang perlu dilihat.

"Kilang berlesen juga ada berkecukupan memercamkan semua peringkat mereka tidak mematuhi syarat ditetapkan pihak berkuasa tempatan (PBT) dan Jabatan Alam Sekitar (JAS).

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Indah Water Konsortium Sdn Bhd - FB

Who We Are

“ We are Malaysia’s national sewerage company. Since our inception in 1994, we work to provide Malaysian homes and businesses with a modern and efficient sewerage system which ensures wastewater is well-treated before being discharged into the river.

Our tagline ‘New Life for Water’ reflects our commitment to the environment by ensuring that the treated water discharged is clean, safe and sustainable to nature. Through our world-class research and development expertise, we leverage innovation to transform waste-to-wealth to contribute sustainably to a green and circular economy.



Our governance and stewardship structure

We believe good governance provides a solid foundation for building a sustainable business and delivering on our brand promise. The Board of Directors of IWK has oversight on IWK’s business strategy

and performance, and provides guidance on material Economic, Environmental and Social (EES) factors that impact IWK’s activities. The Senior Management team, guided by the Board of Directors and led by the Chief Executive Officer, drives and implements strategies and initiatives to create sustainable value throughout the process of wastewater treatment and conversion to alternative forms.

Board of Directors



YB TUAN HJ AHMAD JOHNIE HJ ZAWAWI
Chairman



ALBERT QUAH CHEI JIN
Director



DATO' DR. IR HJ ABDUL RASHID MAIDIN
Director



DR. CHING THOO A/L KIM
Director
**At the time of publishing this report, Dr. Ching Thoo has resigned from his position as a board member.*



RAFIDAH OMAR
Director



SADIKIN ATON
Director



YM RAJA MUHAMMAD AZHAN SHAH RAJA MUHAMMAD
Director



PROF. DR. MOHD SUFFIAN YUSOFF
Director

Who We Are

Management Team



NARENDRAN MANIAM
Chief Executive Officer



IR MOHD ZAINAL ZAKARIA
Senior General Manager;
Operations & Maintenance



IR MOHD TAUFIK SALLEH
Head of Planning & Engineering



GUNASEKAR VEERAPPAN
Head of Customer, Billing & Collection



IR MOHD ZUKI MUDA
Head of Capital Works



CHUA TIONG LEONG
Head of Finance



AZUAN AHMAD ZAHDI
Head of Corporate Planning



ZAITON SHAARI
Head of Human Capital &
Administration



ABDUL RAZAK ABU TALIB
Head of Information Technology



WAN ESURIYANTI WAN AHMAD
Head of Corporate Communications



NORDIANA IDRIS
Head of Legal



FAIZIAH MD NOOR
Head of Procurement



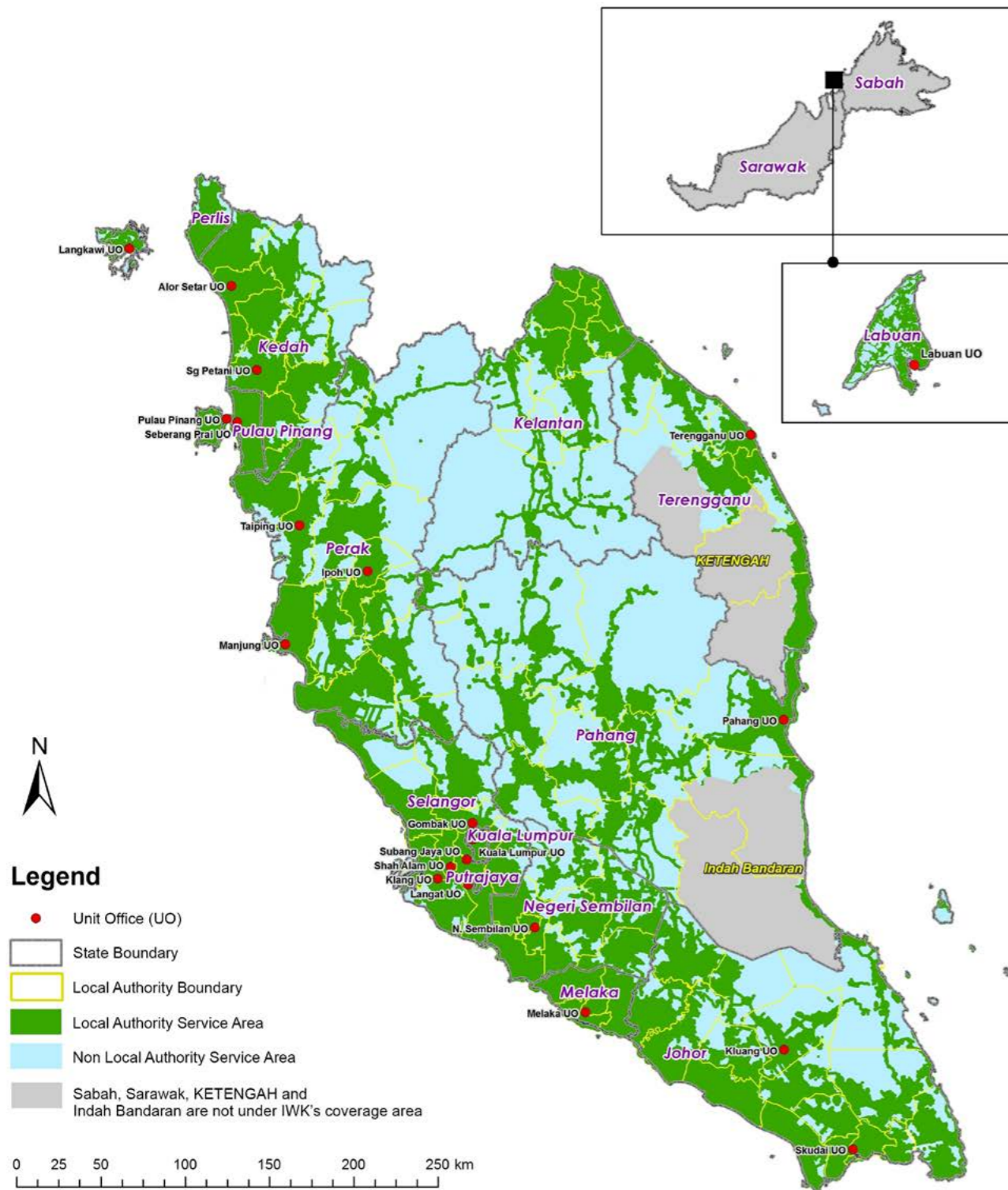
SYAMSUL ANWAR ABDUL AZIZ
Head of Internal Audit & Risk



SUZINOR KAMARALZAMAN
Head of Integrity & Governance

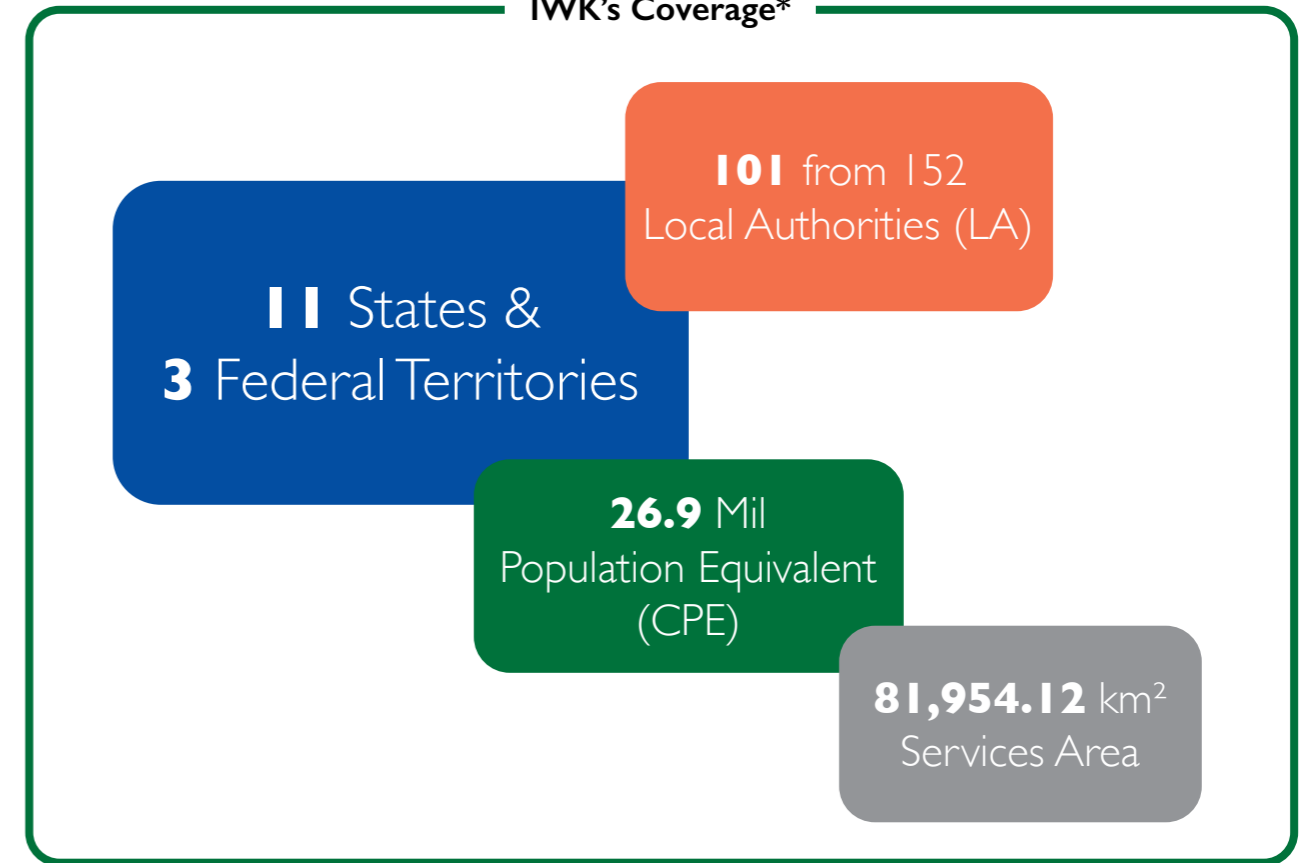
Facts and Figures

Indah Water Konsortium Operational Areas



Update: As at June 2021, post Kelantan takeover in January 2021

IWK's Coverage*



Asset data from 2017 - 2020

	2020	2019	2018	2017
Service Area (km ²)	66,741	66,741	66,741	64,943
Billed Customer	4,155,140	4,048,522	3,971,378	3,799,988
Sewage Treatment Plants (STPs)	7,003	6,918	6,745	6,690
Network Pump Stations (NPS)	1,267	1,228	1,193	1,138
Population Equivalent (PE)	26,627,927	26,166,034	25,240,867	24,358,564
Sewer Length	20,094	19,663	19,134	19,031
Headcount	3,368	3,353	3,318	3,327
Unit Offices (UO)	21	21	21	21
Reporting Centres (RC)	59	59	58	59
Certifying Agencies (CA)	10	10	10	10
Laboratories	5	5	5	5

*Update: As at June 2021, post Kelantan takeover in January 2021

Our Purpose

Indah Water Konsortium (IWK) Sdn Bhd is Malaysia's national sewerage company. Since our inception in 1994, we have worked diligently to provide Malaysians with a modern and efficient sewerage system. Water is our most precious resource. Our modern sewerage system ensures that wastewater is well-treated before being discharged into the river.

IWK operates and maintains a total of 7,003 public sewage treatment plants (STP), 1,267 network pump stations, and 20,094 km of sewer lines making it one of the largest sewerage services operator in the region. IWK provides sewerage services to a population equivalent (PE) of close to 27 million people.

Our tagline 'New Life for Water' reflects our commitment to ensure our treated water is clean, safe and sustainable to the environment. Our expertise include operations and maintenance, refurbishment, planning & policy strategy, engineering & process review, project planning, project management, Environmental Impact Assessment (EIA) and Hazard & Operability Study (HAZOP), training services & module development, research & development, capacity building, and community awareness & education programme.

IWK is well-positioned to ensure that Malaysians, today and in the future, will be able to enjoy a clean and healthy environment through a proper and well-maintained sewerage system.



Pursuing our Purpose

We are a purpose-driven organisation with a core focus on creating sustainability within the water ecosystem of Malaysia's wastewater industry. We see Purpose as the intent behind what a business does: its effect on people, the impact it has on our environment, and the transformative change it brings to our communities. Our clear purpose guides us to deliver our services in an environmentally sustainable, financially resilient and socially responsible manner.

Our vision is to be The Premier Wastewater Company. To achieve this, we operate with resilience in mind and practice embedding

sustainability at the core of everything we do. With sustainability at the forefront of our purpose, we look at how every aspect of our operations impacts our environment, our customers, our stakeholders, our financials, our communities and our nation.

Our purpose drives the way we operate and build our workplace culture. Our People practice the values of performing their roles with Integrity, elevating standards of Work Ethics, and upskilling through Knowledge enablement to deliver an efficient, safe and modern wastewater system that safeguards our country, our communities and our environment.

Preserve the environment



by ensuring wastewater is well-treated as per requirements before being discharged into waterways

Protect our communities



by providing them a modern and efficient sewerage system that prioritises the health and safety of the *Rakyat*

Expand the circular economy



by embracing green technology and embarking on resource recovery efforts, especially on water recycling and waste into energy initiatives through commercially viable applications

Build business sustainability



by driving towards robust business model benefitting all stakeholders in order to sustain financially and reduce dependency on the Government

Drive operational excellence



by providing high-levels of customer service quality and prompt resolution of on-ground challenges

Strive for a safe and meaningful workplace



by prioritising health and safety measures for our front liners, and continuous opportunities for knowledge enrichment for all *Indahans*

Strengthening industry talent pipeline



by enhancing specialist skills and knowledge to elevate water-related talent expertise in the water industry

Vision, Mission and Core Values

Vision

The Premier Wastewater Company

Mission

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

Core Values



Integrity

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



Work Ethic

Indahans are visionaries, comprising specialists and well-trained individuals who are experts in their respective business functions, serving the needs of IWK in an efficient and ethical manner. They are committed to ensure that the work delivered are efficient, ethical and high quality to achieve well-being of the people and environment



Knowledge

Indahans are committed to broaden and deepen knowledge in all areas of wastewater management (planning, design, construction, legislation, operation, maintenance, training, consultation, billing, collection and customer service) and applying that knowledge toward achieving IWK's vision to become the premier wastewater company

PERFORMANCE



- Message from the Chairman
- Our Operational Highlights
- Sitting Down with the CEO
- Our Strategy

Awards

- The Inaugural Asean PR Excellence Award 2015 (Bronze Award for Media Relations)
- Malaysia Canada Business Council 25th Anniversary Business Excellence Award 2017 - Good Corporate Governance
- Leadership Award for Water & Wastewater Efficiency
- Esri Malaysia Geoinnovation Award Malaysia Water Industry Outstanding Achievement Award 2019
- MARIM Risk Management Team of the Year 2019 - First Runner Up
- Human Resources Development Awards 2019 - Certificate of Excellence in Human Resource Development (Employer Category)
- IWA Professional Development Award
- HR Employee Experience Award (Silver in Best Management Training Programme)
- ASEAN Energy Award 2021 (Energy Management for the Small and Medium Industries category)
- National Energy Award 2021 (Energy Management in Small and Medium Industry category)
- MWA Water Industry Achievement Award 2016 (Best Sewage Treatment Plant Award)
- KWSP - Majikan Terbaik (Wilayah Persekutuan Kuala Lumpur 2018)
- MWA - Batu Feringghi Sewage Treatment Plant (Best Sewage Treatment Plant)
- The Water Efficiency Awards @ The Golden Globe Tigers Award
- National Energy Awards 2020 | ASEAN Energy Awards 2020

Message from the Chairman



For the last 27 years, Indah Water Konsortium (IWK) has played a vital yet inconspicuous role in Malaysian homes and businesses through its wastewater management. As a purpose-led organisation, we are committed to delivering quality, safety and reliability in our mission-critical role of providing a holistic, efficient and environmental-caring sewerage services for the nation.

This organisation has come a long way in developing the country's sewerage system. We are proud today of IWK's remarkable journey - not just from an operational aspect, but from elevating wastewater management into generating environmentally-sustainable waste-to-wealth by-products and supporting the clean water agenda – part of the bigger sustainability picture.

The tenets and practices of sustainability at IWK are not considered a subject on its own, nor an area of administration under a particular department at IWK for the sake of a box-ticking exercise. It is a principle that we adopt wholeheartedly into every aspect of our planning and operations.



Delivering value under challenging circumstances

The operating context for the period under review has been challenging and further compounded by the global COVID-19 pandemic which prompted widespread health and economic impact. At the time of penning my thoughts here, more than a year has come to pass since the World Health Organisation declared COVID-19 a pandemic. The zoonotic trigger of the COVID-19 pandemic makes it all the more vital to give nature a healthy respect and help maintain the environment's equilibrium.

IWK, along with many other businesses, have not been spared from the impact of the pandemic of the past year nor its challenging operating environment of the past few decades. We have experienced many highs and lows, yet throughout it all, the organisation continued to demonstrate its resiliency in its operational, financial as well as its reputational management.

The period in review falls within our five-year (2019 to 2023) business plan towards our goal to be the premier wastewater

company in Asia. The five-year business plan focuses the efforts of the organisation to drive towards achieving reduced dependency on government subsidy in IWK's financial management, while ensuring that the nation benefits from sustainable water and environment services. The latter is in line with the Environmental Sustainability in Malaysia 2020-2030 strategic direction from the Ministry of Environment and Water (KASA).

IWK charted notable triumphs for the period in review, key of which were the takeover of the maintenance of the public sewerage system in Kelantan as of 1 January 2021; the expansion of the desludging services for fat, oil and grease (FOG) trap for food businesses; and the implementation of the joint billing initiative in Terengganu. As at end-2020, IWK manages 56.7% of local authorities' areas in Malaysia's wastewater management. This has moved up to 65.1% with the takeover of Kelantan's wastewater management effective January 2021. The expansion of areas under IWK's management go a long way in ensuring better sewerage services that conform to high standards, especially in efforts to conserve water resources and the environment.

Message from the Chairman



However, it would seem that our services may not be deemed a priority utility service in the eye of many of our customers. Our services are invisible to most, at the best of times. It has only been through the continuous and high-intensity awareness programmes that more and more customers are realising the good works that IWK has been doing in terms of sewerage services.

These efforts, by and large, have had some positive impact on bill collection. For the two years in review, we were encouraged by the steady increase in billing collection from customers despite the challenging landscape arising from the COVID-19 outbreak which had an impact on businesses and livelihoods. At the end of 2020, we achieved a 91% collection rate which measures total billing collection since IWK's inception. On the other side of the coin, IWK had to resort to legal means, which was successful, after many failed efforts to recoup years of arrears from certain customers.

Bill collection is one of the more important income drivers to sustain IWK's operations amid escalating operational costs compounded by a stagnated tariff rate since its inception in 1994. I commend the leadership and employees of IWK who have prudently balanced expenditure with the need to invest meaningfully in research and development while maintaining and upgrading as required for continuous operational capacity and efficiency. While doing so, IWK strived to maintain its strong performance in effluent compliance levels and regulatory standards. At the end of 2020, IWK maintained its good performance at 97.1% of final effluent complied with the Environmental Quality (Sewage) Regulation requirements, which was higher than the compliance level of 96% in 2019.

This journey undertaken by IWK has undoubtedly been as inspiring as it has been arduous. Through no fault of our own, IWK had had to contend with reputational issues when errant parties dumped illegal waste into the sewerage system and waterways, and fingers were wrongfully pointed at IWK. Here, I would like to strongly emphasise our disappointment at the many parties who assigned blame to IWK without knowing the actual situation. We engaged with stakeholders to help them understand the issue, and I hope, there is now better awareness of our roles with these stakeholder groups. I would like to

stress here that IWK is deeply committed to protect and preserve the environment, particularly our water source, efforts of which you will see reported in this Sustainability Report.

In steering the organisation towards a strengthened financial foundation, IWK looks to expand its revenue streams, using the circular economy approach and transforming waste-to-energy by-products. We look to leverage our in-house research and development to explore potential applications to monetise the wastewater treatment by-products, such as bio-effluent, bio-solid and bio-gas. These efforts are important to transition IWK from a utility-based sewerage services provider to a holistic wastewater management and resource recovery services. The expansion of revenue streams is also motivated to help mitigate some of IWK's cost pressures.

While the period under review had been tumultuous, I cannot underscore enough the commitment and dedication shown by our IWK employees, fondly known as *Indahans*, especially during the COVID-19 related Movement Control Order (MCO) period. All of our 7,003 sewage treatment plants (STP) and 1,267 network pumping stations (NPS) remained fully operational. Our front liners and essential service providers continued to clock in the hours necessary to ensure that the public sanitation services continued without any hiccups.

We pivoted our customer engagement model to digital channels, encouraging them to utilise the various online channels for queries, complaints and bill settlement. The pandemic accelerated our digital transformation plans sooner than expected and the take-up utilisation of these alternative digital channels was encouragingly high.

Powering up for the future

Today, IWK is at a tipping point. We have been balancing rising operational expenditure - which includes maintaining ageing assets - with the commitment to provide high-quality service to customers. This has grown to be challenging. There are only so many of the expenses that we can - and have - cut down. This is against a backdrop of sewerage charges that have not changed for the past 27 years.

While the government, thankfully, continues to subsidise IWK's cost of operations up to a staggering 125% of a customer's monthly bill, this way is not sustainable for the long-term. We have made good headways with our discussions with the regulators on increasing the tariff, but the process has still not been completed. Suffice to say, the proposed tariff increase - when it gets approved - would still not fully cover the costs-per-customer but would be an important step in the right direction towards being a market-driven and self-sufficient entity gradually weaned from government support.

With sustainability at the forefront of our purpose for being, we consider the impact of environmental preservation in all our operational processes. For instance, our high-tech Pantai 2 Regional Sewage Treatment Plant (Pantai 2 RSTP) in Lembah Pantai, Kuala Lumpur, which is the largest green and underground wastewater treatment plant in Asia Pacific, incorporates sound environmentally-friendly properties. This plant is able to maximise the recuperation of green energy such as the use of solar energy and bio-gas as new energy, and supports the electrical energy needed for the plant's day-to-day operations. It is also equipped with the ability to harvest rainwater and reuse of bio-effluent.

This is what we envision for the future of IWK—providing operational efficiency with an embedded focus on environmental protection. Our foray into the FOG business, as well as our joint venture with Pengurusan Air Selangor Sdn Bhd (Air Selangor) to manage a water reclamation plant in 2021, are just a few examples of the types of initiatives that IWK is forging for business as well as environmental sustainability. These initiatives are developed with the broader intent to include the business and community ecosystem so that it can play a multiplier role in contributing towards a strengthened value chain that incorporates sustainability tenets in its operations or outcomes.

IWK is keeping pace with the changes and trends of the times for sustainable development as guided by the industry as well as the United Nations Sustainable Developmental Goals (UN SDG). This includes leveraging on innovation and advanced technologies of the 4th Industrial Revolution as well as digital transformation to innovate our national wastewater management and preserve the environment.

The path ahead of us will continue to be challenging as we grapple with the deep-set impact of COVID-19 on all our communities. I pray for strong and fast retribution to this virus with the vaccine programmes that are being rolled out at the moment. Notwithstanding this, the state of the economy as well as IWK's budgetary constraints will no doubt provide challenges in fast-tracking some of the initiatives we foresee rolling out.

But we *Indahans* are ready as we are agile. We will continue on our four-pronged strategy as outlined in our Business Plan 2019-2023 to strengthen our financial viability, expand coverage and increase efficiency, drive green initiatives, and integrate wastewater and water-related industries.

In appreciation

There is a famous saying that goes: *If you want to go fast, go alone. If you want to go far, go together.* We have certainly gone far in our journey towards shaping IWK to be a holistic wastewater management organisation, and we could not have achieved our

milestones if not for the collaborative nature of the people we work together with - from the government ministries, the oversight regulator, the non-government organisations, our customers, our vendors and contractors, and our people.

I am honoured to Chair the IWK Board, a position I assumed in May 2020, and I would like to thank my predecessor Encik Amiruddin Abdul Aziz for his valued contributions during his tenure as Chairman. The Board joins me in thanking the Ministry of Finance, the Ministry of Environment and Water (KASA), and the National Water Services Commission (SPAN) for their guidance and support. My utmost appreciation goes to the Board of Directors for their active engagement in the well-being of IWK, as well as to our customers, our business partners and vendors for their ongoing support. A special note of heartfelt appreciation goes to each and every *Indahan*, who has been instrumental in our success over the past 27 years - both past and present.

As we look forward to 2021, we know the road ahead remains riddled with uncertainties. However, I have every faith and confidence in the sound leadership of Mr. Narendran Maniam and the management team to lead us through this extraordinary journey. Together with all *Indahans*, we continue to keep clear focus on our purpose and work in concert towards providing the nation with excellent and sustainable wastewater management service.

Thank you.

