



TOWARDS  
SUSTAINABLE  
WATER MANAGEMENT

SUSTAINABILITY REPORT  
**TWENTY TWENTY**

# INSIDE THIS REPORT



## COVER RATIONALE

### TOWARDS SUSTAINABLE WATER MANAGEMENT

The sustainable use and management of water is vital for the wellbeing of society. As living standards improve and economic development increases, the growing need for clean water is crucial. As the largest water operator in Malaysia, Air Selangor is responsible for ensuring sustainable supply chains to our 8.4 million consumers.

Driven by our sustainability mission, we aim to lead the way toward sustainable water management with ideas and strategies that ensure efficient water administration, as well as delivering meaningful value across economic, environmental and societal sectors.

By being innovative, resourceful and responsive, we will continue to lead with purpose and provide holistic water services that meet the needs of our communities, now and in the future.

*The cover design epitomises our brand promise to our customers – to bring joy in every drop of water we supply and to ensure the best experiences for our communities. This is reflected through kids joyfully playing and splashing around in our local rivers.*

PENGURUSAN AIR SELANGOR SDN. BHD. (“Air Selangor” or the “company”) is pleased to present our inaugural Sustainability Report which provides an overview of our business performance as well as insights on how we manage and/or address various material matters relating to the economy, environment, society and governance. This report is consistent with the disclosures from our previous annual Performance Reports<sup>1</sup> and where necessary, we have substantiated our narratives with more in-depth information. Themed “Towards Sustainable Water Management”, we aim to equip all our stakeholders with insights on the way we conduct our business and manage sustainability matters in a transparent, concise and balanced manner.

The information included in this report covers the reporting period between 1 January 2020 and 31 December 2020. In terms of sustainability disclosures, we used year-on-year data over a period of three years, wherever available, to reflect our performance based on the selected themes. The scope and boundary of this report covers our business activities and operations in Malaysia which include our headquarters, all 12 regional offices, 10 customer services offices and operational assets. The Sustainability Report is expected to be published annually, unless stated otherwise.

This Sustainability Report has been prepared in accordance with the “core option” of the Global Reporting Initiative (GRI) Standards. The relevant GRI indicators and our disclosures are listed in the GRI Content Index available on pages 104 to 106.

We welcome any feedback from our stakeholders on the contents of our first sustainability report. For more information, please contact us at:

✉ [sustainability@airselangor.com](mailto:sustainability@airselangor.com)

📍 **Sustainable Development Section,  
Risk Management Department,  
Pengurusan Air Selangor Sdn. Bhd.,**  
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59200 Kuala Lumpur

<sup>1</sup> The last Performance Report was published on 4 August 2020.



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Message from the

CEO

**SUHAIMI KAMARALZAMAN**  
Chief Executive Officer



**In 2020, we witnessed the global coronavirus or COVID-19 pandemic creating socio-economic disruptions and social risks like never before. As the world continued to adapt to the new normal, personal hygiene has become essential in the fight against the pandemic where the use of water is crucial in keeping us clean and helped prevent the spread of the disease. Hence, ensuring a sustainable water supply remains a top priority mitigation strategy, considering the external risks of water sources' pollution.**

In Malaysia, despite the abundant tropical rainfall and our rich water resources, the challenges faced by Air Selangor in our mission to provide sustainable water supply include rising water demand of a growing population, water wastage and river pollution. Over time, it has become a collective responsibility – from water operators to consumers alike, and from policymakers to the industry players at large, to protect our raw water sources and proactively conserve our clean water supply.

This is where the role of Air Selangor is critical. As the largest water operator in the country, we play the exemplary role, assuming the responsibility of working 'Towards Sustainable Water Management' in Selangor, Kuala Lumpur and Putrajaya. In doing so, we are taking definitive action towards positive economic, environmental, and social performance. Our aim is to collaborate and identify solutions that will shape resilient and responsible water management policies, infrastructure, strategies, and action for the benefits of our consumers.

Our inaugural Sustainability Report serves as a point of reference on Air Selangor's focus areas, strategies and programmes that contribute towards achieving our mission and vision. Through this report, our objective is to provide our stakeholders with insights on how we manage this resource responsibly and at the same time encourage them to be part of our mission.

**Total  
CAPEX will be  
invested over  
2020 – 2022**

**RM5.09  
BILLION**

to ensure  
our customers receive  
the best experience





## SERVING A CRITICAL ROLE IN WATER STEWARDSHIP

As the largest water operator in Malaysia, we serve over 8.4 million consumers in a highly urbanised setting, alongside businesses and industries alike. With our 30-year business plan approved by Suruhanjaya Perkhidmatan Air Negara (SPAN), a total investment of RM5.09 billion capital expenditure for the period 2020-2022 was allocated to manage the water services ecosystem. This includes sourcing and supplying clean water responsibly, minimising the impact of our operations on the environment, ensuring the well-being and welfare of our 5,000 employees and stakeholders and above all, ensuring a safe and seamless supply of water to our 2.49 million account holders, with a commitment to quality and service excellence.

Additionally, as part of Air Selangor Sustainability Strategy 2020-2022, we have pledged our support to the United Nations (UN) Sustainable Development Goals (SDGs). By prioritising five of the 17 SDGs, our focus over the next two years would be to improve the resilience of water services. This is to improve overall customer experience and to motivate stakeholders along the value chain for positive action, cooperation, and contribution to improving water infrastructure, policies, conservation, and security. I believe this will work towards strengthening our resolve and commitment to be the leading water services provider in Asia by 2030.

In delivering efficient services to our customers, we are wholly committed to fulfil the requirements of the Corporate Liability Provision under the Section 17A of the Malaysian Anti-Corruption Commission (MACC) Act 2009. We established the Anti-Bribery and Anti-Corruption (ABAC) Framework, Policy and Procedures which applies to all our employees, Directors and business associates. Apart from this, we also rolled out extensive engagement and training with all relevant stakeholders on the topic of anti-bribery and anti-corruption. We will be taking more steps to strengthen internal controls and increase awareness on this matter to ensure this risk is tackled at all levels as part our commitment towards integrity, transparency and accountability.

## IMPROVING WATER SERVICES & PERFORMANCE IN 2020

The year 2020 was particularly challenging due to the business and supply chain disruptions caused by the COVID-19 pandemic and the mandated movement control orders. However, being an essential service provider, we continued to deliver our services to our consumers while at the same time, ensuring the health and safety of our team members. Despite these operational challenges, we are pleased to report that Air Selangor recorded RM2.18 billion in revenue, as compared to RM2.10 billion recorded in 2019.

Ensuring the best customer experience remains at the core of our operations. Throughout the year we continued to focus on developing new water treatment plants such as the Rasau Water Supply Scheme, as well as reducing the non-revenue water rate. On top of that, in keeping with our digitalisation strategy, we also optimised technology solutions to continue monitoring and improving water quality. These efforts will gradually increase our water reserve margin, reinforcing our ability to cater to the ever-increasing water demand in the areas we serve.

In 2020, we achieved an average reserve margin of 11.87%, surpassing our target of 11.37%. We have also successfully reduced our non-revenue water rate to 28.53% exceeding the target of 29.20% set by SPAN. Furthermore, we achieved 100% compliance to the Ministry of Health (MOH) Quality Assurance Programme (QAP) with zero violation for *E. Coli* and zero simultaneous violation incident for *E. Coli* and free residual chlorine and a high percentage of compliance to the MOH Drinking Water Quality Standard (DWQS) at 99.74%.

**Overall, our performance during the year under review has served our set targets. However, some of the challenges remain for us to address as we recover from COVID-19 impacts in 2021 and beyond.**



### **MAKING OUR STAKEHOLDERS A PRIORITY**

We strive to meet our stakeholders' expectations by implementing key strategies to deliver seamless services and consistent quality to our customers. In 2020, we continued to leverage multiple media and non-media platforms to not only raise awareness of our customers on billing matters and water conservation, but to also keep them updated on various industry developments as well as service enhancements from time to time.

Our employees are the backbone of our performance and growth. However, the direct and biggest impact of the pandemic has been on human capital. The situation called for exceptional manpower planning and safety mechanisms while maintaining stringent health and safety procedures. Thus, we introduced work-from-home options and roster (split teams) arrangements for our workforce. Only employees responsible for customer-critical functions continued to operate from their physical workspaces.





During the year under review, another priority was to manage the growing anxiety of our employees in relation to both physical and mental well-being, mainly due to insecurities concerning their job and income. We are pleased to note that we maintained our employee headcount and salaries at the same levels as 2019, despite tough economic conditions. We also continued to organise employee engagement sessions, upskilling and training programmes, and mental health talks virtually and where possible, physically to boost the morale of our employees.

We also established strategic cooperation to support Air Selangor's plans to develop human capital, especially relating to the Air Selangor Leadership Development Programme with Universiti Putra

Malaysia (UPM) and successfully developed the Water Expert Development Programme (WEDP) training module for our technical workforce in partnership with Universiti Kebangsaan Malaysia (UKM).

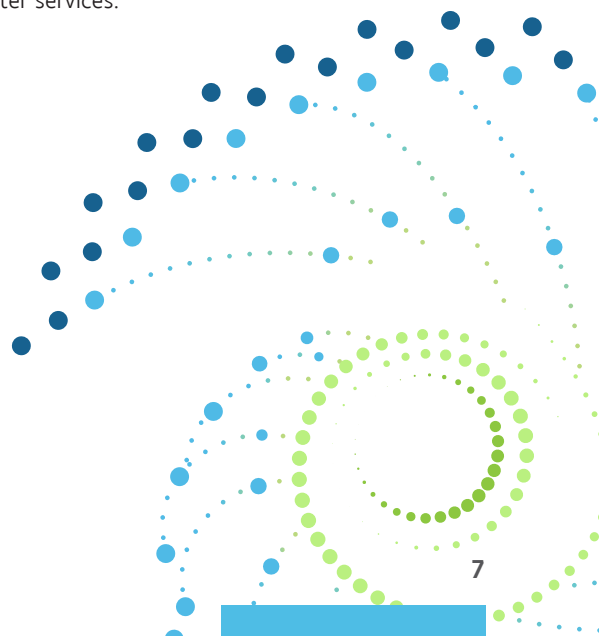
The communities in the ecosystem where we operate are very important to us. During the year, we launched a total of five initiatives under Air Selangor's Flagship Corporate Social Responsibility (CSR) Programme, Sesama Mara. Sesama Mara has strengthened our relationship with the local communities and non-governmental organisations (NGOs), while at the same time helped disadvantaged and vulnerable members of society. We invested a total of RM321,690 towards this effort for the year 2020.

Our stakeholders are our crucial advocates in fulfilling our mission. We work closely with the relevant authorities such as SPAN, Lembaga Urus Air Selangor (LUAS) and local authorities (PBT) to manage water-related concerns such as the growing incidents of pollution and remedial actions. This is in line with efforts implemented by Selangor State under Skim Jaminan Air Mentah (SJAM) to ensure continuous water supply and reduce the impact of water supply disruptions due to pollution incidences.

### **ACKNOWLEDGING OUR PARTNERS IN GROWTH**

I take this opportunity to commend Air Selangor's frontliners – our dedicated employees who have tirelessly worked to maintain production and distribution during an extremely challenging and disruptive year, ensuring service continuity for our customers. I also extend our sincere gratitude to our stakeholders, our partners, as well as our customers for trusting our ability and commitment to serve their interests and expectations. I am confident with the support of all our stakeholders, we will continue to demonstrate our pledge towards sustainable water services.

**SUHAIMI KAMARALZAMAN**  
Chief Executive Officer



## VISION

We will be the leading water services provider in Asia by 2030

## MISSION

We deliver the best experience to our customers

## OUR CORE VALUES

### TEAMWORK

Providing support to one another, working collaboratively, respecting one's views, and making our work environment well balanced and enjoyable.

### HONESTY

Being open and truthful in all dealings to allow us to be of great service to our colleagues and customers.



# ABOUT AIR SELANGOR

Air Selangor serves as the sole public water services provider in Selangor, Kuala Lumpur and Putrajaya (Distribution Area) and is responsible for abstracting, treating, and distributing treated water supply to 8.4 million consumers in our Distribution Area.

Air Selangor Holdings Berhad (AIS Holdings) is the immediate holding company and Menteri Besar Selangor (Incorporated), a corporate body formed under Enactment No.3 of the Menteri Besar Selangor (Incorporation), Enactment 1994 is the ultimate holding corporation of Air Selangor.

Since obtaining our license on 13 September 2019, we are driven by our vision to be the leading water services provider in Asia and to strongly support the rapid urbanisation in Selangor, Kuala Lumpur and Putrajaya, which is also the hub of Malaysia's economic growth.

We strive to continuously deliver clean, safe, and sustainable water to our consumers. We achieve this through our continuous efforts to increase supply margin, improve operational efficiency at our water treatment plants (WTPs) and minimise losses in our distribution networks. Our unwavering commitment to deliver the best customer experience through a high standard of service is underpinned by the core values practised by our employees.

## INTEGRITY

Continually doing the right thing no matter what the consequences. With integrity we will live by our standards and beliefs even when no one is watching.

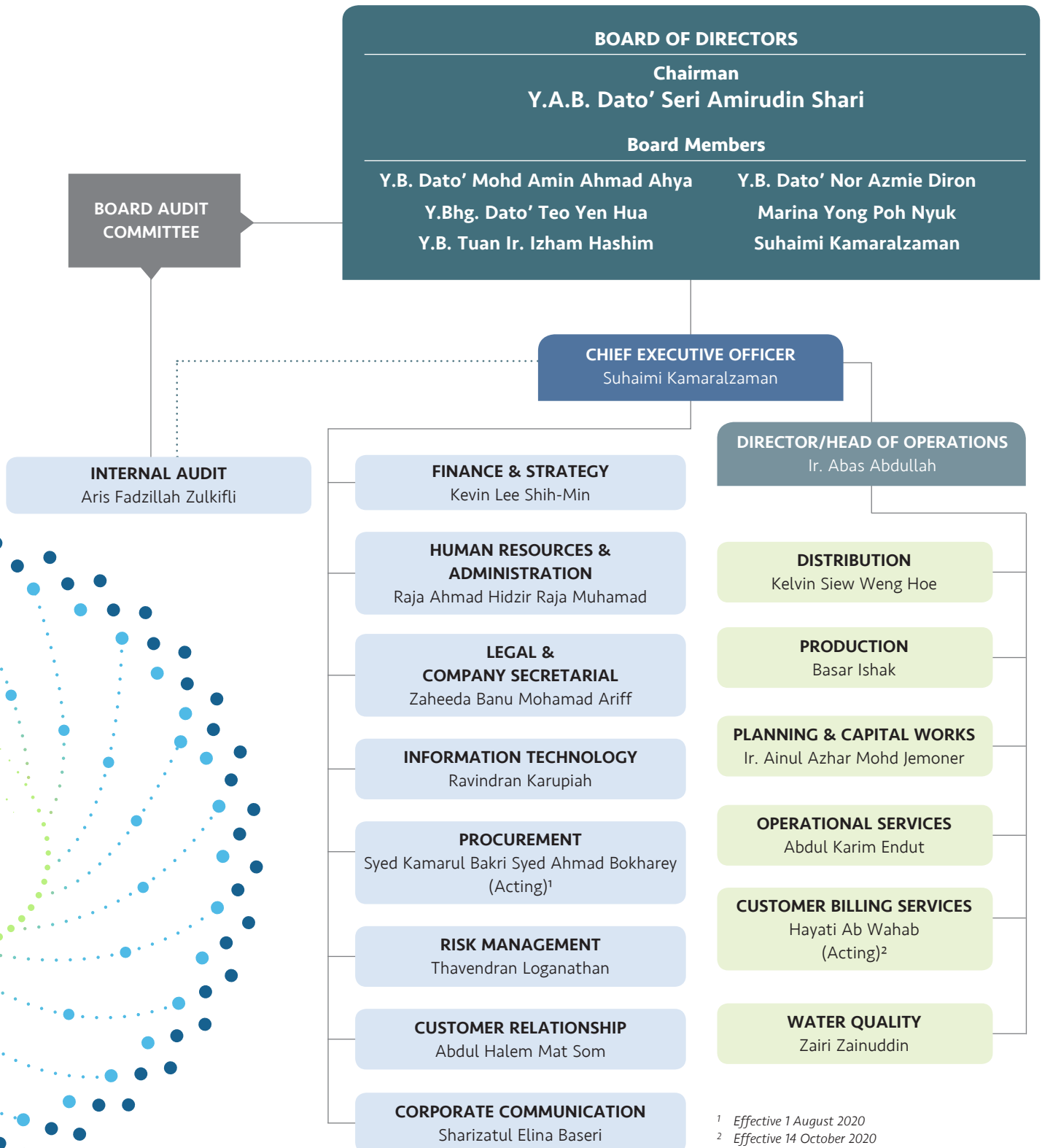
## PROFESSIONALISM

At all times, we strive for excellence and quality in everything we do on top of being reliable and responsible.

## HIGHEST STANDARD OF SERVICES

We respect our customers and strive to deliver timely, responsive and proactive services at all times.

# OUR LEADERSHIP TEAM



<sup>1</sup> Effective 1 August 2020  
<sup>2</sup> Effective 14 October 2020

# WHO WE SERVE



## DOMESTIC

Our customers in this category form the largest part in the total registered accounts with Air Selangor. Domestic accounts include residential properties such as landed and strata properties.

**2,166,925**  
ACCOUNTS  
(86.96%)



## COMMERCIAL

Our customers from commercial category consist of industries, commercial areas and ships.

**311,237**  
ACCOUNTS  
(12.49%)



## OTHERS

This category includes government offices, religious and charitable institutions.

**13,726**  
ACCOUNTS  
(0.55%)

# AIR SELANGOR AT A GLANCE



## Headquarters:

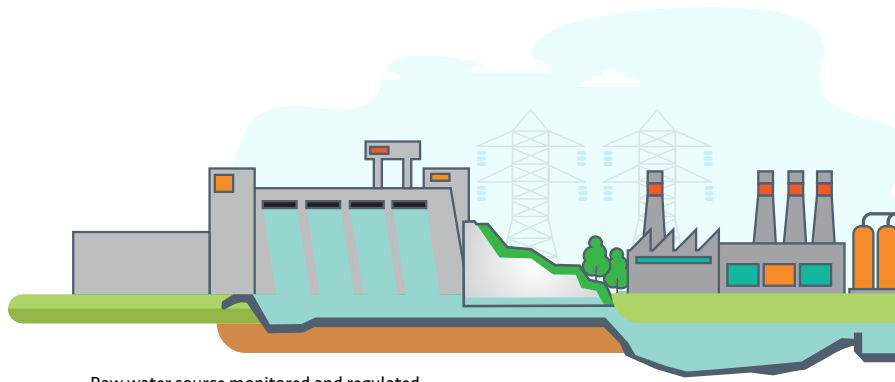
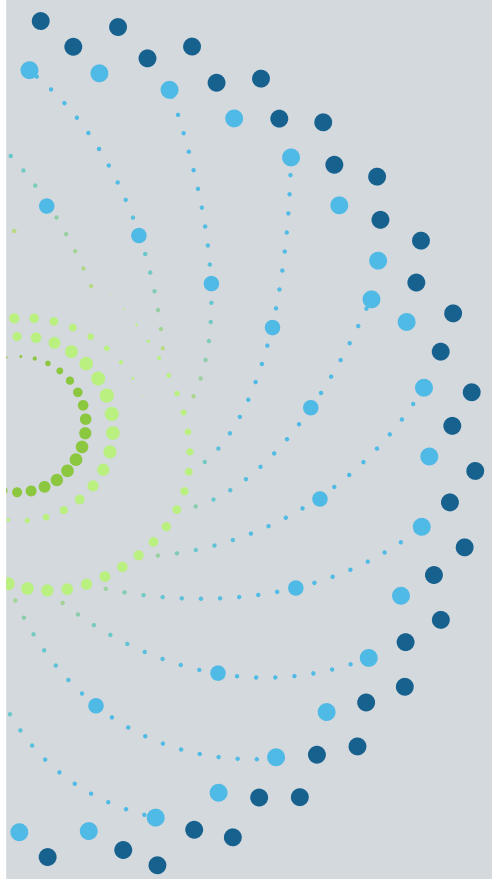
Pengurusan Air Selangor Sdn. Bhd.,  
Jalan Pantai Baharu,  
59200 Kuala Lumpur

## Offices:

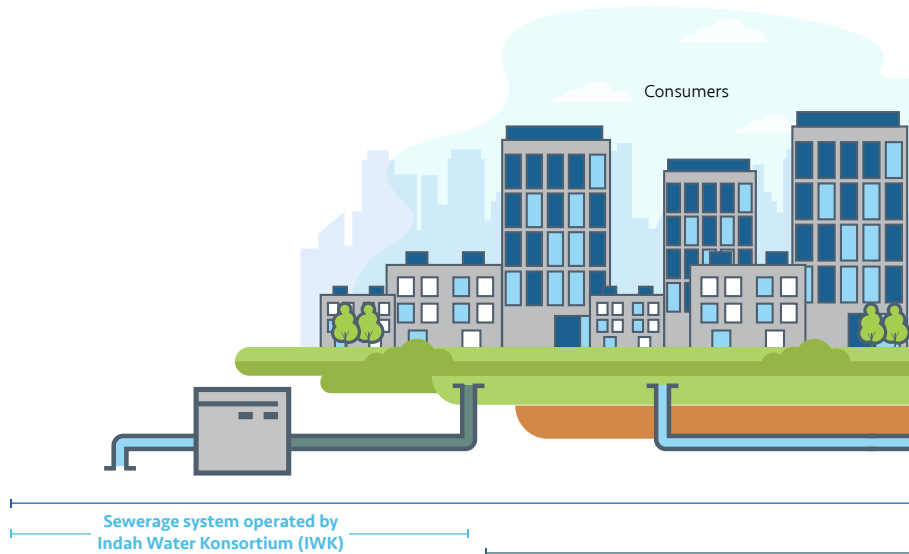
**10** Customer Service Offices

**12** Regional Offices

located in Selangor,  
Kuala Lumpur and Putrajaya.



Raw water source monitored and regulated  
by Lembaga Urus Air Selangor (LUAS)



Sewerage system operated by  
Indah Water Konsortium (IWK)

	<b>Hybrid Off-River Augmentation System (HORAS)</b>
<b>Dams</b>	<b>600</b>
<b>8*</b>	<b>1</b>
<b>Active Storage for Dams</b>	<b>Off-River Storage</b>
<b>95.95%-100%</b>	<b>3</b>

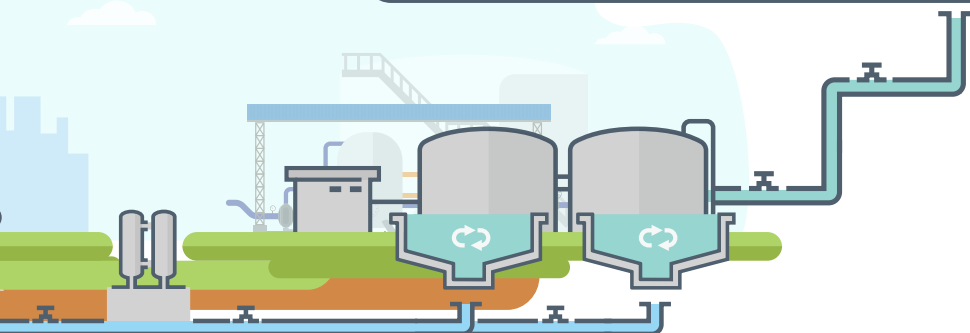
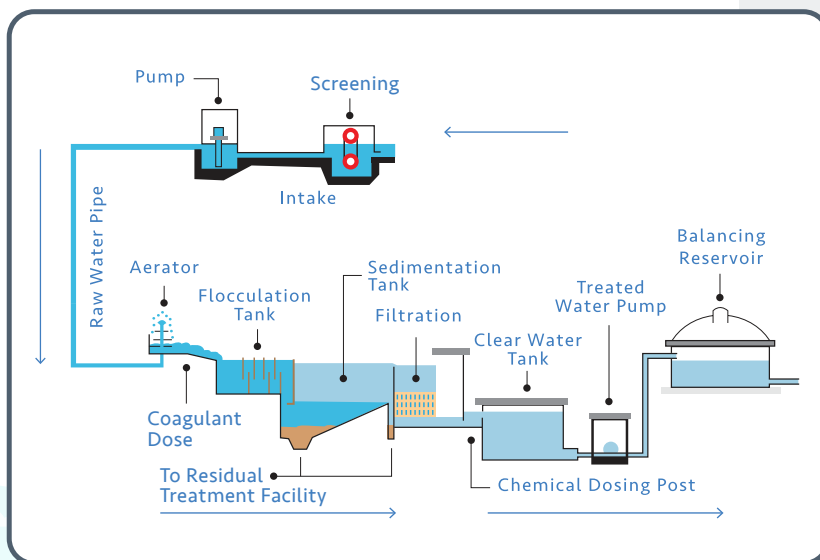
As at December 2020.

\* Seven dams are under supervision of Air Selangor, and one dam i.e., Batu Dam is under the Department of Irrigation and Drainage. List of dams/ORS/HORAS 600 is available on page 57.

Effluent discharge from registered factories and water treatment plants is regulated by Department of Environment (DOE)

Water quality tested by Ministry of Health (MOH) and Air Selangor

Factory operations regulated and licensed by local authorities



Water supply and sewerage services regulated by Suruhanjaya Perkhidmatan Air Negara (SPAN)

Water treatment and distribution up to consumers' water meter operated by Air Selangor

**Workforce**  
**5,022**

**Active Operational Vehicles**  
**1,068**

**Service Reservoirs**  
**1,610**

**Pump Houses**  
**732**

**Water Treatment Plants**  
**34**

**Pipe Length (mapped using GIS)**  
**29,540 km**

**Water Sampling Stations**  
**1,117**

**Hybrid Distribution Water Quality Real-Time Analyser (HYDRA)**  
**140**

**Average Production Volume**  
**4,965 MLD**

**Accredited Regional Laboratory**  
**3**

**River Monitoring Stations**  
**13**

**Off-Plant Autonomous Chlorine Injection System (OACIS)**  
**22**

# 2020 IN REVIEW: KEY HIGHLIGHTS

Air Selangor has successfully achieved various milestones since it commenced operations as the sole license holder of water supply services in Selangor, Kuala Lumpur and Putrajaya. These milestones are also some of the pioneering efforts in our journey towards setting new benchmarks in the water services industry, both in Malaysia and the region.

## Business Plan Approval

SPAN, the water services industry regulator approved Air Selangor's Business Plan which covers our first operating period (OP) from 2020 to 2022. Backed by CAPEX amounting to RM5.09 billion over the first OP, Air Selangor has and will be rolling out projects and initiatives in several key areas to ensure sustainable water management and supply, all of which were focused on improving asset reliability, increasing water reserve margin, and enhancing customer service.

**RM5.09** BILLION  
CAPEX: 2020-2022

## Non-Revenue Water Achievement

Air Selangor successfully reduced the average rate of Non-Revenue Water (NRW) in our Distribution Area to 28.53% in 2020, an improvement from the 29.66% recorded in 2019. This achievement also exceeded the target of 29.20% set by SPAN, despite the challenges faced in carrying out on-site work during the COVID-19 pandemic and various movement restrictions.

The NRW reduction was achieved through the on-going implementation of several internal initiatives that began in 2017. Air Selangor remains firmly committed to achieving our NRW target of 24% by 2025, 20% by 2037 and 15% by 2049.

REDUCED NRW TO  
**28.53%**

## Rasau Water Supply Scheme

We have been actively identifying new sources of raw water to ensure sustainable water supply for customers in our Distribution Area. A new and viable water source, the planned Stage 1 Rasau Water Supply Scheme is the largest Off-River Storage (ORS) facility project in the country with an expected production capacity of 700 MLD. Stage 1 of the project will be completed by 2024, while Stage 2 is expected to be completed by 2028. The entire Rasau Water Supply Scheme will have a total capacity of 1,400 MLD, and will serve an estimated 467,000 consumer accounts in the Klang region (Stage 1) and Petaling Region (Stage 2).

**1,400** MLD  
PRODUCTION CAPACITY

## Handover of Kelau Dam

Kelau Dam, one of the key assets in the Pahang-Selangor Raw Water Transfer (PSWT) project, was developed to supply raw water to Langat 2 Water Treatment Plant. It was completed in July 2015 at a cost of RM183 million. The Kelau Dam was designed with a storage capacity of up to 147.10 million cubic metres (MCM) of water. It was officially handed over to Air Selangor on 15 March 2020.

**147.10** MCM  
STORAGE CAPACITY

## Water Quality

Water quality monitoring for raw water and treated water is important to ensure that the treated water produced is safe for human consumption. In 2020, we achieved 100% compliance with the MOH QAP standards, achieving zero violation for *E. Coli* and zero simultaneous violation incidents for *E. Coli* and Free Residual Chlorine (FRC). We also achieved a 99.74% compliance to the MOH DWQS due to the stringent operational controls from the catchment areas to the distribution network, supported by the application of latest technologies along the supply chain that further improved monitoring and operational efficiencies.