YB Tuan Haji Ahmad Johnie Zawawi

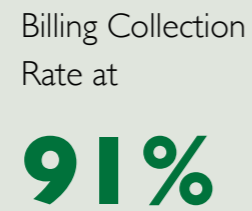


Our Operational Highlights

2019-2020



Joint Billing with **SATU** in March 2020



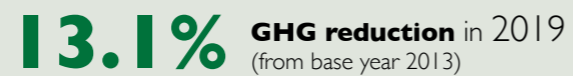
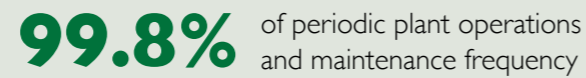
Takeover of Kelantan **sewerage management** since January 2021



ISO IMS **Phase 2**

First utility company in Malaysia to achieve **ISO 45001:2018 Occupational Health & Safety Management System**

Expanded our **desludging services** for fat, oil and grease (FOG) trap for **food premise owners** in mid-2020



Formation of an **SPV** with **Air Selangor** to grow **Water Reclamation** opportunity, secured **1 WRP** in **Setia Alam**



62 projects initiated ranging from research and development to piloting trial programmes in **2019 & 2020** via Indah Water Research Centre (IWRC)

Sitting Down with the CEO



“ In an ever-challenging business climate, IWK designed a clear roadmap for its sustainable growth. In this interview, Chief Executive Officer, Mr. Narendran Maniam explains the cornerstones, opportunities and challenges in meeting the aspirations set in the Business Plan 2019-2023.



Q What are the main highlights achieved by IWK for the period in review?

I am pleased to report that IWK performed exceptionally well for the period in review, despite the challenging environment. In 2019, we introduced our re-envisioned Business Plan for the medium term covering a period of five years from 2019 to 2023 (BP2019-2023). This five-year business plan is a medium-term plan that lays out the path towards our ultimate vision which is to be the Premier Wastewater Company in Asia. It builds upon the aspirations of the previous roadmaps and sets to continue the momentum towards building greater resiliency.

The BP2019-2023 centres on four strategic focus, namely strengthening IWK's business sustainability, expanding coverage and increasing efficiency of wastewater service, empowering green economy of the wastewater industry, and integrating wastewater and water industries. Essentially, the BP2019-2023 spells out a roadmap of efforts towards IWK being financially sustainable and reducing dependency on the Government, while ensuring that we

provide Malaysians with treated wastewater services.

For the period in review, our primary efforts were directed at securing a better financial footing for IWK. This included efforts to adjust the tariff towards being at market-driven parity. A considerable amount of work remains to be done on this front, but I think we have made encouraging progress.

At the same time we have refocused on finding and capturing profitable growth opportunities, and building revenue streams. This is reflected in the rollout of our desludging services for fat, oil and grease (FOG) trap for food premise owners, restaurant owners and food court operators.

We have also made significant inroads in expanding our coverage of sewerage services management areas, taking over Kelantan on 1 January 2021. So overall progress to date has been good. I believe we have built real momentum in driving towards our goals, but there is still an enormous task ahead.

Sitting Down with the CEO

What does sustainability mean to the IWK business and how are you approaching this?

Sustainability has long been at the heart of our business strategy and our operations. Simply put, in everything that we do, our ultimate commitment to wastewater management is to ensure sanitisation for the health of People and the Planet.

It is embodied in our brand promise of bringing *New Life for Water* – which means giving new life to wastewater after it has been treated. Sewerage management is crucial to the well-being of the people and the environment. Its importance cannot be underscored enough as treated and safe water is vital to protecting futures.

We take a holistic approach in embedding our sustainability intent in our business management which encompasses the three areas of economic, environmental and social (EES) aspects. Water safety for the *rakyat* is a vital national agenda. This means that IWK's infrastructure, assets, plants, skills and innovation must be kept up to par to ensure holistic wastewater services are rendered in good compliance to benchmarked standards with no interruptions.

As at end 2020, we have close to 26.63 million customers for our connected services in terms of *Connected Population Equivalent* (cPE). Wastewater produced from these residential and commercial premises is channelled to IWK's almost 7,003 sewage treatment plants (STP) for high-quality wastewater treatment. On an average of one day alone, we produce more than 5,600 MLD of treated wastewater, also known as bio-effluent. This is equivalent to approximately 2,000 Olympic-sized swimming pools.

A sizeable portion of the treated water is channelled back to rivers, so we adhere very strictly to environmental compliance standards. However, true to our promise of *New Life for Water*, we also look to recycle and commercialise bio-effluent for non-potable use in commercial establishments, bio-solids as agri fertilisers, and bio-gas for energy generation. Apart from these, we apply other green initiatives within our operations. This would include managing and reducing greenhouse gas emissions from our treatment plants, energy management system, vehicle tracking system and old vehicles replacement programme, as well as reducing sludge volume.

Making the business financially viable is an important economic consideration for the long-term. Public finance has played a principal role in financing Malaysia's wastewater management services. However, given constraints on public finance and the need for substantial investments, we look to strengthen our current business model and leverage alternative sources of income to help scale up our services. This is where we look at important initiatives such as rebalancing our tariff and developing new revenue streams as part of our business resiliency efforts.

Sustainability to us also means strengthening and giving back to our communities and playing a role in the greening of our environment. In this respect, I want to make a special shout out to the IWK employees, known as *Indahans*, for their spirit of volunteerism and passion in making community work meaningful and valuable. Our initiatives span education programmes, charitable concerns, greening activities and addressing social needs.

Our brand promise ensures that we always factor in sustainability as an integral part of our business operations and decisions. It motivates us every day as we continue to scale up our progress on this sustainability journey. What we do today is critical to shaping a sustainable future for tomorrow.

The world's headlines for 2020 and 2021 have been on the unprecedented global pandemic COVID-19. How has this pandemic impacted IWK?

As we reflect on our performance for the period in review, we must start with recognising the adverse impact the COVID-19 pandemic has wrecked on all communities – individuals, businesses and countries worldwide. As of now, the actual impact of the pandemic continues to unfold, but we are hopeful of solid recovery given the vaccine, and a return to a new form of normalcy. I hope that this is sooner rather than later.

Against this context, our sense of purpose at IWK has never been stronger and our focus even clearer. Why we do what we do has never resonated as much as it does now. For the People, for the Planet.

Our priority has been to keep our people and our customers safe. Disinfecting services were conducted at our offices and STPs. We also conducted health screening for employees on duty. Our people have shown tremendous resilience, being agile and swift in continuing to meet our obligations to our customers and our community.

When the Movement Control Order (MCO) was first instituted in March 2020, we worked with a reduced workforce capacity and despite the smaller number of workforce, essential services were not compromised. We continued to ensure that all our 7,003 STPs and 1,267 network pumping stations operated dependably with minimal disruptions to support our customers' service needs. We promoted digital platforms for customer engagements given that we had to close our physical payment and inquiry counters nationwide.

As we continue to navigate the COVID-19 pandemic and its impact, we remain focused on our strategy and efforts to deliver sustainable value and emerge more resilient, if not stronger, by bolstering our financial pillars, strengthening our operations, and seizing growth opportunities to expand our business revenue streams.

You have said previously that IWK has been facing tremendous financial constraints. What is the situation like now?

Our financial performance is vital to our business sustainability. We were glad to note our efforts towards enhancing efficiency and increasing engagements with our customers and stakeholders have positively impacted our revenue.

For the period in review, revenue from our sewerage management business chalked up an increase to RM781.09 million, up 8% compared to the previous 2017/2018 period in review.

A confluence of factors contributed to the better revenue charted for the period in review. One of them was our improved rate of billing collection from customers. The cumulative billing collection efficiency for connected services for 2020 was at 91%, higher by 3.74% compared to the year before. This was a testament to the various public and customer engagement programmes that we undertook to give them a better understanding of how IWK supports their sewerage management needs.

This performance was against the impact the COVID-19 pandemic had on bill collection as commercial businesses and individuals were affected financially. We saw a reduced number of service calls for desludging services from customers from the commercial and industrial sectors.

While billing collection improved somewhat, outstanding debt remains high and an area of attention for us at IWK. Unfortunately, due to the MCO, we could only begin with debt collection efforts through the Debt Collection Agency (DCA) from 19 May 2020 onwards. Even this had limitations due to the need to adhere to the strict standard operating procedures in engaging with debtors.

While revenue growth remains encouraging, it is still not enough to cover rising operational expenditure. Earnings Before Interest, Tax, Depreciation and Amortisation (EBITDA) is at a loss of

RM78 million as at end 2020, higher than the RM61 million loss as at end 2019. The calculation of EBITDA excludes government compensation and subsidy. This steady increase in loss over the years is attributed to the increase in operational cost that continues to be on an uptrend due to the expansion of service areas, rising infrastructure, maintenance of ageing assets and operation cost for STPs, as well as rising inflation rates. Although the gap between revenue and rising operational cost has narrowed over the years, there continues to be a sizeable disparity.

I envision this disparity gap to continue so long as the tariff remains at its current rate of between RM2 to RM8 monthly per household, a tariff set and unchanged since our inception in 1994. We have undertaken efforts towards rebalancing the tariff to be market-driven through engagement with the Government and other stakeholders.

While the tariff proposal is in the process of being developed, we are looking at the suitability of its implementation against the economic climate. We still have some way to go before the rebalanced rates can be approved – ultimately, the final decision will be made at the Cabinet-level before implementation can commence. As such, our stakeholder engagements will be ongoing.

Together with the tariff adjustment, we have also submitted proposals for implementing new charges for vacant premises and abortive charges for confirmed desludging requests, all of which have been positively received by our stakeholders. These proposals are currently undergoing reviews expected by the third quarter of 2021.

In the financial management of the IWK business, it is important to note that IWK was awarded a 28-year privatisation concession for the provision of sewerage services in Malaysia in 1993. In August 2021, The Government of Malaysia extended the current concession agreement (CA) with IWK which scheduled to end on 31 March next year to 31 December 2034. The extension has been approved by the Cabinet on 21 October 2020 and it was extended based on IWK's excellent performance in managing the country's sewerage system and assets over the past 27 years. The extension is a new era for IWK as we are given the opportunity to explore the potential non-tariff business activities. The revenue from the non-tariff business activities is expected to reduce financial burdens faced by IWK and ensure the sustainability of the sewerage services industry for the country.

All-in-all, while IWK performed well operationally, we are still struggling with a lack of adequate financial returns to be self-sufficient. Having said that, we have put in place various other non-core business revenue drivers that we look forward to supplementing IWK's income. The tariff adjustment is, of course, key to pivoting the business to a better standing.

To strengthen financial viability, IWK has looked into expanding its revenue streams. What is the progress in this area?

Yes, it is coming down to crunch time for IWK, where we need to expand our revenue streams while leveraging our expertise to broaden the business. The way we approach our revenue expansion model is to catalyse efforts that contribute to a circular and green economy in line with our sustainability aspirations.



Sitting Down with the CEO



One of our ongoing efforts has been in the area of water reclamation, an initiative spurred together with KASA. This initiative utilises bio-effluent and advanced technology to produce high quality reclaimed water as an alternative non-potable water source for industries. On the same note, our treated effluent can also be used as an alternative source of water for washing machines, equipment, drains and landscaping purposes.

This saves the high-quality tap water for human consumption usage, contribute towards maintaining the country's clean water resources and reduce pressure on water sources. It also contributes to our commitment under the Green Technology Master Plan 2017-2030 to reuse 33% of the total treated effluent water, while adopting circular economy practices for long-term resource sustainability.

In this regard, we are pleased with the progress made on the joint venture with Pengurusan Air Selangor Sdn Bhd (Air Selangor) to manage the water reclamation plant (WRP) at the Setia Alam Regional Sewage Treatment Plant (RSTP) SAM163 – the first in the Klang Valley. As at time of writing this Report, we are pleased to see that the WRP has commenced operations as of 1 May 2021. We have signed a similar Memorandum of Understanding with Syarikat Air Melaka Berhad (SAMB) and look forward to rolling this out to Melaka soon. We hope this is the start of a more holistic WRP development nationwide.

We also have to contend with the improper and illegal disposal of fats, oil and grease (FOG) discharge, especially from the food and beverages (F&B) industry. This is a major source of clogged sewer lines and river pollution cases in the country. To that end, we expanded our range of desludging services to include the FOG trap system. One of the first industry players to heed the response to use IWK's FOG trap system desludging service is Nusa Baiduri Sdn Bhd. We expect to ink more agreements with other industry players to take up the FOG trap desludging services soon.

There is a need for more individual septic tanks (IST) to carry out regular desludging exercise in the interest of better sanitation. There are currently about 1.3 million premises that still utilise the old IST sewerage system. On 1 June 2021, scheduled desludging has been made mandatory for customers using the IST system.

Q Customer excellence has always been an important part of IWK's service charter. How have you performed for the period in review, given that the COVID-19 pandemic has impacted services somewhat?

Yes, customer satisfaction and service distinction is a very important performance indicator for us. We strive to provide excellent operational and maintenance performance as well as exemplary customer satisfaction and service. I am pleased that the team has, once again, surpassed expectations to manage our customers well.

We have in place a Customer Charter that outlines our commitment to our customers. This is made publicly available on our website as a mark of our dedication to discharging our duties efficiently and be expedient in our response at all times. These standards are regulated and monitored by SPAN.

What marked this period different from the others was the impact COVID-19 had on the way we engaged with our customers. Due to the Movement Control Order (MCO) restrictions, we could not engage in a face-to-face mode as our offices were closed to the public except for critical operations, so we certainly saw an impact on the rate of calls answered. Given that context, we still charted an encouraging rate of customer call management.

While we already had ongoing plans to port customers to a more digitised communication mode, the pandemic gave us the impetus to

expedite digitalisation. We extensively promoted the use of online and e-wallet payments for IWK utility bills which saw an increase in payment uptake via digital platform as well as growth in apps registration and the use of electronic channels such as emails, mobile apps and social media for operational queries and requests.

To ensure that we constantly strive for excellence in service to our customers, we conducted a Customer Satisfaction Survey in 2020. This helps us to address our gaps, where necessary. I am pleased to note the standard of excellent customer service IWK has shown to our customers. Of the responses received, 42% rated IWK as *Excellent*, 48% rated as *Good* and 10% rated as *Satisfied*. There were no ratings received for *Weak*. While that is excellent feedback on our levels of service, we are not the type to rest on our laurels. We will continue to push the bar of excellence even higher.

Q The wastewater treatment business is highly regulated to be in compliance with various stringent environmental standards. How has compliance been a challenge given the increase in illegal dumping into waterways?

On our end, we absolutely do not compromise when it comes to adhering to compliance standards set for environmental protection. That is the reason for IWK's existence. Yes, the period in review had been challenging due to the unfortunate incidents of illegal waste dumping. Despite this, IWK managed to maintain its compliance with effluent discharge standards to the Environmental Quality (Sewage) Regulation (EQSR) requirements at 97.1%.

The incidents of illegal dumping of hazardous materials into rivers and waterways have been a serious source of pollution to rivers, seas and oceans, threatening the environment and the health and safety of the people and communities. There have been many

instances of culprits committing this criminal offence at our STPs, or illegally dumping the waste into IWK's manholes.

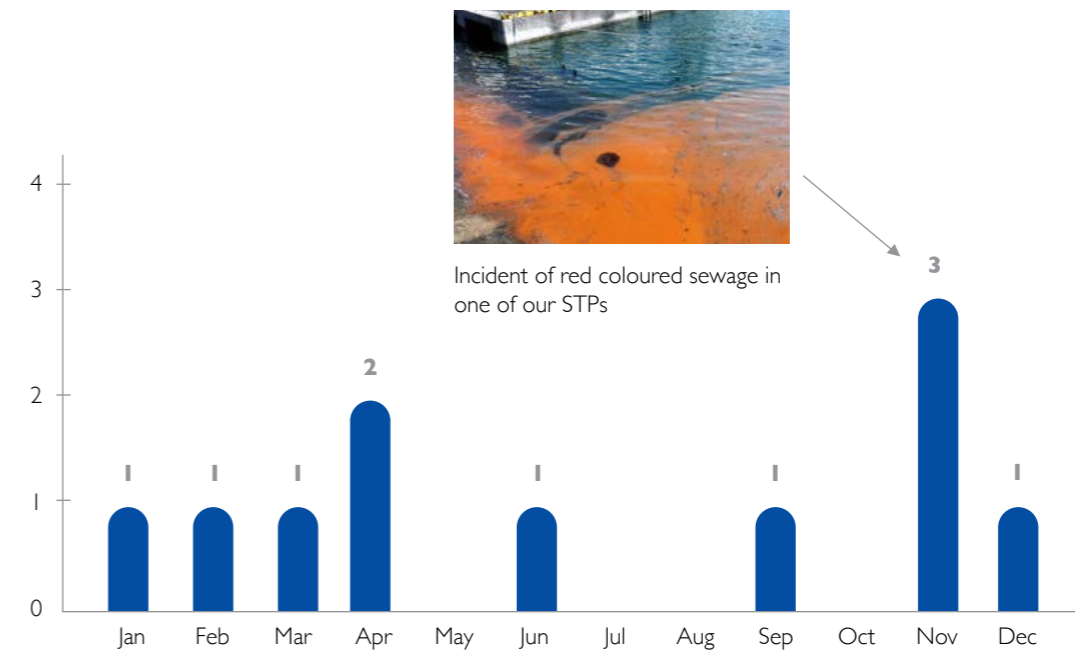
The nature of this vile act is abhorrent enough without uninformed parties pointing fingers – falsely – at IWK as the cause of the pollutions. In September 2020, the Gong River in Rawang turned black and reports, including that from the media, alleged that IWK's STPs were discharging waste into the river.

We found these types of reports and allegations highly irresponsible. But what this underlined was the ignorance of many on how a responsible sewerage treatment company like IWK treats its wastewater in an environmentally sustainable manner. We needed to inform and educate them so we set out to engage with key stakeholders comprising the regulator and ministerial institutions. We are thankful for the support from KASA and SPAN who spoke out against these false accusations.

I want to reiterate here that IWK is committed to adhering to stringent environmental standards but this can be easily affected by irresponsible acts done by those who dispose of waste illegally into the public sewers. This causes the plants to disrupt their services as we need to conduct a chemical clean-up. It is important for the community and the wider stakeholders to note that IWK can only treat wastewater and not other illegal substances or chemicals released in the sewerage system.

We also encountered incidences of theft, which has been more apparent during this challenging economic period. We have invested in and enhanced our security and surveillance measures at potential high-risk sites to mitigate these challenges. These include enhanced early warning systems and the introduction of manhole locking systems. We have also improved our emergency containment for contaminated wastewater and emergency treatment measures with various products for process recovery as well as means to mitigate foul smell using activated carbon.

Nos. of Cases of Illegal Discharge at IWK STPs 2020



Sitting Down with the CEO

Arising from these types of incidents, KASA established the Environmental Crime Prevention Unit (*Unit Pencegah Jenayah Alam Sekitar*) which include the Department of Environment (DOE), SPAN, Department of Biosafety and the Police Department. IWK lauds the setup of this unit and we contribute to this effort through providing relevant information and intelligence through our own monitoring efforts.

This, of course, means that we need to budget not just for maintenance and upgrades, but also to implement modern security and technology aspects for a safer, efficient and effective operations. That is why the income from the eventual rebalancing of the tariff will be crucial for the ongoing upgrades of the growing number of STPs that are already, and will fall, within our purview.

For the period in review, we have received approval from SPAN to upgrade 644 STPs with expectations to comply with specified parameters of effluent quality discharge (Para 1) as set by the Department of Environment (DOE), with a budget of RM142.8 million for the coming year. In principle, SPAN has approved the utilisation of the Sewerage Capital Contribution Fund (SCC Fund) for our equipment and instrumentation replacement project, security manhole lock installation, and the refurbishment of public toilets and religious centres' toilets.

Q How has the progress been on the expansion of IWK services towards a unified nationwide sewerage management?

We have made positive inroads in standardising wastewater management in Peninsular Malaysia. We have taken over the operations and maintenance of Kelantan's sewage management services as of 1 January 2021. Currently, we are in discussions to take over the operations and maintenance of the public sewerage services in areas under the jurisdiction of the Johor Bahru City Council and the Pasir Gudang City Council.

On 26 March 2021, the Ministry conducted a Majlis Air Negara meeting chaired by YAB Prime Minister, where the Chief Minister of Johor agreed to pass the sewerage services for areas under Majlis Bandaraya Johor Baharu and Majlis Bandaraya Pasir Gudang to IWK.

For the purposes of elevating sanitation standards, it is important that more properties using IST be connected to a central network sewage system where the population equivalent (PE) is higher than 150 people. We are actively advocating for more properties to be connected to our systems.

We are also taking efforts to help manage the government's public sewerage systems on a financially practicable basis. As of end December 2020, we have progressively taken management of four of the Government's sewerage systems, and we are working towards taking over the Ministry of Health's 109 STPs which are located in hospitals nationwide. We are also in discussion with the Ministry of Education to take over the operations of STPs located in schools in phases starting from 2021.

With these new inclusions, IWK will operate in 101 of the 155 local authorities' areas, managing a coverage area of 79,722km² from the previous 66,741km², with approximately 27.21 million Connected Population Equivalent (cPE).

While taking over these assets will help ensure better and standardised sewerage services and quality wastewater treatment, we need approximately 24 months to conduct repair works and upgrades to some of the ageing plants. This is to ensure that we achieve quality sanitation in line with standards set out by the Department of Environment (DOE) as well as achieve desired levels of operations.

This is over and above the ongoing maintenance and upgrade work on ensuring that the wastewater treatment plants are operating at maximum efficiency. This is important as most of the assets we takeover have differing specifications and operational capacity, and many are already ageing assets. This necessitates critical upgrades to be done to bring the treatment plant facilities up to compliance standards.

Q You have a strong research and development (R&D) component at IWK. How are you leveraging the aspect of innovation to develop sustainable solutions for the business?

Ultimately, to become Asia's premier wastewater management company, IWK has to capitalise on technology, innovation and R&D to propel the organisation towards increasing our operational and service standards as we move towards a circular and green economy.

R&D is a cornerstone of IWK's progress. We have made inroads in creative and innovative discoveries such as using indigenous microbe technology to tackle bio-effluents that can reduce energy usage by 30%.

We worked on a Black Soldier Fly Larvae (BSFL) initiative, an interesting initiative that utilises a particular species of fly that offers a good and environmentally-efficient solution for waste management. What is interesting is that not only does the BSFL do its duty in waste management, but it also carries through as an animal feed supplement. By using the BSFL, we reduce the need to transport sludge to land fields, thereby saving close to RM7 million a year.

For the period in review, we identified three key projects which were the hydrostatic test for Project INDAH System Development, the Automation for Small-Scale STPs project and the Sludge Drying conversion to pellet-like. While these projects were impacted by the movement restrictions imposed for the COVID-19 pandemic, we hope to recommence the implementation activities for both these projects soon.

We continue to provide avenues to enhance knowledge and skill of our people in the highly-specialised subject of sewage management so that we can build a pipeline of talented professionals in the water services sector: Our Asian Sewerage Training, Research and Innovation Centre of Excellence (ASTRICE) situated at the Sg. Besi Regional Sewage Treatment Works, Bukit Jalil provides the relevant technical training programmes, not just for IWK employees, but also for other practitioners in the industry and the wider public, both local and international.

Q What efforts have been made towards strengthening the IWK organisational culture and talent management?

I believe that our values come from inside out. We must first embrace and internalise our values of Integrity, Work Ethics and Knowledge before the outside world can see the demonstration of these values through our words and actions. In my interactions with *Indahans*, I find myself in the company of very smart, committed and dedicated people who are humble and hardworking. These people I trust will bring IWK to the next stage of its transformative journey towards being a sustainable organisation renowned as Asia's premier wastewater management company.

I want to specially recognise their agility, particularly during the COVID-19 pandemic that outlined all of 2020, for stepping up and stepping out of their comfort zones, to do what is right for the community and the company. Those who continued to show up at the frontlines to keep the core operations running smoothly did so with much grace and conscientiousness.

Many of our colleagues work in dirty, dangerous and difficult (3D) environments, with the pursuit of ensuring sewerage services are not disrupted and any instances of disruptions are attended to with utmost care. Our risk management framework is robust and continues to be assessed on a progressive basis to ensure that our people and our communities remain protected. This is even more important than ever in this current period as we work amid the COVID-19 pandemic. We are ensuring extraordinary measures are taken to ensure their safety as our highest priority.

The number of onsite health and safety incidents that we track increased from 37 incidents in 2019 to 40 incidents in 2020. With profound sadness, I have to report one fatal accident at the KLR348 STP at Pantai 1. The incident involved the exposure to soiled septic water contamination without applying the necessary safety procedures. The accident has been taken very seriously and additional measures have been put in place such as the 'No man entry' approach when doing cleaning work in the sludge tanks. This is the first fatality in over four years, and I pray, the last.

More information on our people management is detailed on page 44-50.

Q What is IWK's role in fostering community development and building your reputation?

Our approach to community development is anchored on our ultimate promise to protect the people and the environment. Under the banner of "IWK CARES", we do this by building relationships with our customers, engaging our stakeholders, and supporting our community's needs.

In essence, the main activities of 2020 that we engaged in centred around helping communities cope with the impact of the pandemic. These included assistance extended to hospitals, health care personnel and other front liners combating the pandemic. We also looked to support the needs of the underprivileged segments of society through various donation activities, including donation of food to the needy communities and providing free desludging services to all charity homes as well as houses of worship.

Our community engagements also centre around awareness and education programmes because it is very clear that not many people realise the 'invisible' work that happens in sewage management, and the fact that sewerage charges in Malaysia are one of the lowest in the world.

We adopted 21 rivers nationwide under our *Friends of Rivers* programme in our effort to advocate environmental protection. This is part and parcel of our ongoing awareness programme on the impact of treated wastewater which is important for community sanitation, and how the properly treated wastewater is transformed into safer conditions before being released into the environment.

We are also actively involved in KASA's recently launched National River Trail programme (*Denai Sungai Kebangsaan*) that aims to beautify and preserve around 10,000 kilometres of river trail routes across the country by 2030. This is an important endeavour as it instils an appreciation among the public on the importance of caring for the river as an important natural resource, as well as involving the local community in an effort to jointly combat illegal waste disposals.

More information on our community engagement is detailed on page 54-55.



Sitting Down with the CEO

You have an ambitious goal to make IWK Asia's premier wastewater management company. How are you going about achieving that? What does the future look like?

Yes, we want to be Asia's premier wastewater management company. To do that, we need to ensure that we continue to build strong foundations for growth and sustainability.

The five-year business plan (BP2019-2023) is aimed to chart a sustainable path for IWK to be more independently financed with a strong operational base. Our efforts are ongoing in the four key areas of growth which are: strengthening business sustainability, expanding coverage and increasing efficiency of wastewater service, empowering the green economy of the wastewater industry, and moving towards integration of wastewater and water industries.

These four key focus areas are further operationalised under five key intent that aims to drive towards a high performance organisation, foster culture change and readiness, elevate innovation as a catalyst for change, engage and empower through stakeholder management, and uphold value creation through compliance and governance. These

intent will be executed through 20 identified transformation initiatives that will be operationalised across the whole organisation.

An important part of strengthening our financial and business resiliency is rebalancing the proposed tariff revision and other charges. We expect to implement the revised charges in 2022, but this is still subject to reviews and approval processes with the Government. We will also continue with engagements with the Ministries and regulators on the resolution of the Government Support Loan which is vital to enable IWK to improve its financial position.

I also mentioned earlier that we have commenced with discussions on amending the concession agreement (CA). Part of the proposed revision includes amendments that allow IWK to expand its non-core business such as monetising land on which our plants are sited for building telecommunication towers. We also want to innovatively look into how else we can support the business through non-core revenue-generating activities.

In terms of expanding service coverage, we will continue engagements for takeover of sewerage services with relevant local authorities and

government sewerage facilities, as well as increase the number of customers for scheduled desludging services. We are also seeking green light approval to carry out property connection projects utilising the SCC Fund.

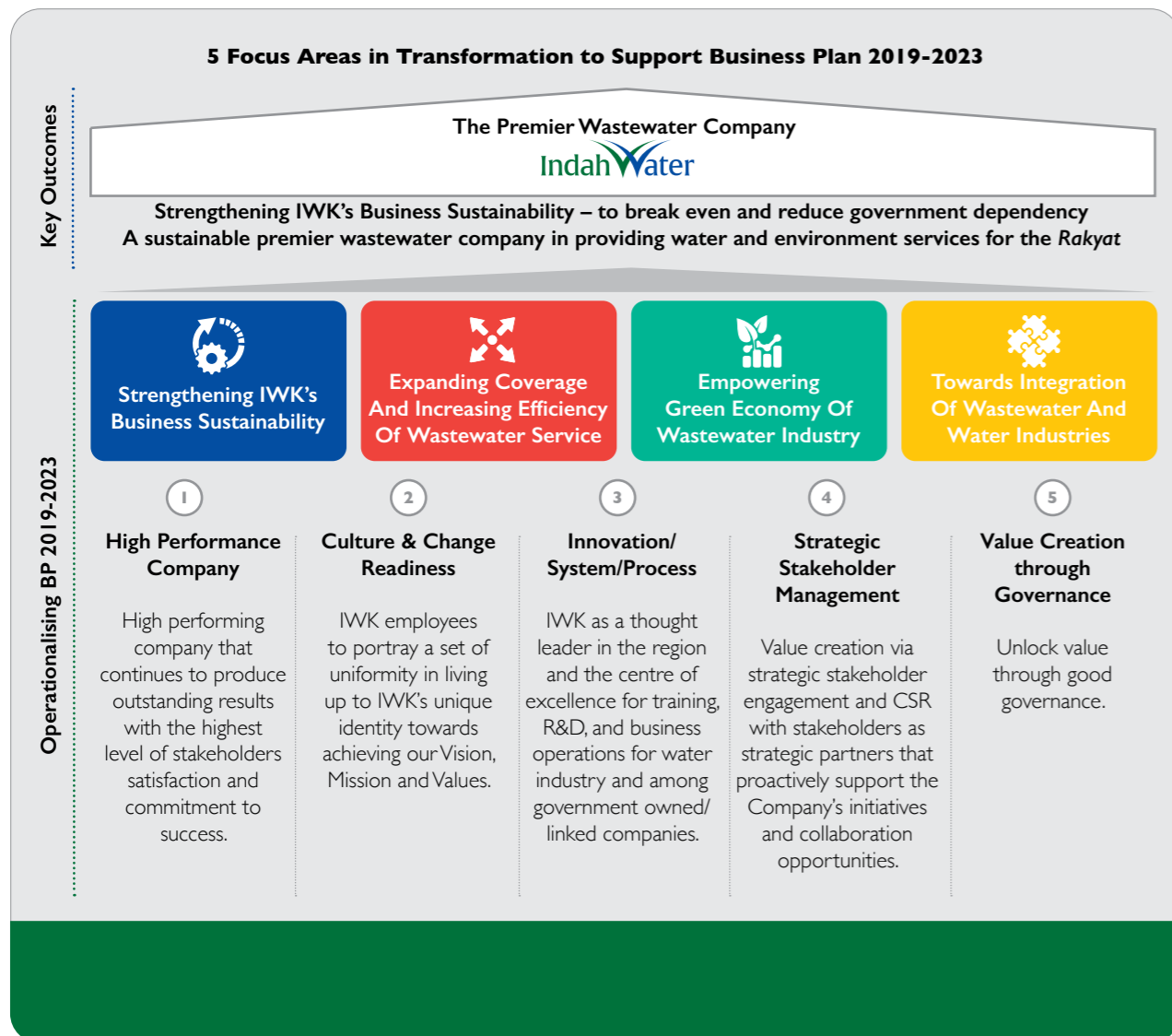
Another very important initiative that contributes to the integration of wastewater and water industries is expanding joint-billing efforts with local water operators. We have already commenced joint-billing with Syarikat Air Terengganu Sdn Bhd (SATU) since March 2020. Following meetings held with the Majlis Air Negara in March 2021, we shall be pursuing discussions with certain states that have indicated their interest for joint-billing.

To be a business fit-for-future, we are keeping a close pulse on expanding our green economy initiatives. We are planning to embark on more green initiatives such as optimising and

streamlining processes for energy savings, increasing use of solar energy and the use of Black Soldier flies for efficient bio-waste processing.

I believe our goals are highly achievable as evident by the successful initiatives that we have been putting in place over the past years. This is a clear demonstration of our commitment to our ambition to drive sustainability in our business and make a positive change in the country's sewerage management. This resonates with the theme of our Sustainability Report - 'Shaping A Sustainable Tomorrow' - which represents our intent to build a brighter, and more sustainable future for all.

I am excited about this ongoing journey. I believe it is something that we can achieve – together. I very much welcome your feedback on our performance and progress ahead.



“ Against an operational period underscored by uncertain and challenging times, I am deeply grateful to the guidance and support provided by the Chairman and the Board of Directors. My deep appreciation goes to our oversight and management regulators - Yang Berhormat Ministers and Deputy Ministers, the Secretary Generals and all the officers from the Ministry of Environment and Water (KASA); the Ministry of Finance Incorporated; the National Water Services Commission (SPAN); and the Department of Environment. Their guidance has been integral to the significant advances we made in shaping our efforts towards building a sustainable and future-driven organisation.

I would like to thank our customers who continue to value the services that we provide them, and to all our supply chain of partners, collaborators, vendors and contractors for the support we have received. I must also recognise support given from the academia and the non-governmental organisations who continue to spur us to progress further.

I would like to take a special moment to extend my sincere gratitude to the management and employees of IWK. They demonstrated grit, determination, proactiveness and resilience to forge ahead amid the rapid changes that were fast happening around us. A note of recognition goes to our front liners who stepped up, and selflessly put themselves at the forefront during the pandemic, to ensure the rakyat had seamless services from IWK.

The period in review was marked by the celebration of our 25th anniversary. It was particularly gratifying to be celebrating this anniversary as we looked back at how much IWK had achieved. It only gives us more impetus to advance ahead with courage, passion, boldness and perseverance towards Shaping a Sustainable Tomorrow.

IWK would like to thank KASA, MOF, SPAN, JPP, DOE and all agencies for their guidance and support towards achieving our targets and directions moving forward. Thank you for your continued support.

”

Our Strategy

Strategic Focus on Sustainability – To Shape Long-term Resiliency

Our strategy sets out our approach to deliver on our long-term purpose to sustain resilience in our business, protect the environment, and nurture our communities. We look to enhance value for all our stakeholders and build integrated sustainability along the value chain of our operations.

We are going into our third full year of the IWK Business Plan 2019-2023 (BP2019-2023). The objective of the BP2019-2023 is to steer IWK onto a more sustainably resilient financial path and continue to expand on wastewater management efficiency.

Our BP2019-2023 is closely aligned with the strategic direction taken by the Ministry of Environment and Water (KASA), particularly on sewerage operational expenditure recovery and water reclamation efforts.

Accordingly, IWK's strategy adopts a four-pronged approach around the three sustainability dimensions: Economics, Environmental and Social (EES). These dimensions include initiatives that foster results in the areas of Performance, People and Planet. In managing our EES matters, we incorporate EES sustainability approaches in all aspects of our work – from our decision-making, operations, and engagements to our service offerings.

Vision

The Premier Wastewater Company


Mission

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

Tagline


New Life for Water

	2020	2023	2025	2030
1 CLEAN RIVERS (Increase in %)	357 clean rivers	5%	10%	25%
2 AIR QUALITY (Reduction in % from 2020 level with annual average of PM2.5 µg/m ³)	25 µg/m ³	25%	10%	5%
3 MALAYSIA ENVIRONMENTAL PERFORMANCE INDEX (MyEPI) (Completion stage)	Initiation	Framework & indicators established	MyEPI established	
4 ESTABLISHMENT OF MALAYSIA ENVIRONMENTAL COMMISSION (Completion stage)	Concept	Legal Framework	In operation	
5 METEOROLOGICAL AND GEOPHYSICAL SERVICES EFFICIENCY (Efficiency in %)	75% efficient	80%	85%	90%
6 WATER EFFICIENCY				
a) Non Revenue Water (NRW) (Treated water lost in %)	35% treated water lost	32%	25%	20%
b) Domestic Water Consumption (Litres/capita/day)	205 Litre/capita/day	190 Lcd	180 Lcd	160 Lcd
7 TREATED WATER RESERVE MARGIN	13% reserve margin	13.5%	15%	20%
8 FINANCIAL SUSTAINABILITY				
a) Water Supply (Number of water operators)	4 water operators	6	7	10
b) Sewerage (OPEX Recovery in %)	83% OPEX Recovery	87%	90%	100%
9 URBAN CONNECTED SEWERAGE SERVICES	78% population covered	80%	85%	95%
10 WATER RECLAMATION (Millions of Litres/day)	<5 millions of Litres/day	50 mLd	150 mLd	1,500 mLd
11 ESTABLISHMENT OF NATIONAL GHG CENTRE (Completion stage in %)	20%	80%	90%	100%
12 FLOOD RISK MANAGEMENT (Number of people protected)	1.6 mill people protected	2.0 mill	2.5 mill	3.0 mill
13 PARIS AGREEMENT COMPLIANCE / NATIONALLY DETERMINED CONTRIBUTION (NDC) (Achievement in %)	10%	70%	80%	100%
14 NATIONAL WATER INNOVATION ROADMAP (2021-2040)				
a) Government Fund Saving (Saving in RM)	Initiation	RM336 mill	RM56 mill	RM336 mill
b) Economy Generation (RM)	Initiation	RM90 mill	RM320 mill	RM1.98 bill
c) Job Opportunity (Number of jobs created)	Initiation	20,000 jobs created	30,000	180,000
15 ALTERNATIVE WATER				
a) Rain Water (Rain Water Harvesting) (Millions of Litres/day)	<1 millions of Litres/day	3 mLd	10 mLd	100 mLd
b) Ground Water (Off-River Storage) (Millions of Litres/day)	<1 millions of Litres/day	100 mLd	500 mLd	3,000 mLd
16 RAW WATER PRICE (Establishment coverage)	State Government revenue	Intra State Establishment	Inter State Establishment	International
17 NATIONAL BIOSAFETY FRAMEWORK (NBF) (Completion stage in %)	Initiation	80%	90%	100%



KEHENTERIAN ALAM SEKTOR DAN AIR
Ministry of Environment and Water
(Revised May 2021)

ENVIRONMENTAL SUSTAINABILITY IN MALAYSIA 2020 - 2030



The Ministry of Environment and Water (KASA) is leading the effort towards Sustainable Malaysia 2030. In essence, 30 initiatives are built upon four thrusts; empowered governance, green growth, strategic collaboration and social inclusiveness, covering the atmosphere (air), hydrosphere (water), lithosphere (land) and biosphere (living things). We plan to collaboratively enhance the planetary health which all of us depend on.

EMPOWERED GOVERNANCE

- 1 CLEAN RIVERS (Increase in %)
- 2 AIR QUALITY (Reduction in % from 2020 level with annual average of PM2.5 µg/m³)
- 3 MALAYSIA ENVIRONMENTAL PERFORMANCE INDEX (MyEPI) (Completion stage)
- 4 ESTABLISHMENT OF MALAYSIA ENVIRONMENTAL COMMISSION (Completion stage)
- 5 METEOROLOGICAL AND GEOPHYSICAL SERVICES EFFICIENCY (Efficiency in %)
- 6 WATER EFFICIENCY
 - a) Non Revenue Water (NRW) (Treated water lost in %)
 - b) Domestic Water Consumption (Litres/capita/day)
- 7 TREATED WATER RESERVE MARGIN
- 8 FINANCIAL SUSTAINABILITY
 - a) Water Supply (Number of water operators)
 - b) Sewerage (OPEX Recovery in %)
- 9 URBAN CONNECTED SEWERAGE SERVICES
- 10 WATER RECLAMATION (Millions of Litres/day)
- 11 ESTABLISHMENT OF NATIONAL GHG CENTRE (Completion stage in %)
- 12 FLOOD RISK MANAGEMENT (Number of people protected)
- 13 PARIS AGREEMENT COMPLIANCE / NATIONALLY DETERMINED CONTRIBUTION (NDC) (Achievement in %)
- 14 NATIONAL WATER INNOVATION ROADMAP (2021-2040)
 - a) Government Fund Saving (Saving in RM)
 - b) Economy Generation (RM)
 - c) Job Opportunity (Number of jobs created)
- 15 ALTERNATIVE WATER
 - a) Rain Water (Rain Water Harvesting) (Millions of Litres/day)
 - b) Ground Water (Off-River Storage) (Millions of Litres/day)
- 16 RAW WATER PRICE (Establishment coverage)
- 17 NATIONAL BIOSAFETY FRAMEWORK (NBF) (Completion stage in %)

GREEN GROWTH

- 18 GREEN ECONOMY (Gross Domestic Product)
- 19 GREEN JOBS (Number of jobs created)
- 20 MYHIJAU MARK GREEN PRODUCT AND SERVICE (Number of green products and services)
- 21 GOVERNMENT GREEN PROCUREMENT (Gross Domestic Product in %)

STRATEGIC COLLABORATION

- 22 PROTECTION OF VULNERABLE COASTS (Stretch in kilometres)
- 23 INTEGRATED RIVER BASIN MANAGEMENT PLAN (Number of studies completed)
- 24 GREEN TECHNOLOGY INNOVATION (Milestone achievement in %)
- 25 GREEN OFFICE PRACTICES (Number of organisation)
- 26 ESTABLISHMENT OF WASTE TO WEALTH FACILITIES (Number of facilities)
- 27 MALAYSIA'S ROADMAP TOWARDS ZERO SINGLE-USE PLASTIC (2018-2030)
- 28 NATIONAL RIVER TRAIL (Stretches in kilometres)
- 29 RECYCLING RATE FOR SCHEDULE WASTE (Increase from 2020 level in %)

SOCIAL INCLUSIVENESS

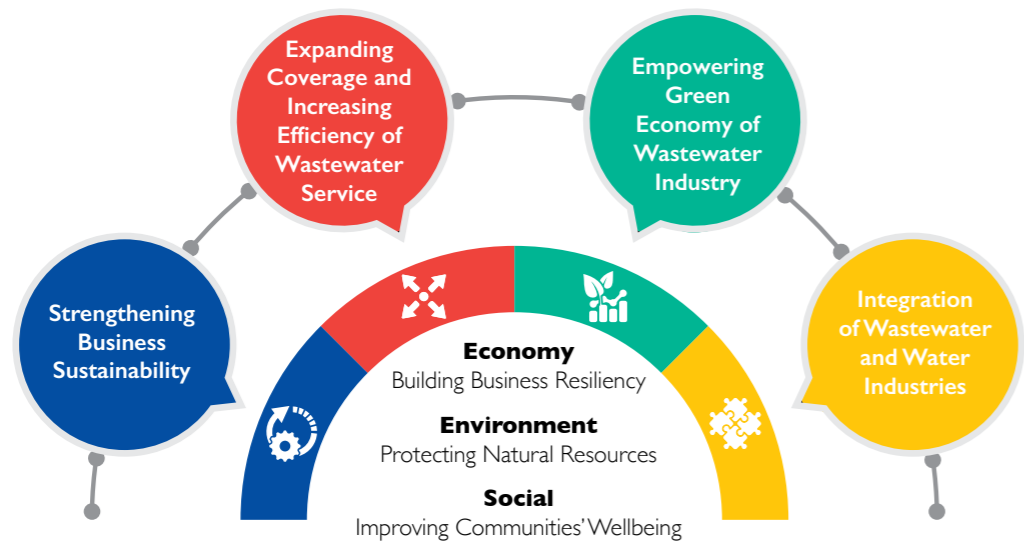
- 30 ESTABLISHMENT OF YAYASAN KELESTARIAN ALAM MALAYSIA, MyAlam (Completion stage)

Prepared by:
Strategic Planning and International Relations Unit, KASA (July 2020)

For more information please visit www.kasa.gov.my or contact us at upsha@kasa.gov.my

Our Strategy

Four Key Strategic Areas



In drawing up our initiatives for execution as guided by the four key strategic areas in BP2019-2023, we ask ourselves why this is important and how we will achieve this.

1



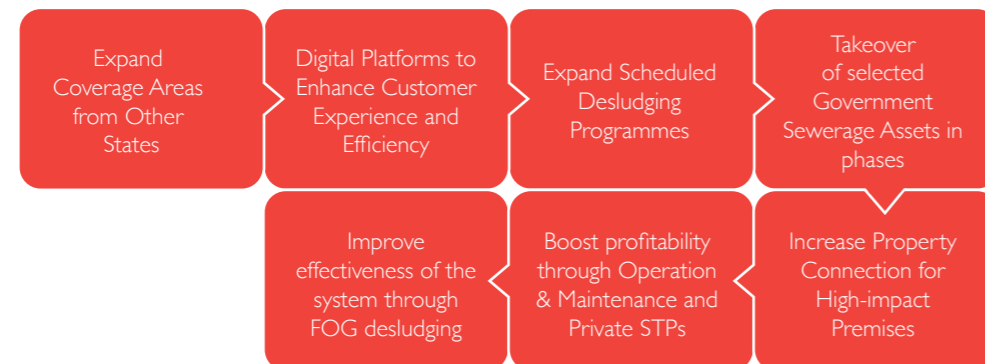
Strengthening Business Sustainability is essential to IWK because it can allow the organisation to carry out the nation's mandate of ensuring quality sanitation and sewerage infrastructure management while operating towards independence from the Government's financial assistance. These initiatives have been identified as key towards building business resiliency.



2



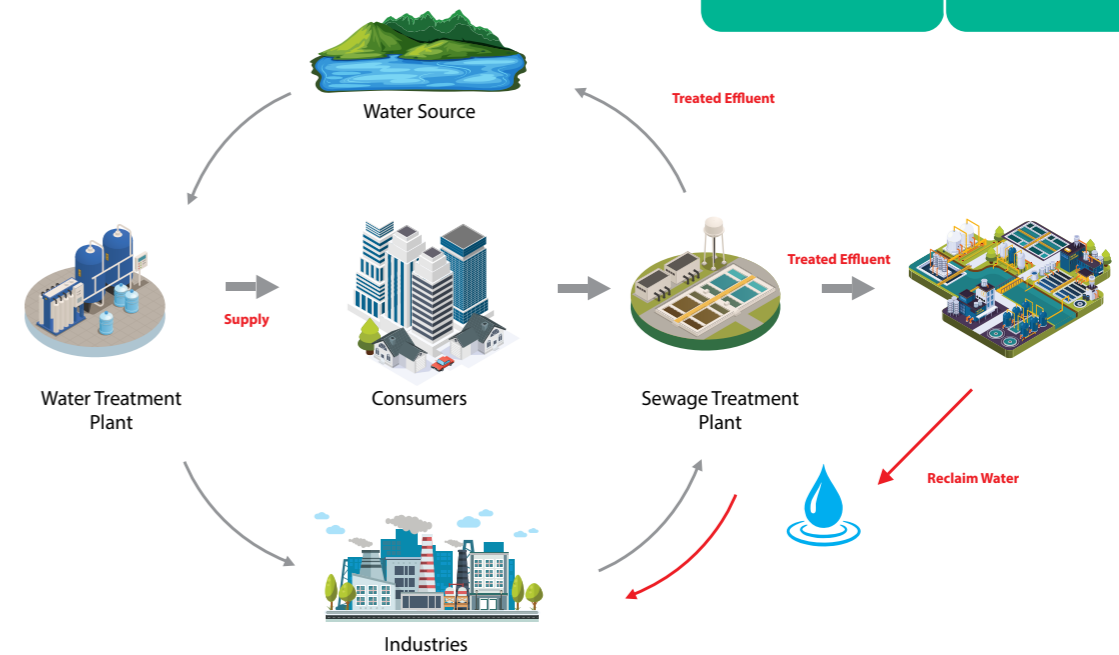
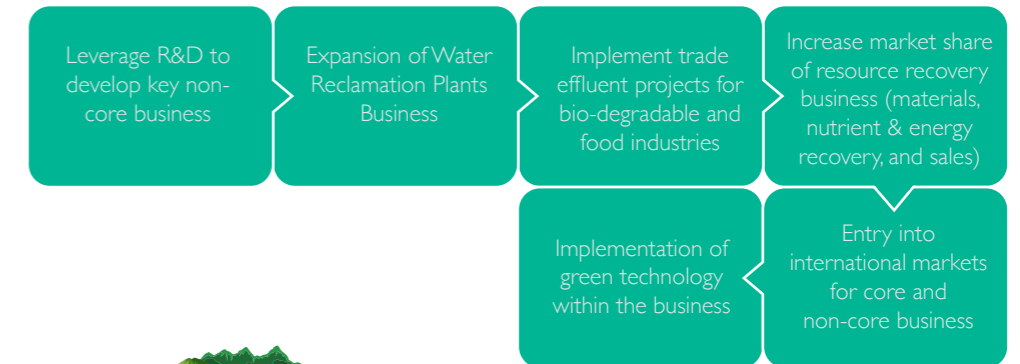
Expanding Coverage and Increasing Efficiency of Wastewater Service allows IWK to standardise and streamline processes and resources to achieve internationally-benchmarked effluent standards, and better economies-of-scale and operational efficiency throughout the value chain. These initiatives have been identified as vital to expanding relevance, capability and capacity.



3



Empowering Green Economy of Wastewater Industry is important to IWK as it aligns and supports Malaysia's aspiration for sustainable growth by catalysing the green economy and technology. This is in line with the country's Green Technology Masterplan (2017-2030) where IWK commits to achieve the target set under the ambit of wastewater sector; which is to recycle 100% of sludge and 33% of treated effluent by 2030. These initiatives embed green and circular economy aspirations at its core, to drive green and business viability.



4



Integration of Wastewater and Water Industries is crucial to drive the acceptance of users on the importance and interlinkages of wastewater and the water industries. The joint-billing initiative is the single most effective and vital initiative that will supplement the recognition of wastewater services as a crucial part of the utility value chain.



Our Strategy


What Matters to IWK - Material Sustainability Assessment

In ensuring that we deliver on our mandate to ensure safe wastewater management and allow access to benchmarked-standards of wastewater treatment for Malaysia, we identify and prioritise issues that matter most to our business and stakeholders. In our business, risks that are material to the operations that we closely monitor include financial and liquidity risk, costs of asset upkeep, investment in the security of assets and safety of people, and adherence to environmental compliance standards.

The IWK Enterprise Risk Management (ERM) Policy and Framework provides a methodology to identify, analyse, evaluate, manage and monitor significant risks faced by IWK. An effective risk management process is vital to good corporate governance, which supports management in achieving IWK's business objectives and ensures that IWK remains relevant and resilient into the future.