**99.74%** COMPLIANCE  
MOH DWQS

## Operational Efficiencies

In order to optimise operational efficiencies, we implemented an enterprise resource planning system, namely the Total Asset Management System (TAMS) which included an accounting and financial planning module, supply chain and procurement module, Work and Asset Management System (WAMS) module, as well as payroll and claims module under the Human Capital Management (HCM) system. We also initiated the Air Selangor Strategic Plans and Initiatives Realisation (ASPIRE) project to track our performance against our business goals and expanded the capacity of the Intelligent Command Centre (ICC) to cover 54.9% of all our assets. These enhancements have significantly improved business process efficiency and performance reporting.



## Sustainable Financing and Solutions

During the year, apart from supporting water stewardship initiatives, we have also successfully completed the inaugural issuance of Sukuk Muharabah under the newly established Sukuk Murabahah programme. Carrying a AAA rating, the Sukuk Muharabah programme comprises of a 30-year Islamic Medium-Term Notes (IMTN) programme and a seven-year Islamic Commercial Papers (ICP) programme, with a combined limit of up to RM10 billion in nominal value. Despite the cautious market sentiment, Air Selangor successfully issued RM1.15 billion in nominal value of IMTN and ICP, marking an important milestone in Air Selangor's efforts to enhance and upgrade its water infrastructure.

Through the Sukuk Murabahah programme, we may also issue Sustainable & Responsible Investment (SRI) Sukuk Kelestarian Air Selangor (Sukuk Kelestarian) to finance and implement sustainable and responsible investment projects that have a positive impact on the environment and/or society. This is in line with our capital investment programme, sustainability strategy and priority SDGs. The Air Selangor Sustainable Development Sukuk Kelestarian Framework (Sukuk Kelestarian Framework) was developed to meet local, regional, and international standards for sustainable finance. The Second Party Opinion on the Sukuk Kelestarian Framework is available on our website at <https://www.airselangor.com/about-us/sustainability/sukuk-kelestarian/>.

**AAA RATING**

## Financial Performance

Despite the challenging economic conditions in Malaysia brought on by the COVID-19 pandemic, we recorded a higher revenue of RM2.18 billion, an increase of 3.62% as compared to RM2.10 billion in 2019. This was attributed to higher sales of treated water to our customers. Nevertheless, it is important to note that Air Selangor is currently operating within a tariff environment that has yet to achieve full-cost recovery. Upon achieving full cost recovery, Air Selangor's business model would be able to defray both operational expenditure (OPEX) and CAPEX, apart from earning regulated, sustainable returns while at the same time, recoup environmental and social costs of doing business.

REVENUE 2020  
**RM2.18 BILLION**

## Customer Satisfaction Index (CSI) 2020

We conducted a comprehensive Customer Satisfaction Index (CSI) Survey 2020 to gather responses and feedback from Air Selangor's domestic, commercial and government customers on our water services as well as to assess their perceptions towards our brand. This survey was conducted to understand stakeholders' expectations as well as to improve Air Selangor's customer experience.

We scored an overall customer satisfaction (CSAT) of 63.6% and a Net Promoter Score (NPS), of -23 (negative) which can be attributed to various service disruptions experienced by our customers due to third-party pollution. About 2,380 respondents participated in the survey where Water Quality, Service Restoration, Customer Service, Billing and Communications emerged as the five key areas for improvement.

In 2020, we actively promoted the Air Selangor brand to distinguish it from the previous water operator Syarikat Bekalan Air Selangor Sdn. Bhd. (SYABAS). An analysis of social media conversations indicated that 98% of analysed interactions referred to the Air Selangor brand compared to mentions of the previous operator.

**63.6% CSAT SCORE**

## Sesama Mara Programmes

Air Selangor's flagship CSR, Sesama Mara, which means 'Together We Move Forward', is the overarching theme for Air Selangor's CSR programmes. The programmes consist of grassroot initiatives to give back to surrounding communities and strengthen our ties with local communities, residents' associations, local authorities, and NGOs. In 2020, we successfully launched a total of five initiatives, namely Box of Hope, Plumbing Apprenticeship Programme, Plumbing Assistance Services for the Less Fortunate, Air Selangor's Face Mask collaboration with Komuniti Tukang Jahit (KTJ) and KL Sketch Nation, and Empowering Online Learning: For Children of Air Selangor Employees. A total of RM321,690 was channelled to support the five initiatives.

## Stakeholder' Outreach

Air Selangor has proactively reached out to multiple stakeholders to understand their expectations, needs and challenges towards finding an opportunity to raise greater awareness on Air Selangor, as well as water services and water industry. In 2020, we engaged with numerous internal and external stakeholders including regulators, customers, employees, suppliers, local communities and media amongst others, through various platforms. We relied on inputs from various surveys, data collected from different stakeholder touchpoints, and formal as well as informal interactions to arrive at rich insights, which become the basis for our future focus and business strategies. During the year, we also strengthened and improved our engagement platforms, especially on our communication channels such as website, customer portal etc. to improve the quality of our services and stakeholders experience.

# OUR BUSINESS PLANS

To meet the growing demand for water as well as ensure efficient management of sustainable water supply, we designed our 30-year business plan which can be summarised into seven Strategic Plans & Initiatives (SPIs) and eight Key Result Areas (KRAs). Approved by SPAN, this business plan is divided into 10 OPs, with each OP spanning a three-year period.

To ensure progress on the SPIs and KRAs, Air Selangor has earmarked a CAPEX of RM35 billion for the 30-year period. In response to the evolving operating landscape as well as the business ecosystem, we will continuously review our business plan from time to time, taking into consideration factors such as economic development, water demand and water tariffs to ensure sustainable water supply for our customers.

## AIR SELANGOR STRATEGIC PLANS AND INITIATIVES REALISATION

To help us keep track of our performance against our goals, Air Selangor embarked on the ASPIRE project in 2020 to identify relevant performance measures using big data analytics. Through this project, we will be able to identify the short- and long-term drivers of performance management as well as the CAPEX spending for each SPI. We also measure the overall operational cost per volume of water billed as part of SPI 3: Improving Operational Efficiency.

The key drivers of the ASPIRE project are:

- **STRATEGIC INDICATORS** - Lead indicators to measure achievement of the SPI.
- **TACTICAL DRIVERS** - Internal and external drivers that are used to identify areas for improvement which will influence the achievement of strategic indicators.
- **OPERATIONAL MEASURES** - Actionable information and measures which are used to monitor progress for immediate action for both medium and long-term, as these will impact tactical drivers.

The development of the ASPIRE dashboards is expected to be completed before the end of 2021.

1

## Water Forever

Towards a Sustainable Water Future

### Objectives

- Ensure sustainable water supply for the future.
- Mitigate potential effects from climate change and raw water pollution.
- Design interventions and initiatives that ensure water supply is in tandem with water demand. Some of these actions include reducing system water loss, optimising customer water use, as well as identifying and developing new sources of water.

### Our Achievements in 2020

- Successfully **increased our average water reserve margin to 11.87%** against the targeted 11.37%. We are on track to meet the target of 15%.
- **Completed planning for Rasau WTP** project which will commence in **2021**. Initiated the appointment of Rasau Project Team and Owner's Engineer in December 2020.

2

## Improvement to Asset Reliability and Resilience

Towards Resilient Water Future

### Objectives

- Optimise management and maintenance of our assets.
- Ensure uninterrupted water supply to our customers.
- Rehabilitate, replace and upgrade our assets.
- Improve water storage capacity.

### Our Achievements in 2020

- **Completed 96.02%** of planned **preventative maintenance** of assets.
- **Completed 99.83%** of planned **condition-based maintenance** of assets.
- **Completed 8,508 corrective maintenance** of assets.
- **Completed pipe replacement** works for **84** hotspots.
- **Completed rehabilitation** works for **32 unused reservoirs** out of 144 identified.
- **Completed** refurbishment works of **3 pump houses** out of 54 identified.
- Purchased **790 units of new vehicles** under the six-year Company Vehicles-Replacement and Additional programmes. These include jumbo water tankers to boost tanker fleet capabilities during service disruptions.

3

## Improving Operational Efficiency

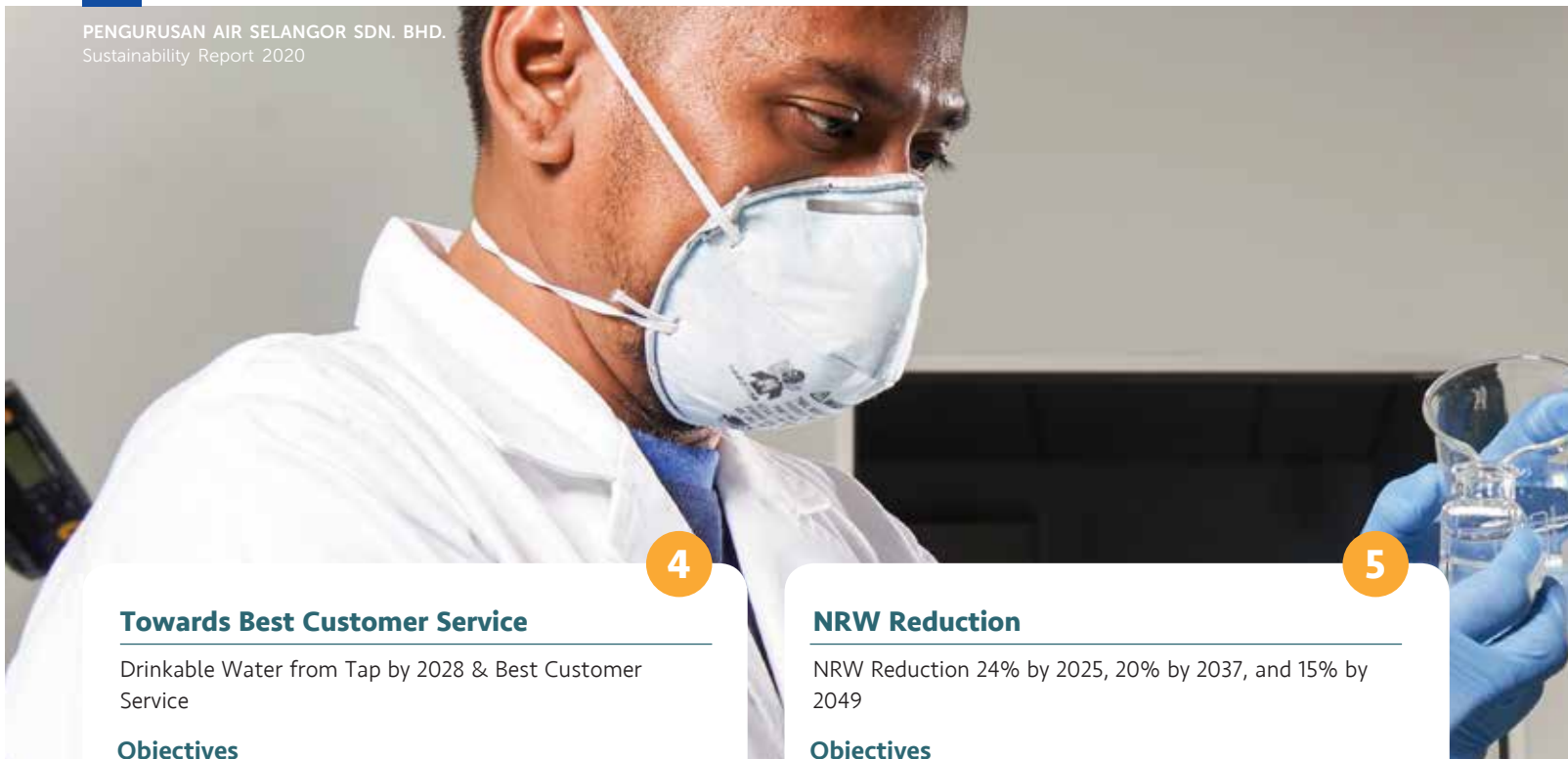
Digital Utility of the Future

### Objectives

- Leverage on growth of digital connectivity and big data to become the Digital Utility of the Future.
- Ensure effective use of resources across our operations, namely production, distribution, asset inventory and maintenance, and customer management.

### Our Achievements in 2020

- Launched **new digitalisation initiatives** which include Operations Business Intelligence for Revenue Management (OBI-RM) dashboard, Operations Mobile Application (OMA) and iERP Systems for streamlined operations.
- Initiated the **ASPIRE** project to track performance against business goals.
- Expanded capacity of the **ICC** which covers **54.9%** of all assets.
- Completed **RFID** tagging for **15,502** number of **assets**.
- Initiated **Online Hydraulic Modelling** for key distribution schemes.



4

### Towards Best Customer Service

Drinkable Water from Tap by 2028 & Best Customer Service

#### Objectives

- Improve our service delivery and exceed customer expectations in terms of reliability, responsiveness and quality on a continuous basis.

#### Our Achievements in 2020

- The completion of Salesforce (Customer Relationship Management system) integration with ICC. Agents will be notified with first-hand information on possible water disruption caused by level drop at reservoir and therefore be able to answer customer enquiries related to water disruption promptly.
- Achieved **117.14% of meter replacement** works.
- Completed the pilot **installation of 8,037 units of Advanced Metering Infrastructure (AMI) meters** at Sepang Region.
- Achieved **Water Quality Complaint Index ratio of 0.58** complaints per 1,000 connections, below the targeted 0.6.
- Completed works for 10 water courses under the **Trust our Tap** initiative.
- Implemented Salesforce system for Customer Relationship Management Service.
- Achieved water quality targets as follows:

Parameter	MOH Target	Achievement
<i>E. Coli</i>	≥ 99.85	100.00
Free Residual Chlorine	≥ 98.15	99.91
<i>E. Coli</i> & Free Residual Chlorine	≥ 99.95	100.00
Turbidity	≥ 98.00	99.98
Aluminium	≥ 90.00	96.69

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### NRW Reduction

NRW Reduction 24% by 2025, 20% by 2037, and 15% by 2049

#### Objectives

- Reduce water loss throughout our operations, targeting to achieve 24% by 2025, 20% by 2037, and 15% by 2049.
- Optimise operational costs and increase our revenue.

#### Our Achievements in 2020

- Achieved **NRW reduction of 28.53%** surpassing the target of 29.20% as set by SPAN.
- Achieved **Pipe Burst Index of 8.87** bursts per 100 km of pipeline against the targeted 13\*.
- Achieved water supply target as follows:

Parameter	SPAN Target	Achievement
Repair and resume water supply within 24 hours for communication pipe failure	80.00%	82.00%
Repair and resume supply within 24 hours for failure of main of diameter less than 200 mm	80.00%	82.00%
Repair and resume supply within 36 hours for failure of main of diameter 200mm > diameter < 600mm	90.00%	95.00%
Repair and resume supply within 48 hours for failure of main of diameter greater than 600mm	95.00%	100.00%

\* Based on Unavoidable Annual Real Losses (UARL) and Infrastructure Leakage Index (ILI), Allan Lambert, Water Loss Research and Analysis Ltd, United Kingdom, 2019, the acceptable pipe burst index is at 13 bursts per 100km per year.

6

### Creating Conducive Working Environment

World Class Water Service Provider

#### Objectives

- Position Air Selangor as an employer of choice by creating a safe and conducive work environment.
- Develop and grow talent within our company to ensure a sustainable pipeline of leaders and achievers.

#### Our Achievements in 2020

- **Completed office renovation** and refurbishment works for the headquarters and a few Regional Offices for improved workplace experience.
- **Graduated 36 employees** from the Leadership Development Programme as part of talent management and succession planning.
- **Set up COVID-19 Command Centre** to facilitate pandemic response within the company towards maintaining business continuity and protecting employee health.

7

### Environmental Stewardship

Waste Zero Environment

#### Objectives

- Operate in a responsible manner, minimise our impact on the environment, and adhere to regulations.
- Towards zero-waste environment, optimise resource use and reduce our carbon emissions.

#### Our Achievements in 2020

- Achieved compliance with the Department of Environment (DOE) Guided Self-Regulation (GSR):

Scope	Compliance (%)
Water Treatment Plants	73.61
Distribution Activities	15.00

- Recorded carbon emissions and carbon emissions intensity for 2020, as follows:

Total Carbon Emissions (tCO <sub>2</sub> )	572,356.86
Produced Volume Carbon Intensity (kgCO <sub>2</sub> /m <sup>3</sup> )	0.315
Billed Volume Carbon Intensity (kgCO <sub>2</sub> /m <sup>3</sup> )	0.442

## FINANCIAL PERFORMANCE

Air Selangor is currently operating within a tariff environment that has yet to achieve full-cost recovery. Upon achieving full cost recovery, Air Selangor's business model would be able to defray both OPEX and CAPEX, apart from earning regulated, sustainable returns while at the same time, recoup environmental and social costs. A tariff setting mechanism implemented by the regulator would enable Air Selangor to continue developing the necessary infrastructure to provide sustainable water services in the long term, while promoting transparency and encouraging water conservation.

In 2020, Air Selangor achieved RM2.18 billion in revenue, 3.62% higher than the RM2.10 billion recorded in 2019. During this period, Air Selangor invested approximately RM328.65\* million in CAPEX across four categories of works to meet our service targets. Over half of our CAPEX went towards the NRW reduction programme, followed by asset management and replacement.

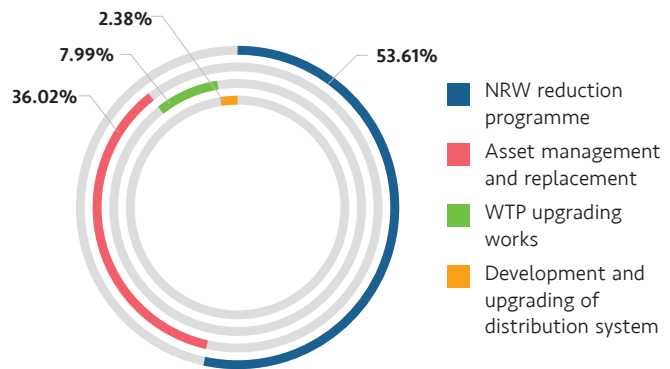
The figures stated below reflect Air Selangor's operations in its first full year as a holistic water distribution and treatment service provider.

### Air Selangor's 2020 CAPEX

	Contract Awarded (RM million)
NRW reduction programme	176.18
Asset management and replacement	118.38
WTP upgrading works	26.27
Development and upgrading of distribution system	7.81
<b>Total</b>	<b>328.65*</b>

\* Figures for total CAPEX does not tally with the figures in breakdown due to rounding.

### 2020 CAPEX for Air Selangor

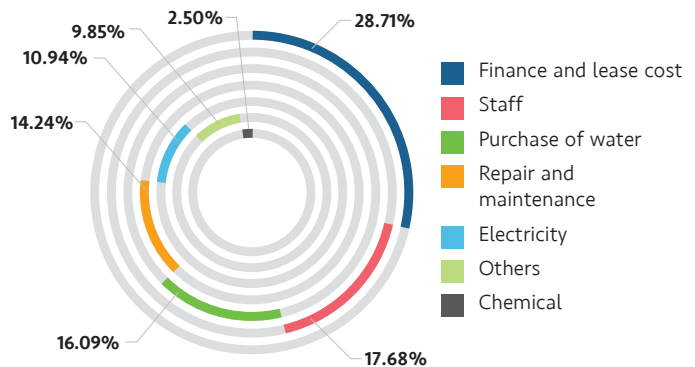


Air Selangor recorded an OPEX of RM2.31 billion in 2020, largely attributed to finance and leasing costs (to finance CAPEX), followed by staff costs and cost for the purchase of water.

### Air Selangor's 2020 OPEX

	(RM million)
Finance and leasing costs	662.97
Staff	408.19
Purchase of water	371.52
Repair and maintenance	328.74
Electricity	252.59
Others	227.44
Chemical	57.80
<b>Total</b>	<b>2,309.25</b>

### 2020 OPEX for Air Selangor



## SUSTAINABLE FINANCING

Air Selangor's RM10 billion Sukuk Murabahah programme facilitates the issuance of Sukuk Kelestarian Air Selangor to fund projects that are in line with Air Selangor's capital investment programme, sustainability strategy and prioritised SDGs.

The Sukuk Kelestarian Framework governs the use of proceeds, project evaluation and selection criteria, management of proceeds and transparency of disclosure via reporting. It was developed to meet local, regional, and international standards for sustainable finance.

The local, regional, and international standards which the Sukuk Kelestarian Framework is aligned with are the Securities Commission Malaysia's Sustainable & Responsible Investment (SRI) Sukuk Framework, the ASEAN Green Bond Standards (ASEAN GBS), the ASEAN Social Bond Standards (ASEAN SBS), the ASEAN Sustainability Bond Standards (ASEAN SUS) and the globally recognised Green Bond Principles (GBP), Social Bond Principles (SBP) and Sustainability Bond Guidelines (SBG).

There are a total of four project categories which are eligible for funding, as defined by the Sukuk Kelestarian Framework. They are as follows:

### SUSTAINABLE WATER SUPPLY



to increase the supply capacity of clean and affordable water to an ever-growing number of households and businesses in the Distribution Area, while considering the impact from climate change and pollution on our water sources.

### SUSTAINABLE WATER MANAGEMENT



to improve the way we produce and distribute water to our customers, by optimising the use of our precious natural resources, improving system connectivity to minimise service disruptions and reducing system losses.

### RENEWABLE ENERGY



to leverage on opportunities to generate renewable energy arising from our business operations to decrease energy costs and minimise impact on the environment.

### GREEN BUILDING/ASSETS



to improve the sustainability of our assets through retrofitting of existing assets, enhanced designs and construction of new assets.

The Sukuk Kelestarian Framework was assessed and rated by RAM Sustainability Sdn. Bhd., an independent party. The Second Party Opinion on the Sukuk Kelestarian Framework is available on our website at <https://www.airselangor.com/about-us/sustainability/sukuk-kelestarian/>.

# AWARDS AND ACCOLADES

In 2020, Air Selangor was shortlisted and 'Highly Commended' in the Public Water Agency of the Year category along with three other international water utility companies, by the Global Water Intelligence at the Global Water Awards 2020 Celebration.

This was the first recognition of its kind received by Air Selangor at Global Water Awards that recognises important achievements within the international water industry, among the water, wastewater and desalination sectors that are moving the industry forward through improved operational performance, adoption of innovative technology and sustainable financial models. This prestigious recognition is a testament to our achievements in delivering clean and safe treated water to our consumers in Selangor, Kuala Lumpur and Putrajaya.





# KEY PERFORMANCE DATA



Water Reserve Margin  
**11.87%**



Yearly Average Non-Revenue Water  
**28.53%**



Overall Treated Water Quality Compliance  
**99.74%**



Pipe Burst Cases per 100 KM per Year  
**8.87**



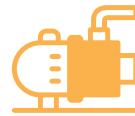
Pipe Leak Cases  
**124,614**



Pipes Replaced  
**85.60**  
KILOMETRE



e-Bil sign up rate by customers  
**23.70%**



Asset Condition Score  
**2.14**



Revenue  
**RM2.18**  
BILLION



Carbon Emissions Intensity  
**0.442**  
kgCO<sub>2</sub>/m<sup>3</sup>



Lost Time Injury Frequency Rate  
**1.27**



Gender Diversity  
**79%** (Male)  
**21%** (Female)

Clean water supply is not only for health and wellbeing, but it is also a basic human right. It is an important natural resource used as a critical input by various industries and businesses to generate product outputs, contributing to overall economic growth.

While we acknowledge that water sustainability is an important aspect for all businesses, this is even more critical for us. Being the **sole water operator in the state of Selangor, Kuala Lumpur and Putrajaya**, Air Selangor has the responsibility of supplying potable water to **8.4 million residents** living in our Distribution Area, which is equivalent to one quarter of Malaysia's population. Additionally, Selangor and Kuala Lumpur serve as the economic hubs of the nation, and Putrajaya is the administrative capital, where various industries and businesses rely on us for water supply.

## SUSTAINABILITY AT AIR SELANGOR

Since the completion of the merger and acquisition exercise undertaken by Air Selangor to acquire all water assets and operators within the state, our focus has been on streamlining our business operations to achieve our sustainability goals. We recognise the enormous responsibility placed on us to ensure sustainable water supply to meet the current and future needs of our growing customer base. In this respect, we are actively implementing various interventions and safeguards. Our aim is to integrate sustainability into all aspects of our operations, particularly in identifying risks and opportunities within our business, applying effective controls to mitigate these risks while leveraging on new opportunities.

Building on this momentum, we have established the Air Selangor Sustainability Framework which sets out the company's approach to sustainability, defines how sustainability is governed, interventions to be carried out from the perspective of strategy development, reporting performance and stakeholder engagement.





## SUSTAINABILITY GOVERNANCE

Air Selangor formalised its commitment to sustainability by institutionalising a dedicated section/team to champion sustainability matters within the organisation. Per the diagram below, the Sustainable Development (SD) Section was formed in May 2019 under the Risk Management Department (RMD).



At Air Selangor, the CEO and Management Committee (MC) have been tasked to oversee the effective implementation and integration of sustainability across the organisation. This includes reviewing and approving sustainability strategies and targets, reviewing material sustainability matters, action plans and authorising performance disclosures. The CEO communicates the material sustainability matters to the Board, where necessary.

The roles and responsibilities of the of the SD Section are outlined as follows:

- To identify and propose sustainability strategies and policies that are aligned to internal organisational goals and external commitments towards sustainability (e.g SDGs);
- To actively provide support to the management on current and emerging sustainability risks and opportunities; and
- To drive internal sustainability initiatives, monitor and report progress against targets and create awareness among employees.

Supported by the Sustainability Working Committee (SWC), the SD Section has the primary role of ensuring the effective implementation of sustainability programmes and initiatives across the organisation. The SWC provides oversight on sustainability implementation across Air Selangor, recommend changes to material sustainability matters and strategies through active participation in the identification, management and monitoring of action plans.

## OUR COMMITMENT TO THE SUSTAINABLE DEVELOPMENT GOALS

The 2030 Agenda for Sustainable Development and the SDGs were first adopted by the world leaders in 2015. The 17 SDGs reinforce the collective and inclusive global agenda with an ultimate objective of 'leaving no-one behind'.

The water goal, i.e., SDG 6 is most relevant to our business, where efforts are to be channelled towards sustainable management of water and sanitation for all. However, for Air Selangor, in delivering significant results under SDG 6, we can directly impact or influence the outcomes under other SDGs too.

Based on the level of direct impact or degree of influence that we can exercise on various stakeholders to generate results, as well as the interlinkages between SDGs, we have prioritised the following five, including SDG 6.

Our aspiration over the next three to five years will be to:

- 1 Align our long-term sustainability strategy under each of the priority SDGs with our regulators' focus areas and the operating landscape.
- 2 Build the evidence by monitoring and reporting data to demonstrate progress and highlight areas of improvements.
- 3 Engage with various stakeholders along our value chain, including regulators and policy makers to strengthen partnerships towards achieving the SDGs in our industry.

### Our Priority SDGs & SPIs that support them



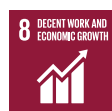
- SPI 1:** Water Forever
- SPI 2:** Improvement to Asset Reliability and Resilience
- SPI 3:** Improving Operational Efficiency
- SPI 4:** Towards Best Customer Service
- SPI 7:** Environmental Stewardship

### Our Contribution (2020)

- 99.8% of the population within our operational boundary has access to Air Selangor's potable water supply.
- Achieved 100% compliance with the MOH QAP with zero violation for *E.Coli* and zero simultaneous violations for *E.Coli* and free residual chlorine.
- Achieved 99.74% compliance with the MOH DWQS.
- We actively monitor raw water quality at all intake sources through our team of technical experts on the ground who will notify the relevant authorities if pollution is detected.
- Air Selangor's WTPs are working towards a zero effluent discharge operating model to minimise impact on the environment.
- Air Selangor is committed to reduce water loss in its operations and have successfully reduced this to 28.53% from a high of 33.00% in 2016.
- We actively promote water conservation through various educational and awareness programmes in partnership with educational institutions and state assemblymen (ADUNs). This includes distribution of free water thimbles to help consumers reduce water use.
- Through our flagship, River Care programme, we conducted two awareness sessions, one for local community and another one for our employees. In total, we engaged with 150 local community members and 90 employees to encourage participation in protecting their river ecosystems and the implementing actions required to report suspected pollution to authorities.



## Our Priority SDGs & SPIs that support them



- SPI 1:** Water Forever
- SPI 2:** Improvement to Asset Reliability and Resilience
- SPI 3:** Improving Operational Efficiency
- SPI 6:** Creating Conducive Working Environment

## Our Contribution (2020)

- Air Selangor provides employment to more than 5,000 skilled talents and provides them with competitive remuneration and benefits.
- We are constantly looking to improve diversity at the workplace, in addition to creating equitable opportunities for growth, welfare and well-being. In 2020, our employee turnover rate was only 4.55% and our employee engagement survey returned a score of 82.00% indicating a highly engaged workforce.
- We do not directly hire migrant labour. Our suppliers and vendors are also required to adhere to adequate health and safety standards for their employees/workforce as stipulated in their contracts.
- At Air Selangor, workplace health and safety are a top priority. There were zero fatalities reported in 2020 and we are committed to minimise workplace risks through various intervention programmes.



- SPI 1:** Water Forever
- SPI 3:** Improving Operational Efficiency
- SPI 4:** Towards Best Customer Service
- SPI 7:** Environmental Stewardship

- We optimise the treatment processes through technology, and actively monitor and regulate various disinfectants and chemicals that are used. Our disinfectants and chemicals are certified by SPAN, SIRIM, and/or Jabatan Kemajuan Islam Malaysia (JAKIM), where applicable.
- We also manage the various residuals from the water treatment process to meet full compliance with the Environmental Quality (Scheduled Wastes) Regulation 2005.
- Through our WTPs and commitment towards a zero-discharge operating model, we are continuously exploring recycling solutions to treat effluents and thus reducing freshwater withdrawals.
- Reduced our impact on the environment, as stated in our Health, Safety and Environment Policy, and optimised the way we use energy and other resources.
- With a Sustainability Strategy in place for OP 1 (2020-2022), we are institutionalising responsible business practices to effectively manage our impacts.
- To improve the quality of our disclosures, starting 2020, a full-fledged sustainability report will be published annually in accordance with GRI Standards.



- SPI 3:** Improving Operational Efficiency
- SPI 7:** Environmental Stewardship

- We are working towards climate-proofing our operations to ensure sustainable water supply.
- We have adopted new methods of raw water storage via ORS and HORAS 600 to minimise the impacts of water scarcity which may arise due to climate change.
- We are taking steps to reduce our carbon emissions through efficiency measures and renewable energy opportunities.



- SPI 1:** Water Forever
- SPI 2:** Improvement to Asset Reliability and Resilience
- SPI 3:** Improving Operational Efficiency
- SPI 4:** Towards Best Customer Service
- SPI 7:** Environmental Stewardship

- Air Selangor has established an Anti-Bribery and Anti-Corruption Policy in 2020 and developed procedures to ensure highest standards of integrity are practised throughout the organisation.
- Recognising the important role we play as the sole water operator for Selangor, Kuala Lumpur and Putrajaya, we continue to improve our service delivery by engaging with our stakeholders, by being responsive to our customers, and by communicating our challenges, strategies and performance in a transparent manner.

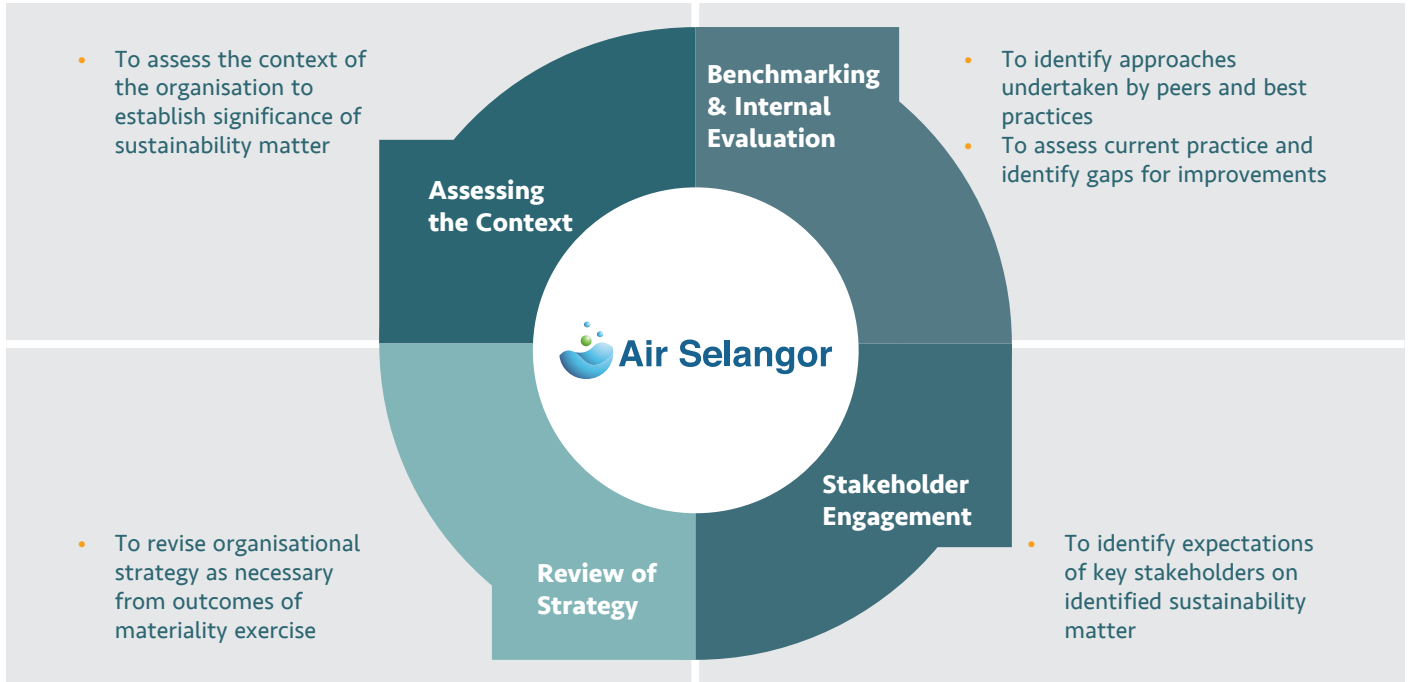
## STAKEHOLDER ENGAGEMENT

Air Selangor has interacted with stakeholders as part of business operations through identified communication channels. Stakeholder engagement is an important aspect for us to understand issues and concerns raised by various groups, to obtain further business insights to improve overall outcomes and to strengthen working relationships. Stakeholder engagement as a function and focus area falls within the purview of various departments within the company, depending on the nature of the engagement and its purpose. The table below provides an overview of our engagements with our stakeholders on sustainability topics.

STAKEHOLDER GROUP	APPROACH/PLATFORMS	TOP AREAS OF CONCERN
<b>Directors</b>	<ul style="list-style-type: none"> <li>Board and Board Committee Meetings</li> </ul>	<ul style="list-style-type: none"> <li>Financial and operational performance</li> <li>Capital investments and initiatives</li> <li>Risk management</li> </ul>
<b>Regulators</b>	<ul style="list-style-type: none"> <li>Meetings</li> <li>Events</li> <li>Workshops</li> <li>Site visits</li> <li>Enforcement activities</li> </ul>	<ul style="list-style-type: none"> <li>Adherence to regulations and license requirements</li> <li>Business plan and operational performance</li> <li>Tariff rates</li> <li>Pollution</li> <li>Compliance with MOH DWQS</li> <li>Speedy and accurate water quality test results</li> <li>Engagement and communication</li> <li>Climate change</li> <li>Environmental performance</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>Service counters</li> <li>Open counters</li> <li>Helpline</li> <li>Social media</li> <li>Mobile application</li> <li>Air Selangor's website</li> <li>Media</li> <li>Reports</li> <li>Campaigns</li> <li>Complaint investigation</li> </ul>	<ul style="list-style-type: none"> <li>Service reliability and billing accuracy</li> <li>Continuous water supply</li> <li>Optimum water pressure</li> <li>Water quality</li> <li>Engagement and communication</li> <li>Brand perception and trust</li> <li>Timeliness of resolutions and responsiveness to complaints</li> <li>Awareness and educational matters</li> </ul>
<b>Developers</b>	<ul style="list-style-type: none"> <li>Meetings</li> <li>Electronic Development Plan Approval System (edPLAS) application</li> </ul>	<ul style="list-style-type: none"> <li>Efficient and transparent water supply application process</li> <li>Integrity and governance</li> </ul>
<b>Employees</b>	<ul style="list-style-type: none"> <li>Employee engagement survey</li> <li>Employee training and employee engagement events</li> <li>Internal newsletters and bulletins</li> <li>Performance reviews</li> <li>Total Asset Management System (TAMS)</li> <li>Manuals and procedures</li> </ul>	<ul style="list-style-type: none"> <li>Engagement and communication with management</li> <li>Remuneration and benefits</li> <li>Workplace health and safety</li> <li>Succession planning and talent pool</li> <li>Opportunities for learning and development</li> <li>Internal system capability, reliability and performance in conducting day-to-day tasks</li> </ul>
<b>Vendors/Suppliers/Contractors</b>	<ul style="list-style-type: none"> <li>Procurement manual</li> <li>Performance reviews</li> <li>Vendor surveys</li> <li>Training and events</li> <li>Meetings</li> <li>Site visits</li> <li>Air Selangor's website</li> <li>TAMS' Supplier Portal</li> <li>Telegram</li> <li>Tender advertisement</li> </ul>	<ul style="list-style-type: none"> <li>Fairness and transparency in tender process</li> <li>Impartial and comprehensive tender evaluation</li> <li>Business ethics</li> <li>Service and product quality</li> <li>Vendors' due diligence</li> </ul>
<b>Local Communities/NGOs</b>	<ul style="list-style-type: none"> <li>Meetings</li> <li>Engagement sessions, community events and CSR programmes</li> <li>Campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Philanthropy and charitable giving</li> <li>Environmental performance</li> <li>Brand perception and trust</li> <li>Engagement and communication</li> <li>Partnerships and collaboration</li> <li>Awareness and educational matters</li> </ul>
<b>State Assemblymen, Government Agencies, Industry Groups, Academic Institutions and Others</b>	<ul style="list-style-type: none"> <li>Community programmes/events</li> <li><i>Sidang Dewan Undangan Negeri (DUN)</i></li> <li>Briefings and engagement sessions</li> <li>Townhall</li> <li>Research collaborations</li> </ul>	<ul style="list-style-type: none"> <li>Partnerships and collaborations</li> <li>Engagement and communication</li> <li>Timeliness of resolutions and responsiveness to complaints</li> <li>Awareness and educational matters</li> </ul>
<b>Media</b>	<ul style="list-style-type: none"> <li>Press conferences</li> <li>Events</li> <li>Air Selangor website</li> <li>Engagement sessions</li> </ul>	<ul style="list-style-type: none"> <li>Dissemination of information</li> <li>Engagement and communication</li> </ul>

## MATERIALITY ASSESSMENT

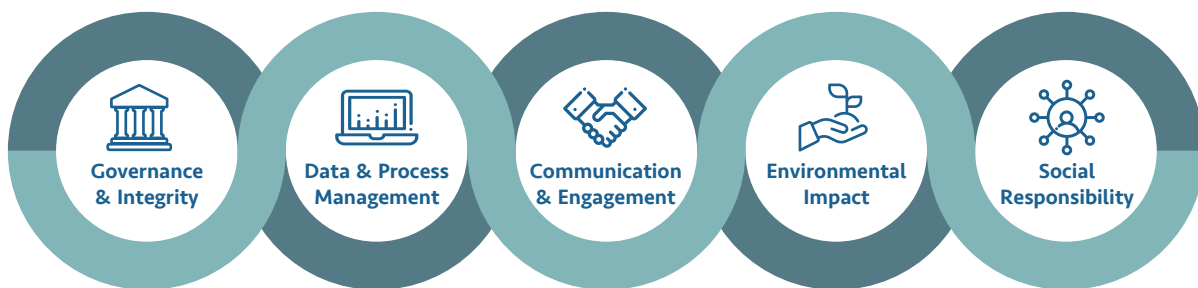
Air Selangor established a materiality assessment process to identify sustainability risks and opportunities relating to the economy, environment and society. Air Selangor aims to review its material matters prior to the start of each OP (as defined in the company's 30-year rolling capital investment and business plan, effective September 2019).



The first company-wide materiality assessment which was carried out by the SD Section was completed in October 2019. The process included literature review, a peer benchmarking exercise against best practicing water operators and SDG identification. A literature review was done to provide an overview of policies, relevant frameworks and initiatives in a larger context for the water sector. Here, business goals, internal sustainability efforts and policies were also examined. This was followed by a benchmarking exercise to examine sustainability best practices and performance by peer operators, both local and international, against those practised by Air Selangor. Next, an exercise to identify and prioritise relevant SDGs to Air Selangor was also carried out.

To identify material sustainability matters, selected internal and external stakeholders were directly engaged to not only understand, but also identify challenges and opportunities which are material to the organisation. Outcomes from other stakeholder engagement exercises such as surveys were also taken into consideration and included, where applicable. The list of material sustainability matters was prioritised and mapped against organisational goals over the period indicated.

The process led to an identification of several material sustainability matters, which are managed by deploying five key strategies:



Air Selangor aims to review its identified material sustainability matters every two years and where necessary, formulate strategies to address any changes in these material matters.

## SUSTAINABILITY STRATEGIES

To successfully achieve its sustainability ambition, Air Selangor derived a set of strategies for OPI between October 2019 and 2022, which are focused on addressing current gaps and identifying opportunities for further improvement. These strategies were derived from the materiality assessment exercise, stakeholder engagement sessions, as well as existing current and future plans that are aligned with the company's sustainability ambition and have been approved by the CEO and MC for implementation.

Our progress on these strategies has been disclosed in the following pages of this report. Meanwhile, Air Selangor is working towards establishing long-term sustainability strategies in line with its growth plans to provide greater clarity on how the company plans to address material matters that will potentially impact our businesses and stakeholders in the long-term. This will be disclosed in future sustainability reports.

### Strategy 1: Enhancing Governance & Integrity

A

Embed sustainability governance mechanisms to ensure management oversight.

**SPI 3: Improving Operational Efficiency**



B

Establish and implement an international standard of ethical behaviour throughout the organisation.

**SPI 1: Water Forever**

**SPI 2: Improvement to Asset Reliability and Resilience**



### Strategy 2: Standardising Data & Processes

A

Integrate and streamline all data management processes and systems across the organisation.

**SPI 2: Improvement to Asset Reliability and Resilience**

**SPI 3: Improving Operational Efficiency**



B

Establish a system for monitoring and analysing sustainability related data.

**SPI 3: Improving Operational Efficiency**



### Strategy 3: Transparent Communication

A

Enhance communications throughout the organisation and externally with customers through new and existing platforms.

**SPI 4: Towards Best Customer Experience**

**SPI 6: Creating Conducive Working Environment**



B

Establish annual Sustainability Reporting process which integrates performance data and sustainability commitments.

**SPI 3: Improving Operational Efficiency**

**SPI 7: Environmental Stewardship**





### Strategy 4: Reducing Environmental Impact

**A**

Improve operational efficiency and cost savings through effective energy management.

**SPI 3:** Improving Operational Efficiency

**SPI 7:** Environmental Stewardship



**B**

Reduce environmental impact of operational waste and effluent.

**SPI 3:** Improving Operational Efficiency

**SPI 7:** Environmental Stewardship



**C**

Lead by example through efficient use of water in the face of climate-change.

**SPI 1:** Water Forever

**SPI 7:** Environmental Stewardship



### Strategy 5: Be Socially Responsible

**A**

Embed a culture of health and safety throughout the organisation.

**SPI 6:** Creating Conducive Working Environment



**B**

Enhance product quality and protect customer health through continuous improvement.

**SPI 1:** Water Forever

**SPI 4:** Towards Best Customer Experience



**C**

Identify and develop an impactful flagship corporate responsibility programme.

**SPI 1:** Water Forever

**SPI 7:** Environmental Stewardship



**D**

Create opportunities to promote and enhance employee diversity.

**SPI 3:** Improving Operational Efficiency

**SPI 6:** Creating Conducive Working Environment





# ENHANCING GOVERNANCE AND INTEGRITY

**Robust Governance Framework ..... 34**

**Strengthening Principles of  
Business Integrity ..... 39**

As the sole licensed water operator for Selangor, Kuala Lumpur and Putrajaya, Air Selangor is subject to operating conditions and regulations set by the Selangor State Government and relevant authorities such as SPAN and LUAS. Therefore, as Air Selangor embarked on its sustainability journey, we have implemented effective governance mechanisms to achieve our business objectives and drive organisational performance. Our robust governance framework identifies the operational and business risks faced by the company for necessary mitigation action.

As a provider of essential services, we place emphasis on business continuity, especially given the current environment. We have also strengthened legal and ethical principles throughout the company via the various approaches taken to eliminate corruption and bribery risks, with the introduction of various controls and practices that are aligned with regulations in Malaysia.



## ROBUST GOVERNANCE FRAMEWORK



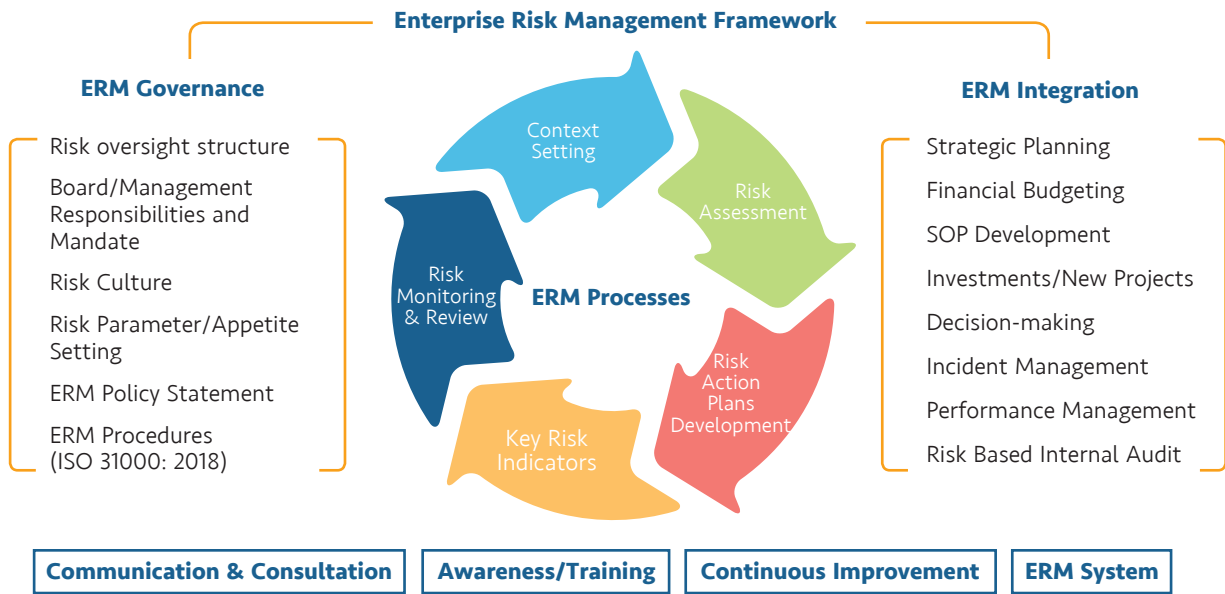
Air Selangor adopted an integrated risk management approach that contributes to the organisation’s security, resilience, operational efficiency, risk tolerance profile and strategic decision-making process. As opposed to a compliance-based risk management approach, our integrated approach focuses on developing risk strategies and evaluating risks in the wider context of business strategy. It is also viewed as a collaborative tool that involves both functional and business leaders. The Risk Management Department (RMD) in Air Selangor constitutes five different sections that focus on diversified set of risks as shown below:-



### Enterprise Risk Management Framework

An effective risk management framework allows the company to proactively identify and control risks to achieve its business objectives and meet stakeholder' expectations. The Board of Directors (BOD) recognise that the adoption of Enterprise Risk Management Framework (ERM) is an integral part of robust governance practices in enhancing transparency for decision-making, elevating business strategy and implementation, and strengthening business resilience.

The diagram below illustrates the Air Selangor's ERM framework.



The framework, which is aligned with ISO 31000:2018 Risk Management standards, sets out the underlying pillars that support the continuous identification, monitoring and review of business risks as well as the development of action plans to address these risks.

The ERM governance structure covers company-wide entities, driven by the BOD and supported by the Board Audit Committee (BAC), Risk Management Committee (RMC) and representatives from both operational segment and corporate functions. The members of the RMC are also members of the MC, which is led by the CEO.



### **Board of Directors (BOD)**

The BOD is responsible for overseeing the establishment and implementation of the ERM framework, including provision of recommendations and direction on the principal business risks and emerging risks. The BOD reviews and monitors the effectiveness and adequacy of the ERM framework and implementation of systems to safeguard business operations and ensure business continuity.

### **Board Audit Committee (BAC)**

The BAC reviews the effectiveness of Air Selangor's ERM framework and internal control systems. The BAC also provides an independent view on specific risks, control issues, the state of internal control, including trends and events. Specifically, the BAC also reviews and approves both internal and external audit plans, while monitoring integrity risk reporting. In short, the BAC assists the BOD in carrying out its oversight responsibilities relating to the Air Selangor's accounting policies, internal controls and financial reporting practices.

### **Internal Audit Department (IAD)**

The IAD supports the BOD, BAC and MC by bringing a systematic and disciplined approach in evaluating and improving the effectiveness of the Air Selangor's governance, risk management and internal controls. In performing its internal audits, the IAD is guided by the mandatory elements of The Institute of Internal Auditors' International Professional Practices Framework, including the Core Principles for the Professional Practice of Internal Auditing, the Code of Ethics, International Standards for the Professional Practices of Internal Auditing, Definition of Internal Auditing and Internal Audit Guidelines as issued by the Malaysian Institute of Accountants.

### **Risk Management Committee (RMC)**

The RMC acts as an advisor for key risks and control effectiveness throughout the company. The RMC is also responsible for implementing the ERM Framework and Policy. It reviews the policy annually to ensure the effectiveness of risk management in the company.

### **Risk Management Department (RMD)**

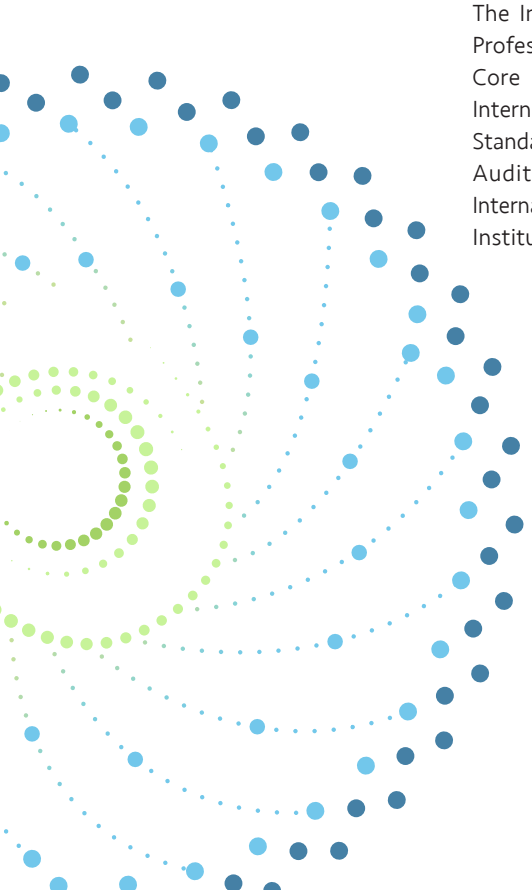
The RMD assists the RMC in discharging its duties and responsibilities which include improving the ERM Framework, Policy and Procedures. RMD is also responsible for providing risk management guidance and advice, monitoring the implementation of risk action plans and key risk indicators, creating risk awareness among all employees, highlighting emerging risks and submitting periodic risk reports to the RMC for review.

### **Risk Owners and Risk Co-owners**

Risk Owners consisting of Director of Operations, Heads of Departments, Heads of Regions, and Heads of Water Treatment Plants are responsible for identifying key risks and ensuring appropriate risk management strategies and controls are considered and incorporated in the business plan and strategy development process. Supported by Risk Co-owners, Risk Owners will implement the appropriate risk management strategies and controls. Emerging risks which require urgent attention are highlighted to Risk Owners and the RMC for further deliberation.

### **Employees of Air Selangor**

Employees of Air Selangor contribute towards managing risk exposure to the company by assisting Risk Owners and Risk Co-owners in identifying key risks and supporting the implementation of risk action plans. Employees are encouraged to proactively highlight any new emerging risks to Risk Owners and Risk Co-owners, exercise due care to prevent loss while also capitalising on opportunities.



## Key Business Risks & Mitigation Measures

Air Selangor reviews its **Risk Profile\*** on a yearly basis to ensure key and emerging business risks are considered and appropriate mitigation strategies are implemented. In 2020, we identified several key business risks which were monitored and addressed through the risk management plan to minimise their impact on our business operations.

KEY BUSINESS RISKS	KEY RISK MANAGEMENT STRATEGIES
<b>Unsustainable revenue model</b>	<ul style="list-style-type: none"> <li>Secured alternative sources for CAPEX, apart from tariff revisions, through fund-raising and NRW matching grant.</li> <li>Prioritised CAPEX based on criticality.</li> <li>Maintained strong cash flow planning and management.</li> </ul>
<b>Regulatory compliance</b>	<ul style="list-style-type: none"> <li>Institutionalised an engagement process with local authorities to ensure compliance to regulatory requirements.</li> <li>Conducted internal self-assessment and monitoring of compliance matters.</li> </ul>
<b>Raw water pollution</b>	<ul style="list-style-type: none"> <li>Installed and upgraded River Monitoring Stations with real-time monitoring systems.</li> <li>Scheduled river surveillance by the Pasukan Khas Lembangan and Alur Air (PAKAR) teams in Air Selangor.</li> <li>Intensified collaboration between Air Selangor and other governmental agencies and local authorities for effective governance, stricter enforcement and implementation of river pollution mitigation initiatives.</li> <li>Reviewed and enhanced water treatment capabilities of existing WTPs.</li> </ul>
<b>Health and safety</b>	<ul style="list-style-type: none"> <li>Enhanced employee awareness through capacity building, culture alignment and strengthen governance mechanisms.</li> <li>Enhanced vendor/supplier awareness through capacity building and penalty system to encourage compliance.</li> <li>Strengthened hazard identification and evaluation procedures.</li> </ul>
<b>Demand and supply</b>	<ul style="list-style-type: none"> <li>Enhanced our water distribution system.</li> <li>Constructed new WTPs to meet future demand and improve reserve margin.</li> </ul>
<b>Public reputation</b>	<ul style="list-style-type: none"> <li>Enhanced ERM governance and coordination activities.</li> <li>Enhanced crisis communication and scenario planning related process and procedures.</li> <li>Improved public awareness and engagement through targeted communication strategies.</li> </ul>
<b>Asset management</b>	<ul style="list-style-type: none"> <li>Optimised TAMS and enhanced governance mechanism to ensure compliance with identified procedures.</li> <li>Established the Strategic Asset Management Plan and implemented the asset management standard operating procedure (SOP), guided by ISO 55001 Asset Management System.</li> <li>Formalised Asset Criticality Assessment Guidelines and performed asset condition assessment.</li> </ul>
<b>Project delays</b>	<ul style="list-style-type: none"> <li>Improved liaison and planning activities involving key stakeholders.</li> <li>Intensified project management training and process enhancements.</li> </ul>
<b>Non-revenue water</b>	<ul style="list-style-type: none"> <li>Implemented Commercial and Physical Loss Reduction programmes.</li> <li>Strengthened resource planning, including manpower and CAPEX work prioritisation.</li> </ul>
<b>Collections</b>	<ul style="list-style-type: none"> <li>Intensified public awareness and acceptance towards online payment channels via e-Bil campaigns and targeted communication.</li> </ul>

\* The Air Selangor Risk Profile outlined here is valid as at 31 December 2020.

## Business Continuity Management

In managing crises or disasters, Air Selangor is committed to protect its employees, minimise damage to the environment, reduce losses and damage to its assets, resources, and operations and maintain its reputation, in line with stakeholder' expectations. Our existing **Emergency Response Plan (ERP)** was first developed in 2017 to manage water disruptions while our **Disaster Recovery Plan (DRP)**, which was established in 2016, covers mission-critical IT system disruptions to ensure affected business operations are restored.

In 2019, the management reinforced the need to set up a **Business Continuity Management (BCM)** function in the event of other internal or external events which may lead to business disruption. Therefore, in May 2020, the BCM Section was established under the RMD to provide a structured approach for the continuous operation of critical business functions and essential services in the event of business disruptions.

BCM is a holistic management programme that identifies potential events that threaten an organisation. Coupled with a framework that builds resilience and capabilities to respond effectively, it safeguards the interests of its key stakeholders, namely the environment, reputation, brand and value-creating activities.

Air Selangor also developed a **BCM Framework**, guided by ISO 22300: 2012 Business Continuity Management System and a BCM Policy, both which have been approved by the CEO. The BCM Policy covers governance structure, methodology, planning, impact analysis and pandemic response framework. In 2020, multiple activities were carried out to introduce and strengthen employees' understanding on BCM.

We are currently working towards establishing and implementing an effective BCM programme to enhance the company's resilience by mitigating the possible adverse impacts of various disruptions in business.



## Business Continuity Response During COVID-19 Pandemic

In March 2020, the Government of Malaysia announced a nationwide lockdown by enforcing a Movement Control Order (MCO) to combat the spread of COVID-19. The lockdown included closure of all government and private offices, excluding all essential services such as utilities.

In response to the MCO in Selangor, Kuala Lumpur and Putrajaya, several processes were initiated to ensure Air Selangor continued its operations and services for consumers. This included identifying critical- and non-critical functions for the purpose of manpower planning as well as alternative procedural arrangements to minimise the risks of infection which were in compliance with the SOPs. We implemented a roster (a rotation schedule) for employees undertaking critical functions and who needed to work from office. Other employees were provided flexible work-from-home arrangement.