The ERM strategy provides the backbone for embedding risk management within the culture of IWK businesses. The respective departments periodically review the effectiveness of existing controls, and the status of risk treatment plans to mitigate significant risks.

This allows us to better understand the full spectrum of risks and opportunities, and potentially pave new ways to protect our business against emerging challenges. Based on the assessment of material factors, we will develop solutions and address issues identified as being most material to our business.

Category	Material Matters	Description and Impact	Initiatives to Address This
Economic Performance 	Sustainable revenue streams and effective cost management	The financial management of IWK's operations relies on customers' bill payments and the annual subsidy provided by the government, as well as the Government Support Loan (GSL) for capital expenditure. However, there is a challenge in prompt bill payment from customers that affect operating revenue. Compounding this is the low tariff rates that have not changed to suit market-factors since 1994, with costs to run the facilities that keep on increasing every year, as well as the need to manage and maintain ageing assets. We also believe that we need to wean IWK from the GSL towards greater self-reliance. To do that, we must strengthen our income streams.	<ul style="list-style-type: none"> • Tariff restructuring • Recategorising domestic customer charges • Concession Agreement amendments to include monetisation opportunities • Resolution on payment structure of Government Support Loan (GSL) • Expanding non-core business for new revenue streams • Expanding organic growth through the extension of coverage areas • Joint billing initiatives
	Efficient sewage operations	IWK's repertoire of STPs taken over from different local authorities and developers mean different plants have different specifications. Stringent upkeep and standardisation of the plants are crucial to ensure greater productivity, efficient operations and utilisation of resources that minimise disruption and uphold effluent standards. We need to constantly upgrade, maintain and repair towards aligning to the set benchmarks. Many of these plants are also ageing, thereby requiring critical operational capex for replacement of vital equipment and infrastructure.	<ul style="list-style-type: none"> • Plant optimisation through Energy Management System (EnMS) • Grouping and outsourcing plant maintenance services for reduced cost • Reduction of manpower such as replacing and reducing the number of static security (SS) guards with Electronic Security Systems (ESS) • Upgrade assets • Critical equipment standardisation for pumps, blowers, aerators, filter presses and clarifiers • Standardisation reduces inventory for spare parts, cost savings via bulk-purchases • Rationalise small plants • Use of SCC Fund for equipment and instrumentation replacement project, security manhole lock installation, and the refurbishment of public toilets and religious centres' toilets

Category	Material Matters	Description and Impact	Initiatives to Address This
Economic Performance (cont'd) 	Technology and Innovation	Innovation in processes and technology in wastewater management necessitates IWK to keep pace to ensure evolving contaminants such as micro pollutants are addressed. Research activities are also essential to develop creative and innovative solutions for the sewerage industry, with practical solutions that address immediate environmental needs and provide monetisation opportunities. We also have to keep pace with changing engagement landscapes which include efforts towards digitalisation adoption.	<ul style="list-style-type: none"> • Develop key non-core business through green technology • Recycling bio-effluent for non-potable use • Leveraging the use of Black Soldier Fly Larvae (BSFL) for efficient bio-waste processing • Stakeholder communications through digital platforms: email, website, social media, apps
	Corporate Governance and Risk Management	We hold ethical behaviour and good corporate governance in high-esteem. Our core value of Integrity is grounded in our strategy to discharge our duties in a safe, ethical and responsible manner. Our Integrity Management Plan together with the Enterprise Risk Management (ERM) policy and framework provides the backbone for embedding good governance and risk management within the culture of IWK businesses and adherence to compliance standards.	<ul style="list-style-type: none"> • Establishment of Integrity and Governance Unit • Holistic and comprehensive ERM policy and framework • Embed a risk-aware culture at all levels of the company and strengthen risk governance through Board Audit & Risk Committee (BARC) • Conduct company-wide risk assessment focusing on industry standard • Implement formal risk educational programmes to educate employees • Develop risk reporting metrics to monitor risk profiling and significant risks and issues • Align internal policies, governance structure and risk management system to meet company's objectives, business plan and Integrated Management System (IMS) • Stringent procurement practices • Independent function of internal audit and risk management • Whistle-blowers policy • Vendor Code of Conduct • Dealing with Third-Party Policy • Management of Support Letter Policy • Anti-Bribery and Anti-Corruption Policy • Organisational Anti-Corruption Plan (OACP) • Policy On Gift, Entertainment, Corporate Hospitality, Sponsorship, Charitable Donation and Political Contribution • Corruption Risk Management Workshop in collaboration with Malaysia Anti Corruption Commission (MACC) • Corporate Integrity Pledge 2.0 • Corruption Prevention Policies • Anti-Bribery Management System (ABMS) MS ISO 37001:2016 • Certified Integrity Officer Programmes for Private Sector

Our Strategy

Category	Material Matters	Description and Impact	Initiatives to Address This
Economic Performance (cont'd) 	Legislation, Regulations and Policies	IWK is highly governed by national laws, policies and regulations to ensure that sewerage services operate at optimal levels for customers' needs, and treated effluents comply with acceptable benchmarks to mitigate pollution and service disruption. It is material to IWK to keep apprised and abreast with policy changes, where relevant, to adhere to them stringently.	<ul style="list-style-type: none"> Water Services Industry Act 2006 (WSIA) Sewerage Services (Charge) Regulations 1994 Sewerage Services (Authorisation of Collection of Charges) Order 1994 Sewerage Services (Authorisation to Demand, Collect and Retain Sewerage Charge) Order 1995 Sewerage Services (Authorisation to Demand, Collect and Retain Sewerage Charge) Order 1996 Solid Waste & Public Cleansing Act 2007 Water Services Industry (Desludging Activities) Regulations 2021
	Stakeholder Engagement	Considering the changes in the operating landscape and standards of environmental expectations, we see the public, customers, local communities, local authorities, federal and state governments, regulators, non-governmental organisations, environmental bodies, academia and employees including labour unions as major stakeholders. We aim for engaged communication and feedback through customised channels, so that various stakeholders can directly or indirectly present their opinions.	<ul style="list-style-type: none"> Although 2020 presented a challenging time for face-to-face engagement, our engagements with our stakeholders continued with ministerial and oversight regulators to align direction and expectation
Environmental impact on the Planet 	Clean and safe for the environment	In line with our mandated role to protect public health, preserve the environment, and contribute to national water security, we have to ensure that our impact on the environment is sustainable. This means close adherence to policies that are in place, as well as ensuring our operations comply with the standards.	<ul style="list-style-type: none"> Environmental Quality Act 1974 Environmental Quality (Sewage) Regulations, 2009 Environmental Quality (Scheduled Wastes) Regulations 2005 Environmental Quality (Clean Air) Regulations, 2014 Environmental Quality (Control of Diesel Engines) Regulations 1996 Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 Groundwater Quality Standard for Conventional Raw Water Treatment (Drinking Water), Edition 2019 by DOE EQ (Refrigerant Management) 2020 Water Services Industry (Desludging Activities) Regulations 2021

Category	Material Matters	Description and Impact	Initiatives to Address This
Environmental impact on the Planet (cont'd) 	Embed green and circular economy measures and resource management	<p>As a company dealing in wastewater treatment with a focus on sustainability, we look at the use and treatment that promotes the sustainable management of resources and energy that is safe for the environment.</p> <p>In managing costs while being environmentally conscious, we look at the recovery and reuse of resources as a contributing factor to decrease consumption of raw materials, reduce waste and improve energy efficiency, while contributing towards a greener environment.</p>	<ul style="list-style-type: none"> Water Recycling through expansion of Water Reclamation Plants and increasing Internal Recycling at Sewage Treatment Plants for in-plant use and sewer cleaning Biosolids Recycling by expanding nutrient recovery from biosolids via Black Soldier Fly Larvae (BSFL) technology to produce animal feed and bio-fertilisers; pilot production of biofertilisers for plant growth; and promote biosolids as soil conditioner for local authorities landscape applications Generating Renewable Energy through exploring energy recovery from biosolids via conversion to renewable biofuel materials for power plants or industrial co-firing; biosolids anaerobic digestion to biogas for electricity; solar power at STPs as implemented at Pantai 2 RSTP. The number of STPs with solar power will be increased in phases
	Pollution, theft and vandalism	Theft and vandalism of critical plant equipment (scavenged for scrap metal, etc.) can be detrimental to its operations and cause financial losses and adverse environmental impact when non-treated effluents are released into waterways. Culprits have also dumped illegal substances into IWK's sewer pipelines. These can affect the quality of water and the environment, ultimately affecting communities.	<ul style="list-style-type: none"> Formation of surveillance team at high-risk areas Enhanced early warning system Introduction of manhole locking system Emergency containment of contaminated wastewater Emergency treatment (poly tank, pump set with hose), with various products for process recovery such as Superfloc, CHP and measures to mitigate foul smell using activated carbon
	Safe Workplace	Employee safety and accident prevention are critical to IWK. The core work of IWK necessitates on-the-ground frontline employees to work in dirty, dangerous and difficult (3D) situations, which can result in injuries and even loss of life. Apart from instituting health and safety measures, we rely on constant audits, reviews, assessments and trainings to upgrade and strengthen safety measures as a matter of priority.	<ul style="list-style-type: none"> Health and safety steering committee looks into addressing issues such as instituting the 'No man entry' approach when doing cleaning work in sludge tanks Implement health and safety accident prevention awareness training Constantly review and strengthen safety measures in the master Operating Procedure Instructions (OPI) Governed by internationally-benchmarked standards which are regularly audited Implement MS 1722:2011 and ISO 45001 as part of our Occupational Health and Safety Management System

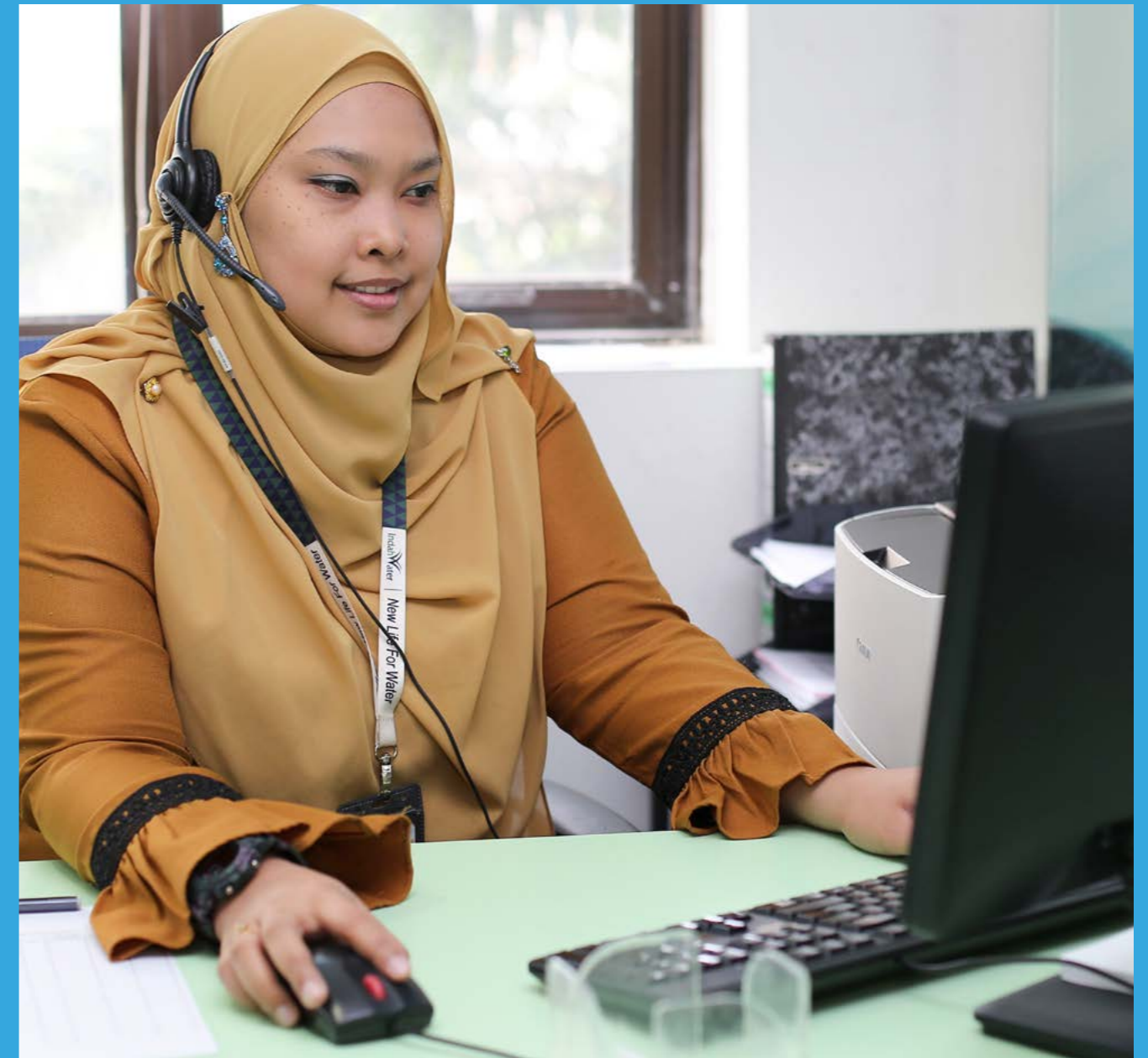
Our Strategy

Category	Material Matters	Description and Impact	Initiatives to Address This
	Education and Information Management	Lack of awareness of IWK's services as not being part of the vital utility services result in a lack of bill payment commitment by customers. There have also been instances when IWK has been falsely accused of water pollution when unscrupulous parties dump illegal waste matter into waterways. It is important for users to understand the importance of sewage and wastewater management and how it impacts their daily lives.	<ul style="list-style-type: none"> • Awareness campaigns through media and social media platforms on the importance of sewage system management • Engagement with stakeholder parties to educate/inform them of IWK's role when faced with illegal materials dumped into the sewage system and its mitigating measures.
	Customer Management	It is important for IWK to promptly address customer feedback/queries/complaints to ensure IWK's services consistently meet the standards expected by our customers and business partners. We also want to strengthen our interactions with our customers so that we can bridge better understanding and stand at the ready to meet their service needs adequately.	<ul style="list-style-type: none"> • Customer Charter that outlines Customer Service Excellence expectations • Implement ISO 10002:2014 in pursuit of better management and handling of customer satisfaction and complaints • Adherence to Level of Service charter on customer management, billing and operational enquiries/resolution • Expansion of customer engagement touchpoints (following COVID-19) through digital platforms – IWK app, emails, calls, SMS, social media • Joint billing initiatives
	Employee Management	We believe workplace diversity and inclusivity are entrenched in IWK's fair employment practices. Our employees are key to the organisation's growth and progress. We ensure our employees are engaged, fairly remunerated and given opportunities to strengthen skills and competencies, so that they can contribute towards achieving the aims of the organisation.	<ul style="list-style-type: none"> • Competitive wages and benefits commensurate with job roles and expertise, qualifications and experience • Talent management geared towards retaining the right composition of talent to support business management and operations • Skill development training and workshops across the organisation • Cascade business KPIs to employee KPIs to achieve business goals and drive gap closure
	Contribute to Local Community Development	Creating a positive impact within our communities and our environment is entrenched in our sustainability approach. It is important that all Malaysians, especially those in rural and remote areas as well as the disadvantaged, have access to proper sewage systems as this can contribute to a higher and more hygienic standards of living.	<ul style="list-style-type: none"> • Non-chargeable services provided for welfare homes, mosques, temples, churches and other religious centres • Local supply chain management in accordance to procurement policies • Briefings on the development and importance of wastewater services in Malaysia to local communities • Corporate Social Responsibility (CSR) projects such as the long-term Friends of River programme to protect rivers via IWK Cares and Saya Sayang STP programmes

Making a positive Social Impact for **People**



PEOPLE







- Our Employees
- Our Customers
- Our Community
- Our Partners
- Real People, Real Stories

People

“ People - and their aspirations for a better world – are at the heart of what drives us at IWK. We aim to protect and enable our employees and promote growth and development for all towards a meaningful workplace. We are also committed to supporting our communities where our customers and our suppliers operate. We work in close collaboration and engagement with our partners and regulators. ”



Targets	IWK's Efforts
 <p>3 GOOD HEALTH AND WELL-BEING</p> <p>Ensure healthy lives and promote well-being for all</p> <p><u>Target 3.9</u> By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination</p> <p><u>Target 3.d</u> Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks</p>	<p>Employee Occupational, Health and Safety Measures</p> <p>Sanitation and hygiene of treated wastewater efforts for community health</p>
 <p>4 QUALITY EDUCATION</p> <p>Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all</p> <p><u>Target 4.4</u> By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship</p>	<p>Technical skills training and upward mobility</p>
 <p>5 GENDER EQUALITY</p> <p>Achieve gender equality and empower all women and girls</p> <p><u>Target 5.5</u> Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life</p>	<p>Supporting female workforce representation</p>

Targets	IWK's Efforts
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p> <p>Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p><u>Target 8.2</u> Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors</p> <p><u>Target 8.3</u> Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services</p> <p><u>Target 8.5</u> By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value</p> <p><u>Target 8.8</u> Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment</p>	<p>Inclusive, non-discriminatory human resource management policies</p>



People

Engaging with our Stakeholders

The success of our business is dependent on the long-term relationships we build with our stakeholders. We want to ensure that their concerns have a channel to be heard and addressed, where relevant.

Over the years, we have nurtured our relationships with our stakeholders, and we continue with this effort over a range of platforms. From 2020, we have taken a more digital approach in reaching out to our stakeholders, to continue with our efforts to engage with them to understand their expectations and concerns.

	Engagement Mode	Areas of Interest	Value Created
Employees	<ul style="list-style-type: none"> Meetings / engagement sessions CEO messages Newsletter Social activities Townhall Employee Engagement Survey Training and development programmes Employee portal Employee performance review and rewards Kelab Indah Water (KIW) Recognition awards Union Engagement Activities Collective Bargaining / Agreement Covid-19 preparedness 	<ul style="list-style-type: none"> Employee wellbeing Occupational safety and health Work-life balance Training and career development Compensation Business Plan / Operational updates Integrity and governance matters Keeping abreast with market Maintaining a safe work environment and embracing new norms 	<ul style="list-style-type: none"> Safe and healthy working environment Transparent performance review and career development plan Enhance employees' technical and learning competencies, social and human development Improve communication in terms of up-to-date information on the Company's direction/ news Improve employees' experience in driving positive performance result / outcomes Increase productivity, work quality and retain talents
Government and Regulators	<ul style="list-style-type: none"> Regular meetings, facilitation meetings, strategic workshops, forums / dialogues Consultation on regulatory and compliance matters Emails and letters Feedback surveys 	<ul style="list-style-type: none"> Concession agreement Authorised Person (AP) Regulatory compliance Environmental management & compliance Business direction Ensuring business and service viability Ethics and integrity Water Sector Transformation 2040 (WST 2040) Funding for sewerage projects 	<ul style="list-style-type: none"> Create strong rapport with Government and regulators, build reputable and credible Company image and be on par with current requirements / regulations



	Engagement Mode	Areas of Interest	Value Created
Customers	<ul style="list-style-type: none"> Face-to-face Website / Online platforms Social Media Channels Complaint Management 	<ul style="list-style-type: none"> Understanding why sewerage services are essential utilities Range of services Prompt response to complaints Sewerage charges 	<ul style="list-style-type: none"> Create brand awareness and the importance of them maintaining their payment as part of supporting the importance of a clean and safe environment
Contractors/ Vendors/Suppliers	<ul style="list-style-type: none"> Meetings Tendering and procurement platforms 	<ul style="list-style-type: none"> Supply chain management Cost reduction/savings Procurement policy, practices and system Transparency and governance Suppliers and sub-contractors evaluation 	<ul style="list-style-type: none"> An easy and transparent procurement process that is fair and creates win-win relationship with our vendors / suppliers Performance monitoring and improve efficiency throughout supply chain
Media	<ul style="list-style-type: none"> Media Release Press Conference Interviews Site Junkets 	<ul style="list-style-type: none"> Business strategies Corporate responsibility Accessibility and immediacy Long-term relationship building Issues/Incidents such as pollutions 	<ul style="list-style-type: none"> A platform to create brand awareness on IWK's business activities, challenges and how these challenges are managed through neutral and fair reporting on IWK
Local Communities	<ul style="list-style-type: none"> Volunteering engagements Charity/community events Local employment / internship opportunities 	<ul style="list-style-type: none"> Community building Environmental protection and education Brand awareness Community investment and development (capacity building) 	<ul style="list-style-type: none"> Build positive relationships with the community and create brand awareness for IWK Support the Government's effort to catalyse the country's economic activities through creation of job opportunities for local communities
Non- Governmental Organisations (NGOs)	<ul style="list-style-type: none"> Strategic partnership and support in community, and environmental sustainability 	<ul style="list-style-type: none"> Community engagement Environmental initiatives 	<ul style="list-style-type: none"> Mutual understanding on sustainability and IWK's efforts towards environmental and social improvements IWK's brand awareness for community
Industry Associations	<ul style="list-style-type: none"> Industry exhibitions and conferences Strategic partnerships Membership with Malaysia Water Association (MWA) and others 	<ul style="list-style-type: none"> Branding and reputation IWK as Thought Leader Strategic training programmes and partnerships R&D collaborations 	<ul style="list-style-type: none"> Build good relationships and brand awareness with industry peers



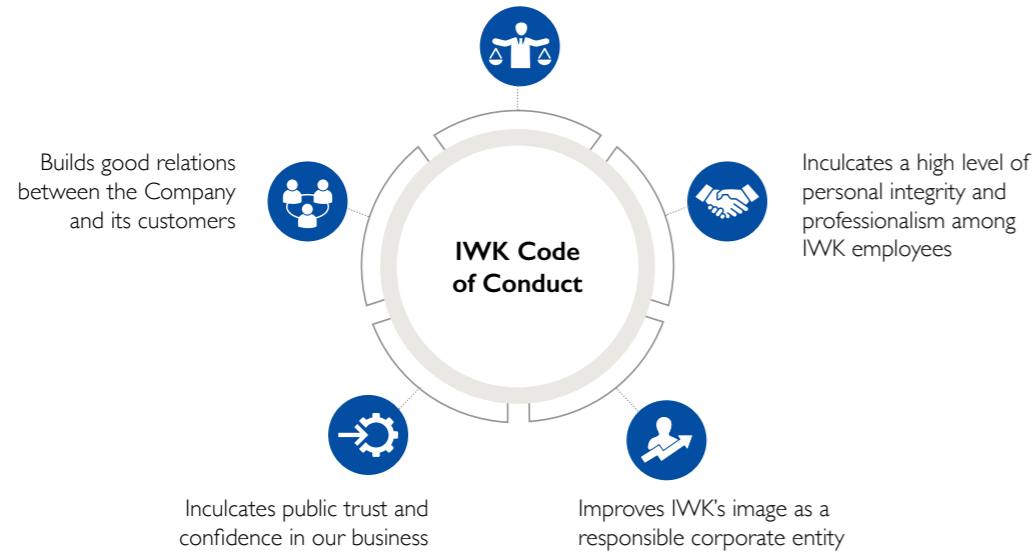
Our Employees



All About Our People

Our employees – known as *Indahans*, are the life force that sustains the business. IVK's foundation for success lies in its team of dedicated *Indahans* who are vital to driving the organisation to become a modern, progressive company, expanding beyond sewage services into being a value-driven circular economy contributor.

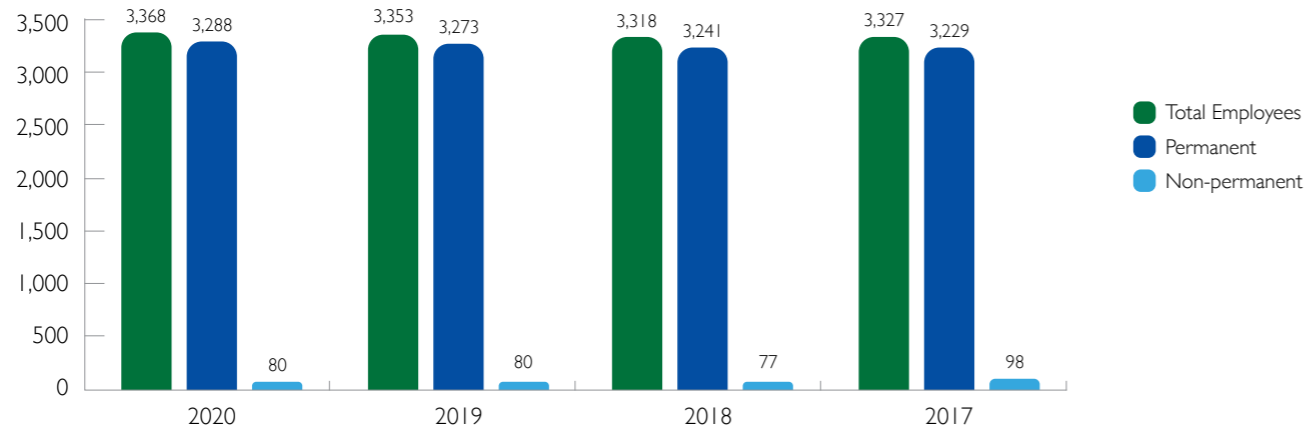
Standardises a general Code of Conduct which is comprehensive in shaping the expected business conduct and behaviour of employees in the Company



IVK embraces diversity among its employees as we believe our differences build towards our strength as we consider the various perspectives and learn from each other. The company is against any form of discrimination and we believe every employee has the right to feel safe and welcomed in their workplace.