## STRENGTHENING PRINCIPLES OF BUSINESS INTEGRITY

Air Selangor remains committed to conduct its business with highest standards of integrity, transparency and accountability, in line with its core values of Professionalism, Integrity, Honesty, Teamwork and Highest Standard of Services. As part of our efforts to uphold these values, we adopted a zero-tolerance policy towards acts of bribery and corruption.



We established an Integrity Unit in October 2019 under RMD to fulfil the requirements set out by the Prime Minister’s Office in October 2018 and to comply with the Corporate Liability Provision under Section 17A of the Malaysian Anti-Corruption Commission (MACC) Act 2009. The Integrity Unit reports to the Head of Risk Management on administrative matters but maintains a direct line of reporting to the BAC. The Head of Risk Management also plays a strong advisory role in directing the Integrity Unit’s activities, in consultation with the BAC Chairman.

The Integrity Unit’s three main obligations are as follows:-

- 1 To ensure full compliance to Adequate Procedures of MACC Section 17A, including continuous training and awareness;
- 2 To partner the business in ensuring all policies, guidelines and frameworks across the organisation are implemented to the highest standards of integrity;
- 3 To actively conduct Corruption Risk Management (CRM) assessments via frequent risk reviews, control testing, action plans validation, identification of opportunities for process improvements with regards to integrity and corruption risk.

The **Anti-Bribery and Anti-Corruption (ABAC) Framework, Policy and Procedures** were subsequently established to guide our employees and business associates in identifying and dealing with any bribery and corruption issues, as well as understanding their roles and responsibilities. The ABAC Policy and Procedures defines the various types of corruption including bribery, abuse of power, bid-rigging, unauthorised disclosure of confidential information, false claim, embezzlement, fraud, and extortion. It is also aligned to the relevant anti-bribery and anti-corruption laws in Malaysia.

The ABAC Policy and Procedures apply to all employees and Directors of Air Selangor, and business associates conducting business on behalf of Air Selangor which include but not limited to vendors, suppliers, agents, contractors, and consultants. It must be read together with other policies and procedures such as the Employee Handbook, Employee Code of Conduct and Ethics, Business Code of Conduct, Whistleblowing Policy, No Gift Policy, Corporate Social Responsibility Policy, Manpower Recruitment Policy, Conflict of Interest Policy and Employee Disciplinary Policy.

To support the implementation of the ABAC Policy and Procedures, our dedicated whistleblowing channel via [etika.air@airselangor.com](mailto:etika.air@airselangor.com) which was established in 2015, is available to anyone who would like to raise concerns about non-adherence to the ABAC Policy and Procedures. The Whistleblowing Policy protects the whistleblower’s identity and prevents any kind of retaliation towards the whistleblowers.

### Anti-Corruption Training and Corporate Integrity Pledge

As part of our efforts to ensure all employees are aware about the definitions of bribery and corruption, and how to manage any potential or actual cases, anti-corruption training for our employees and vendors are conducted. As of December 2020, around 70% of our employees and 52% of our registered vendors attended the anti-corruption awareness sessions, either in-person or via digital workshops. Efforts to reach out to all employees and registered vendors are currently ongoing.

We also organised a **Corporate Integrity Pledge** ceremony, also known as *Ikrar Bebas Rasuah*, for our top management, employees and business associates. As of December 2020, 100% of our top management, 70% of our employees and 52% of our business associates have taken the Corporate Integrity Pledge.



Corporate Integrity Pledge by Air Selangor's Top Management



Corporate Integrity Pledge by Air Selangor's Business Associates



Corporate Integrity Pledge by Air Selangor's Employees



Training on Anti-Corruption for Employees

### Integrity Pact

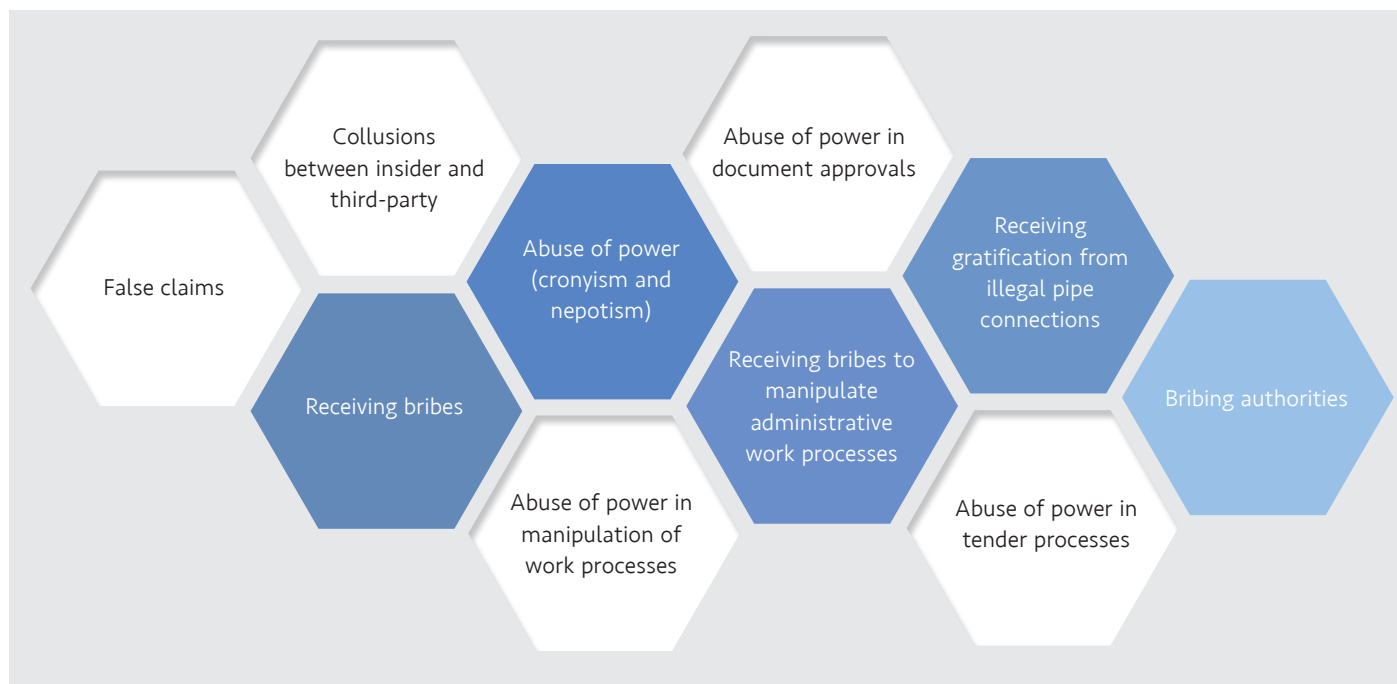
The Integrity Pact comprises of a declaration or a set of disclosures that need to be completed by Air Selangor’s Board members, senior management, employees and business associates who are involved in procurement processes within the company. The implementation of the Integrity Pact is in line with Air Selangor’s Code of Business Ethics which stipulates that procurement decisions must be made solely based on Air Selangor’s best interest (including the interest of its customers), product or service suitability, price, delivery, and quality. In 2020, we completed implementation of Integrity Pact for all Board members, employees, and business associates.

### Integrity Review

In 2020, we carried out reviews on previous corruption cases in 2018 and 2019, integrity-related documents from relevant departments such as No Gift Policy, Conflict of Interest and Employee’s Code of Ethics from Human Resources, Whistleblowing Policy from Internal Audit, CSR Policy from Corporate Communication and Procurement Manual from Procurement. These reviews were conducted to identify corruption hotspots and its exposure to our departments and processes. We also identified ways to strengthen the documents and improve integrity matters so that they mirror Air Selangor’s current direction and strategy. Specifically for policies and manuals, we intend to enhance the approval processes, requirements for review and accessibility of these policies to relevant stakeholders. In addition, Roundtable Discussions with our Planning and Capital Works department were conducted to investigate potential corruption risks.

### Corruption Risk Management

The CRM Assessment Workshop was held in February 2020 with the objective of developing corruption risk profile and anti-corruption risk action plans. From this workshop, we identified 108 potential corruption risks across various departments within Air Selangor. The top 10 potential corruption risks are listed as below.



From the potential risks identified, recommendations for improvement were developed, which included strengthening internal controls, elevating awareness level and embedding culture of ethics and integrity, among others.



# STANDARDISING DATA AND PROCESSES

When the merger and acquisition exercise was completed in September 2019, Air Selangor inherited systems, processes, policies and data from five distinct entities.

In order to achieve organisational alignment and ensure a level of consistency in our business modus operandi, we invested our efforts in harmonising operations across the company through the adoption and streamlining of standards, procedures and policies. Our aim was to improve efficiencies, boost productivity and maintain the quality of our water services.

<b>Streamlining ISO Management System in Air Selangor .....</b>	<b>44</b>
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## STREAMLINING ISO MANAGEMENT SYSTEM IN AIR SELANGOR

At Air Selangor, we believe that a strong management system is key to realising the company's mission to deliver best experience to our customers. Towards this, we adopted multiple management standards to sustain the quality of our products and services, reduce environmental impact, ensure safe workplace as well as manage information security and business continuity.

In 2020, our activities were mainly focused on streamlining the ISO activities across Air Selangor. These activities included establishing an Integrated Management System, improving the internal management system and carrying out periodic ISO audits to obtain or renew the various ISO certification in different areas.

We remain committed to enhancing our management practices and increase business efficiency through the adoption of ISO standards and best practices. Moving forward, Air Selangor will also be implementing an Integrated Management System for the entire company covering ISO 9001, ISO 14001, ISO 45001, ISO 27001, ISO 55001, ISO 22301, and ISO 37001.



## ESTABLISHING A MONITORING AND REPORTING FRAMEWORK

Air Selangor is committed to embed sustainable practices across our business operations via our sustainability strategies which drive the implementation of various initiatives. We also established a standardised internal monitoring and reporting framework to track the progress of our sustainability efforts and programmes for continuous improvement.

## EMBARKING ON OUR DIGITAL TRANSFORMATION

Digital technology has transformed the way organisations conduct business to achieve growth and enhance market presence. As the biggest water operator in Malaysia with a daily production of treated water amounting to nearly 5,000 MLD, we serve the needs of 8.4 million consumers through numerous operational assets, backed by a workforce of approximately 5,000 people. In this regard, we deal with enormous amounts and types of information which needs to be managed efficiently and leveraged on to maximise the value of these data captured daily. We believe our digital transformation will optimise operations and deliver enhanced customer experience.

### Data Analytics Centre

Air Selangor acknowledges the need for fast and efficient data management and analytics. With the growing amount and type of data generated throughout the company, we established a **Data Analytics Centre (DAC)** to manage the consolidation of data from various sources and create organisation-wide capabilities for big data analytics.

The role of the DAC is to build, maximise and upscale the capabilities of end-to-end big data analytics which include artificial intelligence, machine learning and digitalisation of intelligence. DAC has implemented various initiatives to enhance our business operations and processes which include OBI for Revenue Management (OBI-RM) and OMA. The OBI-RM provides deep insights on improving billing and meter-related activities and processes. Meanwhile, the OMA is a mobile platform that consolidates and streamlines Air Selangor's various operational processes.

DAC also introduced **Enterprise Data Lake, ASPIRE as well as Exploratory and Predictive Analytics** which are ongoing initiatives that focus on obtaining insights to derive business decision-making in various areas across our business operations. Our aim is to leverage on big data analytics to drive business growth and promote data-driven decision-making within the company.

### Intelligent Command Centre

As part of our aspiration to become a digital water utility operator, we established an **Intelligent Command Centre (ICC)** in Air Selangor which commenced operations in 2019. It is essentially a transition from an operational command centre (OCC). The ICC links and integrates our key strategic asset parameters such as flow, pressure, reservoir level, pump status and Supervisory Control and Data Acquisition (SCADA) capabilities.

The commissioning of ICC was completed on 15 January 2021. One of the main features of the ICC is the Online Hydraulic Model which is an end-to-end integration system for monitoring, analysing and modelling distribution systems in real-time. This system monitors our assets in real-time, ensuring optimal and continuous operations of our assets.

Moving forward, the ICC will be further improved with the adoption of 'Digital Twin' feature which is a virtual replica of the physical assets which will be used for real-time monitoring and prediction of maintenance and replacement of assets. This will help us proactively plan preventive actions to ensure continuous water supply to our customers.

### Digitalising the Way We Work

The COVID-19 pandemic and the various SOPs pushed many people to stay or work from home. Businesses transformed their work culture and accelerated digital technologies throughout 2020 to manage different ways of doing business.

Despite being categorised under essential services, Air Selangor was not immune to the impacts of the pandemic. Nevertheless, we strived to ensure continuous water services for our consumers. We implemented multiple initiatives, leveraging on digital technology to conduct our daily business operations.

#### Air Selangor's Digital Technology Initiatives

Transitioned customers to online transactions to enable them to have continuous interaction on matters pertaining to essential services such as payment, Change of Ownership, request for service or to lodge complaints.

From June to December 2020, we completed 2,690 applications for Change of Ownership via our online platform (DocuSign).

Completed the development of the Enterprise Content Management System (ECMS) framework which is the implementation blueprint for content management processes and system throughout the organisation.

The ECMS implementation will ensure compliance with the relevant ISO standards and Personal Data Protection Act.

Revamped and refreshed Air Selangor corporate website to offer a fresh and more customer-centric access to information and services online.

Established a document repository for online search of water bills, final reminders and disconnection notices at customer service counters.

Established a Salesforce Call Centre management system that enabled multiple interaction channels and closed-loop customer service management.

Adopted and migrated to cloud-based infrastructure, employing industry standard software-as-a-service application which is secure and scalable for future use.

Continued improvement and enhancement of the Air Selangor Mobile Application as a primary interaction channel for customers. The latest updates included the following features:

- Extended information on water disruption.
- Availability on Huawei Apps Gallery.
- Online payment using FPX.

Number of downloads for Air Selangor mobile application increased fourfold in 2020 compared to 2019.

Implemented the HCM System for various human resources management, covering recruitment, onboarding, absences, career and performance, expenses, employees' attendance, health and safety, talent management and compensation, learning and development and payroll.

Implemented the AISBILL mobile application to enhance the meter disconnection (DC) and reconnection (RC) process within debt recovery management.

Leveraged on the use of technologies to enable employees to work online and from home. Used Virtual Private Network (VPN) and Microsoft Teams that enabled employees to conduct meetings, trainings, customer call attendance and other functions remotely.

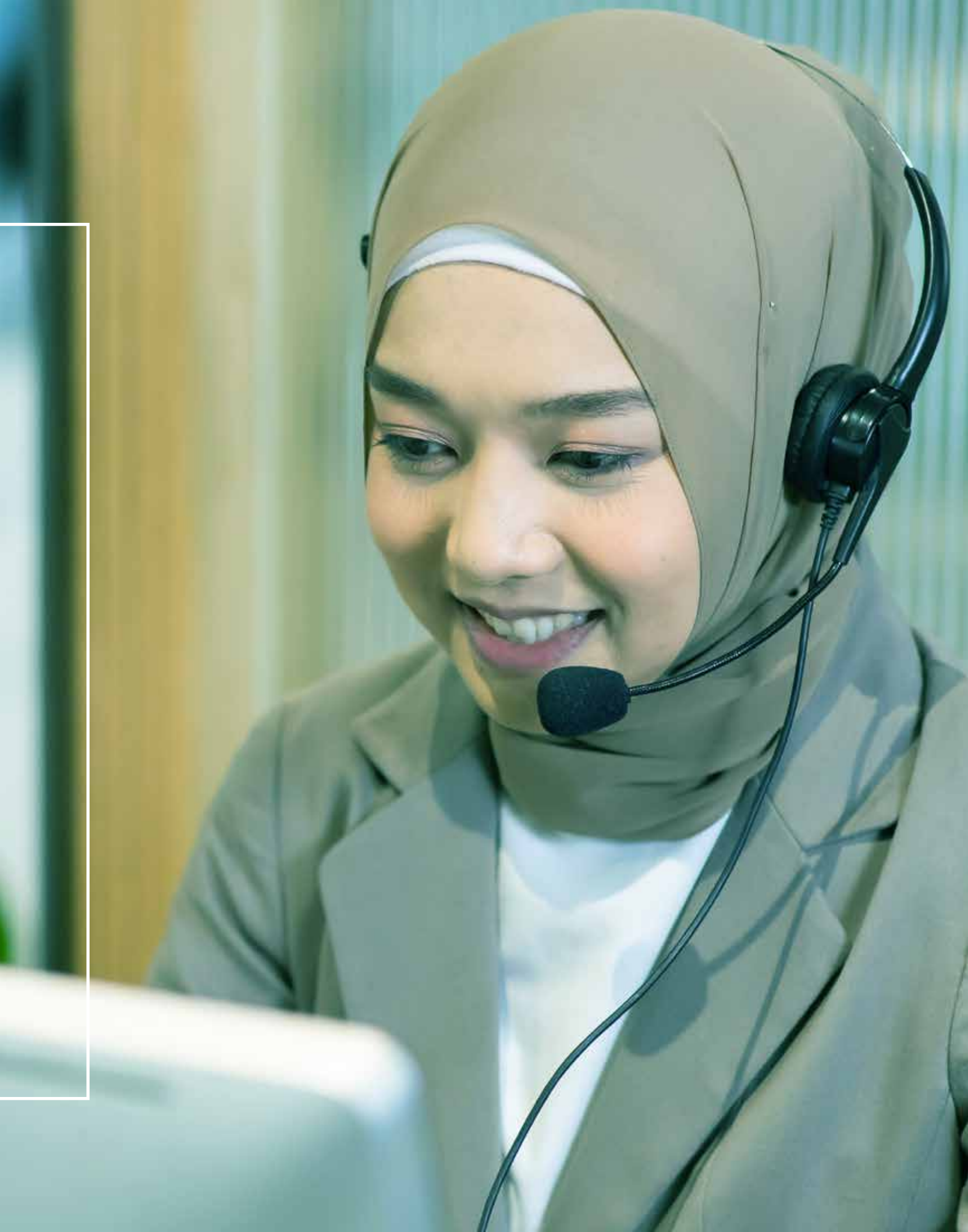
# TRANSPARENT COMMUNICATION

<b>Streamlining the Communication Platform .....</b>	<b>48</b>
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As the sole licensed water operator in Selangor, Kuala Lumpur and Putrajaya, Air Selangor recognises the importance of transparent communication with our stakeholders. Water is an essential part of our lives and therefore our customers expect regular and reliable updates, especially during service disruptions.

Furthermore, it is important for our customers to understand the operating model and challenges faced by Air Selangor in ensuring continuous and clean water supply is achieved. As such, we are leveraging on the many technology platforms that are available in this digitalised world to reach out to our customers in a timely and effective manner.

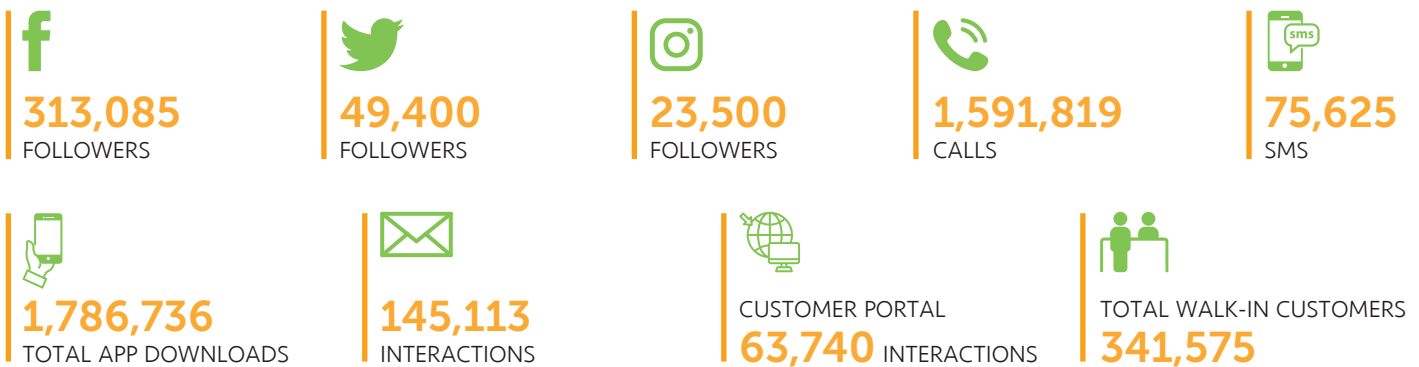
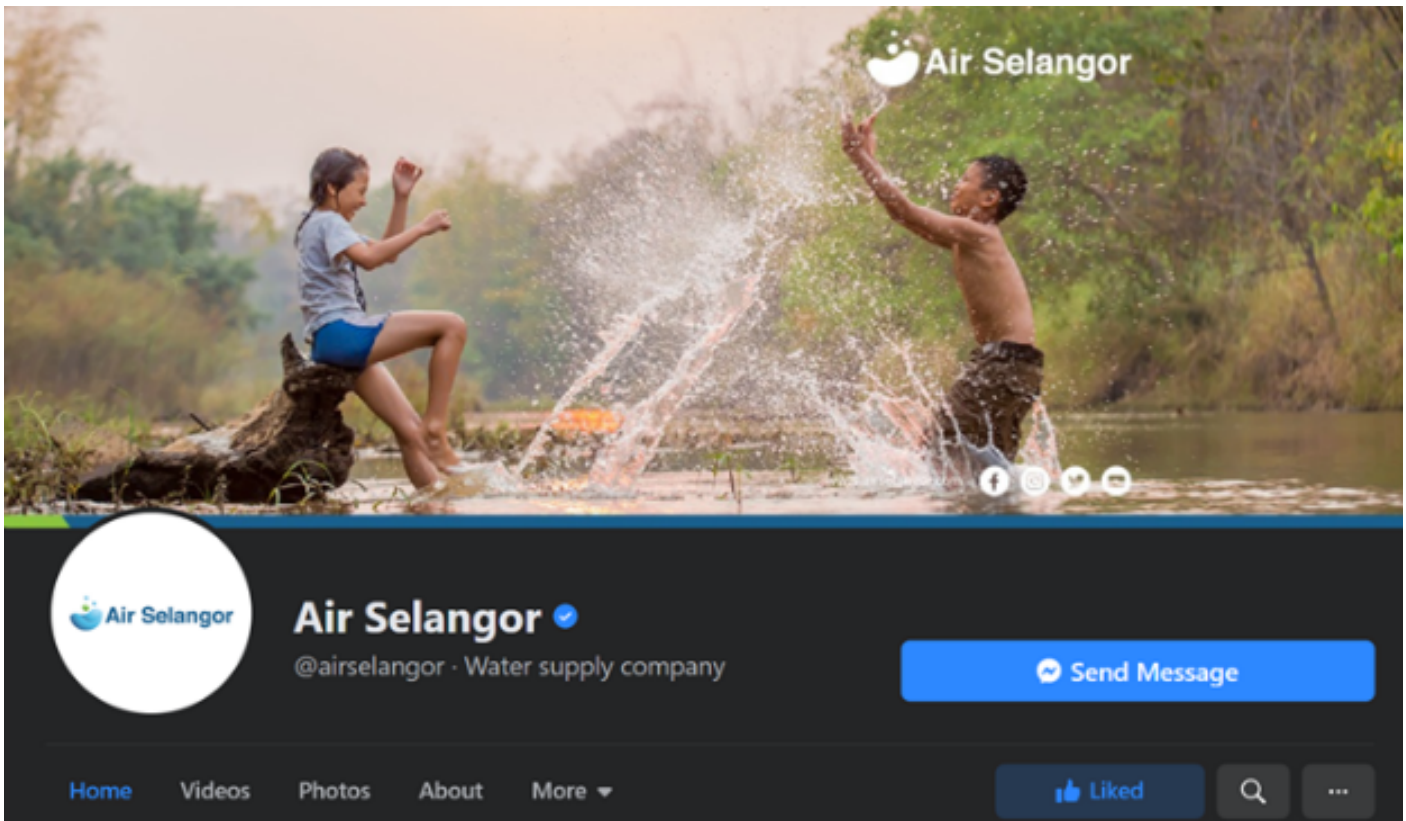




## STREAMLINING THE COMMUNICATION PLATFORM

We connect with our customers through various communication and social media channels such as Facebook, Instagram, and Twitter. We also have the Air Selangor mobile application, call centre hotline, SMS, email, customer portal, and service counters.

As part of our efforts to improve customer experience through digital solutions, we enhanced the Air Selangor mobile application with more features. This allowed our customers to access our services, offering them real-time updates on water supply disruption, manage water bill accounts, pay bills, make complaints and inquiries and gain quick access to other information related to Air Selangor services.



As at December 2020.

# PROVIDING BEST CUSTOMER SERVICES

Air Selangor is committed to continuously improve our customer service standards and provide customers with the best experience in keeping with our SPI 4: Towards Best Customer Service. To this effect, we have embedded 'Highest Standard of Services' as one of Air Selangor's five core values which has been embraced by all our employees. With the aim of providing 'drinkable water directly from the tap by 2028', we have put in place several measures to provide excellent water quality and mitigate supply disruptions for all our customers. We listened to our customers and valued their feedback on how we can serve them better.

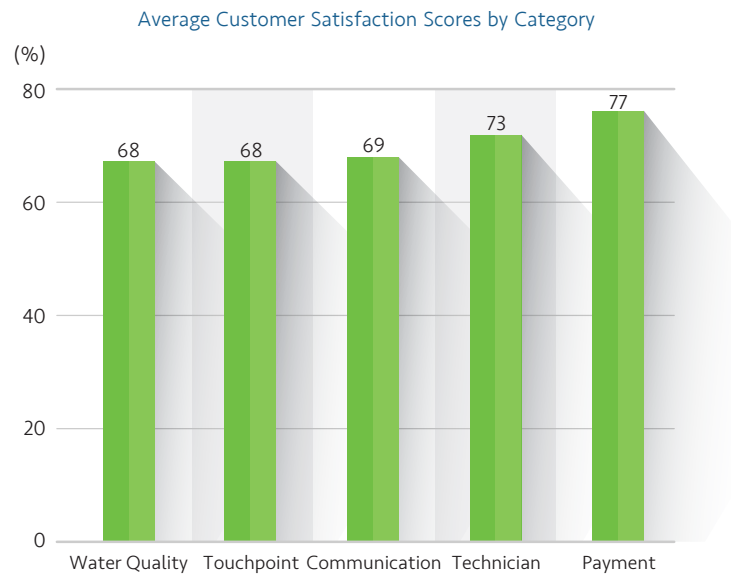
## Customer Satisfaction Index (CSI) 2020

To help us gain deeper insights into the customer service experience, we conducted a Customer Satisfaction Index (CSI) Survey 2020 from September to October 2020. Through this survey, our aim was also to identify and create a radical shift in our customers' experience as well as to enhance our brand reputation in delivering high service standards. We completed the CSI Survey 2020 during a challenging period with COVID-19 protocols and movement restrictions, socio-economic downturn, and major water disruptions caused by third-party pollution.

Under CSI Survey 2020, multiple approaches were taken to assess customer experience, medium of communications and brand perceptions via online surveys, in-depth interviews with our leadership team, commercial and governmental stakeholders, and residential customers. Brand sentiment analysis was also conducted to assess our brand visibility on various platforms including the website, mobile application, social media, mass media and social messaging application.

Based on the CSI Survey 2020 findings, Air Selangor achieved an overall CSAT score of 63.6%. The CSAT aimed at measuring customer satisfaction for our services and assessed several key areas, namely water quality, touchpoint satisfaction, communication satisfaction, technician satisfaction and payment.

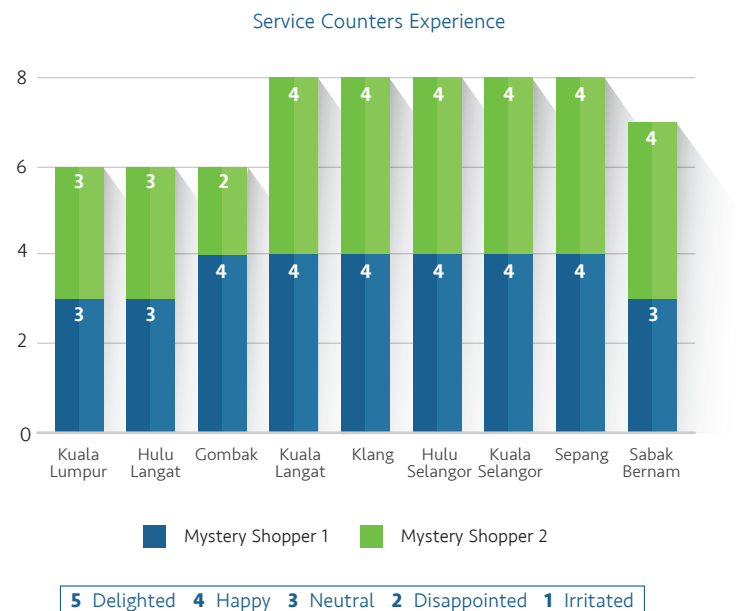
The CSI Survey 2020 also assessed our Net Promoter Score (NPS) which examined the likelihood of our customers recommending Air Selangor to their friends and families. We recorded a score of -23 for NPS, due to several water disruptions that affected customers in September and October 2020. Moving forward, we plan to consistently monitor both the CSAT and NPS scores to ensure we are providing better customer experience.



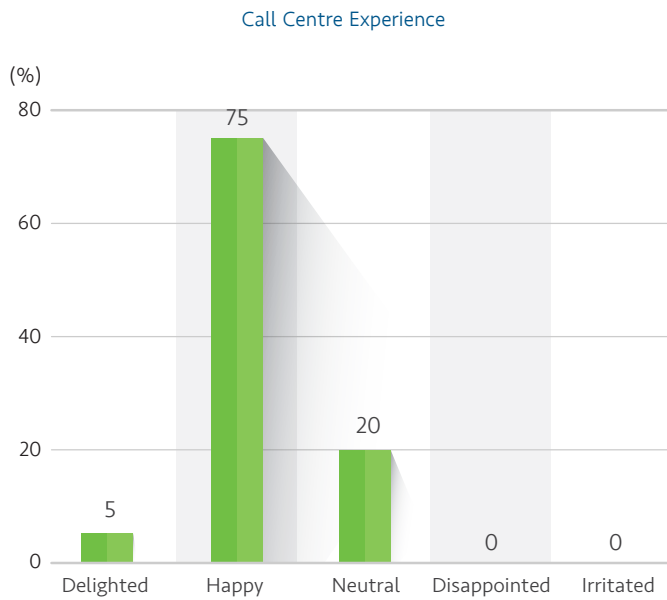
## Touchpoint Service Audit 2020

Touchpoints Service Audit aims at obtaining comprehensive insights on the current Air Selangor service experience. A total of 68 service audits were conducted, which included mystery visits to our counters, call centres and virtual interactions via the Air Selangor mobile application, social media and the customer portal. In addition, in-depth interviews with our key stakeholders, Air Selangor frontliners and touchpoint managers were held to support the overall study.

For service counters, most respondents from the sub-urban and urban areas were 'Happy' with the overall experience with Air Selangor.

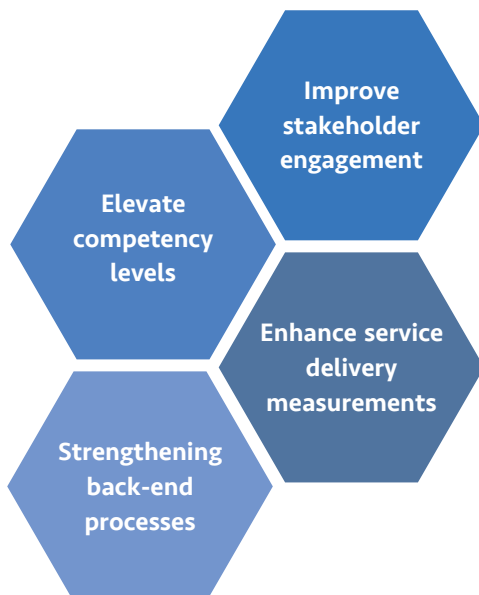


As for our call centre, most respondents were generally happy with the quality of service experienced.



For our service touchpoints, we recognise that there are still areas that require further improvements such as additional engagement with our agents, delays at counters, the increased response time at our Facebook page as well as confusion in making inquiries and/or complaints on customer portals and mobile application. Hence, we are committed to address these service gaps and strive to improve the services we provide to our customers.

In response to this, we have established a three-year action plan focused on achieving the following:



We have also implemented various initiatives to address the most critical customer service issues:

-  Introduced the “water meter level” in our mobile application which shows the progress made on maintenance or repair works as well as supply restoration.
-  Introduced new features in the customer portal which allow them to access the customer dashboard, manage water bill accounts, bill payments, file complaints as well as make enquiries.
-  Introduced more Customer Liaison Officers (CLO) to encourage customers to migrate to online platforms.
-  Made changes to the current policy to provide corporate customers with better services.
-  Developed a complaints escalation governance channel.

These initiatives have led to a significant increase in the number of downloads of the Air Selangor mobile application from 120,488 in 2018 to 1,786,736 (1.78 million) in 2020.

At Air Selangor, we aim to provide the highest standards of service to our customers. We will continue to improve the quality of service, create more effective and efficient channels of interaction and ensure that our highly skilled personnel implement industry best practices. To achieve this, we are currently working to redefine our customer service model, to include regular assessments to not only meet customer expectations but also enhance their experience across our touchpoints. Our continuing aspiration is to consistently meet and deliver the “Highest Standard of Services”, which is one of our five core values.

### Customer Engagement Programme

Apart from directly engaging with customers at our service touchpoints, we rolled-out special programmes to connect with our customers on various topics. One of the larger-scale programmes that we organised in 2020 was the “Jom e-Bil” campaign, which was part of our efforts to further drive digitalisation and provide seamless communication.



### e-Bil Campaign

Air Selangor launched the e-Bil campaign in January 2020 which enabled customers to receive a digital copy of their bills via email, instead of physical copies.

With the launch of the e-billing system, customers were able to pay their bills anywhere, anytime as they just needed access to their phone or computer. Payments were also enabled through our Air Selangor app or website in a secure, fast and convenient manner.

The e-Bil campaign was introduced to reduce our environmental footprint and cost associated with the issuance of physical bills by encouraging customers to switch to e-bills. By the end of 2020 we conducted 234 engagement activities to promote the use of e-bills among our customers.

As of December 2020, 590,625 customers switched to e-bills. This campaign successfully reduced the total number of physical bills sent to our customers, from 396,617 kg in 2019 to 297,380 kg in 2020, which is equivalent to saving 2,620 trees or a 25.0% reduction in paper used for physical bills.



**590,625 (23.7%)**  
CUSTOMERS HAVE SWITCHED TO E-BIL



**25.0%**  
OF PAPER USAGE REDUCED,  
EQUIVALENT TO SAVING 2,620 TREES\*

\*This figure is derived from an online calculation tool from the Environmental Paper Network (EPN).



## PERFORMANCE DATA

DESCRIPTION	2018	2019	2020
<b>SOCIAL</b>			
<b>CUSTOMERS</b>			
Number of calls received	1,553,584	1,693,689	<b>1,591,819</b>
Number of SMS received	40,351	96,144	<b>75,625</b>
Number of emails received	137,661	140,991	<b>145,113</b>
Number of walk-in customers	509,718	486,584	<b>341,575</b>
Number of Facebook followers	78,987	168,502	<b>313,085</b>
Number of Twitter followers	7,631	17,880	<b>49,400</b>
Number of Instagram followers	2,026	7,138	<b>23,500</b>
Number of downloads of mobile application	120,488	316,584	<b>1,786,736</b>
e-Bil sign up rate by customers (%)	-	18.90	<b>23.70</b>



# OPERATIONAL EXCELLENCE

At Air Selangor, we are focused on maximising operational excellence as well as achieving universal and equitable access to safe and affordable treated water for all.

Backed by our business strategy which focuses on key areas, namely Water Forever, Improving Asset Reliability & Resilience, Improving Operational Efficiency and Towards Best Customer Service, we rolled-out innovative measures to provide the highest standards of water quality, secure future water supply, reduce water disruption and optimise our asset management.

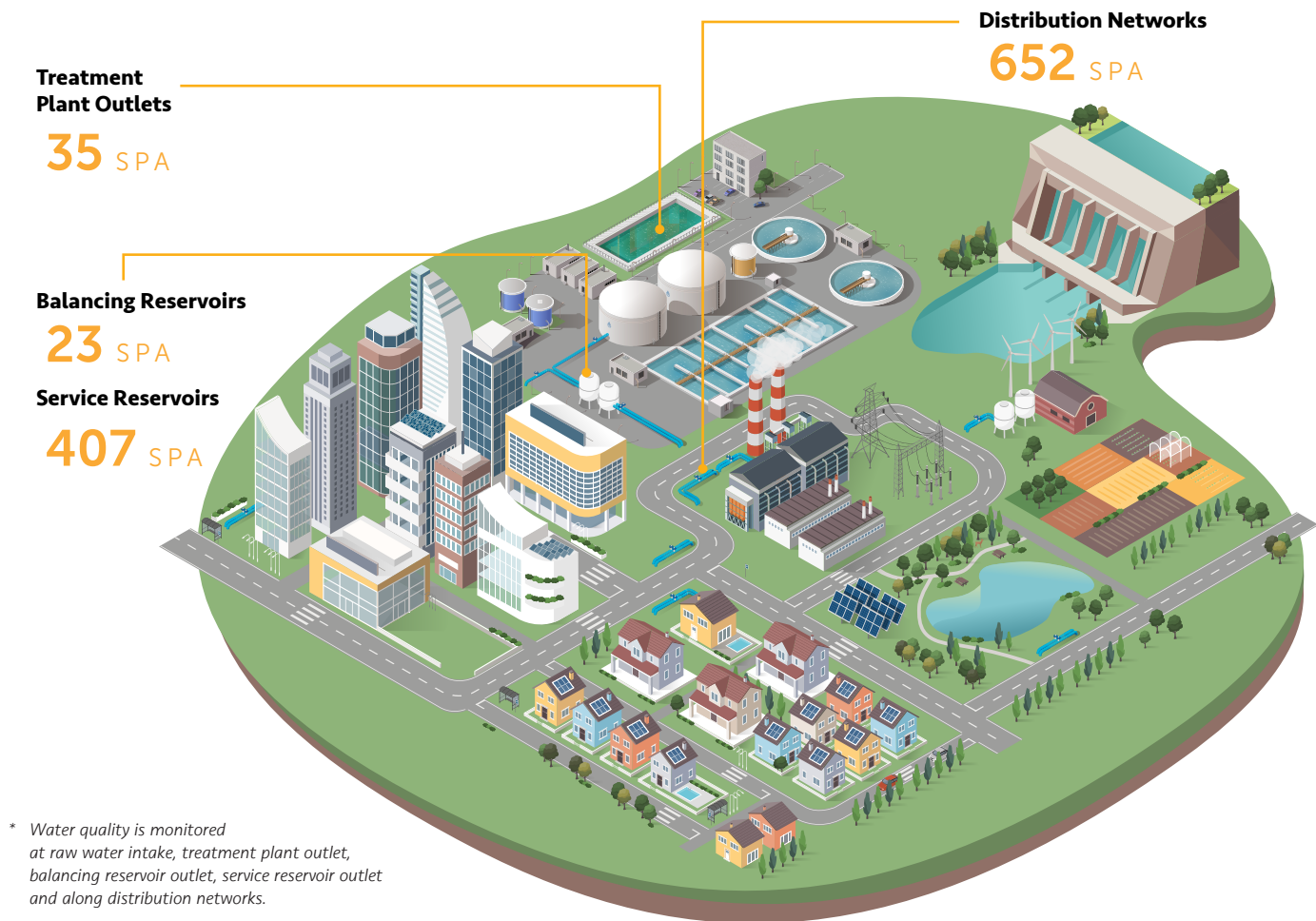
<b>Ensuring Highest Standards of Water Quality .....</b>	<b>54</b>
<b>Sustaining Water Supply .....</b>	<b>57</b>
<b>Facilitating Asset Management .....</b>	<b>65</b>
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# ENSURING HIGHEST STANDARDS OF WATER QUALITY

According to the World Health Organisation (WHO), one in three people globally do not have access to safe treated water. In Malaysia, 96.7% of residents have direct access to a clean water supply and in our Distribution Area, we achieved 99.8% coverage. Water quality is dependent on the source of raw water, including treatment and distribution infrastructure employed. Air Selangor aims to rise to the challenge of providing the best service to our customers, and we have set an ambitious target under SPI 4, which is to provide drinkable water from taps by 2028. To achieve this, we strengthened our processes to ensure we complied with the necessary guidelines and invested in the latest water quality monitoring technology.

## Water Quality Monitoring and Compliance

Air Selangor is responsible for ensuring that the water we supply to our customers is of highest quality. Raw water extracted from the various source rivers undergo treatment at our WTPs before it is supplied to our consumers. Thorough water quality monitoring through regular sampling and testing was done to ensure that the supplied water is safe for consumption and complies with the DWQS set by MOH Malaysia.





As of December 2020, we have a total of 1,457 water quality sampling stations (SPAs), out of which, 1,117 are active SPAs. The total number of sampling stations is reviewed on a bi-annual basis. It is also dependent on changes in water supply patterns due to the expansion of our distribution network resulting from new housing and industrial developments. Active SPAs are SPAs that are being monitored while inactive SPAs are those which are redundant, pending activation or associated WTPs that are currently not in operation. The frequency of monitoring at these stations is in accordance with the requirements set by MOH.

From the total number of active SPAs, 60% were under mandatory monitoring by MOH while the remaining 40% were monitored by Air Selangor, which complements the mandatory monitoring guidelines by MOH. MOH monitoring is carried out by an officer from the respective District Health Office, whereas in-house monitoring is conducted by our own employees from the Lab Services Section of our Water Quality Department. The results obtained from both monitoring activities are used to generate an overall water quality performance for Air Selangor.

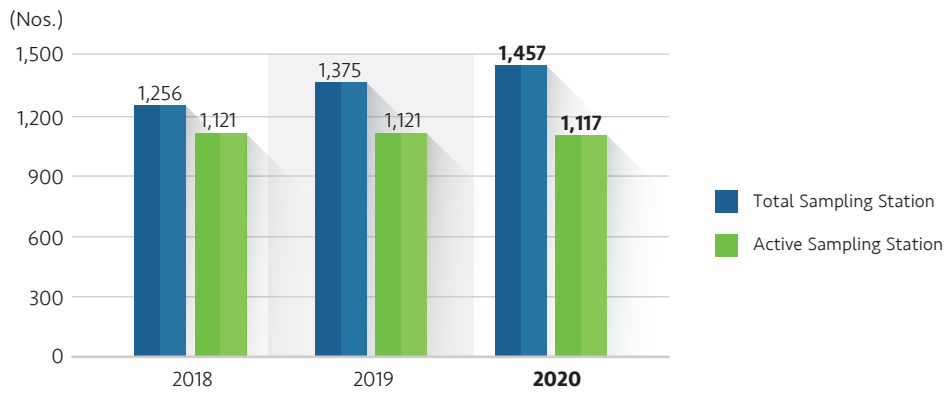


▶ Our laboratories are well equipped with advanced analysing technologies and operated by competent chemists and lab technicians.

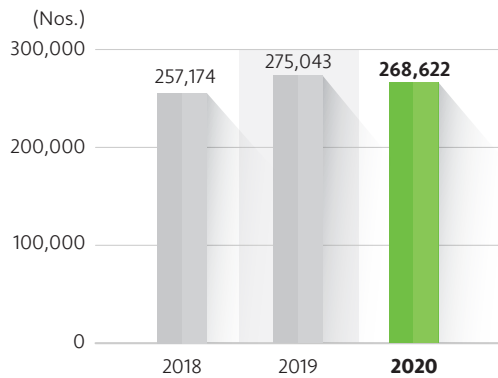
For in-house monitoring, Air Selangor has its own laboratories located at Sg. Selangor Phase 2 WTP (SSP2), Sg. Labu WTP and Sg. Semenyih WTP. All these laboratories are ISO 17025:2017 accredited (General requirements for the competence of testing and calibration laboratories, second revision). Our laboratories can analyse the 54 parameters stated in the DWQS. These laboratories are well-equipped with advanced technology such as Inductive Couple Plasma Mass Spectroscopy (ICPMS) that detects heavy metal substances in water and effluent samples and Gas Chromatography Mass Spectroscopy (GCMS) that is used for quantitative and qualitative analysis for volatile and semi volatile organic carbon. **Air Selangor is proud to be the first water operator in Malaysia that is equipped with Liquid Chromatography Mass Spectrometry Quadrupole Time-of-Flight (LCMSQTOF) equipment for emerging pollutants analysis.**

In 2020, we conducted 268,622 analysis on test water quality and achieved 99.74% compliance with the MOH DWQS.

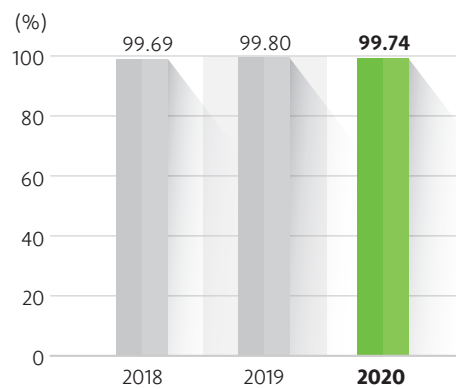
Total Number of Water Quality Sampling Stations



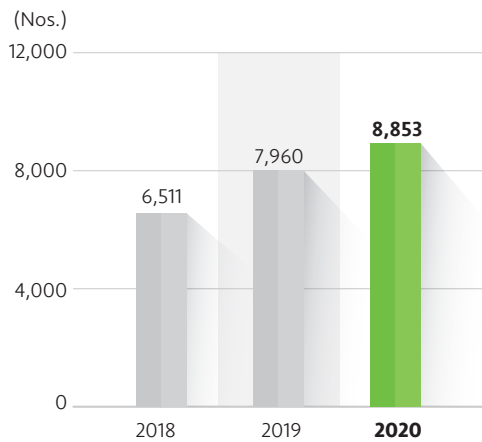
Total Number of Analysis



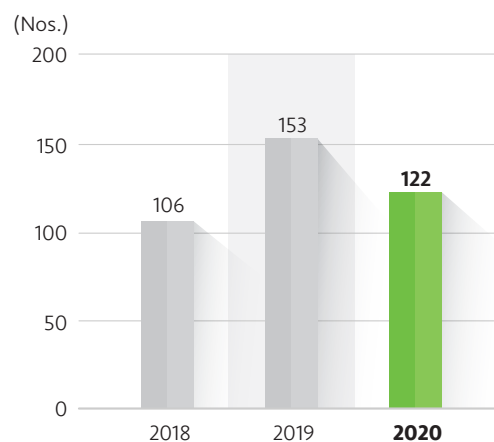
Average Water Quality Compliance



Total Number of Pipe Cleaning Works



Total Number of Reservoir Cleaning Works



Moving forward, we will expand our laboratories' testing capabilities to ensure excellent water quality as this will protect consumer health. By 2028, our laboratories will have the capabilities to analyse more than 120 parameters ranging from microbiological, chemical compounds such as Volatile Organic Compound (VOC) and Semi Volatile Organic Compound (SVOC) and Non-volatile Organic Compound (NVOC), which are currently not listed in MOH DWQS.

## Water Quality Technology

Monitoring water quality is a critical part of daily operations at Air Selangor as this ensures we can consistently deliver clean treated water to our customers. As we operate a wide distribution network that covers almost 30,000 km, it is important that water quality is consistently maintained before it reaches our customers. Therefore, the adoption of new technologies has become important for us to assess real-time water quality and ensure the water we supply meets MOH standards. To achieve this, we have installed advanced equipment along our water distribution networks which are automated and linked to the ICC.

### 22 UNITS OF OACIS

- Free Residual Chlorine (FRC) is one of the required parameters for monitoring as stated in the DWQS. In ensuring compliance throughout our water distribution network, Air Selangor installed automatic secondary chlorination system stations known as Off-Plant Autonomous Chlorine Injection System (OACIS) to boost chlorine levels in the distribution pipeline, whenever necessary.
- As at 31 December 2020, we successfully reduced the number of FRC violations from 230 violations in 2017 (before OACIS installation) to only 31 violations in 2020.

### 140 UNITS OF HYDRA STATIONS

- The Hybrid Distribution Water Quality Real-Time Analyser (HYDRA) that has been installed throughout the water distribution network provides us with real-time water quality data for physical parameters at 15-minute intervals. Any abnormalities in water quality detected will trigger an alarm which notifies the investigation team to promptly conduct on-site verification and take appropriate actions to remedy the violations.

## SUSTAINING WATER SUPPLY

The greater Klang Valley which covers our area of operations is one of the most densely populated and urbanised areas in Malaysia. Selangor and Kuala Lumpur are the primary economic hubs of the nation, while Putrajaya functions as the administrative capital of Malaysia, hence sustainable water supply is an incredibly important aspect for Air Selangor. All the treated water supplied to this area is sourced from surface waters of rivers running through Selangor and Pahang states. This raw water is treated across the 34 WTPs with a total capacity of 6,035 MLD.

### Dams/ORS/HORAS

NORTHERN REGION	SOUTHERN REGION
Sg. Selangor	Sg. Langat
Sg. Tinggi	ORS Sg. Labu
Batu*	ORS Semenyih 2
Klang Gates	ORS Labohan Dagang
Tasik Subang	Semenyih
HORAS 600	Kelau**

\* Batu Dam is under the supervision of the Department of Irrigation and Drainage.

\*\* Kelau Dam is located in Pahang

## Water Treatment Plants

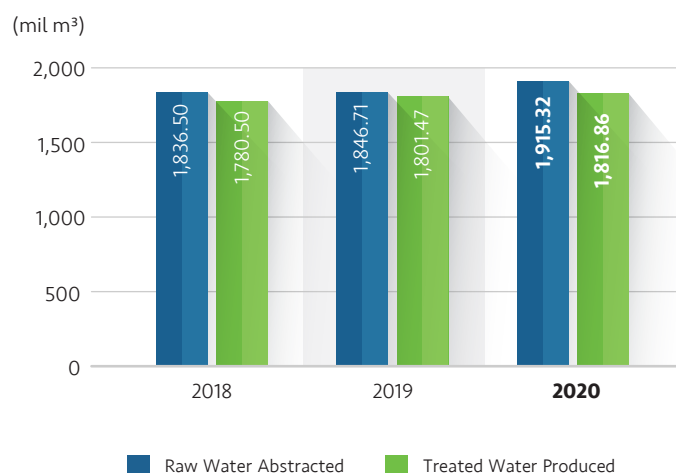
### NORTHERN REGION

Ampang Intake
Batang Kali
Bernam River Headworks
Bukit Nanas
Sg. Gombak
Kalumpang
Kepong
Kuala Kubu Bharu
North Hummock
Rantau Panjang
Sg. Batu
Rasa
Sg. Dusun
Sg. Rangkap
Sg. Rumpit
Wangsa Maju
Sg. Selisik
Sg. Sireh
Sg. Tenggi
Sg. Selangor Phase 1
Sg. Selangor Phase 2
Sg. Selangor Phase 3

### SOUTHERN REGION

Bukit Tampo
Cheras Batu 11
Labohan Dagang (new)
Salak Tinggi
Semenyih 2
Langat 2 (new)
Sg. Labu
Sg. Langat
Sg. Lolo
Sg. Pangsoon
Sg. Semenyih
Sg. Serai

Volume of Water Abstracted and Produced



\* Semenyih 2 WTP began operations in March 2018.

\* Sg. Buaya WTP stopped operations in October 2019.

\* Labohan Dagang WTP and Langat 2 (Phase 1) WTP have been operating since December 2019.

## New Water Treatment Assets

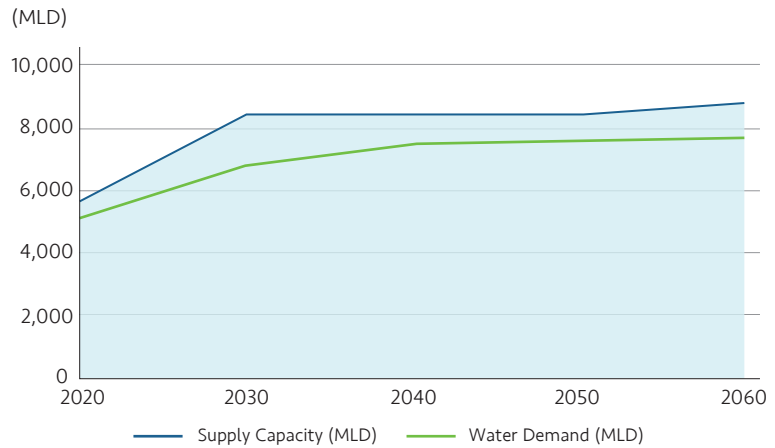
Air Selangor is continuously expanding its production and distribution capacity to cater to the increasing water demand due to population growth and development in Selangor, Kuala Lumpur and Putrajaya. While our customer base grew by 6.75% over the past two years, continued urbanisation and development has also resulted in increased water demand.

Nevertheless, we remain committed to meeting the 15% reserve margin target for treated water by 2030. This reserve margin is important in ensuring continuous water supply in the event of disruptions within our distribution network. As of December 2020, our reserve margin stood at 11.87%, an improvement from 5.87% in December 2018.

By 2030, Air Selangor is expected to achieve a supply capacity of 8,400 MLD to meet the increasing water demand. As part of our efforts to realise this target, two new WTPs, namely Labohan Dagang and Langat 2 (Phase 1) commenced operations in 2019 while four other WTPs will be constructed over the next few years.

Other strategic plans include the PSWT facilities in Kelau Dam, expansion of ORS system, HORAS and further rehabilitation works on our existing dams.

Water Supply and Water Demand Projection



### LABOHAN DAGANG WTP

Labohan Dagang WTP located in the Kuala Langat district commenced operations in December 2019. It has a designated capacity of 200 MLD and currently operates only at a quarter of its full capacity, producing 56 MLD of treated water due to continued work in its distribution network. The plant is expected to operate at full capacity by 2022 after installation works of its main pipes are completed. Raw water is extracted from the downstream portion of Sg. Langat before it is channelled to the ORS pond for pre-treatment, prior to abstraction.

Labohan Dagang WTP was built to supply water to consumers in the Kuala Langat district and its surrounding areas. Previously, consumers in the area were always the last to receive water supply after major WTP shutdowns. With the Labohan Dagang WTP, water supply recovery for consumers in Kuala Langat will be further improved due to its proximity to the plant. In ensuring compliance with environmental regulations, this WTP is equipped with residual treatment facilities and a zero effluent discharge system.



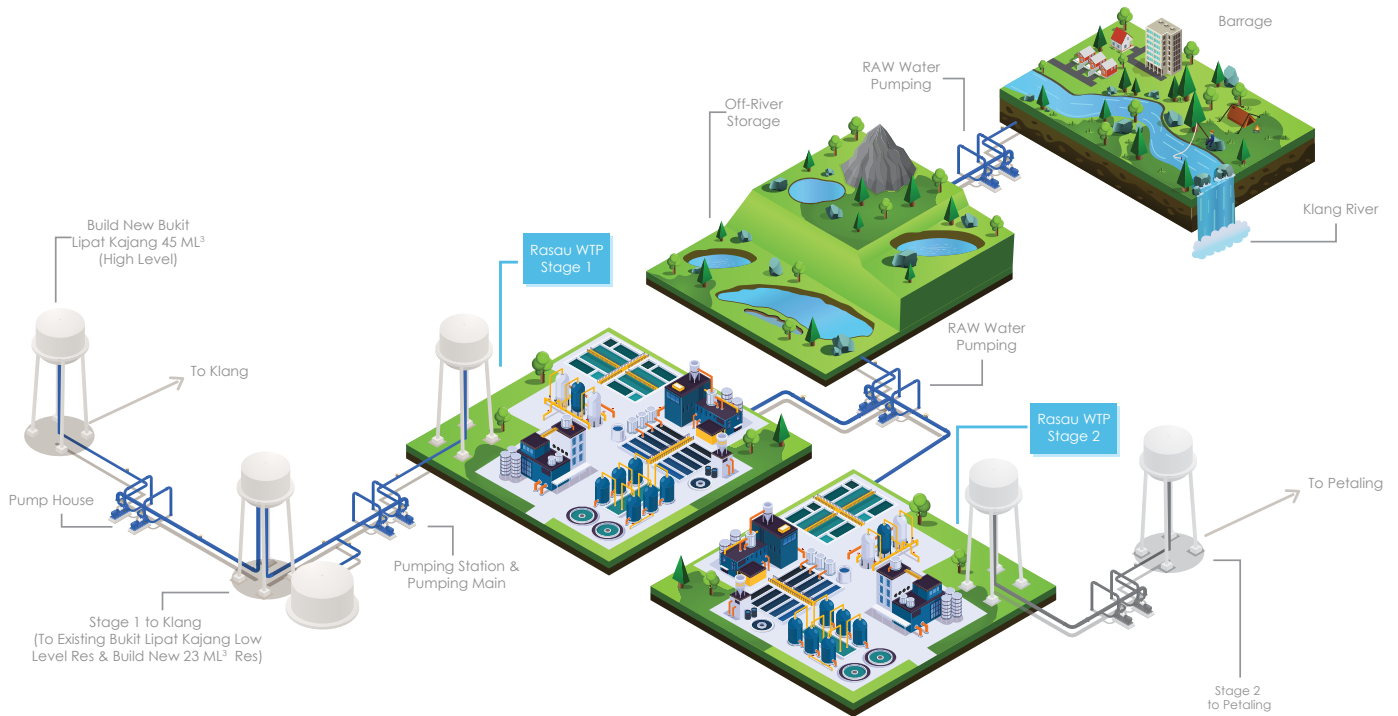
### LANGAT 2 WTP

Located in Hulu Langat district, the operations of Langat 2 (Phase 1) WTP with a distributable capacity of 430 MLD, was handed over to Air Selangor by Pengurusan Aset Air Berhad (PAAB) in December 2019. Raw water for this WTP is sourced from Sg. Semantan in Pahang through the PSWT facilities.