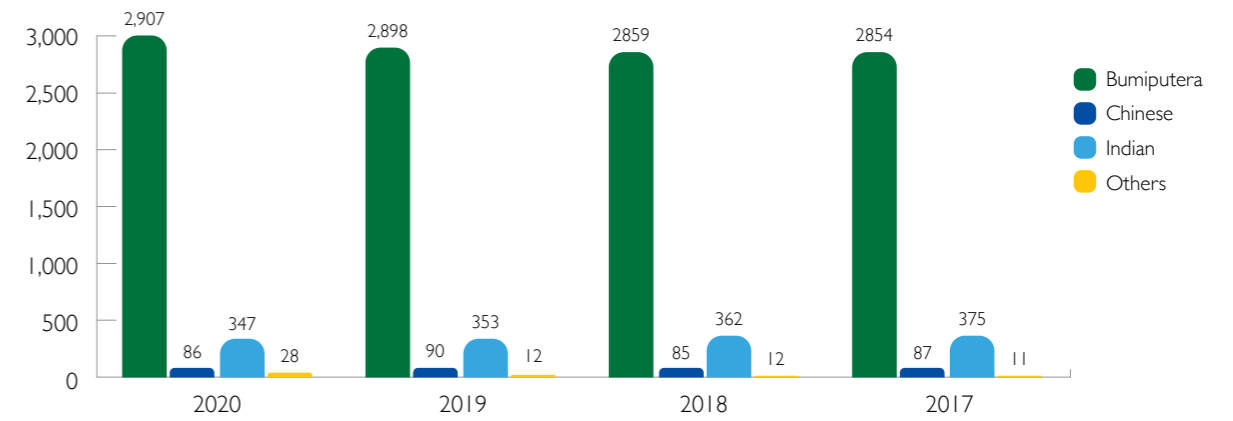
Employee Category

The vast majority of our staff comprise permanent employees. We prioritise the hiring of permanent workforce as we believe in investing in their skills for continued valued contribution. Non-permanent employees are gradually absorbed into the IVK workforce upon demonstration of satisfactory job performance.



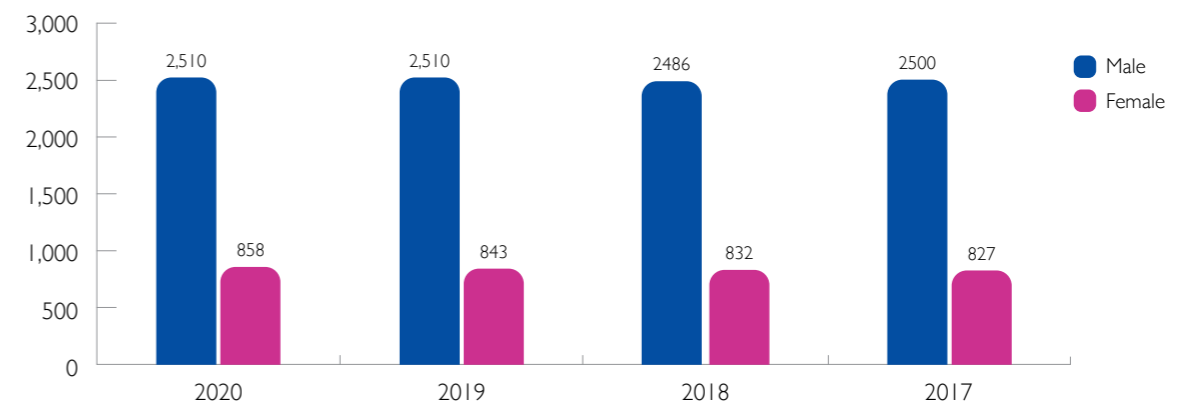
Ethnicity Breakdown

We want to create an environment that embraces diversity, unity and inclusion, and reflects Malaysia's multi-racial composition.



Gender Diversity

There is a higher proportion of male to female employees, given the nature of our operations where a significant part of the work involves manual labour and fieldwork which can sometimes be hazardous across the 3D spectrum - Dirty, Dangerous and Difficult.

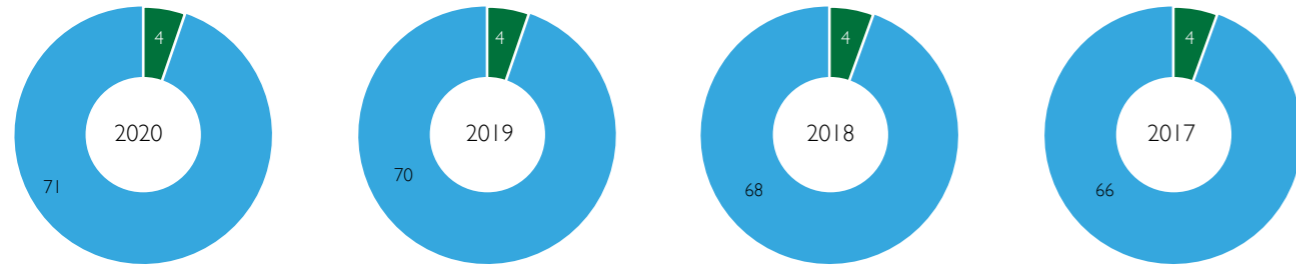


Our Employees

Female Workforce Representation

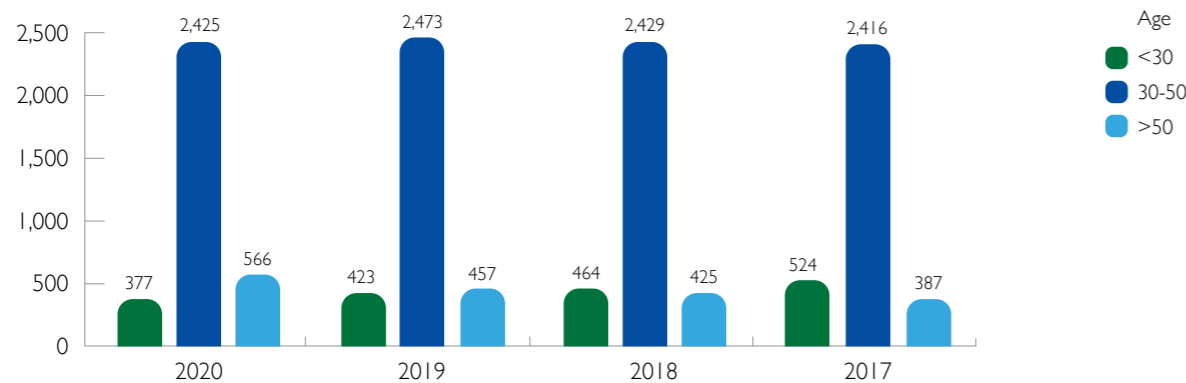
Within our office environment, we provide equal opportunities to both male and female employees and support opportunities for female employees.

● Top Management ● Middle Management



Age Diversity

The IWK workforce is quite age-diverse, and long tenure is highly valued as seen by the larger number of employees within the 30-50 years age bracket. This is positive to IWK as the specialised nature of our business can be supported for the long-term through knowledge application gained through their tenure.



Pn. Nadzilla Zalikha Binti Noh
Network Technician, Unit Office Gombak

Pn. Nadzilla, who hails from Sarikei, Sarawak, works as a technician handling the CCTV operations work on sewerage pipes. The CCTV operations are used to identify and address problems and monitor the conditions of the sewerage pipes.

Although few women are involved in this type of 3D work (Dirty, Dangerous and Difficult) as men almost entirely dominate it, Pn. Nadzilla thrives on the challenges and the opportunities given, regardless of gender. A job well done for her is when she sees the satisfied faces of her colleagues once an investigation is solved and concluded.

As her role is deemed essential services, Pn. Nadzilla is thankful that she is part of the team that resolves issues related to sewerage problems for the community while keeping the environment from being polluted.

Employee Engagement

Having positively-engaged employees is key for us, primarily as we work towards achieving our goals and priorities. An engaged workforce leads to better productivity, strengthened company culture and increased customer satisfaction levels.

In 2020, we conducted our Employee Engagement survey for the 1,729 non-executives who make up 51.3% of IWK's workforce. The response rate to the survey was high at 90% of the targeted respondents. Of the respondents surveyed, 95% of them scored Good and above, an encouraging indication of the level of engagement with our people. The Employee Engagement survey was conducted with the executive employee segment in 2019, drawing a high engagement rate of 88%.

Moving forward, IWK will be conducting its Employee Engagement Survey on the whole organisation but this is subject to an agreed upon frequency due to the placement of employees in all parts of Malaysia.

These Employee Engagement surveys serve as a platform for us to seriously consider constructive feedback and take actions, where necessary. This is part of our commitment to listen to the ground and consider the feedback constructively for the greater good of the organisation and the strengthened engagement of our employees.

Following the analysis and action plan developed based on the 2019 Employee Engagement survey, we put in 66 action plans. These action plans centre around aspects of Performance and Rewards, Career and Personal Growth, Communication and Work Environment. All of the action items have been implemented except for one, which is currently ongoing.

IWK also engages with employees through various other platforms such as departmental team-building sessions, townhalls and impromptu small meeting sessions with the CEO.

Building Capabilities and Skills

We aim to provide a healthy and supportive work environment that fosters our core values of having integrity, work ethics and a thirst for continuous knowledge. To drive towards our vision of being a premier wastewater organisation in Asia, we know the value of investing in our human capital. We put in efforts to engage with and retain our talented employees through our various skill and talent development programmes, including upskilling and retraining to optimise our available resources and enhance productivity.

Given the highly specialised work that we do at IWK, and our aspirations to be more than a wastewater treatment company, we strive to equip talents with knowledge excellence and innovation through specialised training opportunities.

IWK's Asian Sewerage Training, Research and Innovation Centre (ASTRICE) is a learning centre that aims to share experience and capabilities via various thought leadership and capacity building programmes. Our people are also able to participate in various researches such as on the beneficial use of sewage sludge for co-composting, use of sludge as soil amendment and fertiliser, reuse of

bio-effluent, and by-products, as well as using microbe technology to tackle bio-effluent and reduce energy. Through ASTRICE, we look to further support and uplift employees' experiences in searching for knowledge and skills in a complete learning centre, and achieve our goal of developing more water professionals in the region.

We upheld retention and growth of our employees through professional up-skilling initiatives, coupled with academic growth opportunities so they are prepared to apply their full potential to continue the transformation of our business. This is encapsulated in a goal and timeline-oriented overarching Talent Management programme that supports IWK's goal of having highly skilled employees by 2030 through growth in competencies such as leadership, creative and innovative skills.

A few programmes organised as part of the two-pronged approach of skill and academic upscaling consists of:

Designing Elegant Solutions for Innovation, Growth and Navigation (DESIGN): Application of adaptive thinking in problem solving and various circumstances through methodical sessions, of which 150 professionals from six batches completed the programme.

FUTURE LEADERS@IWK: Succession planning management programme for selected talent pool with leadership potentials whereby they undergo an 18-month development programme series to accelerate their contribution to the organisation. Participants undergo six modules to train employees on various leadership core competencies.

Collaboration with Department of Skills Development (DSD) Malaysia to equip IWK employees with the Malaysian Skills Certificate (MSC), recognising their expertise through prior work experiences in technical fields, of which 145 employees had been awarded.

Education Assistance Programme (EAP): Collaboration with Universiti Teknologi Malaysia-MJIIT (Malaysia – Japan International Institute of Technology) to sponsor tuition fees for selected employees to undergo postgraduate studies.

Research opportunities for postgraduate programmes is part of IWK's retention strategy that provides opportunities for IWK professionals to enhance their tertiary education by embarking on educational research with the aim to resolve issues or bridge the gap in current research using available data from within the organisation.

Our Employees

For the period in review, our learning focus centred on equipping our people with the relevant knowledge in functional skills, health and safety management, information technology and knowledge-building capabilities that will be fundamental towards supporting IWK's vision for the future. Our training budget for 2019 was at RM1.2 million but this was reduced to RM460,000 in 2020 due to the many cancelled training programmes arising from the pandemic.

	2020	2019
Training Cost	RM457,558.44	RM1,198,814.65
No of Training Programmes	287	333
Total training hours	51,763.5 hours	102,077.0 hours
Online training	13,522 hours	304 hours



For the two years in review, we conducted a total of 620 capacity-building training programmes. Our training programmes are conducted by both internal and external trainers. Training programmes and employee participation were lower in 2020 compared to 2019 arising from the pandemic which necessitated lesser contact-related

engagements in the company. We also conducted online trainings, with an increased number of hours charted in 2020 due to the pandemic restrictions. It was important that our people remained engaged and able to participate in training for self-improvement on an ongoing basis.

The IWK Capacity Building and Leadership Management Programme had also contributed significantly to position IWK as a competency-based performance organisation. Participating employees were given the opportunity to demonstrate their leadership capabilities by holding bigger roles and responsibilities through promotions. From the year 2019 to 2020, 183 employees were promoted and 149 employees experienced job movements with bigger responsibilities. The learning interventions through planned training programmes are able to support the expansion of skills from competence to performance.

This reflects the effectiveness of the programmes where employees become more motivated and were able to discover their own potential. Employees are given the opportunity to plan and strategise their own career path and measure their progress.

Snapshot of Training Programmes held in 2020 and 2019

Malaysia Certificate of Excellence (Sijil Kemahiran Malaysia) - An accredited programme by Department of Skills Malaysia (Jabatan Pembangunan Kemahiran) 		Certified Environmental Professional in Sewage Treatment Plant Operation (CePSTPO) (Sijil Latihan Kompetensi Peraturan Kumbahan) - A certification programme in skills, monitoring and improvement of STP management and effluent discharge standards	
Fire prevention awareness 	Stress management programme (mental health) 	Occupational Safety & Health in Construction Industry (Management) workshop	Safe-defensive riding (motorcycle) 
Authorised Entrant and Standby Person, confined space entry competency programme	First Aid and CPR Training 	Finance for Non Finance Staffs to create awareness on financial importance in managing the company 	

Ir. Mohd Taufik Salleh

General Manager, Planning & Engineering Department (PED)

Ir. Taufik has been with IWK for 25 years. He joined in 1996 as a Hydraulic Manager and has since taken the opportunities given by IWK to lead projects and teams. Today, he is the General Manager of the Planning and Engineering division – strategising and developing the national sewerage development plans.

Ir. Taufik readily shares knowledge and working experience at international levels through collaboration with external parties as a sewerage projects consultant in various countries. He also represented Malaysia in developing the International Standard for water and sewerage sectors.

He is proud that through all the capacity building and developmental opportunities provided by IWK, he has been able to contribute meaningfully to the development of the sewerage industry and elevating people's awareness of the important work that IWK does.



Who better understands what IWK can achieve if it is not for *Indahans* themselves. We launched our annual Creativity and Innovation Programme (CIP) which challenges our people to apply innovative thinking skills to propose solutions, while building a culture of intrapreneurship.

Based on the theme for the year which was *Our Journey To Be The Premier Wastewater Company*, we continued with the concept of 'Imagination, Incubation and Demonstration' in the CIP. The Imagination phase required participants to propose a solution to a problem statement; the Incubation phase was to develop the solution and assess its viability; while the Demonstration stage was for participants to demonstrate their final prototypes and results of the solutions proposed.

The CIP 2020 received 105 entries which showcased the quality of creativity.



Technology Category

1st Prize Banana Mixer Smart Lifting Device

Installation of a more stable lifting mechanism to lift Submersible Mixer in treatment plants effectively with lesser risk of falling, breaking or damaging the steel chain.

2nd Prize Green Technology: 'Free Energy' Reclaim Water Pump

Using the principle of kinetic energy to replicate the plunger pump by unearthing energy from final effluent drop that drives the plunger pump mechanism.

3rd Prize Attachable "Swipe-Swipe Wiper" at Mechanical Screen

Modification of second stage mechanical screening on sites with the lowest cost possible. Built to get rid of plastic debris, papers and hair strands that may pass through primary screening, causing downstream issues.

Non-technology Category

1st Prize Mobile Ladder for Tanker Maintenance Tangga Mudah Alih Untuk Penyelenggaraan Tanker

Self-building of portable ladder designed to provide safer, more ergonomic and efficient mechanisms for tanker crews.

2nd Prize Jetting Facilitator for Full / Overflowing Manhole Pemudahcara Jetting untuk Manhole yang Penuh / Melimpah

Development of a mechanism without technical equipment, to detect pipes located under manhole.

3rd Prize Crowbar Manhole Key Kekunci Lurang Pembedungan

Modification of a simple tool to assist the opening of manhole covers, enabling the practice of good ergonomics.



Our Employees

Health and Safety Priorities

We aim to safeguard our employees by promoting Occupational, Health and Safety, and wellbeing at the workplace. Given the predominant nature of our frontline work which can be hazardous across the 3D (Dirty, Dangerous and Difficult) spectrum, we strive towards our ultimate goal of zero accidents and work-related ill-health. Across the board for all *Indahans*, this goal has become even more important than ever in the current COVID-19 pandemic, as we take extraordinary measures to ensure we can continue to deliver on our commitments.

IWK adopts the MS1722:2011 and ISO 45001 standards as part of the Health and Safety Management System (HSMS). This underscores our overarching commitment towards building a safety-first culture and ensuring our employees' safety and health are protected.

Overall stewardship of Health and Safety is under the IWK Health and Safety Committee. The Health and Safety Committee, with active participation from all heads of departments, has a role in determining the overall safety and health strategies and initiatives, as well as driving

effective implementation. Given the high priority we place on employee occupational health and safety, IWK will continuously enhance its safety culture and put in the relevant measures accordingly.

Health & Safety Accident Statistic				
	2020	2019	2018	2017
Total Incidents	40	37	38	36
DOSH Reportable	11	14	18	12
Property Damage	8	8	8	7
Near Miss	0	1	1	3
Medical Treatment	15	9	8	13
Fatality	1	0	0	0
First Aid	5	5	3	1

In an unfortunate incident in December 2020, a fatality occurred at the KLR348 STP at Pantai 1. The incident involved exposure to soiled septic water contamination without applying the necessary safety measures while cleaning work was being carried out at the RSTP Pantai 1 Sludge Receiving Facility, KLR348 Unit Office Kuala Lumpur. Any fatality is unacceptable and deeply regrettable. IWK conducted a thorough investigation. Arising from the investigation, IWK implemented additional measures such as the 'No man entry' process when conducting any forms of cleaning work in the sludge tanks to prevent a recurrence of such an incident. Instead of having the workers conducting cleaning works in the sludge tanks manually, cleaning work will be done using dredging pumps and high pressure water jets which is in accordance with the assessment of Hazard Identification, Risk Assessment and Determining Control (HIRADC).

IWK also took steps to improve and enhance several aspects related to the supervision of confined space work, and ensured adequate training for those carrying out these duties. In addition, improvements were also made on the issuance of Permit to Work (PTW) which now includes the need to conduct HIRADC on each Statement of Work Approach (*Penyata Kaedah Kerja*) for confined space work.

Training and on-site instructions have been reinforced for all workers with a strong emphasis on the duty of care and safety of personnel working on ground.

Fair Employment Practices

IWK believes in promoting and developing a diverse workforce as it can bring together a variety of complementary skills, experiences and perspectives, which will enhance the company's capacity to create value. To support this, equal opportunity and non-discriminatory policies for recruitment, remuneration and promotions are in place that does not discriminate gender, ethnic or social background.

The criteria used are the employee's professional credentials, expertise, experience, work performance and overall contribution to the organisation. These policies ensure that all qualified candidates are treated equally and provided with fair opportunities.



Our Customers



Our customers include domestic and non-domestic customers (such as commercial establishments governmental premises and the industrial sector). Our domestic customers constitute 91% of our total customers, with the balance 9% taken up by non-domestic customers.

Excellence in Customer Management

We are one of the first few to adopt the Quality Management Customer Satisfaction ISO 10002:2014 certification as part of our commitment to achieve customer service excellence by better managing and handling customer satisfaction and complaints.

To lend gravity to this commitment, we publish our Customer Charter on our website to show our serious undertaking as well as to be held to account by our customers. This helps us constantly review and drive our service levels better.

Customer Charter

Indah Water Konsortium Sdn Bhd is committed to provide sewerage services and ensure that the levels of service (LoS) are met.

We will ensure efficient sewerage services as follows:

Operate and maintain public sewerage systems efficiently.	Provide desludging service for individual septic tanks on customer's request.	Conforming to environmentally sound practices in the treatment and disposal of sewage and sludge.	Using appropriate technology and apply cost effective measures in all areas of our operations.	Committed to organise various awareness programmes to share information and knowledge with the public and stakeholders.
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We will ensure the levels of service (LoS) as per below:

Being on-call 24 hours a day, 7 days a week to respond to service emergencies.	Responding to service complaints within 24 hours.	Responding to request for desludging of individual septic tanks within 48 hours.	Replying to written operational enquiries within 3 working days.	Answering all calls to our dedicated customer service lines within 10 seconds.	Keeping service appointments within 30 minutes of agreed time and notify customers when delays are experienced, if customers can be contacted.	Responding to billing enquiries within 5 working days.
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We are accountable to our customers by complying with the above standards, which are regulated and monitored by the National Water Services Commission.

This Customer Charter applies from 1 January 2015 and will be reviewed periodically.

Our Customers

Customer Billing and Operational Feedback Resolution

We have made good traction with our ongoing awareness programme on the importance of sewage services provided by IWK to the community. This is reflected in the nature of customer billing enquiries, requests and complaints that are channeled to IWK via telephone, letter, email, SMS, website or in person. Our customer service centre handles all billing-related calls, and we strive to be prompt and efficient in our dealings with them. Customer feedback typically comprise general or billing enquiries, requests and complaints.

	2020	2019	2018	2017
Billing Enquiries received	422,270	536,734	615,312	576,635
Resolved within LoS	420,841 (99.7%)	535,682 (99.8%)	614,509 (99.9%)	564,993 (98.0%)

Our billing collection improved arising from our greater engagement efforts with customers and providing them with more payment channel platforms. We even ran attractive contests to spur our customers to pay their arrears.

Given the background of our impacted operations and reduced workforce during the enforced Movement Control Order (MCO) period, we still charted an encouraging rate of customer call management. The rate of billing complaints dropped to 0.07 in 2020 from 0.11 in 2019, while response time for billing, operational and desludging enquiries increased marginally to 94% in 2020 from 93% in 2019.

In regards to the Operational Complaints Resolution Time, which tracks how fast we resolve complaints within our Level of Service (LoS) charter, we stayed consistently high at 97.7% response time to close complaints made by customers in 2020. This is marginally higher than the 96% resolution time charted in 2019.

In 2020, we conducted a sewerage services survey on the existing domestic tariff rates via Merdeka Center. This survey was conducted with 3,000 IWK customers under the connected and desludging services segments. The majority of respondents were satisfied with the sewerage bill received of which 89% of respondents were satisfied with both connected services and desludging services. More than half (55%) agreed with the need for a revision of sewerage tariffs after understanding IWK's operating costs. Compared to 2016 where only 35% of respondents agreed to a tariff revision, the level of agreement has indeed increased, even at the time of the pandemic.

Supporting Customer Journey through COVID-19

As we all grapple with the COVID-19 pandemic, and continue to do so at the time of writing this report, we had to be agile in how we continued to support our customers against this new operating landscape.

Given that we had to close or minimise face-to-face engagements, we looked at our customer journey and implemented several alternatives for them to continue engaging with us. Given that we had to close our physical payment and inquiry counters nationwide, we encouraged customers to engage with IWK through telephones and digital means.

We promoted digital payment modes to customers, encouraging them to use IWK's official website, the Indah Water mobile application, internet banking and JomPAY to pay their sewerage bills.

Improvement in Work Productivity

IWK has a total of 3,368 employees nationwide as at the end of 2020, an increase of 0.5% compared to the 3,353 employees from the year before. Along with the increase in the workforce, the productivity rate between customers and our employees has also increased. In 2020, an average of one employee served 1,226 customers, rising from one employee to 1,198 customers in 2019.

With the progressive increase of customers year-on-year, IWK has maintained and improved its efficiency in customer management. The rate of complaints successfully resolved for billings and operations increased as well.

In addition, the increase in Connected Population Equivalent (cPE) also resulted in a corresponding increase in the rate of cPE per workforce, from 7,803 cPE per workforce in 2019 to 7,906 cPE per workforce in 2020.

Overall, although there was an increase in the total workforce, the level of productivity and efficiency of IWK continues to trend at improving levels.

Total Employee



Workforce Productivity per employee



Connected Population Equivalent (cPE) per Workforce





Our Community



We are essentially a community-driven organisation, working to provide our communities with safe and sanitised wastewater that is sustainable for the environment. We work to protect and support people in the communities where our suppliers and we operate, and elevate the lives of those underserved in the community.