The Langat 2 WTP filtration system is equipped with a modern water treatment facility based on the Granular Activated Carbon (GAC) system which can absorb and remove unpleasant odours produced by organic substances in the raw water. The areas that receive water from this WTP include Hulu Langat, Cheras, Pudu and Semenyih. Phase 2 of the Langat 2 scheme with a capacity of 760 MLD is expected to be completed in 2030.



## Rasau Water Supply Scheme



Currently, Sg. Selangor is the main source of raw water supply for most of our customers. Due to the increasing river pollution incidents that have disrupted supply, Air Selangor recognises the need to identify new raw water sources. Under the Rasau Water Supply Scheme, Sg. Klang has been identified as this new source of water and this will increase our reserve margin to more than the targeted 15%.

Water will be abstracted from Sg. Klang and pumped into nine existing ponds measuring 489 hectares that function as water storage ponds in the form of ORS. These ponds of various sizes are in the district of Sepang and Petaling, with the biggest pond measuring around 185 hectares. Should pollution be detected in the river, the raw water pump station will stop abstracting water directly from the river. However, operations at the water treatment plant will not be affected as the abstraction of the water sources will shift to the ORS. Additionally, with the interconnectivity with Sg. Selangor Water Supply Scheme, Klang region consumers will be able to receive alternative water supply whenever there are disruptions arising from pollution in Sg. Selangor.

The Sg. Rasau Stage 1 WTP, which is expected to be completed in 2024, has the potential capacity to produce up to 700 MLD of treated water, supplying clean and safe water to an estimated 467,000 consumer accounts in the Klang region. Targeted for completion by 2028, the entire Rasau Water Supply Scheme will have a total capacity of 1,400 MLD.

## Kelau Dam

One of the components in PSWT is Kelau Dam which was built to accommodate raw water supply to Sg. Semantan in Pahang, which in turn supplies Langkat 2 WTP in Selangor. It was officially handed over to Air Selangor on 15 March 2020.

It has a full capacity of 147.10 MCM, providing full supply levels at 85.00m. Dam release is conducted based on the Reservoir Operating Control Curve (RORC) and river levels at the Semantan Intake. During normal weather and Kelau Dam operational at full capacity, a minimum of 180 MLD will be released from Kelau Dam to Sg. Semantan as per environmental flow requirements set by the Department of Irrigation and Drainage, Ministry of Environment and Water.



## Off-River Storage (ORS) and Hybrid Off-River Augmentation System (HORAS)

A total of eight dams are used to store and supply raw water to our WTPs. However, due to the intense water demand experienced by the Distribution Area, new measures were adopted to ensure sustainable water supply to consumers.

The development of HORAS 600 project in March 2014 was a result of water crisis experienced due to prolonged drought in Selangor. Due to the success of such projects in alleviating water scarcity, more water storage projects were developed and today, these eight existing dams are supported by ORS and HORAS to help sustain water supply during dry seasons and water disruption incidences where river water cannot be extracted.

### Benefits of ORS and HORAS

- 1 Provide bigger water catchment area compared to dam catchment because the ORS/HORAS is located downstream and results in higher raw water reserves.
- 2 Improve quality of raw water where ammonia and turbidity are reduced due to gravitational settlement in the ORS/HORAS pond.
- 3 Decrease in production of residual cake compared to river water due to less Total Suspended Solid (TSS).
- 4 Act as flood mitigation measure to reduce flooding incidences downstream.
- 5 Control intrusion of polluted water as the whole area is gated and secured.
- 6 Reduce water supply disruption resulting from river pollution since abstraction is from storage pond.

#### ORS SEMENYIH 2



CAPACITY  
**3.98** MCM

Acts as a supply backup for WTP in the event of emergency due to contamination at Sg. Langat. Able to supply raw water to WTP up to 60 days.

#### ORS SG. LABU



CAPACITY  
**9.30** MCM

Able to supply raw water to WTP up to 90 days.

#### ORS LABOHAN DAGANG



CAPACITY  
**21.40** MCM

Able to supply raw water to Labohan Dagang WTP and provide up to 73 days of supply for Labohan Dagang WTP before it hits critical storage.

#### HORAS 600



CAPACITY  
**19.96** MCM

Optimises raw water release from dams and ponds. It also supports any supply shortage at the raw water intake through pumping (or gravitational force) of this water into the river. It is also used for dilution purpose in the event of river pollution incidences in Sg. Selangor.

Several measures have been initiated by Air Selangor to ensure our readiness to any water stress situation in the future.

#### STEP 1: Dam Release Control

Raw water from the dam is controlled and monitored hourly on a daily basis. This control is based on the RORC for each dam. The RORC will indicate the maximum release allowed from the dam to the WTP or river. When the RORC shows abnormal dam level trends, the Dam Storage Prediction is revised, and further mitigation actions are activated.

#### STEP 2: Dam Storage Prediction

Dam Storage Prediction for each dam is revised on a monthly basis or daily basis (during periods of water scarcity), where necessary. It indicates and predicts the dam storage ability to store and supply raw water within a year. If the prediction shows a declining trend in dam storage, proper mitigation measures will be implemented.

#### STEP 3: Mitigation Action

Inter-basin transfer between the dams and WTPs:

- PSWT intervention to Sg. Langat to support Sg. Langat Dam water release.
  - Raw water from Sg. Semantan, Pahang will be transferred to Sg. Langat.
- Water Transfer 1 intervention to support Semenyih Dam supply to Sg. Semenyih WTP.
  - Raw water from Pond B of Semenyih 2 WTP will be transferred to the Sg. Semenyih Intake.
- Water Transfer 2 intervention to Sg. Langat to support Sg. Langat Dam water release.
  - Raw water from Semenyih Dam will be transferred to Sg. Langat via Sg. Lui.
- Abstraction of raw water from Sg. Gombak to Wangsa Maju WTP.
  - Decrease raw water supply from Klang Gates Dam to the demand water treatment plant.
- HORAS 600 and *Operasi Pengepaman Air Kolam* (OPAK) to support Sg. Tinggi and Sg. Selangor Dam raw water release.
  - Optimise the release of raw water from dams and the ponds to support any shortage at the intake by pumping the water to the river.

*Operasi Pembenihan Awan* (OPA) implemented by the State Government to support the dam storage inflow or river baseflow.

#### STEP 4: Future Raw Water Sources

HORAS 3000 with intervention from the Sg. Bernam transfer will be implemented by Selangor State Government. This scheme is predicted to have the ability to supply an additional 3,000 MLD to Sg. Selangor to support raw water abstraction at SSP1, SSP2 and SSP3. Currently, this project is in its planning phase under LUAS.



### Water Outages

Air Selangor is committed to minimise service disruption to our customers and we have put in place several measures to achieve this. Early detection systems and mitigation plans have been carried out to tackle main causes of water outages in our distribution network, ranging from pipeline issues to unscheduled shutdowns of WTPs due to third-party pollution. Responsive to consumer needs, we have also strengthened our ERP in the event of water supply disruption.

### Pipe Leaks, Pipe Bursts and Pipe Replacement Programme

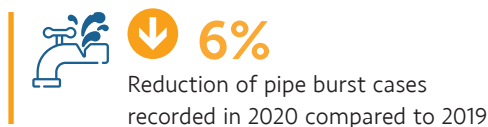
It is our responsibility to ensure that our customers have continuous access to our treated water supply through our extensive network of nearly 30,000km of pipelines. Water leaks and pipe bursts can cause a disruption in the water supply pressure and water availability, all of which will directly affect our customers.

As part of our continuous efforts to reduce the occurrences of such incidences for our customers and manage our NRW, we have put in place various initiatives to prevent and address issues pertaining to pipe burst and leakages. Currently, approximately 73% of our pipe leak cases were detected by our dedicated team of Leak Inspectors while the rest were reported by consumers. *(Read more about our NRW Programme on pages 70 to 71)*

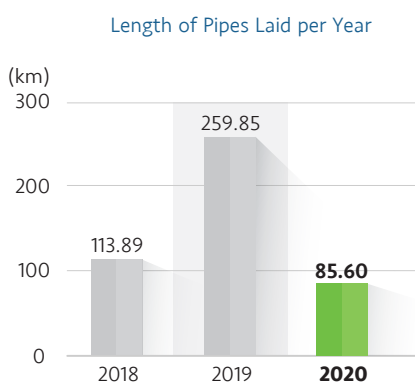
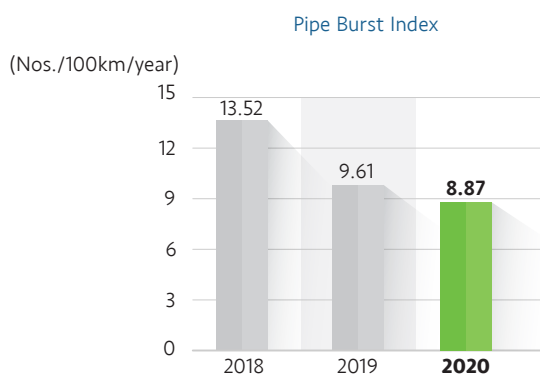
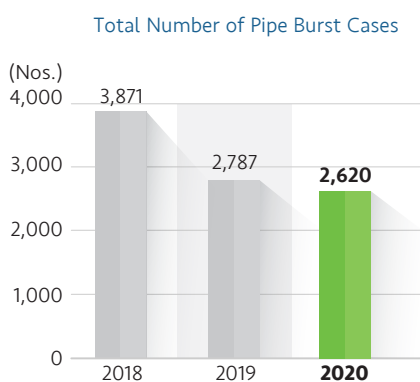
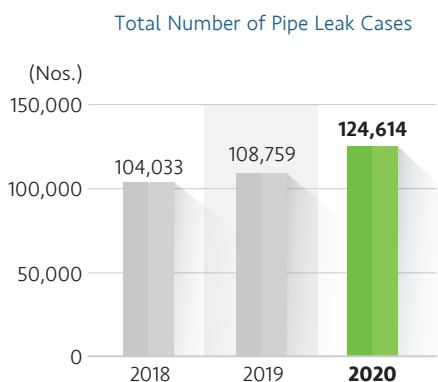
Pipe repair works are carried out by our registered panel of contractors. Once initiated, repair works are completed within 24 to 48 hours upon detection, depending on the type of pipe to be replaced and extent of repair works needed. When it comes to the completion of repair works, Air Selangor is subjected to SPAN's requirements in terms of timeline and most importantly, guaranteeing minimal disruption to our customers. Our main challenge in achieving the SPAN's requirements has been the low schedule of rates for contractors which were last revised 15 years ago, and this had led to difficulties in engaging additional contractors to expedite repair works. However, in March 2020, the schedule of rates revision was approved, and our number of panel contractors have increased from 187 to 217 teams.

Given our experience in monitoring data on pipe burst incidences, we have identified several hotspot areas with a high frequency of burst pipes. Here, these pipes are categorised as aging pipes or beyond economic repair which require replacement. Across our distribution network, these aging pipes are mostly Asbestos Cement (AC), and when replacement is due, the pipes are replaced with High Density Polyethylene (HDPE) and Ductile Iron (DI) pipes which are more resilient to pressure and weather changes.

Pipe replacement works can only be completed in stages due to the high costs involved and for this purpose, Air Selangor has budgeted its annual CAPEX for this programme. From 2016 to 2020, a total of 590.42 km main pipe replacement projects have been awarded to contractors. As of December 2020, 459.34 km of pipeline from the total awarded have been successfully replaced.







### Pump House Breakdown and Reservoir Problems

Among the factors that could potentially cause water supply disruption to our consumers are pump house breakdowns and reservoir malfunctions. Aging pumps and motors running on overcapacity have caused frequent breakdowns in our pump houses, while malfunction of the Control Inlet Valve (CIV) at these reservoirs may lead to either an overflow or a decrease in water levels.

In response to this, we have identified assets which require rehabilitation to minimise incidents of pump house breakdown and reservoir malfunction. Since 2016, we have set 10-year targets for asset rehabilitation where we aim to rehabilitate 144 reservoirs and 54 pump houses. As of December 2020, a total of 32 reservoirs and three pump houses were rehabilitated.

### Managing Water Pollution Incidences

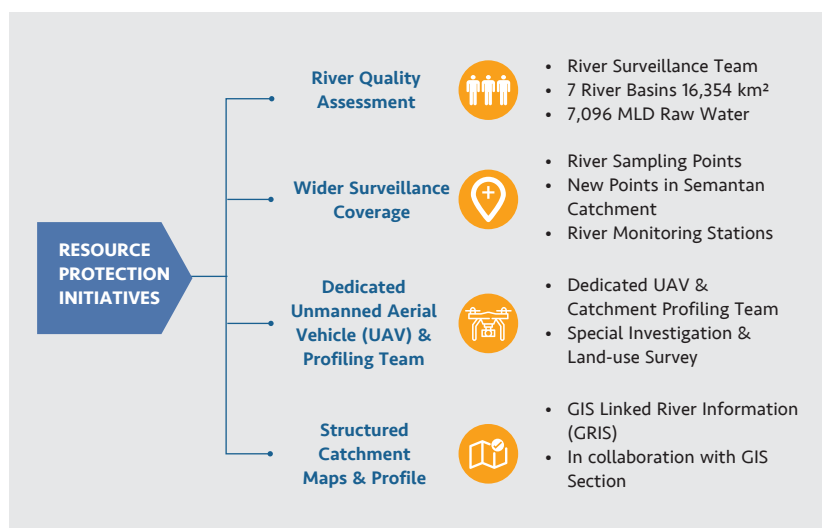
In 2020, we recorded 90 cases of plant shutdowns due to raw water pollution. This caused a total production loss of up to 10,405 million litres for the year. Most times, consumers were not affected as the pollution incidents were minimal and our WTPs could resume operations within a short period. However, some of these pollution incidences caused prolonged shutdown of our WTPs, which in turn affected water supply.

Air Selangor is committed to ensure clean water is supplied to our consumers. When incidences of raw water pollution do occur, we are required to keep this polluted raw water out of our WTPs. This means shutting down the affected WTPs. WTP shutdowns during such incidences is necessary to prevent damage to our equipment or to prevent further clean-up in the system, which may prolong service disruptions. The incidents of raw water pollution are mainly contributed by illegal dumping or illegal discharge of hazardous waste into the river by irresponsible third parties.

In the case where pollution is detected and identified earlier before it reaches our raw water intake, it is managed in-situ through the dosing of adsorbent such as Powdered Activated Carbon (PAC) or with environmentally friendly oxidising agents that can eliminate the pollutants on site.

### Pasukan Khas Lembangan & Alur Air (PAKAR)

Considering the increasing number of water pollution incidences in Selangor, Air Selangor established its River Surveillance Team known as PAKAR in 2016. This team works closely with the Local District Authority and LUAS to protect river basins through the following initiatives.



PAKAR's role is to proactively monitor river water quality and identify and assess risk of pollution in water catchment areas. Upon discovering pollution incidences, our main priority is to ensure the pollution will not reach our WTP intake by immediately informing all the relevant authorities and assisting in the investigation process. The authorities will take further corrective measures and ensure the law is upheld. Below are highlights of the PAKAR team's success in detecting and assisting in river pollution investigations:



### Emergency Response Plan (ERP)

In the event of unscheduled water disruptions, Air Selangor's ERP is activated. However, the ERP alert level largely depends on the severity of the event. For example, if the water disruption involved more than one region in our Distribution Area, which may be equivalent to approximately 3,000 customer accounts, a high ERP alert is activated. The ERP alert level determines the deployment mechanism for support staff and water tankers for distribution of water relief to the affected areas.

For effective management, Air Selangor refers to the ERP Manual to ensure proper planning and execution is conducted in the event of any emergencies. The manual clearly indicates the various types of water quality parameters and actions to be taken by all WTPs, prior to any decisions made to shut down any operations.

In the case of suspected pollution, our PAKAR team immediately investigates the source first, while our Water Quality team runs continuous tests to identify the pollutant and assess pollution levels. The WTP resumes operations once all the water quality parameters meet the stipulated requirements.

In 2020, there were 14 ERPs activated due to water outage incidences. During these incidents, we received assistance from various agencies and water operators from other states. In turn, we also rendered the same form of assistance to other water operators where we provided mobile assets such as our water tankers and personnel, as and when requested, especially in cases of large-scale service disruptions.

# FACILITATING ASSET MANAGEMENT

In ensuring uninterrupted water supply to customers, our assets and equipment must be in excellent working condition. In our portfolio, we have assets that were first commissioned in 1923 and newer assets as of 2020 which we manage through constant monitoring, maintenance and upgrading. As part of our digitilisation strategy, we implemented several initiatives to further enhance our asset management approach throughout our asset lifecycle.



## Total Asset Management System

As part of the strategic approach to achieve SPI 3: Improving Operational Efficiency, Air Selangor implemented the Total Asset Management System (TAMS) to manage our growing assets and equipment. TAMS monitors the assets' complete lifecycle, beginning from acquisition, registration, maintenance, monitoring to asset retirement. A total of 87,815 number of assets have been registered in TAMS while estimated asset growth is expected to reach 104,624 by 2023. The registered assets have gone through asset condition assessments and given a score between 1 (Very Good) to 5 (Extremely Critical). This assessment helps us plan for future maintenance expenses and asset replacement, ensuring smooth operations for our customers.

We will be undergoing ISO 55001:2014 accreditation by the end of 2021. It is an asset management standard that helps organisations manage the lifecycle of their assets more effectively. By implementing ISO 55001:2014, we will have better control over daily activities, achieve efficient assets utilisation and reduce total cost of risk. The system acts as guideline for us to standardise the asset record that we inherited from the five different companies, prior to the completion of the merger and acquisition exercise.

## TAMS Mobile RFID Project

The implementation of Radio Frequency Identification (RFID) tagging and its accompanying mobile application for integration with TAMS began in 2020 and is expected to be fully implemented in 2021. This application is useful for our onsite employees as it enables them to perform digital asset maintenance using RFID technology. The mobile application is installed in the RFID handheld reader, which is used for monitoring and maintenance update as it is digitally recorded. Users will obtain instant notification once the work activity has been assigned to them. Once a registered asset is tagged using RFID, we can track the movement of mobile assets and reduce the incidences of missing or misplacement of assets.

### Asset Condition Score

**2.14** GOOD

for all of our registered assets



## Asset Maintenance

Asset maintenance activities are crucial to ensure uninterrupted supply of water to our consumers. Thus, all our assets undergo the Preventive Maintenance (PM) and Corrective Maintenance (CM) programme. With the implementation of Work and Asset Management System (WAMS), maintenance works are efficiently scheduled and performed. The works are recorded digitally, and the asset performance is monitored by the respective asset owner. For a seamless process to occur, WAMS has also been integrated into our Procurement processes, covering order placement, purchase of equipment and tools for maintenance.



## PARTNERING WITH OUR SUPPLIERS

Air Selangor purchases raw water from the State, treats it at 34 of our WTPs and supplies the potable water to our domestic and commercial customers in our Distribution Area within Selangor, Kuala Lumpur and Putrajaya. In doing so, we engage with third-party contractors, suppliers and vendors who provide services and products required for the smooth running of our operations. In 2020, we engaged a total of 975 suppliers, with 100% local procurement.

In ensuring we practice fair tendering process for our contractors, suppliers and vendors, an Integrity Pact which is in line with Air Selangor's Code of Business Ethics was established to guide procurement practices on product or service suitability, price, delivery, and quality.

We monitored the performance of these third-party contractors, suppliers and vendors to ensure they met service deliverables and conducted performance assessments upon completion of their contracts, services, work or supplies. For contractors, suppliers or vendors who have long-term contracts with Air Selangor, performance reviews are carried out every six months based on the outlined criteria such as quality of work, services or supplies provided, timeliness, as well as compliance to health, safety and environmental requirements.

We recognise the importance of building good working relationships with our contractors, suppliers and vendors. In this regard, Air Selangor organised regular engagement sessions for our contractors, suppliers and vendors with the top management, particularly with our CEO, as this gave them the platform to discuss issues and challenges effectively.



CEO Engagement Session with Vendors

On 20 February 2020, Air Selangor organised a CEO engagement session with vendors at the Setia Alam Convention Centre.

Over 2,000 representatives, consisting of our consultants, contractors, suppliers and vendors, Air Selangor senior management, representatives from the Malaysian Anti-Corruption Commission (MACC) and members of the media attended the event.

During the event, the CEO shared the company's business strategy, expenditure plans and performance expectations of contractors, suppliers and vendors working with Air Selangor. The participants also took part in the Corporate Integrity Pledge to uphold and adhere to ethical business practices.



CEO Engagement Meeting with Vendors

On 21 and 23 July 2020, Air Selangor organised two CEO engagement meetings with eight selected vendors to strengthen our business relationships with these vendors. It also created a platform for vendors to introduce new technologies for potential implementation in Air Selangor.



Panel Consultant Review Session

A Panel Consultant Review Session was held on 14 January 2020 to present the performance levels of our panel consultants in 2019, issues faced and briefed participants on the way forward for Air Selangor.

### Performance Review with Strategic Vendors

Performance review for our strategic vendors was conducted throughout the year to evaluate their performance levels, deliberate on challenges and improvement plans, and lastly, provide an overview on the way forward for Air Selangor.

## PERFORMANCE DATA

DESCRIPTION	2018	2019	2020
<b>OPERATIONS</b>			
<b>Total number of accounts</b>	2,334,224	2,412,735	<b>2,491,888</b>
<b>Number of accounts by type</b>			
Domestic	2,014,227	2,091,711	<b>2,166,925</b>
Commercial	306,496	307,401	<b>311,237</b>
Others	13,501	13,623	<b>13,726</b>
Total number of consumers	8,056,908	8,366,844	<b>8,667,700</b>
Total number of dams	7	7	<b>8*</b>
Total number of WTPs	33	34	<b>34</b>
Average water demand (MLD)	4,857	4,932	<b>4,965</b>
Total number of pump houses	653	731	<b>732</b>
Total number of service reservoirs	1,574	1,601	<b>1,610</b>
Total number of HORAS	-	-	<b>1</b>
Total number of ORS	2	2	<b>3</b>
Total length of pipes (mapped using GIS) (km)	28,641	29,044	<b>29,540</b>
Average water reserve margin (%)	5.87	10.98	<b>11.87</b>
Average water quality compliance (%)	99.69	99.80	<b>99.74</b>
Average NRW rate (m <sup>3</sup> method) (%)	31.69	29.66	<b>28.53</b>
Pipe burst index (Nos./100km/year)	13.52	9.61	<b>8.87</b>
Total number of pipe leak cases	104,033	108,759	<b>124,614</b>
Length of pipes laid per year (km)	113.89	259.85	<b>85.60</b>
Total number of pipe cleaning works	6,511	7,960	<b>8,853</b>
Total number of reservoir cleaning works	106	153	<b>122</b>
Total number of active water quality sampling stations	1,121	1,121	<b>1,117</b>
Asset Condition Score	-	2.24	<b>2.14</b>

\* Seven dams are under supervision of Air Selangor, whereas Batu Dam is under supervision of the Department of Irrigation and Drainage.

# REDUCING ENVIRONMENTAL IMPACT

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Our operations utilise a significant number of natural resources to supply clean water to meet ever-growing consumer demand. We also use materials such as chemicals to treat our water and waste is generated as a by-product of the water treatment process.

We recognise that due to the scale of our operations, energy use is significant and results in carbon emissions. As part of our commitment towards sustainability, we will strive to reduce our environmental impact through our Strategic Plan of NRW Reduction, Improving Operational Efficiency and Environmental Stewardship.



# CONSERVING OUR WATER RESOURCES

Water is often seen as an infinite resource; however, climate change has exacerbated drought seasons which has led to water scarcity. In addition to the water pollution threats, securing adequate clean water supply for all has become increasingly important. The illusion that water supply is abundant in the areas where we operate is further compounded by the current water tariff which has not been revised since 2006. The low price of water coupled with a lack of awareness on the importance of water conservation has resulted in wasteful behaviour.

Recognising that all forms of water conservation is necessary, we have taken steps to reduce treated water loss through NRW reduction initiatives. We also believe that water conservation is a joint effort by all, and as such, we have initiated several conservation campaigns to increase awareness and encourage public participation.

## Non-Revenue Water

Management of NRW is one of the ways to improve clean water availability, especially if water supply is limited in a particular area. It is also considered to be a more cost-efficient method as compared with increasing water supply through the development of new water resources. Economically, the revenue gained from the saved water can be invested into providing better services to customers. Furthermore, it is important to reduce the use of resources to treat and pump this water if it does not reach our customers. Lower NRW means less water is required for abstraction from our rivers and dams, minimising the impact of water cycle disruption and thereby, increasing water resilience.

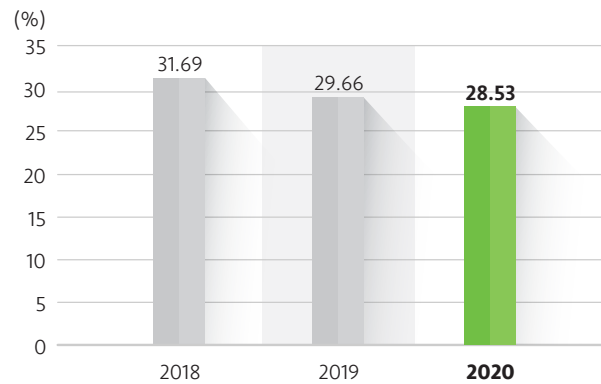
NRW is treated water that is produced but is “lost” or unaccounted for within the water operator’s distribution system. Losses can either be physical losses caused by leakages or burst pipes, or commercial loss due to inaccurate meter readings, water thefts, and unbilled water usage.

Air Selangor successfully achieved a lower average NRW rate at 28.53% in 2020 compared to the average rate of 29.66% in 2019. This achievement surpassed the 29.20% target set by SPAN.

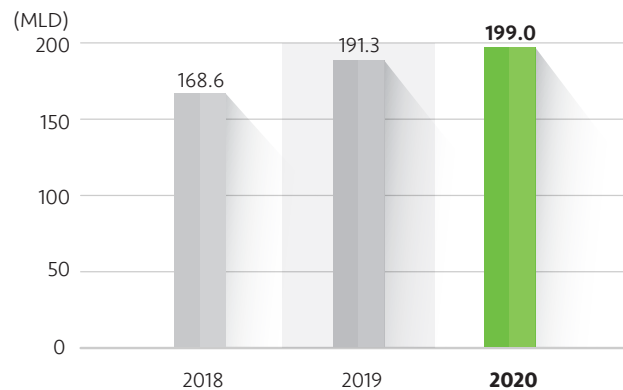
The decrease in our NRW rate was achieved through strategic planning and implementation of Physical Loss Programme, Commercial Loss Programme, and Pipe Replacement Programme.

With support from SPAN’s grant reimbursement, Air Selangor remains committed to further reduce the NRW rate to 24% by 2025, 20% by 2037 and 15% by 2049, ensuring efficient distribution of clean water to consumers.

Average NRW Rate



NRW Savings



## NRW Savings within the distribution system

**199** MILLION LITRES/DAY

Equivalent to **80 Olympic sized** swimming pools



### Active Leakage Control Programme

The major contributor for the reduction in NRW was led by the Active Leakage Control Programme. In 2020, a total of 90,429 numbers of leaks were identified and resolved through this programme, which resulted in a total of 90 MLD in NRW savings.



▶ Installation of 1,650 transient pressure sensors on main pipes to detect leaks much earlier, allowing repair work to be carried out immediately.



▶ Air Selangor's Leak Specialist (LS) and Leak Inspector (LI) teams detect pipe leak cases within the entire pipeline network using sounding equipment. To date, Air Selangor has a total of 54 LS and 133 LI personnel.



▶ The use of Permanent Leak Noise Correlating Logger to detect leaks in the reticulation pipe system. This online monitoring system allows immediate corrective action to be taken once a leak is detected in the pipe. As of December 2020, a total of 1,640 permanent leak detectors have been installed in 36 District Metering Zones.

Air Selangor procured leak detection equipment consisting of sensors and software analytics engines to perform active leak detections on major pipelines. Sensors are placed on a pipeline which can be easily moved to multiple sites via a 'lift and shift' working strategy to record "leak noise" on a pipeline. Here, the software analytics help distinguish any potential leaks from the logged data. Using several numbers of sensor configurations has enabled Air Selangor to cover eight to 10 km per survey per day. This exercise is expected to cover 6,000 km of trunk mains and will be extended to cover the distribution mains thereafter.



### Commercial Loss Programme

For our commercial loss programme, initiatives such as meter replacement, resizing of mechanical meters and meter relocations contributed to 41.67 MLD worth of NRW saved in 2020.

Meter replacement is one of our key initiatives in minimising the commercial loss in our water distribution system. We have successfully replaced 146,353 aged meters achieving 5.85 MLD worth of water saved. We also replaced 158,806 stuck meters that translated into 31.76 MLD of water savings.

## Water Conservation Programme

Other than expanding our treatment plants and distribution network to ensure sustainable supply of treated water, prudent water usage by consumers is also crucial to safeguard future supply capacity. The Ministry of Environment and Water recognises that Malaysians need to reduce their water use to ensure water security and has set a target to achieve an average of 180 litres per capita per day (LCD) by 2025. To help achieve this target, Air Selangor carried out several initiatives to educate the public on the importance of using water efficiently.