We have initiated services without charge for selected welfare homes, mosques, temples, churches and other religious centres. This includes improving toilet facilities in houses of worship as well as public toilets. The improvements made encompass refurbishment and replacement of toilet equipment, painting, desludging, as well as improving sewerage systems such as septic tanks or flush toilets. We do this on behalf of the Government which is funded by the National Water Services Commission (SPAN).

Although we continue to face loss of revenue from this segment of customers, it overrides the overall objective of protecting the environment and preventing pollution that could be detrimental to human health and lives. Without timely desludging service and proper maintenance of the connected network, the impact on the surrounding environment can be severe, contributing to water-borne diseases and other harmful elements.

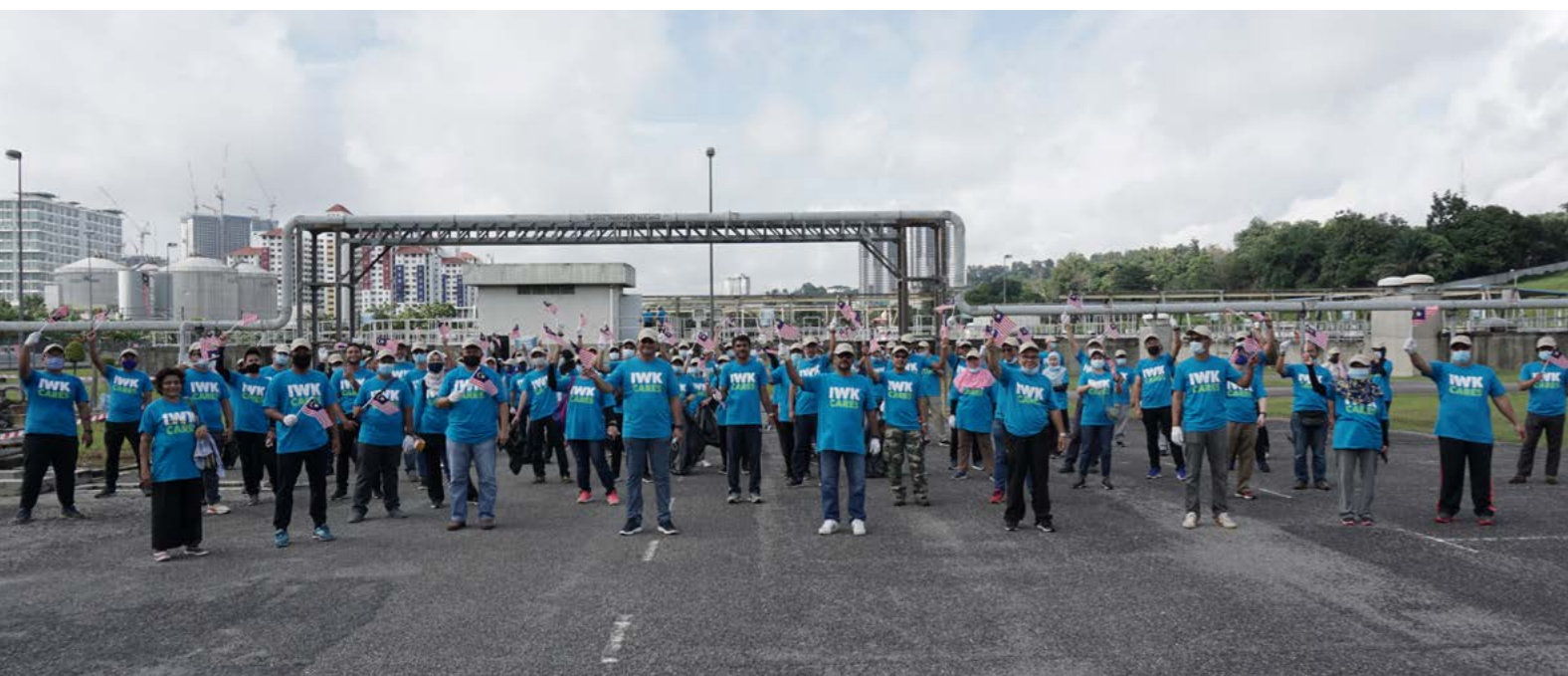
For 2019 and 2020, our costs of providing desludging and connected services to such premises were RM848.68 million and RM872.85 million respectively. What this means is that on an average three-year basis, connected customers pay RM8 to RM12 per month instead of the actual cost of RM17.26 per month. For Individual Septic Tank (IST) customers, they pay RM144 per service instead of the actual cost of

RM263 per m³ per service. This further reinforces the importance of the tariff rebalancing exercise for paying customers so that the returns can be balanced against community needs and future progress to enhance our value contribution.

As the leading provider of wastewater treatment for the nation, we are mindful of our responsibility to address and build awareness of the real work on wastewater and sanitation that IWK does. This is important so that our communities are aware of the vital role of proper wastewater treatment systems in safeguarding public health and wellbeing, and help to drive positive change.

One such initiative was our collaboration with Syarikat Air Terengganu Sdn Bhd (SATU) where we held a bill payment awareness session with over 200 people from the various Terengganu government agencies, including community representatives. Our Kluang operations branch also took the initiative to conduct similar awareness programmes with their local communities in Kluang, Johor.

This agenda will continue to be an ongoing priority for us at IWK as we believe increased awareness can build towards a collective sense of responsibility among the people to play their part in appreciating the importance of proper sanitation of wastewater.



IWK Cares in line with #KitaJagaKita

In responding where we can to the COVID-19 pandemic, we conducted donation activities under our IWK Cares corporate social responsibility (CSR) programme. The IWK Cares initiative was in line and in support of the #KitaJagaKita call to help curb, contain and care for each other in the community during these trying times.

We donated hospital equipment and personal protective equipment (PPE) to the Ministry of Health, emptied out mobile toilets for free at the COVID-19 screening centre in Hospital Sultanah Nur Zahirah Hospital, Kuala Terengganu, and provided rented coolers to the Anika Health Clinic Klang. IWK also donated food supplies to staff at the Chancellor Tuanku Mukriz Hospital, UKM Medical Centre, Taiping Hospital, Shah Alam Hospital, Kuantan Hospital, Sungai Buloh Hospital, Kuantan Hospital, Serdang Hospital, Hospital Universiti Kebangsaan and the Cheras District Police Headquarters, just to name a few. We also donated packed food to media personnel to support them as they continued with their important work of reporting real stories from the frontlines.

We also looked to support the needs of the underprivileged segments of society through the donation of food and rice to several welfare homes and refugee centres registered with the United Nations High Commissioner for Refugees (UNHCR). We donated packets of rice to the Badan Kebajikan Persaudaraan Islam Negeri Melaka (BAKPIS), who in turn, sent these packets to the needy to ease their burden somewhat.



Green CSR

We look at efforts that help to create value and build water and environmental resiliency in our community engagement programmes. We do this to raise the awareness on the need to adopt a more conscientious attitude towards our natural, yet finite, resources.

Since 2018, IWK has been a 'Friends of River' supporter – a national project where likeminded parties and individuals work together in cleaning the rivers around the country. IWK has adopted 21 rivers which are located within the vicinity of our 21 unit offices nationwide so that our local offices could undertake volunteering programmes together with the local communities to clean up the river. We are encouraged that all 21 adopted rivers have been deemed fully cleaned and well-taken care of by the Department of Environment (DOE).

We also launched a new initiative in September 2020 called "Saya Sayang STP" which is to inspire *Indahans* as well as the local communities to creatively use and incorporate environmental-friendly ideas within our STP areas. This would include the use of treated by-products such as bio-solid fertiliser and treated non-potable water for landscaping and cleaning efforts. As more people see the usage benefit of wastewater by-products, we hope

that they will be inspired themselves to consider the tenets of reduce, reuse and recycle which is a critical thinking path towards a circular economy.

We also partnered with the Malaysian Nature Society (MNS) and signed a memorandum of understanding (MoU) to expand the urban forest project *Khazanah Rimba* in Pantai Eco Park, Pantai Dalam, Kuala Lumpur, to further reinforce the potential of by-products reuse in preserving the environment. Partnering with MNS, a well-known body with expertise in the conservation and protection of Malaysia's natural heritage builds great synergy particularly in the social development of sewerage industry and reuse of sewage treatment by-products. Together, both IWK and MNS introduced the "Adopt a Tree" donation campaign, where anyone can donate a tree or more, which will be planted at Pantai Eco Park and maintained by MNS.

IWK is also involved in KASA's National River Trail programme (*Denai Sungai Kebangsaan*), a project that aims to address socio-environmental challenges through the sustainable management and use of nature. The project undertakes to build and preserve a targeted 10,000 km of river trails across the country by 2030, which will also go a long way in helping to mitigate pollution risks and adverse activities to nature.





Our Partners



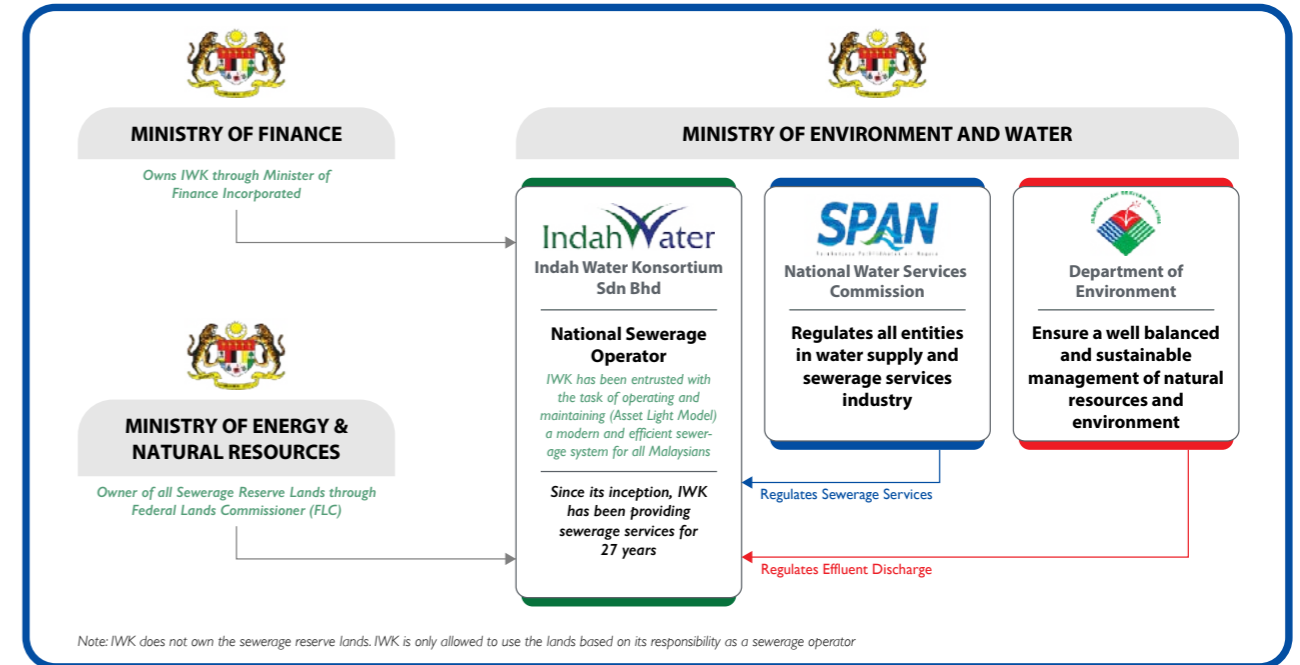
We place importance on building strong relationships with our stakeholders through continuous engagement and open meaningful dialogue. These principles enable us to move progressively towards our efforts to shape a sustainable future.

Our partners in this journey towards providing effective and efficient wastewater treatment services come from a broad range of categories. They include our regulatory authorities and agencies, advisory and consultants, as well as vendors and suppliers.

Our support from the various ministries and government agencies spans efforts to establish and implement the direction forward for Malaysia's sewerage management through policies, laws and regulations. They have been instrumental in guiding, shaping and supporting our directions and efforts. Our stakeholders in this respect are from:



IWK's Corporate Structure and Stakeholders



The media has also been a strong advocate of the efforts of IWK, and is a valuable conduit for us to engage meaningfully with our external stakeholders, the mass public. We engage with traditional and non-traditional media channels to highlight accomplishments, alongside updates on matters that matter to the community.

Engaging with Integrity

Robust corporate governance is key to our sustainable long-term growth. We are committed to achieving our business objectives in an honest, transparent and accountable manner, and sustaining a culture of integrity in everything we do, which is crystallised in our Core Values. To that end, we have in place policies that govern how we interact with our stakeholders, vendors and suppliers. The completion and establishment of our Corruption Risk Management (CRM) and Organisational Anti-Corruption Plan (OACP) 2020-2022 is an attribute that we have always maintained zero tolerance approach towards any form of bribery, favouritism or misconduct in any business dealing involving IWK.

In 2021, IWK has acquired Anti-Bribery Management System (ABMS) MS ISO 37001:2016 for IWK's Corporate Office. ABMS are dependent on both CRM and OACP and is implemented in IWK as part of Integrated Management System (IMS).



Our Partners



Through these merit-based guidance, we appoint and work with competent local contractors selected based on merit and skills for the jobs, for instance, our term contractors for common scope of works such as repair and maintenance of our sewerage treatment plants. These term contractors are appointed based on transparent quotation or tender exercises.

Our commitment to engaging with partners that share the same values of integrity for the community and the environment was demonstrated recently when we suspended a contractor who was found guilty of environmental pollution. The IWK appointed contractor was found to have breached the agreement with IWK when the company's sub-contractor irresponsibly disposed of sewage sludge at a location that was not approved by IWK and the Department of Environment (DOE). We do not take such actions lightly, and will not compromise on upholding the safety of our environment and the people.

Catalysing Local Economic Multipliers

We believe in working with our local vendors, contractors and suppliers for a long-term period of five years or more. This helps the local vendors and contractors see long-term value economically, allowing them to invest and manage their resources, such as manpower, machinery, and facility, in a more productive and effective manner.

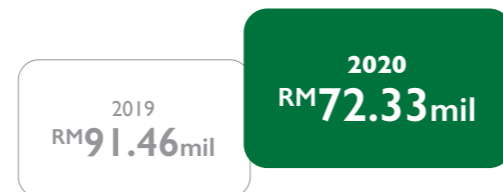
Our vendor selection is based on merit and competency to do the job. This includes job scopes such as maintaining our STPs, grass-cutting and maintaining landscaping, repairing equipment as well as repairing our network of sewerage pipes.

For the period in review, we increased the quantum of term contracts to local suppliers, awarding a total of RM202.7 million in 2020, up from RM193.2 million the year before in 2019. These term contractors are appointed based on a robust and transparent quotation or tender process.

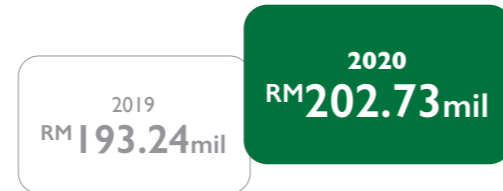
While developing local contractors, we have also built good relationship with international equipment manufacturers. Our values of integrity in our business approach align with their responsible business values as well, as they have opened their local service centres here locally in Malaysia, working with local partners to serve us.

We believe that working together and supporting our local partners are important contributors as economic multipliers for the ecosystem.

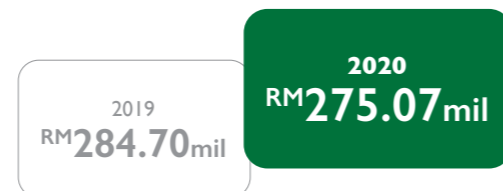
Standard Purchase Order



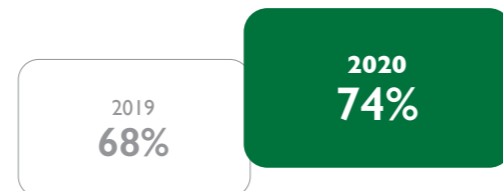
Term Contract Purchase Order



Total



% Term Contract Purchase Order



- Approach to Environmental Sustainability
- Adhering to Environmental Regulations
- Environmental Performance
- Optimal Performance in Sewage Treatment Plants
- Ensuring Compliance in Sludge Disposal
- Increasing Desludging Activities
- Ensure Sewage Pollutant Load at Acceptable Levels
- Reducing Greenhouse Gas Emissions
- Reducing Resource Consumption
- Moving Towards Plants Serving Multi-Purpose Environmental Objectives
- Education and Awareness

Planet

“ IWK is dedicated to protecting the world’s most valuable resource – water – through our processes and operations designed to minimise environmental impact for the collective betterment of our customers, our communities, and our country. As the world moves towards a more circular and sustainable economy, we believe that we are well-placed to contribute meaningfully.








We are committed to doing what really matters: improving lives, advancing communities, and preserving the planet. We operate in a way that respects nature and protects water by upholding high environmental standards through our delivery of clean and safe treated wastewater.

We have a Green Masterplan (GMP) Committee structure in place since 2018 to guide the strategy and action plans. The committee looks at seven key areas company wide, namely trade effluent, bioeffluent reuse, biosolid reuse, renewable energy and energy efficiency, awareness promotion and certification, green procurement and financing, and green HR and office administration.

IWK is aligned to the Ministry of Environment and Water’s (KASA) Environmental Sustainability in Malaysia 2020-2030 Strategic Direction and the Malaysia Green Technology Masterplan (GTMP) 2017-2030 that outlines our contribution towards operational expenditure recovery, the strategic plans for green technology development such as water reclamation, and towards creating a low-carbon and resource-efficient economy.

As we move towards adopting a more circular and sustainable economy, we believe that we are on the right path to contributing towards environmental sustainability, and are committed to be aligned to the UN Sustainable Development Goals (SDGs).

Targets	IWK's Efforts
 <p>Ensure availability and sustainable management of water and sanitation for all</p> <p><u>Target 6.3</u> By 2030, improve water quality by reducing pollution, eliminating dumping and minimising release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally</p> <p><u>Target 6.b</u> Support and strengthen the participation of local communities in improving water and sanitation management</p>	<p>Compliance with effluent discharge standards and water reclamation plant projects as second tap or alternative non-potable water for industrial use, saving quality tap water (potable) for drinking purposes</p> <p>Education and awareness programmes</p>
 <p>Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation</p> <p><u>Target 9.4</u> By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities</p>	<p>Upgrade existing STPs to comply with EQSR 2009 standards. Upgrading of STPs located upstream of water intakes to include green technology features</p>

Targets	IWK's Efforts
 <p>Ensure sustainable consumption and production patterns</p> <p><u>Target 12.4</u> By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimise their adverse impacts on human health and the environment</p> <p><u>Target 12.5</u> By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse</p>	<p>Circular economy reusing waste</p> <p>Support the process of amending the Act to enable expansion of water reclamation plant business</p> <p>Managing resource consumption and the recycling and reuse of by-products</p>
 <p>Take urgent action to combat climate change and its impacts</p> <p><u>Target 13.2</u> Integrate climate change measures into national policies, strategies and planning</p> <p><u>Target 13.3</u> Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning</p>	<p>Strategic alignment of business operations with KASA's Strategic Direction 2020-2030</p> <p>Reducing GHG via implementing green initiatives</p> <p>Awareness and education programmes</p>
 <p>Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p> <p><u>Target 14.1</u> By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution</p>	<p>Participate in preservation of marine life through compliance of treated effluent standards to DOE</p> <p>Participation in Friends of Rivers programme</p>

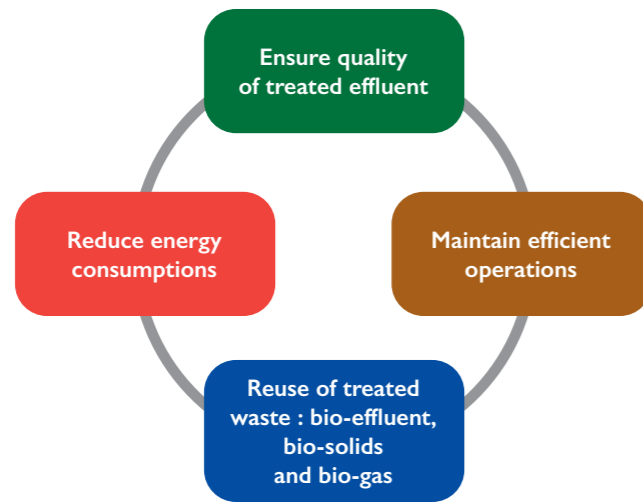


Our Approach To Environmental Sustainability

The increasing population growth, industrialisation and urbanisation are imposing rapidly increasing waste generation and exerting pressures on water resources, contributing to rising water pollution. This has contributed somewhat to the increase in river pollution in Malaysia.

Proper measures of waste mitigation are highly critical to environmental sustainability as irregular treatment and management of waste can be destructive to the environment and act as a breeding ground for many diseases due to the lack of hygiene and sanitation. These can have an adverse impact, not only on nature, but directly on the quality of human life.

Therefore, it is imperative that IWK continues its work to expand access in providing Malaysians a sound wastewater treatment infrastructure while ensuring the environmental impact is proactively managed. Our operations focus on high standards of effluent discharge quality, complying with best practices on sludge handling and disposal, increasing energy efficiency and reducing greenhouse gas (GHG) emissions. We also work to reduce waste by looking at expandable opportunities to integrate a circular economy within our operations.



Adhering To Environmental Regulations

Environmental stewardship is at the core of our operations, it is our promise to our customers and our obligation to our communities and our country. Wastewater management and sewerage services are highly regulated with the aim to protect people and the environment.

Accordingly, IWK's operational activities are subject to extensive, progressive and increasingly stringent environmental regulations, laws and standards. As a custodian of the environment, IWK abides by the Acts, regulations and guidelines to manage our effluent emissions, discharges and the impact on water resources as below:

Water and Sewerage Services	Water and Sewerage Services
Water Services Industry Act 2006 (WSIA)	Environmental Quality Act 1974
Sewerage Services (Charge) Regulations 1994	Environmental Quality (Sewage) Regulations 2009
Water Services Industry (Desludging Services) Regulations 2021	Environmental Quality (Scheduled Wastes) Regulations 2005
Sewerage Services (Authorisation of Collection of Charges) Order 1994	Environmental Quality (Clean Air) Regulations, 2014
Sewerage Services (Authorisation to Demand, Collect and Retain Sewerage Charge) Order 1995	Environmental Quality (Control of Diesel Engines) Regulations 1996
Sewerage Services (Authorisation to Demand, Collect and Retain Sewerage Charge) Order 1996	Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015
Groundwater Quality Standard for Conventional Raw Water Treatment (Drinking Water), Edition 2019 by DOE	Solid Waste & Public Cleansing Act 2007

We also apply and regularly test our internal systems against an Integrated Management System (IMS) to increase efficiency, effectiveness and cost reduction. We also audit our operations through an internal audit team and independent professional auditors, where relevant, to ensure that our operations comply in accordance with the requirements of the ISO standards, and identify gaps so that necessary measures can be taken.

The standards that we apply are:

Standards	Year of Implementation	Year Integrated to IMS
ISO 9001 Quality Management System	2002	2019
ISO 14001 Environmental Management System	2013	2019
ISO 45001 Occupational Health and Safety Management System	2013	2019
ISO 55001 Asset Management System	2018	2020
ISO 50001 Energy Management System	2013	2020
ISO 37001 Anti-Bribery Management System	2020	2020

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

Environmental stewardship is the core of our business — our promise to customers, our competitive advantage and our obligation to the communities in which we operate. How we manage potential environmental impacts and opportunities is a critical element of being a sustainable enterprise. In a business as highly regulated as ours, protecting the environment, maintaining compliance and innovating to improve operations require unwavering focus, expertise, comprehensive systems and internal checks and balances. Our approach has evolved over decades, with a focus on integrating environmental functions into key management systems.

Optimal Performance In Our Sewage Treatment Plants

Operations and Maintenance

Operations and Maintenance (O&M) of IWK's STPs are intended to ensure the plant produces the desired quality of treated effluent and sludge that meets regulations, while maintenance works ensure the plant equipment continues to function efficiently and at optimal levels to achieve the operational objectives. Making sure that the STPs operate efficiently go a long way towards maintaining quality and compliant effluent that can be safely released into the waterways.

	2020	2019	2018	2017	2016
Number of Sewage Treatment Plants under IWK's management	7,003	6,917	6,745	6,690	6,577
Network Pumping Station	1,267	1,228	1,193	1,138	1,077
Connected Population Equivalent (cPE)	26.63 mil	26.17 mil	25.24 mil	24.36 mil	23.92 mil
Periodic plant operations and maintenance frequency (PMF) (% of plants)	98.8%	96.9%	95%	99%	99%

We conduct periodic plant maintenance frequency (PMF) visits, as well as equipment replacement and minor refurbishing works, as required, which is within our ambit. The PMF is determined based on the number of population in the area that utilises the STP, and is reflected in the Operating Procedure Instruction (OPI).

Achieving scores of 98.8% and above are a good indication of the plants' operational efficiency which is essential in contributing to our strong effluent compliance performance.

Optimal Performance In Our Sewage Treatment Plants

Plant Effluent Sampling and Compliance

To ensure consistent and optimal performance, we conduct frequent sampling of the treated final effluent discharge to ensure that it complies with the standards set. The results of the effluent testing are reported to our regulators, the Department of Environment (DOE) and Suruhanjaya Perkhidmatan Air Negara (SPAN).

We strictly adhere to the Environmental Quality (Sewage) Regulations 2009 (EQSR 2009) to monitor and control treated effluent discharge. The sampling frequency is based on the served population, which is the population equivalent (PE) serviced by the plant. Our samples are tested at the five laboratories owned by IWK which are located at Sg. Besi (Kuala Lumpur), Selangor, Ipoh (Perak), Juru (Penang) and Melaka.

	2020	2019	2018	2017	2016
Compliance with effluent discharge standards	97.1%	95.7%	95.7%	96.9%	97.0%
Plant effluent sampling and compliance (No. of STPs sampled)	6,897	6,857	6,681	6,552	6,516
Number of effluent samples tested	101,932*	115,585	113,032	92,868	87,010

* Due to the restricted Movement Control Order (MCO) Phase 1 of the COVID-19 pandemic, we did not conduct effluent sampling between March to May 2020.

Sewer Inspection and Maintenance

The length of sewers maintained by us increases every year as IWK takes over more local authorities' sewerage management. As of end-2020, IWK maintains approximately 20,094 km of sewers.

	2020	2019	2018	2017	2016
Sewer length (km)	20,094	19,663	19,134	19,031	18,348

Given that the sewers and manholes vary from new to 50 years old, frequent inspection is important to mitigate sewer overflows, blockages, collapses and defective sewers. If the sewers overflow, block, collapse or become defective, it can cause several negative environmental, financial and social impacts; for example polluting water courses can cause environmental damage and increase maintenance and repair costs.

Given the vast and continuously growing sewer network, we adopt the approach to ensure between 7% to 10% of total sewer lines are cleaned annually. In this way, every sewer line will be cleaned at least once every 10 to 15 years.

Ensuring Sludge Disposal Is In Compliance To Environmental Standards



Once treated, dewatered sludge or biosolids is disposed at either the municipal landfill or IWK's dedicated sludge disposal sites. To ensure the disposal of biosolids at our dedicated sludge disposal sites conforms to the environmental requirements, we conduct regular environmental monitoring works, which includes monitoring of the groundwater, soil, and/or surface water quality at predetermined intervals as per the conditions set by the Department of Environment (DOE). The quality of groundwater at each site is assessed and monitored based on Groundwater Quality Standard for Conventional Raw Water Treatment (Drinking Water), Edition 2019 by DOE.



Increasing Desludging Activities

What is desludging?

Sludge is a by-product of sewage treatment and needs to be disposed in an environmentally-safe manner. Desludging should be done at least once every three years. Over the years, wastewater treatment system will gradually build a layer of solids or 'sludge' which settles at the bottom of individual septic tanks. Desludging is the process of removing the sludge from the IST, usually with a vacuum truck that pumps out the sludge through the top access lid.



IWK provides desludging services for non-connected sewerage systems such as the Individual Septic Tanks (IST) and pour flush basic sanitation system to customers under IWK's operational area. Desludging of these septic tanks is important to mitigate overflow into drains that could very likely contaminate waterways and cause damage to the environment and community.

systems are not aware of their obligations under this Act. Septic tanks should be desludged once every two years failing which, untreated sewage and sludge solids may be released into rivers causing environmental pollution.

The onus is on owners of premises with septic tanks to be responsible for the maintenance of the septic tanks under the Water Services Industry Act 2006. However, it is unfortunate that even today, many of these owners with IST and pour flush

Our efforts at educating customers, together with SPAN's support, have seen an increase in desludging activities undertaken for the period in review. With the scheduled desludging enforced to all IST customers effective 1 June 2021, we target for these numbers to increase further.



Increasing Desludging Activities

	2020	2019	2018	2017	2016
Scheduled and Demand Desludging	36,964	34,428	33,248	37,947	38,260
Responsive IST Desludging	10,089	9,514	9,003	6,644	6,249
Responsive Pour Flush Desludging	24,575	18,078	18,018	17,774	15,999
Total Desludging Conducted	71,628	62,020	60,305	62,365	60,508

In mid-2020, we expanded our desludging services for fat, oil and grease (FOG) trap for food premise owners. Improper disposal of FOG can clog up sewer pipes and ultimately pollute the waterways. With the FOG trap desludging service by IWK, FOG pollution can be reduced through proper FOG disposal. This is also in line with the Green Technology Malaysia Master Plan 2017-2030 towards environmental sustainability.

Demand Desludging

Request for desludging services for IST by an IWK customer who has an IST at their premise and is located within IWK's operational area where the IST has not been desludged for 24 months or more.

Responsive Desludging

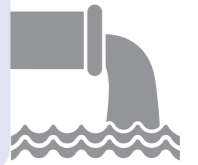
Request for desludging services by the owner / occupant of premises of an IST or privately owned Communal Septic Tanks (CST) located outside the operational area of IWK, or any privately owned sewerage system, as part of routine maintenance services or responsive maintenance services



Ensure Sewage Pollutant Loads Are At Acceptable Levels

What is sewage pollutant loads?

Treated sewage discharges eventually end up in rivers and lakes. It is important to ensure that the sewage pollutant load, which is the amount of a pollutant discharged into a water body, remains within an acceptable level that does not impede the river's self-purifying capabilities.



	BOD (kg/d)		COD (kg/d)		TSS (kg/d)		O&G (kg/d)		Ammoniacal Nitrogen (kg/d)	
	Allowable Load	Actual Load	Allowable Load	Actual Load	Allowable Load	Actual Load	Allowable Load	Actual Load	Allowable Load	Actual Load
2020	311,452	95,347	1,209,910	378,436	575,070	150,718	67,998	23,048	175,861	73,011
2019	329,892	98,620	1,233,666	378,400	591,676	153,276	92,472	20,422	253,438	81,651
2018	322,310	90,673	1,202,900	355,606	576,258	144,175	97,133	17,524	266,895	75,600
2017	315,974	88,594	1,169,611	352,182	559,596	139,084	96,979	18,953	268,859	73,216
2016	331,861	81,043	1,194,280	328,866	562,356	122,384	99,240	17,970	286,391	69,793

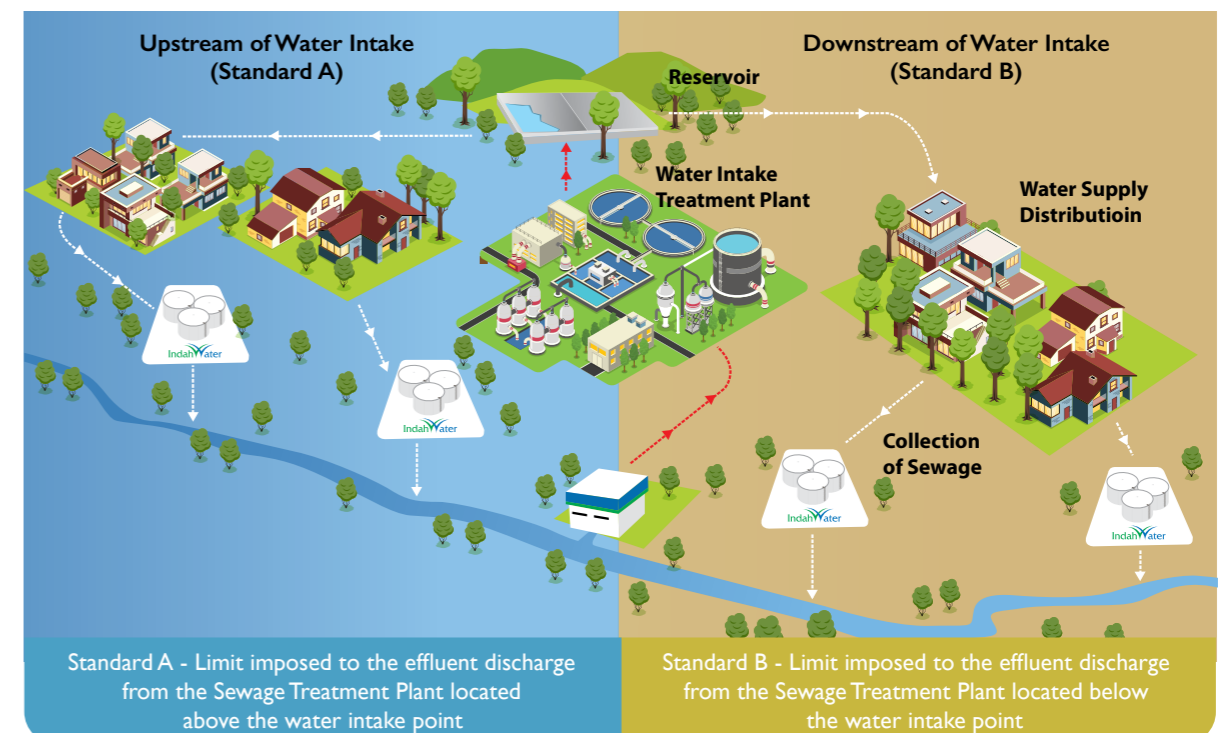
We monitor our sewage pollutant loads as per the parameters provided in the Environmental Quality (Sewage) Regulations 2009 (EQSR 2009). The parameters measured are the Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Chemical Oxygen Demand (COD), Oil and Grease (O&G) and Ammoniacal Nitrogen (NH₃-N).

Our total pollution loading for all the parameters monitored based on our actual plants performance were consistently below the allowable load for both Standard A and Standard B river catchments.

What is Standard A and Standard B?

Standard A refers to upstream of drinking water intake while Standard B refers to downstream of drinking water intake.

Standard Limit A Versus Standard B Limit



Reducing Greenhouse Gas Emissions

The fight against climate change has become one of the most significant challenges of our times. At IWK, we are keenly aware of the impact greenhouse gas (GHG) emissions cause on climate change and are committed to helping contribute to its reduction. We started to disclose GHG emissions from fuel and electricity purchase through our Sustainability Reports since 2009.

We measure our carbon footprint according to a study developed for IWK by Universiti Teknologi Malaysia (UiTM) in 2012. 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 GHG inventory was defined according to the ISO 14064-1:2018 method of classification of the standard. The eight identified emission sources of GHG are categorised as below.

GHG Emissions Classification			
No.	Emission Sources	ISO 14064-1:2018 Emissions Classification	Definition
1	Sewage treatment plant (STP) processes	Direct Emissions	Also referred as Scope 1 in the write up
2	Sludge treatment facilities and disposal site	Direct Emissions	
3	Company vehicles (using either petrol or diesel)	Direct Emissions	
4	On-site back-up electricity production using genset	Direct Emissions	
5	Purchase of electricity for all sewerage facilities and IWK's offices	Energy Indirect Emissions	Also referred as Scope 2 in the write up
6	Employee Business Travel (Air travel); which includes purchase of air flight ticket via travel agent and credit card, controlled by IWK's administrative section	Other Indirect Emissions	Also referred as Scope 3 in the write up
7	Employee Business Travel (Mileage); via fuel consumed by Senior Management vehicles provided with company's petrol card, and mileage claim by staff travelling for business and training purposes	Other Indirect Emissions	
8	Dried sludge or bio-solids disposed at municipal landfill sites	Other Indirect Emissions	



Historical comparison of IWK's GHG emissions

GHG Emission Sources	GHG Scope	2013 (Base Year)	2019 ⁽ⁱⁱ⁾	2018	2017	2016
Sewage treatment plant (STP) processes	Scope 1	225,111	249,539	265,278	255,690	260,150
Sludge treatment facilities and disposal site		6,808	8,912	9,409	10,293	11,320
Company vehicles (using either petrol or diesel)		5,487	4,717	4,354	4,266	4,314
On-site back-up electricity production using genset		66	14	16	39	42
TOTAL SCOPE 1 GHG EMISSIONS		237,472	263,183	279,057	270,288	275,826
Purchase of electricity for all sewerage facilities and IWK's offices	Scope 2	423,351	381,256	374,726	375,198	380,542
TOTAL SCOPE 2 GHG EMISSIONS		423,351	381,256	374,726	375,198	380,542
Employee Business Travel (Air travel)	Scope 3	79	68	43	81	67
Employee Business Travel (Mileage)		3,114	2,530	2,630	2,889	2,892
Dried sludge or bio-solids disposed at municipal landfill sites (i.e. offsite facility)		12,455	72,249	61,505	50,319	42,016
TOTAL SCOPE 3 GHG EMISSIONS		15,648	74,847	64,178	53,289	44,975
TOTAL (SCOPE 1 + 2 + 3)		676,472	719,287	717,961	698,775	701,343

Notes:

- ⁽ⁱ⁾ 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, USEPA, UK DEFRA, GreenTech Malaysia etc.). Therefore, the level of uncertainty linked to this quantification methodology and subsequent calculations is considered low.
- ⁽ⁱⁱ⁾ All of the above GHG data except for year 2019 has been verified by appointed 3rd Party Verifier (i.e. SIRIM QAS International Sdn Bhd)
- ⁽ⁱⁱⁱ⁾ The GHG emission from bio-solids disposal at municipal landfill sites under Scope 3 in year 2019 shows increasing trend since the emission took into account the decay rate for total sludge disposed previously in year 2013 until 2018.
- ^(iv) Verification for year 2020 is currently in progress and will be reported in the next Sustainability Report.



Reducing Greenhouse Gas Emissions

IWK's total GHG emissions in 2019 is 719,287 metric tonnes of CO_{2e}. The main contributors to IWK's total GHG emissions are from purchased electricity for all sewage facilities and IWK's offices, followed by STP processes, which account for about 53% and 35% respectively in 2019. Over 80% of public STPs operated on mechanical treatment systems, which consumes large amounts of energy. Verification for 2020 is currently in progress and will be reported in the next Sustainability Report.

Overall, the total 2019 GHG emissions in CO_{2e} are shown to be higher than the base year (2013) and the previous year. Ideally, GHG emissions sources have shown an increasing trend over the year due to an increase in population and development growth, proportionate to incremental number of public STPs and network pump stations that IWK has taken over.

Further to the expected increase from population and STP's growth, positive changes in the form of emission reductions were seen in the total emission for Scope 1 in 2019 reporting period. This is due to the increasing number of new Para (1) STPs taken over, which have been equipped with ammoniacal removal facility and upgrading and rationalisation programmes of existing old Para (2) and (3) STPs.

Q What is Para 1, Para 2 and Para 3?

The Environmental Quality (Sewage) Regulations 2009 (EQSR 2009) governs the effluent discharge in Malaysia and came into effect in 2009. The sewage treatment plants across Malaysia have different specifications that govern its effluent discharge. In abiding by the EQSR, the different effluent treatments are categorised under Para 1, Para 2 and Para 3 to recognise their different facilities for the effluent treatment standards:

Para 1

refers to sewage treatment plants that are approved and authorised on 10 February 2010, after the Act was reserved

Para 2

refers to sewage treatment plants approved and authorised before 1 January 1999

Para 3

refers to sewage treatment plants approved after the Guidelines for Developers for the Design of Sewage Treatment Plants (vol 4) was issued

For the comparison and monitoring of the company's GHG reduction target achievement, it is most appropriate that the GHG emission is calculated based on population equivalent (PE) served by the company during the respective year (i.e. GHG emissions intensity), as indicated in GHG emissions intensity below.

GHG Emission Sources	GHG emissions intensity				
	2013 (Base Year)	2019	2018	2017	2016
Total IWK's Corporate GHG emissions (CO _{2e} Emission in Metric Tonne)	676,472	719,287	717,961	698,775	701,343
Total PE served from Public STPs	20,612,443	26,166,098	25,240,867	24,358,564	23,917,369
Total IWK's Corporate GHG emissions per PE (CO _{2e} Emission / PE in Metric Tonne) - GHG Emission Intensity	0.0328	0.0275	0.0284	0.0287	0.0293
Percentage in Reduction (%) from Base Year (2013)	N / A	13.16%	13.33%	12.59%	10.67%

Reducing Resource Consumption

Electricity Consumption

IWK's plant operations consume significant quantities of energy, especially electricity. This has been an ongoing challenge to us as over 80% of public STPs employ mechanical treatment systems which consume high amounts of energy. Given that over the years, IWK has taken over various STPs with different build mechanisms that have yet to be standardised to efficient modes due to the finite availability of capital expenditure, energy consumption remains on an uptrend.

These initiatives to conserve electricity, where possible, have allowed IWK to achieve a savings of RM8.5 million in 2019 and RM20.9 million in 2020. The savings was achieved due to plant optimisation efforts carried out for both manned and multiple plants. Manned plants are usually big plants serving a population of more than 20,000 PE, and are manned for long hours by IWK staff and contractors stationed at the STP to carry out operations and management (O&M). Multiple plants are smaller plants that serve a PE of less than 20,000. O&M for multiple plants are carried out by IWK's staff and/or contractors on a regular visitation schedule.

Results on IWK's Total Power Consumption

	2019	2018	2017	2016
Electricity Consumption (kWh x 1Mil)	549.71	540.29	540.92	548.63
CO ₂ Emission (Metric Tonne)	381,256	374,726	375,198	380,542

Fuel Consumption

We calculate fuel consumption from fuel purchases made for desludging tankers, jetting vehicles, box vans and other IWK-owned vehicles throughout our services area. In 2018, we undertook a process and cost optimisation exercise for the multiple plants. With this study, we implemented a three-man team called the 3 Combined Team (3CT) which comprised an IWK supervisor and two external contractors/operators. This optimised team was given the support to monitor a number of multiple plants, with each team managing approximately 20 to 30 plants each. This required us to acquire an additional 36 vehicles in 2019 compared to 2018. Consequently, fuel consumption in 2019 increased as a result of the increased vehicles and travel needed in the course of monitoring the plants.

Results on IWK's Fuel Consumption

YEAR	Type of Fuel	Fuel Consumption (Litres '000)	CO ₂ Emission (Metric Tonne)	TOTAL CO ₂ Emission (Metric Tonne)
2019	Petrol	187	430	4,717
	Diesel	1,602	4,287	
2018	Petrol	134	308	4,354
	Diesel	1,512	4,046	
2017	Petrol	88	204	4,266
	Diesel	1,518	4,062	
2016	Petrol	88	203	4,313
	Diesel	1,536	4,110	

Water Consumption

We look to conserve our water consumption and rely on treated water that is provided by the respective State's water supply system as well as recycled non-potable water from our plant effluent operations and harvested rainwater. The recycled non-potable water is used for general cleaning and landscaping purposes. Recycled non-potable water provides an environmentally sound means of effluent disposal.

Q What is non-potable water?

Non-potable water is water that is not of drinking water quality, but which may still be used for many other purposes such as cleaning, industrial use, landscaping, etc.

However, while we endeavour to reduce our water consumption, the increase in the numbers of STPs and pipelines taken over by IWK continues to see an uptrend in water consumption. Nevertheless, our water consumption is at well-managed levels and its increase is a direct result of the increase of STPs and pipelines under IWK's purview.

Water consumption at IWK STPs



Reducing Resource Consumption

Adopting circular economy to reduce resource impact

We are also on the path of adopting a circular economy approach as it is sustainable on resource optimisation in the long run. We look to applications that can utilise wastewater treatment by-products such as bio-effluent (non-potable water), bio-solids (fertiliser) and bio-gas (electricity source).

Bio-effluent



- Alternative source of water for non-potable applications for industrial, environmental and landscaping use
- Frees up raw water resources

Bio-solids



- Can be used as soil conditioners and fertilisers to enhance non-food crop and plant growth
- Can be used to generate renewable energy
- Projected increase in sludge production can enable expansion of organic products by more people

Bio-gas



- Can be used as a renewable energy source
- Six IWK STPs are capable of producing 10,000m³/day, potentially generating 20MWh/day

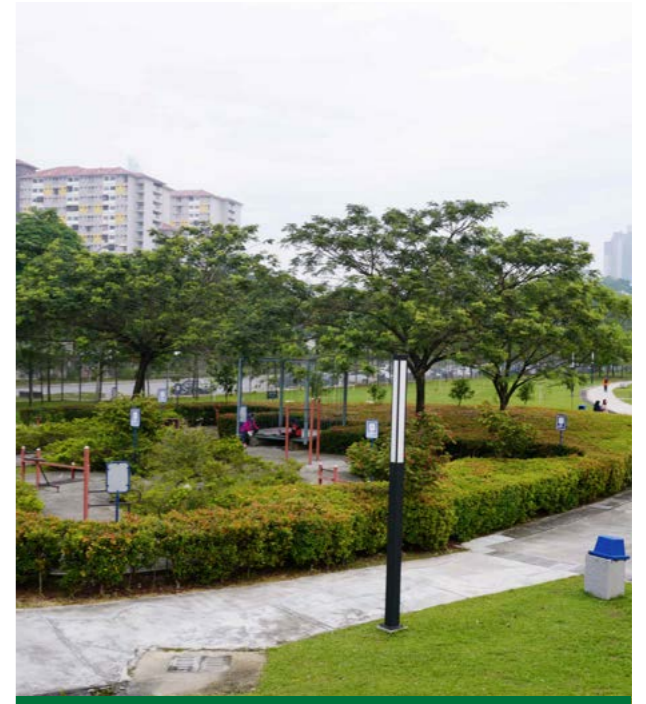
Moving Towards Plants Serving Multi-Purpose Environmental Objectives

We are moving towards equipping our plants with technologically advanced environmentally sustainable features. Our flagship Pantai 2 Regional STP in Kuala Lumpur applies green technology elements and can accommodate up to 1.423 million population equivalent.

This plant also incorporates the Advance Anaerobic-Anoxic-Oxic (Advance AAO) technology, contributing to environmental cleanliness and is more consumer-friendly. The Advance AAO technology can treat and produce higher standards of effluent quality, efficient disposal of pollutants such as nitrogen and phosphorus that exist in high concentration, and a more stable operation.

It also consists of systems that harvest rainwater for cleaning purposes, reuses bio-effluent for cleaning and landscaping purposes, and reuses bio-gas and solar panels for electricity generation to support plant operation as a green technology initiative.

Over and above its green technology capabilities, the plant is also used as a local recreational area called Pantai Eco Park. Spanning a 12-hectare area excluding the STP, the Pantai Eco Park is equipped with amenities such as a community hall, jogging track, futsal court, football field and badminton court, and fosters community building.



Education And Awareness Programmes



Society's growing concerns regarding the safety of Malaysia's waterways, its rivers and lakes and their potential impact on people's health and the environment, underpins our efforts to bring greater awareness on the importance of sanitation and wastewater treatment services.

To that end, we work to disseminate environmental education and raise awareness to instill knowledge on the importance of proper sewage treatment for the greater health of people and the planet. We do this through a variety of channels, from on-ground (albeit limited due to the pandemic), social media and media work. In 2019 and 2020, IWK organised and hosted a total of 176 community engagement, CSR and observation tours.

While we are seeing traction in our educative efforts, the pace of understanding from the communities are not as expected. This is measured against the number of new customers connected to the sewerage system, and the numbers of premise owners with ISTs and pour flush proactively requesting desludging services.



PROGRESS



- Leading the Drive for Innovation
- Collaborating for Purpose
- Progressing for the Future

Progress

“ IWK is committed to leap forward in our aspiration to bring 'New Life For Water' through innovation and collaboration to respond to today's rapidly changing landscape for a better, and more sustainable future tomorrow. We do this to improve the quality of people's lives and the environment.



Our journey towards building a sustainable base for wastewater management is not just a corporate priority at IWK but a pressing need to engage with the dynamics of a changing world. Our core value of 'Knowledge' underscores this intent to build around a culture of innovation, collaboration, efficiency and sustainability.

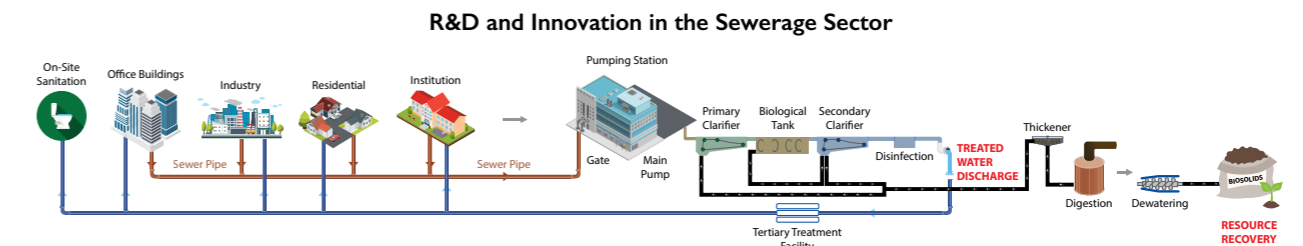
Targets	IWK's Efforts
<p>7 AFFORDABLE AND CLEAN ENERGY</p> <p>Ensure access to affordable, reliable, sustainable and modern energy</p> <p><u>Target 7.3</u> By 2030, double the global rate of improvement in energy efficiency</p>	<p>Advancing resource recovery and waste-to-wealth efforts for a circular economy</p>
<p>17 PARTNERSHIPS FOR THE GOALS</p> <p>Strengthen the means of implementation and revitalise the global partnership for sustainable development</p> <p><u>Target 17.6</u> Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism</p>	<p>Advancing innovation in research and development through Indah Water Research Centre (IWRC)</p>
<p><u>Target 17.9</u> Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the sustainable development goals, including through North-South, South-South and triangular cooperation</p>	<p>Advocating knowledge and skills enhancement through capacity building through IWK's Asian Sewerage Training, Research and Innovation Centre of Excellence (ASTRICE)</p>
<p><u>Target 17.16</u> Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries</p>	<p>Collaborations with likeminded partners to push for sustainable wastewater management</p>

Leading The Drive For Innovation And Capacity Building

IWK is committed to innovation and leveraging research and development in developing by-products from wastewater treatment that support a recirculation of resources. In all our businesses, we continue to develop sustainable products that add value to our customers and our environment.