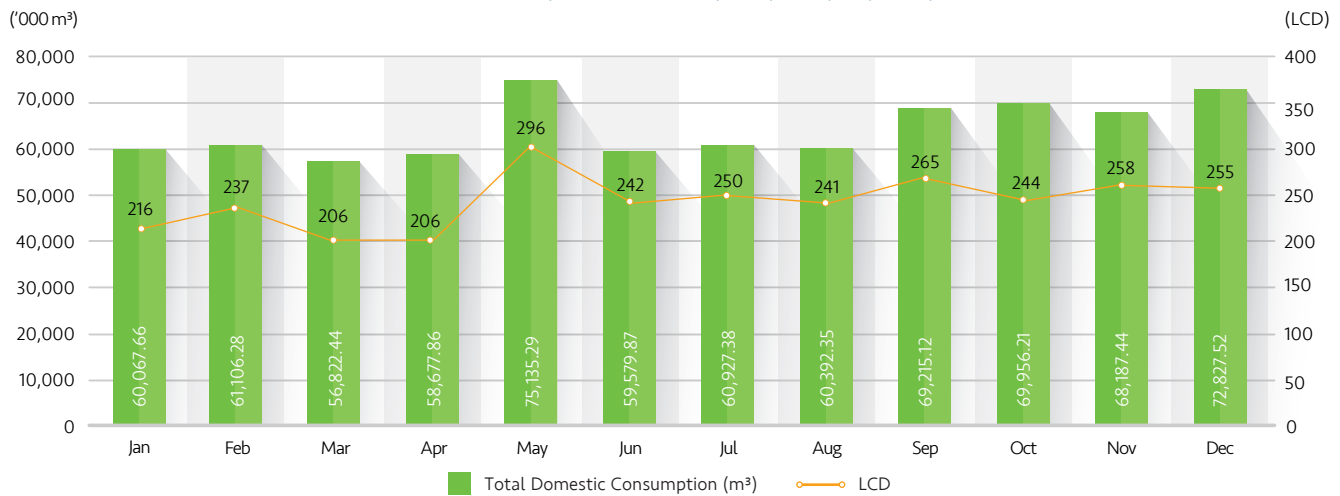
### Consumer' Consumption

In 2020, the average daily water consumption per capita in Kuala Lumpur, Selangor and Putrajaya has been 244 LCD, which is higher

than the average of 230 LCD for Malaysia. According to the WHO, between 50 and 100 LCD of water is needed to ensure that most basic needs are met, with only a few health concerns arising from this. Since the average water use is more than double the recommended amount, it implies that most consumers do not exercise prudence when using water resources.

The MCO imposed by the government in response to the COVID-19 pandemic also saw changes in the way consumers used water. During the first MCO which was imposed in May 2020, Air Selangor recorded a spike in the amount of water used for domestic consumption as most people stayed at home. Overall, per capita consumption in 2020 increased by 4.72% from an average of 233 LCD in 2018.

Total Domestic Consumption and Consumption per Capita per Day in 2020



### Community Engagement

Air Selangor constantly engages with the local communities through residents' associations (RA), joint management bodies (JMB), local councils and ADUN. These engagement programmes act as platforms for us to educate the public on effective water management while at the same time, gather feedback on ways to further improve our services.

In 2020, we successfully carried out a total of 522 engagement activities across Selangor, Kuala Lumpur and Putrajaya. For ADUN-related programmes, we tracked the water consumption in areas involved in this programme after these engagement sessions. There were encouraging results from this programme as water consumption decreased up to 16.98 LCD for monitored areas.



An engagement programme with YB Dato' Mohd Imran Tamrin (ADUN Sg. Panjang).



Datuk Ahmad Faizal Abdul Rahman (CEO SPAN) together with YB Dr. Daroyah Alwi (ADUN Sementa) were present during the free installation of water-efficient taps programme for B40 households in Kampung Rantau Panjang, Klang.

### Save the Drip: INTI International College Subang

Air Selangor believes that participation from educational institutions in promoting a culture of efficient water management among students is key towards achieving a community that understands the importance of water conservation. Hence, Air Selangor carried out engagement initiatives with tertiary education institutions as part of our efforts in promoting water conservation.

In March 2020, Air Selangor collaborated with INTI International College Subang and the ADUN of Subang Jaya to launch the “Save the Drip” campaign at the INTI International College Subang campus in SS15, Subang Jaya.

During the campaign, water thimbles were distributed to students for them to install the water-saving device at home. Social media profiles were also created on Facebook and Instagram to promote creative videos and water conservation tips. A survey on water issues was also conducted by the students. The results were shared with Air Selangor for improvement and research purposes.

### Caring for Our Raw Water Sources

Air Selangor conducted environmental conservation activities with local communities to raise awareness and instil a sense of responsibility among identified local communities. This is a long-term initiative by Air Selangor to encourage local communities especially those living near river basins to protect and care for their river ecosystems and reduce as well as report incidents of pollution to prevent water supply disruption. Ongoing efforts to protect and conserve these rivers are crucial as they are the main sources of raw water for our 34 WTPs in Selangor, Kuala Lumpur and Putrajaya.

As of 31 December 2020, Air Selangor had implemented two initiatives, namely Air Selangor River Care Programme and the River Conservation Programme with Selangor’s Friends of Rivers. We also aim to build a long-term partnership with NGOs to increase public awareness as well as to preserve the environment and the rivers, which are our main raw water source.

### Air Selangor River Care Programme

This community programme was held on 27 September 2020, in conjunction with the World River Day celebration. A total of 150 residents from Kampung Gombak, Kuang, the District Chief and 50 Air Selangor employees from headquarters and Hulu Selangor Regional office participated in communal work to clean a section of Sg. Kuang.

Apart from this communal work activity to nurture a greater interest in recycling practices within the community, Air Selangor partnered with Universiti Putra Malaysia (UPM) to set up electronic waste collection counters for proper disposal of electronic waste.

On 19 December 2020, the river care programme took place at the Sg. Langat WTP with active participation of 40 employees from the Southern Regional Office and the Health, Safety and Environmental Section from headquarters. This programme aimed at encouraging river conservation efforts among employees especially those living near rivers and establishing a “Green Community” at regional level. Among the activities held during this programme were communal work, tree planting to enhance greenery at the water intake areas, and distribution of recycling bins to encourage recycling practices.



### River Conservation Programme with Selangor's Friends of Rivers

Air Selangor collaborated with the Selangor chapter of Friends of Rivers (FoR) to conserve the cleanliness and natural beauty of rivers, particularly the Sg. Klang river basin, Sg. Langat and Sg. Selangor.

Two gazebos will be donated in 2021 (delay due to MCO) for the use of residents around the upstream area of Sg. Klang, Taman Melawati, and Sg. Selaru, Semenyih. These gazebos, under the supervision of Selangor's FoR, are to serve as an attraction as well as a form of encouragement for the local community to participate in activities along the river and to further increase public awareness on the importance of maintaining the cleanliness of the river. Our rivers are our main source for raw water; therefore, it is a collective responsibility to monitor and care for our rivers.

### Smart Water Meter Programme

Another digital solution that empowers both the water operators and consumers is the Smart Water Meter. Smart Water Meter provides real-time information for consumers to better manage water consumption.

It can be used to notify consumers when there is a significant increase in their water consumption, caused by unusual water consumption, possible internal leakage, or when their meters are vandalised or damaged. These alerts will allow consumers to take immediate action or notify Air Selangor for remediation. This technology also helps us collect and analyse data on consumers' water consumption behaviour.

For water operators, it removes the need of manual meter reading and estimation for billing. The Smart Water Meter uses wireless technology to transmit data from meters at any pre-set frequencies which allow real-time remote meter readings for billing purposes.

In 2019, Air Selangor piloted the Advanced Metering Infrastructure (AMI) Smart Water Meter for the Sepang region. By end of December 2020, a total of 8,037 AMI meters connected via the cellular Narrowband - Internet of Things (NB-IoT) were installed, and their performance were consistently monitored.

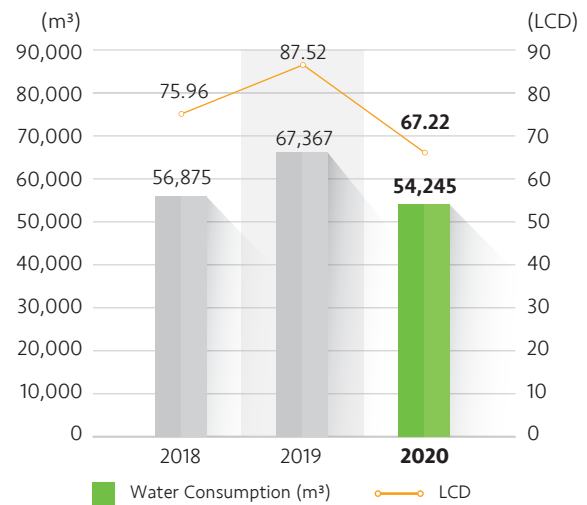
### Air Selangor's Internal Water Consumption

As a water operator, we fully appreciate the efforts to produce and supply clean water. We believe that it is important for us to be role models to consumers, especially in efficient water management.

We operate across several offices and service counters throughout the 10 regions. Our employees spend one third of their day in the office and utilise water through direct and indirect use. We monitor our water consumption through a centralised system. In effort to reduce our water consumption we have installed water thimbles at our office taps and put up educational signages for our employees to encourage mindful usage of water.

In 2020, our average water consumption stood at 67.22 LCD, a decrease of 23.19% as compared to 87.52 LCD in 2019. This is due to the MCO which allowed our employees to work from home.

Total Internal Water Use & Average Water Usage per Employee



\* Excluding water consumption in rental offices and WTPs operational offices.

## MANAGING ENERGY USE

To deliver clean and high-quality water to all our consumers, Air Selangor operations utilise significant amounts of energy throughout the treatment processes, distribution network, offices and employee mobility purposes. We consume primary energy in the form of petrol and diesel and secondary energy from purchased electricity.

Diesel fuel is also consumed by electricity generators that act as back-up power for our facilities. Additionally, we also use petrol and diesel for 1,068 active operational vehicles such as tankers, trucks, mobile stations, company cars and motorcycles for our meter readers. Purchased electricity is utilised at all our facilities. Below are ways we manage our energy use and reduce our carbon footprint.

### Fleet Energy Management

Our Fleet Management unit is now actively monitoring every vehicle's fuel consumption and its distance using an automated fuel consumption online report. We also have installed GPS tracker on every diesel-engine vehicle to monitor fuel efficiency.

We are in the process of finalising our Fleet Management policy that aims to minimise the emissions of current and future fleet vehicles to assist Air Selangor in meeting our Green Fleet goals while reducing the short- and long-term costs of purchasing, maintaining and operating these vehicles.



### Facility Energy Management

In 2020, we established an Energy Management Unit (EMU) to lead our efforts in ensuring efficient energy use throughout the company. We embarked on zero- and low-cost initiatives as quick wins to improve energy efficiency.

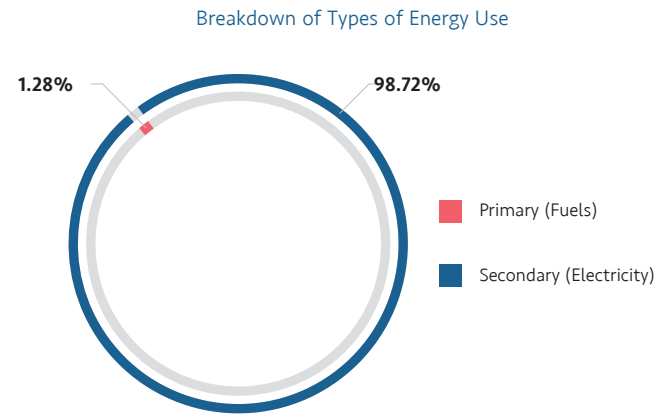
These initiatives focused on management decisions such as applying tariff corrections for our treatment plants and pump houses as well as rectifying poor power factors of our facilities to eliminate penalty fees. To reduce the cost of engaging external contractors, we optimised our resources by leveraging on our employees with Energy Commission (EC) Registered Electrical Energy Manager (REEM) qualifications to fulfil the Electricity Supply Act 1990 and Electricity Regulations 1994.

The EMU diligently monitored and audited our high electricity consuming facilities to ensure the system and equipment operated efficiently. We organised campaigns at our offices by communicating via emails and Yammer, our internal social media platform, to highlight energy efficiency practices at the workplace. We also installed LED lights and energy-efficient air conditioning at our offices. These initiatives resulted in cost savings amounting to RM6.25 million in 2020 for Air Selangor.

Air Selangor is currently finalising our Energy Efficiency Policy to strengthen our commitment to help mitigate carbon emissions, primarily through energy efficiency efforts. Several energy efficiency pilot projects which are currently in the pipeline include modifying our pump house with magnetic coupling technology, installing dynamic voltage controller and demand control drives. We are also looking into the potential of renewable energy particularly photovoltaic (PV) solar panels, both on ground and floating as well as energy storage systems.

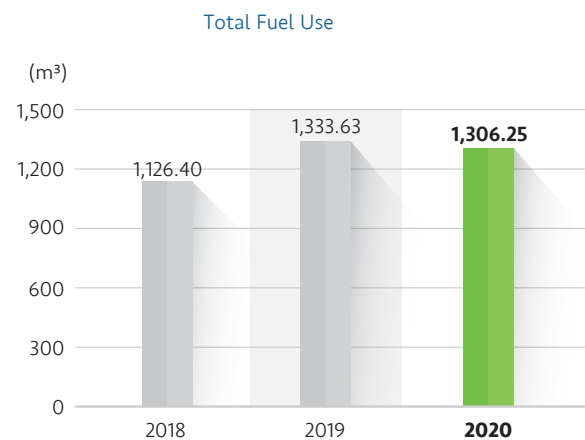
### Energy Use Performance

Overall, 98.72% of energy used in 2020 originated from secondary energy (purchased electricity) and the remaining from primary energy (fuels).

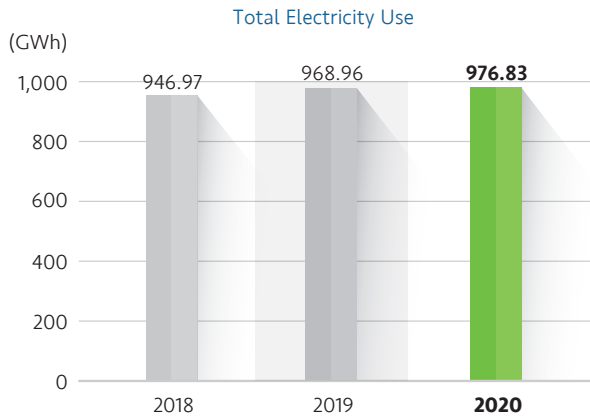


In 2020, the total primary energy used via the consumption of both petrol and diesel stood at 1,306.25 m<sup>3</sup>.

**Achieved**  
**RM6.25 million**  
**in cost savings from energy efficiency**

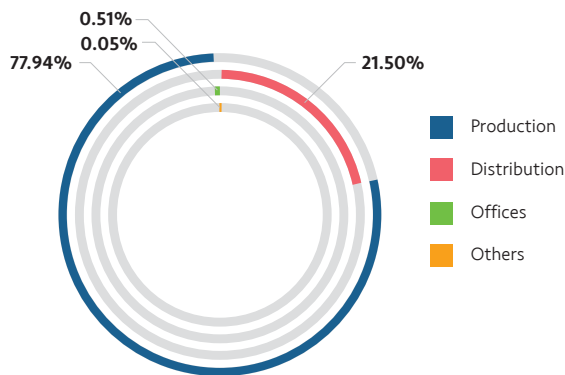


Electricity is used to power our WTPs, dams, ORS, HORAS and their associated facilities consisting of Residual Treatment Facilities (RTF), intake stations and balancing reservoirs. Up to 77.94% of our electricity consumption is used for water treatment processes, which is essentially the production side of our operations. Distribution of treated water through our network which is powered by our pump houses contributed 21.50% of our total energy use. The remaining were used by our offices and other assets such as our depots, signages and streetlights.

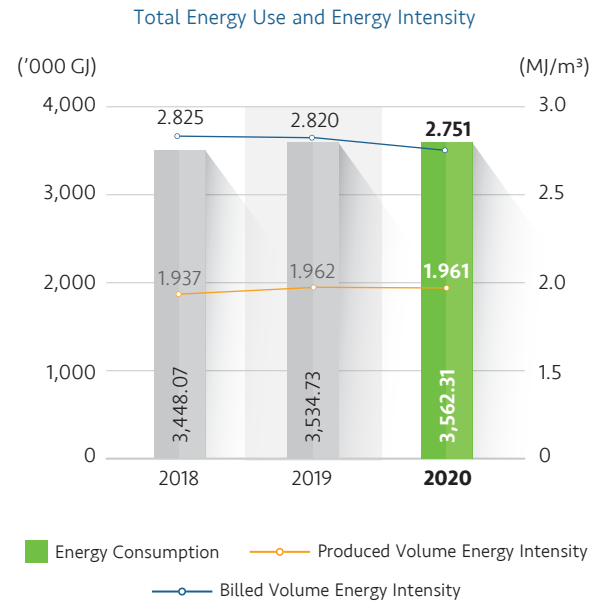


\* Electricity is purchased from Tenaga Nasional Berhad, covering production, distribution, offices and other consumption.  
\* Labohan Dagang and Langat 2 have been operational since January 2020.

Electricity Use by Function



Total energy used increased 3.21% from 2018 to 2020 mainly because of two new WTPs. Nonetheless, the initiatives implemented by our EMU and NRW teams have improved our overall energy efficiency. Our energy intensities reduced to 1.961 MJ/m<sup>3</sup> per produced unit of water and 2.751 MJ/m<sup>3</sup> per billed unit of water in 2020. This is a 1.25% improvement in produced intensity and 2.59% for billed intensity, as compared to 2018 which showed less energy being used per unit of water.



\* Energy conversion factor sourced from Malaysia Energy Statistic Handbook 2019

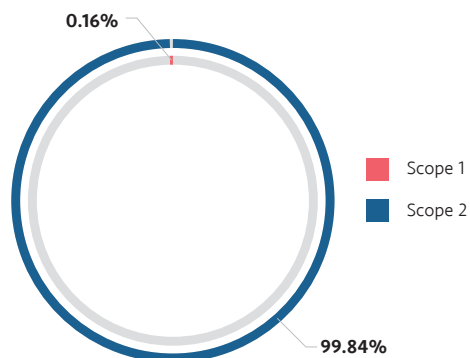
### Carbon Emissions

Air Selangor's carbon emissions are calculated based on methodologies adopted by the Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard. The scope of our carbon emissions is limited to direct carbon dioxide emissions (Scope 1) from fuel consumption by facilities and company's vehicles, while indirect emissions (Scope 2) cover electricity purchases by facilities and offices. Scope 3 has been excluded in our analysis in the current reporting cycle and will be considered for future reporting.

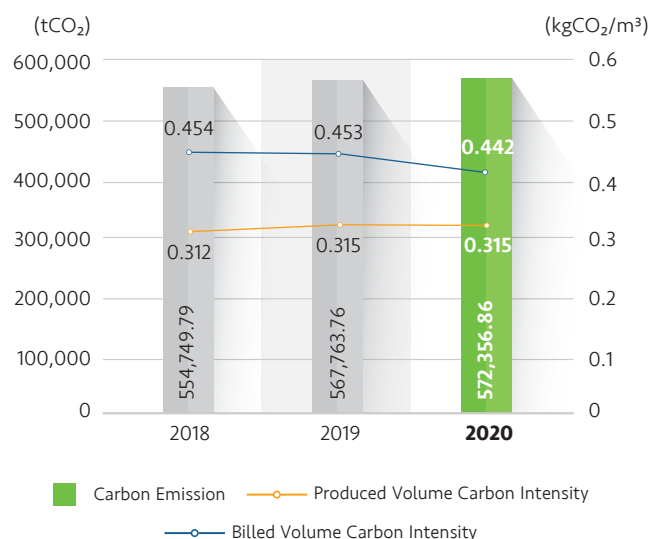
We utilised the electricity carbon emission factor for Peninsular Malaysia which is 0.585 kgCO<sub>2</sub>/kWh as published in the 2017 CDM Electricity Baseline for Malaysia report, issued by the former Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC). For petrol and diesel, the carbon emission factors stood at 0.0189 kgCO<sub>2</sub>/MJ and 0.0202 kgCO<sub>2</sub>/MJ respectively, based on Malaysia's First Biennial Update Report (BUR) submitted to the United Nations Framework Convention on Climate Change in 2015.

Our Scope 1 carbon emissions constituted only 0.16% of total carbon emissions whereas most of our carbon emissions was categorised under Scope 2 or purchased electricity. Overall carbon emissions increased by 3.17% from 2018 to 2020. Carbon emission intensity of produced volume increased 1.11% in 2020 and carbon emission intensity of billed volume improved by 2.73% as compared to 2018. This is due to the improvement of our NRW and billing performance.

Breakdown of Carbon Emissions by Scope



Total Carbon Emissions and Carbon Emissions Intensity



## MONITORING AIR QUALITY

Air Selangor’s WTPs, which have been installed with air pollution control devices such as chlorine scrubbers and bag filters, are subjected to the Environmental Quality (Clean Air) Regulations 2014 (CAR 2014).

Air quality monitoring is conducted on a yearly basis by a certified third-party. Sampling methodology is based on the Third Schedule (I) Chemical & Petrochemical Industry in All Sizes, Regulation 13 of CAR 2014. In 2020, we completed the stack monitoring of the Air Pollution Control System (APCS) for 13 of our WTPs, recording zero non-compliance to regulations.



## MANAGING SOLID WASTE GENERATION

Air Selangor generates large amounts of solid waste in the form of Water Treatment Residuals (“residuals”) as a by-product from the water treatment process. Residuals are largely made up of organic and inorganic matter such as silica and chemical substances. We recognise that the process of managing these residuals does not only use energy resources, but it also takes-up land resources for disposal purposes.

Air Selangor is committed to realise our SPI 7: Environmental Stewardship Waste Zero Environment and will continuously explore alternative methods to manage these residuals to ensure regulatory compliance and reduce negative impact on the environment. Apart from residuals, we are also actively recycling the amount of domestic waste generated to decrease final disposal volumes that are channelled to the landfills.

## Water Treatment Residual Management

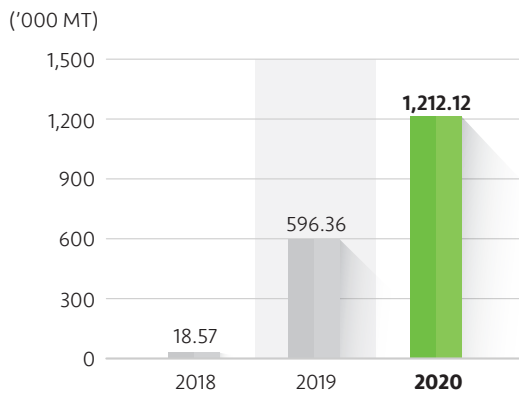
Residuals from our WTPs are classified as scheduled waste (SW 204) and subject to the requirements of the Environmental Quality (Industrial Effluent) Regulations 2009 and Environmental Quality (Scheduled Wastes) Regulations 2005. As part of these regulations, residuals must be treated prior to disposal and its disposal is restricted to designated disposal areas or sanitary landfills. For effluents, 21 of our WTPs are required to comply with Standard A and the remaining with Standard B as set in the Environmental Quality (Industrial Effluent) Regulations 2009.

32 of our WTPs produce residuals which contain aluminium due to the addition of commercially used alum-based coagulants during the treatment process. Two of our WTPs which are Sg. Rumpit WTP, and Kepong WTP use advanced ultrafiltration membrane systems. Raw water is filtered through the ultra-membrane filtration system removing suspended particles, colloids and bacteria, without the addition of any coagulants and therefore does not produce any residual.

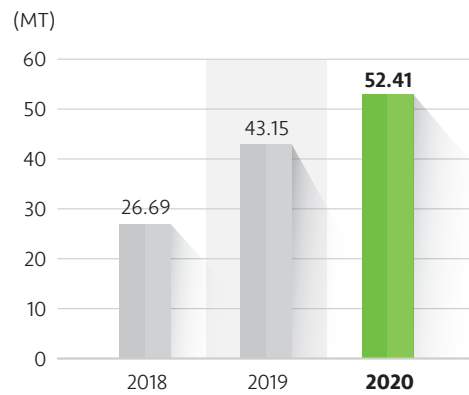
The residuals produced are treated via mechanical and dewatering processes at the RTF. Via a dewatering system, the residual is separated into solid and liquid components, where solid residual which is classified as scheduled waste (SW 204) is collected and disposed at the approved landfill area. Within our RTF, Air Selangor uses multiple residual dewatering technologies which include centrifuge decanter, lagoons, drying beds, and geo-tube. At present, 30 of our residuals generating WTPs are equipped with RTF. Two of our WTPs, namely the Sg. Batu WTP and Sg. Sireh WTP, are in the RTF construction planning stages.

Air Selangor also commissioned the annual Toxicity Characteristic Leaching Procedure (TCLP) test, where the results are submitted to DOE as part of residual management. The test is to identify and monitor the residual content, based on parameters set by the DOE.

Total Amount of Residuals Generated (SW204)



Total Amount of Other Scheduled Waste Generated



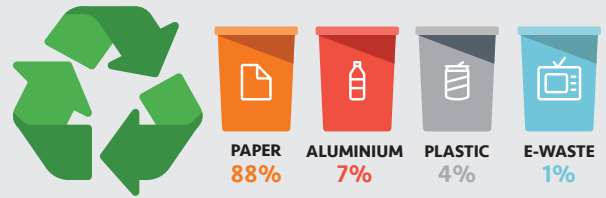
## Domestic Waste Management

Apart from managing our waste treatment residual, minimising the amount of domestic waste generated from our offices is also important in managing our environmental impact. Reduction and recycling of waste are essential in conserving our natural resources, reduce landfills and conserve land areas. We have taken steps to increase awareness among our employees on waste management via various initiatives and campaigns at the office, which they also practice at home.



### Recycle for Life Campaign

As part of our efforts to minimise the amount of waste generated in our premises, Air Selangor established a Green Committee that focuses on recycling programmes at our offices. In August 2020, we participated in Cenviro's Recycle for Life Campaign to enhance awareness among employees. Items meant for recycling were collected and sold to Cenviro. The cash value of the waste was then recorded using a smart card system. Collection was done on a quarterly basis at our headquarters and Regional Offices. By the end of the year, the programme successfully collected 4,319 kg of recyclable items.



### No Single-use Plastic Campaign

A 'No Single-use Plastic' Campaign was launched in July 2020 at the cafeteria of our headquarters. Employees were encouraged to bring their own containers when buying food to reduce the use of single-use plastic packaging and utensils. The campaign included an awareness talk by World Wildlife Fund Malaysia (WWF-Malaysia) and a contest for employees to showcase their own food containers.



## NON-COMPLIANCE INCIDENCES

The Guided-Self Regulation (GSR) Programme was established by the DOE in 2017 with the aim of assisting organisations to achieve compliance with the Environmental Quality Act (EQA) 1974 more effectively. DOE has a set of environmental mainstreaming (EM) tools to support organisations and industrial premises to achieve a certain level of self-regulation. The tools include environmental policy, budgeting, monitoring committee, facility, competency, reporting, communication and transparency.

Air Selangor adopted the GSR as part of our HSE Strategy and implemented this in phases. In 2020, we made good progress on our GSR implementation, achieving 73.61% at WTPs and 15.00% for our distribution activities.

We recorded one violation under Environmental Quality (Scheduled Wastes) Regulations 2005 and 31 violations from 24 WTPs under the Environmental Quality (Industrial Effluents) Regulations 2009. No violations were recorded for Environmental Quality (Clean Air) Regulations 2014.

We received two notices of non-compliances from DOE due to violations at Sg. Labu WTP on the management of scheduled waste and at Sg. Batu WTP for effluent discharge due to unavailability of an operational Industrial Effluent Treatment System (IETS). However, due to immediate mitigation measures taken by Air Selangor upon receipt of notice from DOE, no legal action or compounds were issued to Air Selangor.

No spillage incidents occurred at our sites in 2020. This was due to the several measures implemented at our sites to reduce the risk of spillage incidences within our premises, as follows:

- Provided secondary containment for liquid waste (chemical, used oil);
- Provided collection sump at the storage area; and
- Ensured the storage areas were equipped with spill kit bag.

To ensure the non-compliance incidences are resolved and potential non-compliance incidents are successfully mitigated, we implemented the RTF Turnaround Plan, in collaboration with the DOE. This is targeted for completion by 2024.

A significant budget has been allocated for major CAPEX works, based on the six resolutions listed in the RTF Turnaround Plan. These resolutions include the implementation of GSR at all 34 WTPs, all of which were 100% completed in 2020, improving the RTFs through design redundancy at dewatering facilities, construction of new RTFs, implementation of zero effluent discharge systems, installation of flow meters and on-site stabilisation at the residual disposal site for the Sg. Labu Disposal Area. As of December 2020, we have achieved 51% for the overall progress of the RTF Turnaround plan.