This is in line with the Green Technology Master Plan Malaysia (GTMP) towards a low-carbon and resource-efficient economy. IWK's services and operations falls under the Water Sector ambit which has the set target of achieving 100% sludge (bio-solids) to be reused as fertiliser and electricity generation, and 33% treated effluent to be recycled by 2030.

IWK's efforts in leveraging wastewater by-products into usable resources have received recognition at the ASEAN Energy Awards (AEA) 2020. This award is the highest recognition bestowed on Southeast Asia public and private companies for their contribution to energy development in the ASEAN regions.



R&D Opportunities on-Site Sanitation Unit	R&D Opportunities in Collection System	
<ul style="list-style-type: none"> Eco-toilet for Nutrient Recovery Struvite Fertiliser from Urine Composting Toilet Automated/Independent Individual STP Waste to Electricity Toilet Waterless Toilet Nano Membrane Toilet 	<ul style="list-style-type: none"> Sewage Load per Capita Study Water Characterisation Study Sewage Inflow & Infiltration Study Development of In-pipe Treatment Exploration for Anti-corrosion Pipes Development of Sewer Inspection Techniques Development of New Sewer Pipeline Materials Development of Innovative Sewer Rehabilitation Methods Energy Audit Study for Pumping System Methods to Trace & Track Abnormal Contaminants Evaluation of Gas Emission in Sewers Identifying Sensors as Smart Materials to Track Sewer Line Performance 	
R&D Opportunities in Sewage Treatment System	R&D Opportunities in Wastewater Reuse	R&D Opportunities in Sludge Management and Reuse
<ul style="list-style-type: none"> Development of Screening & Grit Removal Systems Development of Oil & Grease Removal Systems Enhanced Biological Treatment Technology Application of Local Effective Microbes Use of Biochemical Products Effectiveness of Energy Saving Devices Development of Local and Novel Sedimentation Technology Development of Low Sludge Production Systems Development of Hybrid Biological Systems Application & Development of Nano-based Treatment Technologies Harvesting Energy from Wastewater Nutrient Removal System Mathematical Modelling & Computer Simulation 	<ul style="list-style-type: none"> Development of Novel Membrane Technology for Wastewater Reclamation Use of Recycled Water for Industrial & Landscaping Applications Recycled Water for Ground Water Recharge Sustainable Water Reuse Water Reuse Assessment Microbial Study for Water Reuse Application Public & Social Perception Study Market & Economic Study 	<ul style="list-style-type: none"> Odour Treatment Methods & Technology Odour Monitoring Biosolids Composting & Fertiliser Production Biosolids as Soil Conditioner Biosolids as Building Material Biosolids Gasification & Electricity Generation Biosolids as Alternative Biofuel Source Biogas to Electricity Anaerobic Digestion Technology Public & Social Perception Study Market & Economic Study Development of Novel Biological Thickening & Dewatering Methods Microbial Study of Biosolids for Reuse Cost Benefits Analysis of Management Options for Biosolids Reuse

Leading The Drive For Innovation And Capacity Building

Recirculation of Resources

At IWK, we focus on the renewable energy path, turning waste by-products into bio-effluent, bio-solids and bio-gas. Reuse of wastewater is essential to promote an awareness of sustainability and circular consumption. Treated effluent can be used for multiple purposes in municipal, industrial and agricultural industry.



What is sewage?

Sewage is the wastewater from bathrooms and toilets from households and commercial premises. It is also referred to as sewage or brown water and can carry disease and bacteria, both of which could be harmful.

After sewage undergoes treatment at IWK's STPs, the treated water can be reclaimed for reuse.

This reclaimed water or recycled water can be used as an alternative water source to meet non-food demands by industries, businesses and even households. Our pilot trial with an ultrafiltration and reverse osmosis system has demonstrated that it is technically viable to produce high-grade industrial water from bio-effluent.

Treated water can be used for irrigating landscaping and horticulture. In our use of treated water for the purpose of watering plants, we have seen tremendous success in the growth of plants compared to piped water.

The treated non-potable water is a good alternative for industrial use such as in the textile industry, which uses a lot of water, and

for industrial cooling purposes. We ourselves reuse bio-effluent in our larger STPs as internal non-potable water as cooling water for the heat exchanger of a chiller system.

IWK's STPs can produce approximately 5,092 MLD of bio-effluent monthly. Currently, we are working closely with Pengurusan Air Selangor Sdn Bhd (Air Selangor), the water supply company for Selangor state, to produce non-potable water from bio-effluents treated by IWK to be used as an alternative water source for the industrial and non-food sectors in Klang Valley. By doing so, commercial industries in Klang Valley will be assured of non-potable water supply but need no longer rely on treated, good quality drinking water which helps the state reserve its margin of treated, drinkable water for the community in meeting rising demands.



IWK's STPs produce about 120,000 tonnes of sludge annually. Sewage sludge is the residue that is produced as a by-product of wastewater treatment.

To move towards the GTMP target of achieving 100% reused sludge (bio-solids), we are advocating the use of bio-solids as fertilisers for land application for non-food crops. Bio-solids are rich in organic matter with reasonable amounts of nitrogen (N), phosphorus (P), potassium (K), trace minerals, and micronutrients. This makes it a good alternative for soil conditioner, compost and fertiliser.

Studies conducted by IWK in collaboration with universities have shown that various plants have benefited tremendously in terms of growth and health from bio-solids as fertilisers such as in rubber trees. This points to the efficiency of bio-solids as fertiliser for non-food crops.

Due to its good fuel properties with a heating value from 15,000 kJ/kg to 19,000 kJ/kg, bio-solids can be converted to solid fuel material for co-firing energy and building materials such as clay and cement.



Bio-gas is produced in IWK's STPs using the Anaerobic Digester system. Bio-gas is an alternative source of renewable energy that can generate electricity. At IWK, there are six STPs equipped with the Anaerobic Digester system that is capable of producing 10,000 m³/day, with the potential to generate 20 MW hours/day.

The sludge is treated in the anaerobic digesters to reduce the volatile solids for more stable sludge prior to disposal. In 2020, the six STPs with the Anaerobic Digester system produced an average of 2,000 Nm³/d of bio-gas.

IWK has been utilising the bio-gas produced from our STPs as a source of renewable energy for electricity.

Indah Water Research Centre (IWRC)

Since 2012, we have a dedicated research facility, the Indah Water Research Centre (IWRC), that underscores our commitment towards active research, innovation and capacity development. As a priority, we actively look at research and development of sewage treatment process, biosolids treatment process and recycling technology for potential use and recycle of by-products from our sewage treatment plant processes.

Although disuse materials occur after the wastewater treatment, it must be considered first so that the end-to-end process is maximised for better efficiency to extract what is needed for reuse purposes.

Our well-equipped analysis laboratory performs physical, chemical and microbiology-related work utilising a range of rapid testing methods for wastewater or sludge analysis. The microbiology laboratory supports research and studies on microbial product development and microbiological/microscopic analysis such as total plate count, on coliform and E.coli, among others.

Our pilot testing laboratory is dedicated to in-house studies using pilot lab-scale reactors to simulate plant conditions as well as to develop solutions and innovations in sewage treatment. This is to ensure that our plants are always kept at optimal efficiency levels, as well as utilise research to develop viable outcomes from the end-to-end sludge and wastewater treatment process.

Our microbial production unit conducts microbe isolation and cultivation work that is capable of producing large-scale microbe products for various applications such as nutrient removal, fat, oil and grease (FOG) degradation, effective aeration for cost optimisation and reduce dependency on the chemical treatment.

We also carry out intensified, practical and field trials at our pilot plants at IWRC and Titiwangsa 2 RSTP to run demonstrations and field tests on wastewater and sludge treatment technologies. We recently carried out beneficial applications of bio-solids for agri-related needs such as planting media mix, fertiliser, biopellets, nurseries and planting demonstration areas, biopellet fertiliser unit and sludge drying facility.

Asian Sewerage Training, Research and Innovation Centre of Excellence (ASTRICE)

ASTRICE fulfils the role of developing human capital for the wastewater industry in order to elevate standards while building talent capacity. The centre provides excellent training facilities with experienced trainers and forward-looking programmes.

The training programmes done in collaboration with international and local experts aim to prepare talents to meet the rigorous demands placed on wastewater quality by giving them the skills, knowledge and training they need to ensure the safety and proper management of our water supply.

Using Black Soldier Fly Larvae (BSFL) as essential decomposers

- One of our research endeavours include the use of Black Soldier Fly Larvae (BSFL) in our bio-waste treatment. The flies play a role in decomposing waste, breaking down organic substrates and returning nutrients back.
- The treated waste, when used as fertiliser, contains less chemicals than conventional fertilisers. It is also able to slow-release essential nutrients and minerals from organic matters in addition to NPK (nitrogen-phosphate-potassium).
- The method of breaking down waste into fertiliser can offer reliability of resources and quantity, and is a more cost-efficient option compared to organic fertilisers.
- Black Soldier Fly Larvae (BSFL) protein is a sustainable protein that is similar to that of fishmeal, and is recognised as an alternative source of protein for livestock feed.
- Frass is a leftover product from growing BSFL including larvae waste, exoskeleton sheds and remaining feed ingredients. This all-natural fertiliser contains a dense blend of NPK, growth stimulants and minerals.

Dr. Afifa Safira A Gani Manager, Asset Management Unit

Dr. Afifa has always been proud to introduce herself as an IWK Engineer, having worked with the sewerage management company for over 13 years. In achieving the principles of IWK which is to ensure clean water and a clean environment, she finds it rewarding to shape the minds of young engineers to have the same motivation as IWK.

She is inspired to use her role in IWK to contribute to the good of Malaysia and its environment. Especially during this pandemic, the importance of managing the unseen has motivated her to work harder each day so that Malaysia can have a good sanitation system.

As someone who is passionate about research and developing new ideas, Dr. Afifa finds IWK to be conducive to helping her sharpen her skills to be more analytical, creative and resourceful. IWK also teaches her that it is important to ask questions because the best argument is not to win in a disagreement but to gain the best solution.



Collaborate For Purpose

We adopt a partnership model, where relevant, to drive collective engagement towards shared goals. One of the main highlights for the year in review was our partnership with Syarikat Air Terengganu Sdn Bhd (SATU) in our joint-billing initiative for customers with connected sewerage services that was implemented in March 2020. We will continue with ongoing discussions with other states on the possibilities of joint-billing.

We also embarked on a joint venture with Pengurusan Air Selangor Sdn Bhd (Air Selangor) on a sustainable water recycling initiative. The collaboration will be carried out by Central Water Reclamation Sdn Bhd (Central Water), a special purpose vehicle (SPV) company that will be 60% owned by Air Selangor and 40% owned by IWK. The bio-effluent treated at IWK's treatment plants will be further treated at Central Water's treatment plant that is equipped with advanced technologies, to produce non-potable treated water that can be safely used for industrial purposes. Through this joint venture, Central Water commenced management of the water reclamation plant (WRP) at the Setia Alam Regional Sewage Treatment Plant (RSTP) SAM163 as of 1 May 2021.

The implementation of this joint-bill initiative is a first step towards the Government's aspiration for integrated water and sewerage services in the future. Furthermore, the joint-billing initiative provides customers with a greater degree of convenience as they would only have to make payment through one bill only. We will continue to engage with other partners to collaborate in efforts towards integrating wastewater and water services.

As the world becomes more digital, IWK strives to cultivate digital convergence through its communications and payments channels. We partnered with Razer Inc's financial-technology (fintech) arm, Razer Fintech, to enable customers to make their bill payments at 7-Eleven and 99 Speedmart outlets nationwide. The partnership allows customers to make offline payments for their IWK utility bills through Razer Merchant Services' (RMS) point-of-sale (POS) systems, terminals and web-based interfaces.

In the spirit of scientific discovery towards developing innovative solutions focusing on treatment process and biotechnology, revolutionary product and technology commercialisation, we work in strong collaboration with research institutions and like-minded organisations. These collaborations centre on applied research activities so that we can develop immediate operational uptake and commercialisation to improve the sewage treatment capabilities and field applications for efficient operation, rapid reaction and solutions, cost effective, energy neutral and viable alternative revenue streams.

Over the years, we have collaborated with several universities and research institutions on various research studies. In 2020, we collaborated on 33 projects ranging from research and development to piloting trial programmes, while in 2019, we collaborated on 29 projects.

We have also inked memorandums of understanding with several institutions of higher learning to collaborate on areas of advancing the sewerage management industry.

Academia Partner

	Leveraging Nanotechnology for innovation and development in wastewater treatment projects
	Leveraging Biotechnology Application in Wastewater and Environmental Technology
	Joint research related to the wastewater and sewerage industry
	Explore use of bio-solids on forestry, resource recovery, alternative fuel source, advanced treatment technology, and cost-effective technology for remote sludge treatment and sludge drying
	Exploring knowledge and advocacy programmes on sewage by-products
	Advanced treatment technology, energy efficiency, renewable energy, IR4.0, Internet of Things, resources recovery, environmental, educational and capacity building



Ms. Khor Bee Chin
Senior Manager, Technology & Innovation Section



Ms. Khor has been with IWK for the past 22 years. She currently leads the Technology & Innovation Section that oversees the research and development team of the Indah Water Research Centre (IWRC). Over the years, she has had the opportunity to work on various scopes including engineering design, standard and specification development, treatment process troubleshooting, environmental management and QMS ISO9001.

Through IWK's support for creative thinking, Ms. Khor feels empowered to think outside the box to find the best solutions. IWK's support for creative thinking has also been facilitated through the annual Creativity and Innovation Programme (CIP), which has spurred many creative ideas and solutions from *Indahans*.

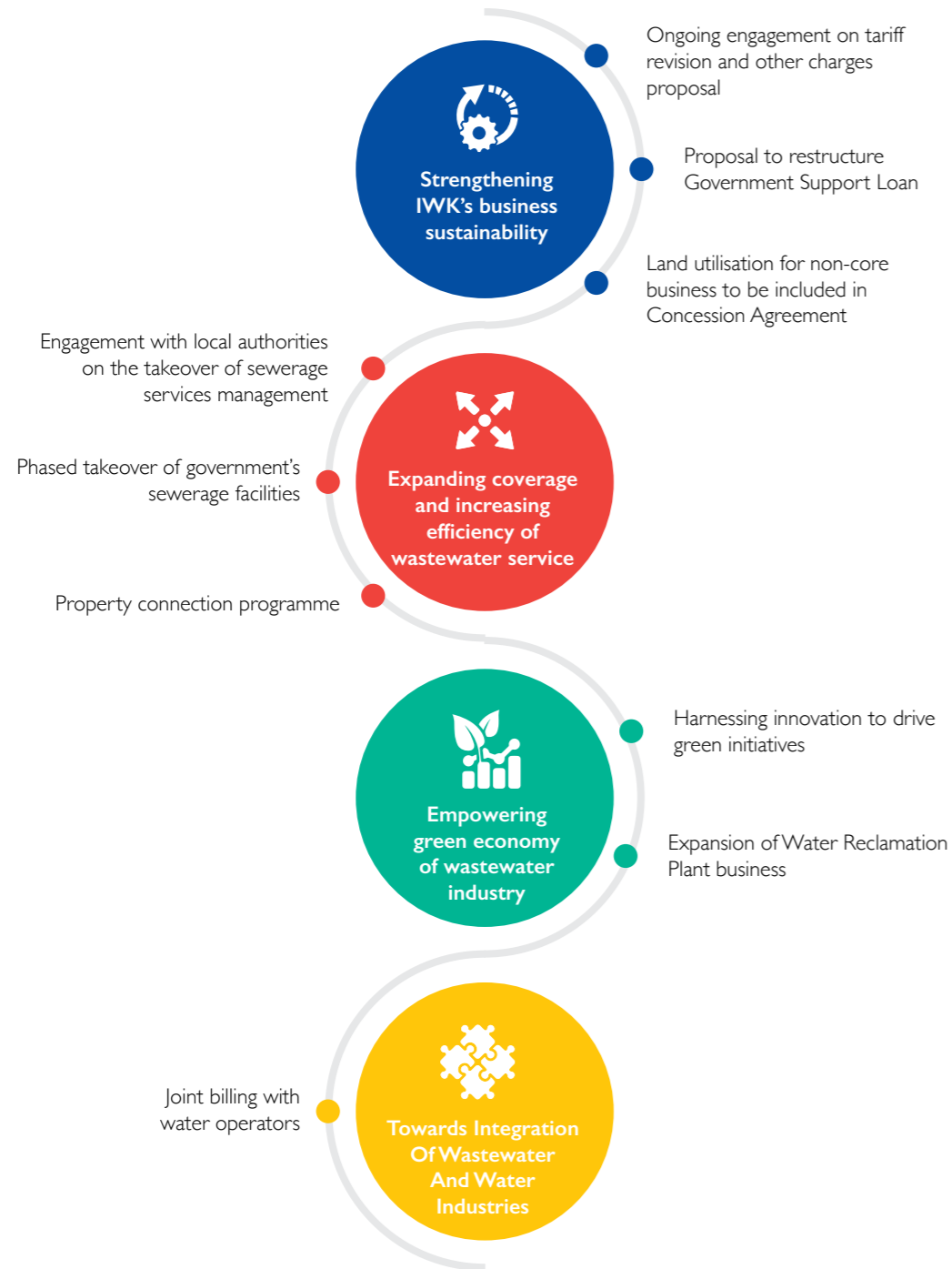
She attributes the friendly working culture where each individual is respected as a conducive environment for her to thrive.

Progressing For The Future

For the coming years, we will continue with the implementation of the BP2019-2023 that covers four strategic focus areas spanning a list of broadly identified initiatives.

As we look to progress ahead, sustainable innovation practices and solutions are required for us at IWK to respond to the changing environment. That is why sustainability has been deeply carved into our strategy and operational intents so that IWK can continue to create long-term value for the People and the environment.

Many of the challenges that we face, and will face, will require holistic solutions underpinned by innovation, research and development, as well as the collaboration between multi-stakeholders and interdisciplinary approaches.



New Life for Water

ABBREVIATIONS/ ACRONYMS

3CT	: 3 Combined Team	HIRADC	: Hazard Identification, Risk Assessment and Determining Control	SAMB	: Syarikat Air Melaka Berhad
3D	: Dirty, Dangerous and Difficult	HSMS	: Health and Safety Management System	SATU	: Syarikat Air Terengganu Sdn Bhd
AAO	: Anaerobic-Anoxic-Oxic	HAZOP	: Hazard and Operability	SCC	: Sewerage Capital Contribution
ABMS	: Anti-Bribery Management System	HR	: Human Resource	SDG	: Sustainability Development Goal
AEA	: ASEAN Energy Awards	IMS	: Integrated Management System	SIRIM	: SIRIM Berhad
Air Selangor	: Pengurusan Air Selangor Sdn Bhd	IPCC	: Intergovernmental Panel on Climate Change	SMS	: Short Messaging Service
AP	: Authorised Person	IR4.0	: Industrial Revolution 4.0	SPAN	: Suruhanjaya Perkhidmatan Air Negara (National Water Services Commission)
ASEAN	: Association of Southeast Asian Nations	ISO	: International Organisation for Standardisation	SPV	: Special purpose vehicle
ASTRICE	: Asian Sewerage Training, Research and Innovation Centre of Excellence	IST	: Individual septic tank	SR2019/2020	: Sustainability Report 2019/2020
BAKPIS	: Badan Kebajikan Persaudaraan Islam Negeri Melaka	IWA	: International Water Association	SS	: Static security
BARC	: Board Audit & Risk Committee	IWK	: Indah Water Konsortium Sdn Bhd	STP	: Sewage treatment plant
BOD	: Biochemical Oxygen Demand	IWRRC	: Indah Water Research Centre	TSS	: Total Suspended Solids
BP2019-2023	: Business Plan 2019–2023	JPP	: Jabatan Perkhidmatan Pembetungan	UKAS	: Public-Private Partnership Unit
BSFL	: Black Soldier Fly Larvae	KASA	: Ministry of Environment and Water	UK DEFRA	: UK Department for Environment, Food and Rural Affairs
CA	: Certifying Agency, also Concession Agreement	KIW	: Kelab Indah Water	UN	: United Nations
CCTV	: Closed Circuit Television	KPI	: Key performance indicator	UNHCR	: United Nations High Commissioner for Refugees
CEO	: Chief Executive Officer	KWSP	: Kumpulan Wang Simpanan Pekerja (Employees Provident Fund)	UO	: Unit office
Central Water	: Central Water Reclamation Sdn Bhd	LA	: Local Authority	USEPA	: United States Environment Protection Agency
CePSTPO	: Certified Environmental Professional in Sewage Treatment Plant Operation	LoS	: Level of Service	UTM	: Universiti Teknologi Malaysia
CIP	: Creativity and Innovation Programme	MACC	: Malaysia Anti-Corruption Commission	UTP	: Universiti Teknologi Petronas
CHPP	: Combined heat power plant	MARIM	: Malaysian Association of Risk and Insurance Management Malaysia	UiTM	: Universiti Teknologi MARA
cPE	: Connected Population Equivalent	MCO	: Movement control order	UNIMAP	: Universiti Malaysia Perlis
COD	: Chemical Oxygen Demand	MJIIT	: Malaysia-Japan International Institute of Technology	WHO	: World Health Organisation
COVID-19	: Novel Coronavirus Disease 2019	MLD	: Million litres per day	WRI	: World Resources Institute
CPR	: Cardiopulmonary resuscitation	MNS	: Malaysian Nature Society	WRP	: Water reclamation plant
CSR	: Corporate Social Responsibility	MOF	: Kementerian Kewangan (Ministry of Finance)	WSIA	: Water Services Industry Act 2006
CST	: Communal septic tank	MOU	: Memorandum of understanding	WST 2040	: Water Sector Transformation 2040
DCA	: Debt collection agency	MS	: Management System		
DESIGN	: Designing Elegant Solutions for Innovation, Growth and Navigation	MSC	: Malaysian Skills Certificate		
DOE	: Department of Environment	MWA	: Malaysian Water Association		
DOSH	: Department of Safety and Health	NGO	: Non-government organisation		
DSD	: Department of Skill Development	NPK	: Nitrogen-phosphate-potassium		
EAP	: Education Assistance Programme	NPS	: Network Pump Station		
EBITDA	: Earnings Before Interest, Tax, Depreciation and Amortisation	O&G	: Oil and Grease		
EES	: Economic, Environmental and Social	O&M	: Operations and Maintenance		
EIA	: Environmental Impact Assessment	OACP	: Organisation Anti-Corruption Plan		
EnMS	: Energy Management System	OHSMS	: Occupational Health & Safety Management System		
EQSR 2009	: Environmental Quality (Sewage) Regulation 2009	OPI	: Operating Procedure Instruction		
ERM	: Enterprise Risk Management	PE	: Population Equivalent		
ESS	: Electronic security systems	PED	: Planning and Engineering Department		
F&B	: Food and beverage	PMF	: Plant maintenance frequency		
Fintech	: Financial technology	PPE	: Personal protective equipment		
FOG	: Fat, oil and grease	PO	: Purchase Order		
FoR	: Friends of Rivers	POS	: Point-of-sale		
GHG	: Greenhouse gases	PTW	: Permit to Work		
GMP	: Green Masterplan	R&D	: Research and development		
GSL	: Government support loan	RC	: Reporting centres		
GTMP	: Green Technology Master Plan 2017-2030	RMS	: Razer Merchant Services		
		RSTP	: Regional sewage treatment plant		

Acknowledgements

The SR2019-2020 Sustainability Report Committee:

No.	Committee Members	Department
1	Ayu Suriawaty Bahkia	Human Capital & Administration Department
2	Azzura Mohd Amin	Customer, Billing & Collection Department
3	Choe Sew Ho	Operations & Maintenance Department
4	Devi Apalandu	Customer, Billing & Collection Department
5	Gan Chee Choy	Capital Works Department
6	Idrus Bin Majid	Procurement Department
7	Izzati Tajuddin	Legal Department
8	Joseph Cheong	Corporate Communications Department
9	Khor Bee Chin	Planning & Engineering Department
10	Lina Ong Chiew Yin (Project Manager)	Corporate Planning Department
11	Lydia Tan Sook Chin	Finance Department
12	May Lim	Corporate Planning Department
13	Mohammad Shakir Ariff Mohd Shaifuddin	Corporate Planning Department
14	Nooreliza Che Elies	Corporate Planning Department
15	Norshamsinar Mohamad	Integrity & Governance Unit
16	Raja Muhamad Azryn Shah Raja Iskandar	Operations & Maintenance Department – Desludging Business Unit
17	Siti Salwany Ban	Internal Audit & Risk Department
18	Wong Mew Ling	Corporate Planning Department

Distribution and feedback

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

Corporate Communications Department

Indah Water Konsortium Sdn Bhd
No. 44, Jalan Dungun, Damansara Heights,
50490 Kuala Lumpur

comms@iwk.com.my

T : +603 2780 1100

F : +603 2780 1101

www.iwk.com.my