## PERFORMANCE DATA

DESCRIPTION	2018	2019	2020
<b>ENVIRONMENTAL</b>			
Average domestic water usage per capita (LCD)	233*	232	<b>244</b>
Total internal water use (m <sup>3</sup> )	56,875	67,367	<b>54,245</b>
Average internal water usage per employee (LCD)	75.96	87.52	<b>67.22</b>
Total energy use (GJ)	3,448,066.98	3,534,734.81	<b>3,562,306.97</b>
Energy intensity (MJ/m <sup>3</sup> )			
• Produced	1.937	1.962	<b>1.961</b>
• Billed	2.825	2.820	<b>2.751</b>
Total energy use from electricity (kWh)	946,973,306.42	968,956,441.61	<b>976,829,872.53</b>
Total energy use from fuel (MJ)	38,963,073.78	46,491,615.89	<b>45,719,425.63</b>
Total CO <sub>2</sub> emissions (tCO <sub>2</sub> )	554,749.79	567,763.76	<b>572,356.86</b>
CO <sub>2</sub> emissions intensity (kgCO <sub>2</sub> /m <sup>3</sup> )			
• Produced	0.312	0.315	<b>0.315</b>
• Billed	0.454	0.453	<b>0.442</b>
Total CO <sub>2</sub> emissions (Scope 1) (tCO <sub>2</sub> )	770.41	924.24	<b>911.39</b>
Total CO <sub>2</sub> emissions (Scope 2) (tCO <sub>2</sub> )	553,979.38	566,839.52	<b>571,445.48</b>
Total scheduled waste generated (SW204) (MT)	18,568.13	596,358.39	<b>1,212,118.87</b>
Total scheduled waste generated (Others) (MT)	26.69	43.15	<b>52.41</b>
Total amount of chemicals used for water treatment (MT)	112,569.36	116,015.06	<b>115,297.58</b>

\* Data is obtained from Malaysia Water Industry Guide 2019.

# BE SOCIALLY RESPONSIBLE

<b>Providing A Conducive Workplace .....</b>	<b>84</b>
<b>Creating A Safe Workplace .....</b>	<b>92</b>
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<b>Performance Data .....</b>	<b>100</b>

As the largest water operator in Malaysia, Air Selangor takes pride in delivering the most valuable of resources, water and water services to over 8.4 million people.

In providing quality and affordable water, we recognise our critical role in improving lives and livelihoods of communities, in preserving the ecosystems that are nurtured by water and water bodies, in ensuring that we operate with integrity and be socially responsible while serving our business purpose.

In the same way, we also take a nurturing approach in developing the potential of our employees as a skilled and future-ready workforce. By promoting our core values of Professionalism, Integrity, Honesty, Teamwork and Highest Standard of Services, we instil a sense of belonging and responsibility in our employees to be equally committed to their personal and professional development, upholding the highest standards of workplace safety while contributing towards the goal of sustainable water services.



## PROVIDING A CONDUCTIVE WORKPLACE

Air Selangor recognises the importance of providing a conducive workplace for our employees as they are one of our most important stakeholders. A safe and conducive workplace enables our employees to unleash their full potential, generating positive returns for the company. This has been identified as an important aspect for our business operations, as also captured under our SPI 6: Creating Conducive Working Environment.

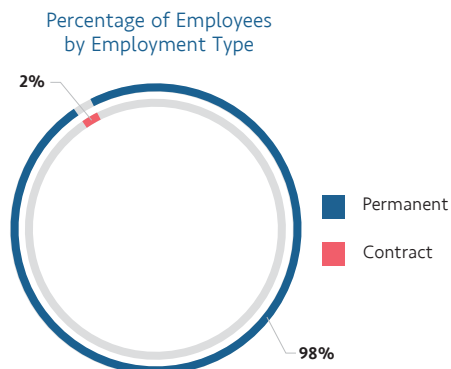
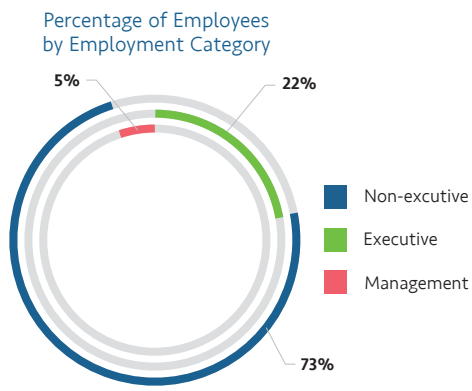
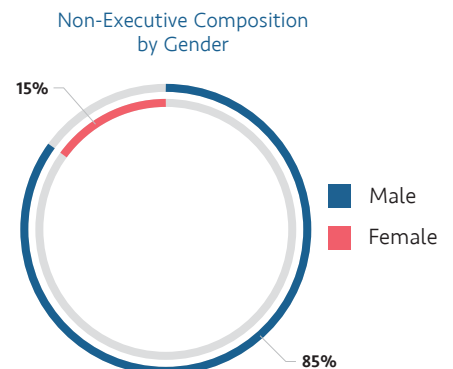
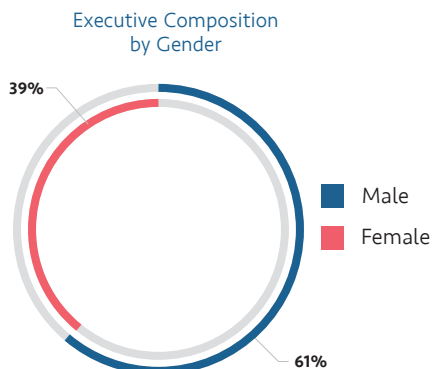
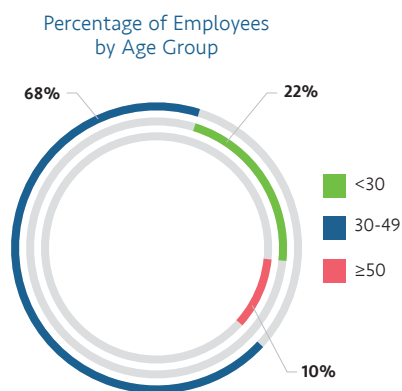
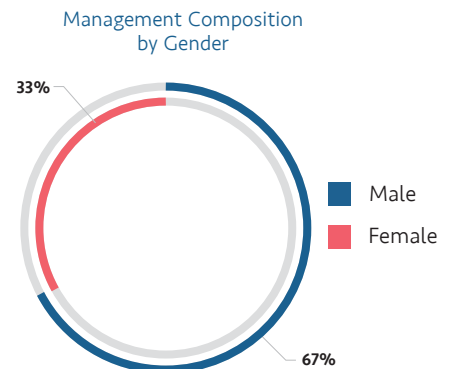
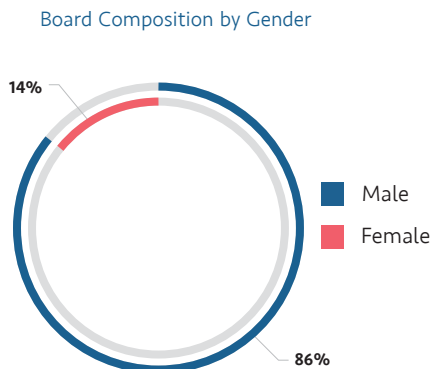
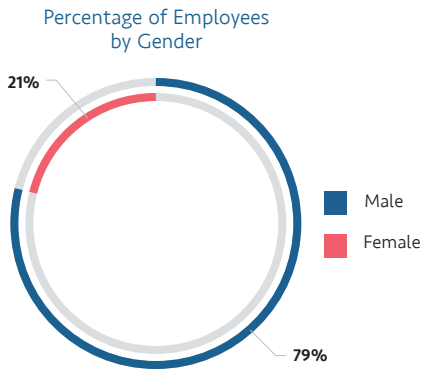
Other than providing employees with competitive perks and benefits, Air Selangor also values diversity and inclusion, training and development, employee engagement, and most importantly, the health and safety of our employees.

### Diversity and Inclusion

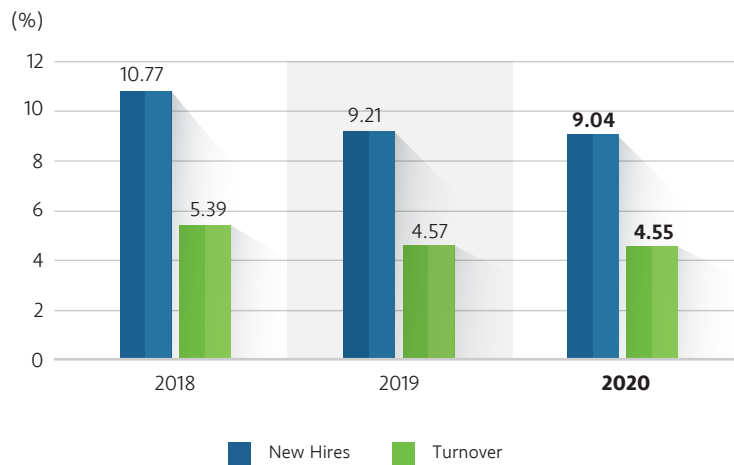
Air Selangor's talent is diverse, with various backgrounds and skill sets i.e., professionals such as engineers, executives, technicians, laboratory specialists, customer service officers, auxiliary police, and tanker drivers, among others who are part of our workforce. We hire our employees based on their experience and capabilities.

The water sector traditionally has a lower rate of participation among women as compared to other sectors due to the nature of work and working conditions. While this scenario is true for Air Selangor where women make up only 21.03% of all employees in the company, we are committed to look for ways to improve gender diversity in our company. In 2020, the number of women in our senior management team increased threefold, from 1 in 2019 to 3 in 2020.





New Employee Hires and Employee Turnover Rates



## Training and Development

Air Selangor recognises the importance of capacity building for our employees. We believe that providing our employees with the right learning and development platforms will equip them with the tools, skills and knowledge to reach their full potential.

Our employees are given the opportunity to attend both internal and external training sessions from time to time, according to their needs. The Learning Centre crafts an annual training plan based on input from all Head of Departments and Regions on the required training programmes for employees. In 2020, Air Selangor spent RM2.05 million on training and development for our employees.

Air Selangor provides continuous development to employees, regardless of their positions. Our training programmes encompass foundational training for new employees, technical and soft skills training, and leadership training to identify and develop potential leaders among our employees, as well as other supplementary programmes. In 2020, a total of 511 training programmes were organised with 79,721 total hours clocked for learning and development.

Training effectiveness is measured through participants' feedback which is collected and managed by the Learning Centre. Meanwhile for other competency-based development programmes, direct participant assessment will be performed to gauge their workplace performance before and after completing the programme.



*New employees attending our on-boarding programme.*



*Participants at the risk management workshop.*



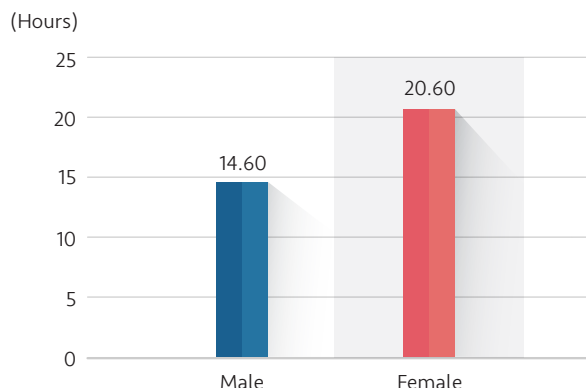
*Some of our training programmes had to be held online adherence to with COVID-19 SOPs.*



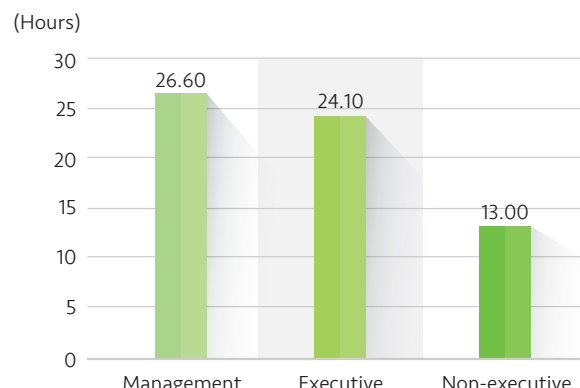
*Participants practising plumbing works as part of the SKM learning modules.*



Average Training Hours per Employee by Gender



Average Training Hours per Employee by Employment Category



### Malaysian Skills Certification Programme

The Malaysian Skills Certification Programme (*Sijil Kemahiran Malaysia – SKM*) was first introduced to encourage life-long learning and help individuals develop vocational skills. Since 2018, Air Selangor has been sending our employees for this competency certification programme to fulfil the requirements set by our regulator SPAN in producing skilful and competent workforce in the water service industry in Malaysia. Air Selangor targeted for 386 employees to receive certification by the end of the year, but our target was exceeded as 393 employees were deemed competent under this programme. These employees have benefitted from various modules from the same year, such as:

-  Water Treatment Operation Services
-  Water Distribution Operation Services
-  Non-Revenue Water
-  Water Treatment Quality Control – Laboratory
-  Inbound Customer Engagement Operations
-  Office Administration

An additional 46 employees participated in the SKM programme through the National Dual Training System (NDTS) from 2010 to 2018. NDTS is a learning system that consists of 70% to 80% of practical training at the workplace and another 20% to 30% of theoretical learning at training centres. The NDTS is an industry-driven training method which is operated through joint-ventures between companies and training institutions.

Upon completion of their courses, they are awarded SKM certification. The added skills gained during the SKM programme will boost employees’ confidence and satisfaction at the workplace, apart from increasing productivity. It also further reflects Air Selangor’s commitment to ensure our employees have ample continuous learning opportunities to help build their careers.

Apart from the certification programmes mentioned, Air Selangor has also provided competency training for special work involving licensing and term limits. Occupational Safety & Health (OSH) related training programmes are important to ensure relevant employees are equipped with adequate knowledge to understand the safety management systems and the legal compliance required.

As such, the following training programmes were carried out for our employees to ensure that they are equipped with knowledge and awareness about OSH:

1. Authorised Entrant & Standby Personnel (AESP) for Confined Space
2. Authorised Gas Testers Entry Supervisor for Confined Space (AGTES)
3. Basic Occupational First Aid (BOFA), Cardiopulmonary Resuscitation (CPR) & Automated External Defibrillator (AED)
4. Basic Aquatic & Resuscitation
5. Basic Lifting Operation
6. Ergonomic-Trained Personnel (Initial Ergonomic Risk Assessment)

### Leadership Development Programme

Our Leadership Development Programme was launched in 2018 to encourage our employees to become future leaders of the company, backed with the necessary experience, skills and knowledge to drive Air Selangor's transformation objectives.

This programme consists of four sub-categories: Senior Management Development Programme (SMDP), Middle Management Development Programme (MMDP), Line Management Development Programme (LMDP) and Talent Associate Programme (TAP). Participants are grouped according to their roles and positions held within the company. The duration for each of these modules vary from between eight to 24 months.

All the learning modules were built around Air Selangor's core values and based on Air Selangor's leadership competencies framework. Thirty-six candidates graduated from the Leadership Development Programme in August 2020 upon completion of all programme modules, following a rigorous selection and approval process.

Besides the core learning modules, Leadership Development Programme' participants are also exposed to social enterprise activities and are given the opportunity to facilitate the Air Selangor Youth Camp. The Youth Camp has been designed and customised for the children of our employees and other underprivileged teenagers from local communities between the ages of 13 to 16. The programme is part of our corporate social responsibility, and it aims to enable participants to develop leadership and character development skills during the camp.

By facilitating this Youth Camp, participants of the Leadership Development Programme stretched their leadership capacity, strengthened engagement skills and at the same time, contributed positively towards the community. Due to the COVID-19 pandemic, the Youth Camp did not take place in 2020 but will be organised when conditions improve.

### Partnerships with Institutions of Higher Education

In 2020, Air Selangor signed a Memorandum of Understanding (MoU) with Putra Business School (PBS) of Universiti Putra Malaysia (UPM), one of the leading tertiary education institutions in the country. The collaboration aimed to establish strategic cooperation to support Air Selangor's plans to develop human capital, especially relating to the Air Selangor Leadership Development Programme.

In addition, we have also partnered with Universiti Kebangsaan Malaysia (UKM) to develop a comprehensive Water Expert Development Programme (WEDP) training module for our technical workforce. The aim of this initiative is to create a structured module that meets our workplace needs which can also be subsequently applied as a benchmark for the water supply industry in Malaysia. The training module is expected to launch in the third quarter of 2021 and will involve approximately 140 employees and 17 internal trainers and facilitators.



▶ Trainers and participants from the Leadership Development Programme, 2018

## Employee Engagement Programme

Air Selangor engages with its employees through various platforms such as email, in-house magazine, team-building activities, departmental meetings and many more. To foster a strong sense of unity and build team spirit, we conduct regular employee engagement sessions to solicit and channel relevant feedback to the management. In 2020, we organised the following employee engagement activities:

### Meet and Greet with CEO

Introduced in 2019 as a management initiative to enhance the working relationship with employees, as a result of the feedback received from our Employee Engagement Survey.

### AiR Care: Prolonged Illness Visits

In 2020, we visited nine staff members with prolonged illness and also provided financial assistance to them.

### Employment Engagement Survey 2020 Lunch Appreciation

An event held to express appreciation towards departments and regional offices with the most respondents for our Employee Engagement Survey (EES) 2020.

### Air Selangor River Care

A series of awareness programme and activities that engage with local communities and employees to promote river conservation and encourage the public to report suspected pollution to authorities.



### Director's Office Engagement Session

To cascade the company's strategy towards improving customer service effectiveness and efficiency aligned with the seven (7) Strategic Plans & Initiatives ("SPIs"). The session was attended by 230 participants selected by the Head of Departments and Head of Regions including the ambassador and influencer from Culture Integration Program.

### HSE Management Walkabout

Part of our effort to demonstrate management commitment to increase awareness on the importance of HSE practices and to develop a culture of open communication.

### Appreciation Ceremony for Top Performing Employees

A ceremony to express the Company's appreciation towards employees who have shown excellent work performance in 2019.

### Appreciation Ceremony for Retired Employees

A ceremony to appreciate the services and devotion of our retirees. A total of 37 retirees and prospective retirees have received RM2,000.00 Sijil Simpanan Premium (SSP) BSN each.



### Leadership Development Programme Graduation Ceremony

To celebrate employees who have completed the Air Selangor Leadership Development Program Session 2019/2020 (Talent 1.0), where a total of 36 employees were selected and successfully completed the training sessions for the programme.



In addition, performance appraisals are also conducted bi-annually to evaluate employees' performance and at the same time to identify a development plan for employees. In 2020, we have evaluated the performance of 95% of our employees. The remaining 5% were essentially new employees who worked less than six months in the company.

### Employee Engagement Survey

Air Selangor conducted an Employee Engagement Survey (ESS) in June 2020. The survey was conducted to gauge employees' sentiments as well as the climate of opinion on their experience working with the company and the company's communication and engagement efforts, etc.

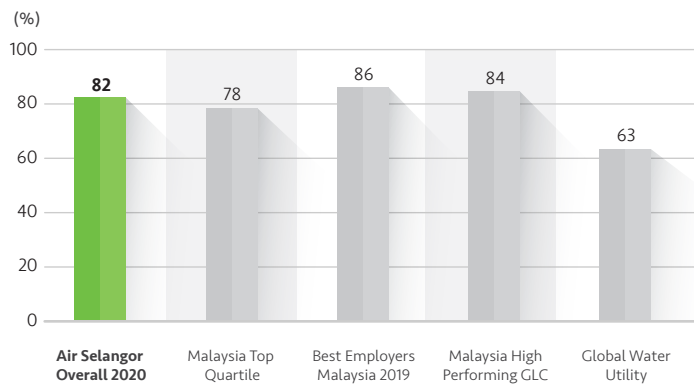
The previous employee engagement survey was carried out in 2017. Our plan is to conduct this exercise every two years with a pulse survey in between. In 2020, the survey received 99% participation rate from our employees. Focus group sessions were also held with selected employees to further gauge employees' engagement at the workplace.

Overall, Air Selangor achieved 82% on our engagement score, which was a 13-point increase from the 69% recorded in 2017.

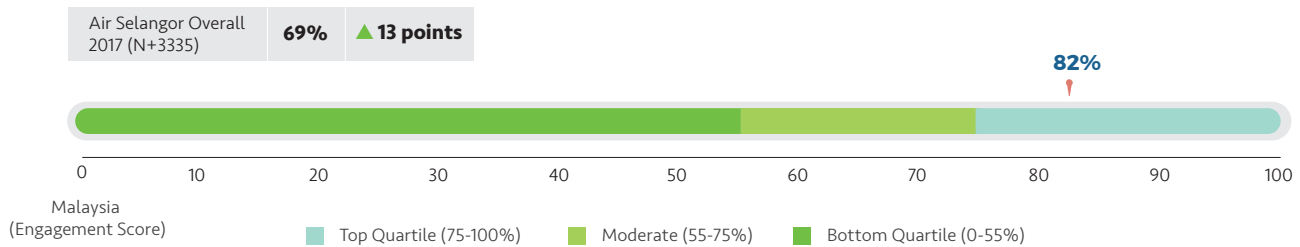
### Overall Air Selangor Engagement Score is at Top Quartile of Malaysia norm



AIR SELANGOR OVERALL ENGAGEMENT SCORE VS EXTERNAL BENCHMARKS



Differences may appear one percentage point higher or lower than expected due to rounding.



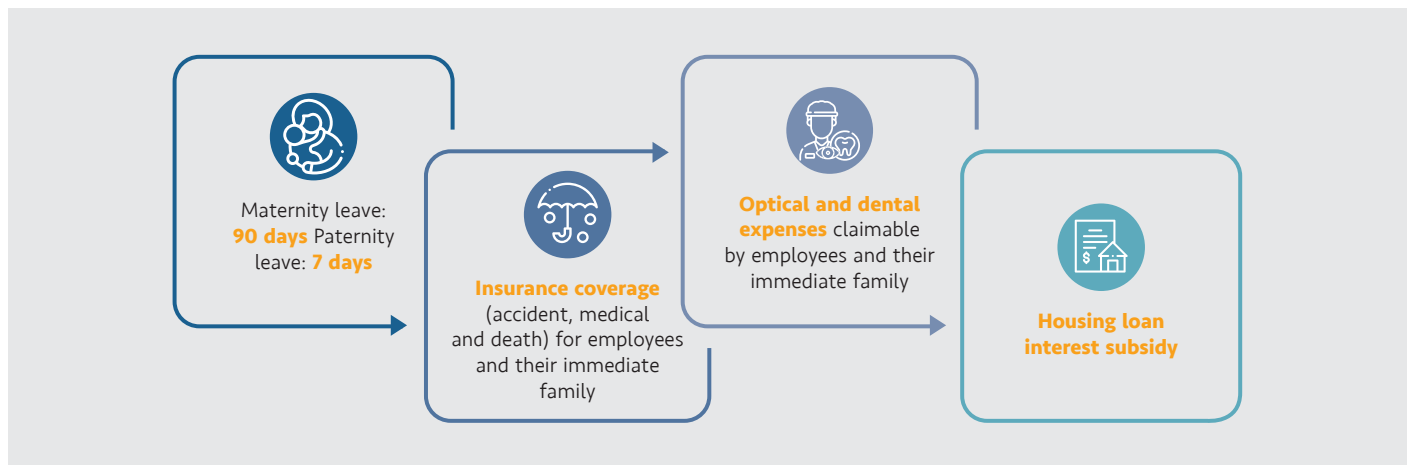
Following the survey, an action plan consisting of various initiatives was devised to address the gaps highlighted in the survey. The proposed initiatives include creating greater avenues for employee appreciation as well as opportunities for senior management to further engage with employees. We recognise that two-way communication is important and therefore, we have planned to set up a new platform for employees to provide feedback on issues of concern or to suggest new ideas for improvement at the workplace. More capacity building programmes will also be planned to help employees build their careers.

By addressing the gaps raised in the employee engagement survey, our main objective is to improve workplace culture, inspire employees to embrace our values, demonstrate their commitment and leadership to drive performance, and to improve the quality of our engagement on a year-on-year basis.

**Employee Benefits**

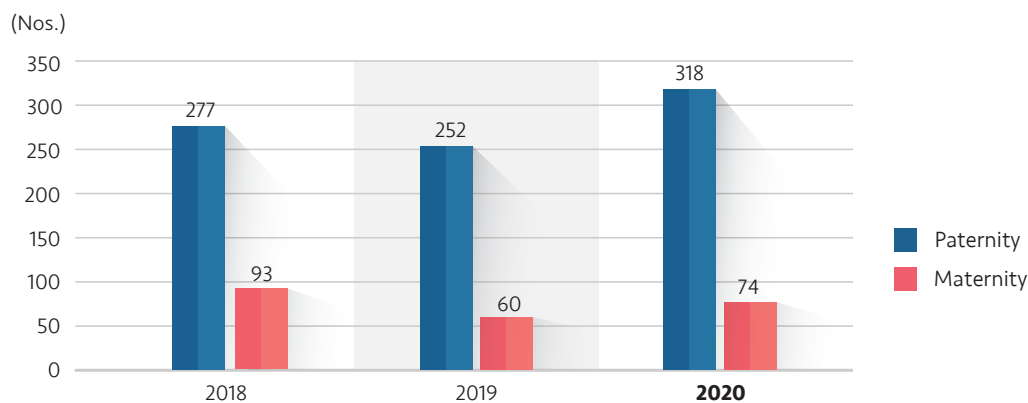
Air Selangor provides attractive perks and benefits which are beyond what has been stipulated in the Employment Act 1955, to ensure employee welfare and well-being is taken care of. We believe that an attractive benefits package will attract more talent to our company and reduce employee turnover. The ratio of the standard entry wage by gender to the local minimum wage is 1:1, which reflects our efforts to maintain gender equality.

The following are some examples from a long list of perks and benefits that we provide to our employees.



**Parental Leave**

Parental Leave Taken by Employees



All employees who took parental leave returned to work once their leave period ended. These employees are also still employed with Air Selangor, 12 months after the end of their parental leave. We have successfully achieved 100% retention rate among employees who took parental leave for the year.

## CREATING A SAFE WORKPLACE



Our priority is to protect the health and safety of our employees, apart from minimising the environmental impact associated with our activities and contribute towards sustainable development. Air Selangor views health and safety with utmost importance as most of our employees work in operations and are on the ground.

At present, all 10 distribution regions and two WTPs have successfully obtained OHSAS 18001: 2007 Occupational Safety and Health Management Certification. This certification provides us with a systematic and recognised management system, in line with the company's commitment to protect the safety and health of its employees. However, as mentioned earlier in the report, Air Selangor is currently aligning all our ISO certifications where we are working towards achieving company-wide certifications for indicated standards.

As for our contractors, a Safety Induction Course for Contractors has been initiated since 2017 as part of our efforts to provide contractors with basic knowledge on occupational safety and health before commencing work. This initiative fulfils our obligations as an employer as mentioned in Section 15 of the Occupational Safety and Health Act 1994; to provide information, instruction, training and supervision to all our employees.

### **Health, Safety and Environment (HSE) Master Plan**

The Air Selangor Health, Safety and Environment (HSE) Master Plan is a three-year plan that was crafted to ensure robust management and governance on health, safety and environment (HSE) throughout the company. The Master Plan consists of programmes and activities that serve as a guideline to promote provision of safe workplace at all our offices.

The main elements in the Master Plan are leadership and commitment, capacity building and HSE system governance. The plan also serves to comply with requirements in OHSAS 18001:2007 standards.

## HSE Policy

Air Selangor published a revised HSE Policy in January 2020 to reflect our commitment to ensure our employees and contractors uphold the best HSE standards. We are committed to:

**1** Recognise HSE objectives as an integral part of our business performance.

**2** Formulate and implement policies and procedures that comply with all applicable health, safety and environment laws and related requirements that meet national and international standards.

**3** Continually implement, improve and update the HSE Management System.

**4** Provide a platform for employee participation and involvement in health, safety, and environment practices.

**5** Monitor related activities and perform regular surveillance with a view to prevent untoward incident, injury, illness at workplace and impact of pollution to environment.

**6** Investigate any accidents and use all relevant information to prevent similar incident reoccurrence.

**7** Maintain a safe and conducive working environment.

**8** Periodically review and improve our HSE policy, objectives and targets while ensuring they are understood by all employees and made available to all interested parties.

This policy applies to all our employees and third parties who perform work on our behalf. The policy will be reviewed and updated periodically where necessary to ensure its relevance.

### Corporate HSE Committee

Air Selangor formed the Corporate HSE Committee (the Committee) in January 2020, with the CEO as the Chairperson and Director of Operations as its Deputy Chairperson. The other Committee members include all 15 Head of Departments (HODs), all 10 Head of Regions (HORs), 32 employee representatives, one representative from Security section and four secretariats. The Head of HSE Section is the Committee Secretary. The Committee meets at least once every quarter.

In terms of roles and responsibilities, the Committee was formed to conduct the following:

- (i) monitor HSE compliance;
- (ii) formulate, review and assess HSE policies;
- (iii) study and improve lost time injury (LTI) trends;
- (iv) investigate and resolve workplace accidents and HSE-related complaints; and
- (v) assess the effectiveness of our HSE programmes and activities.

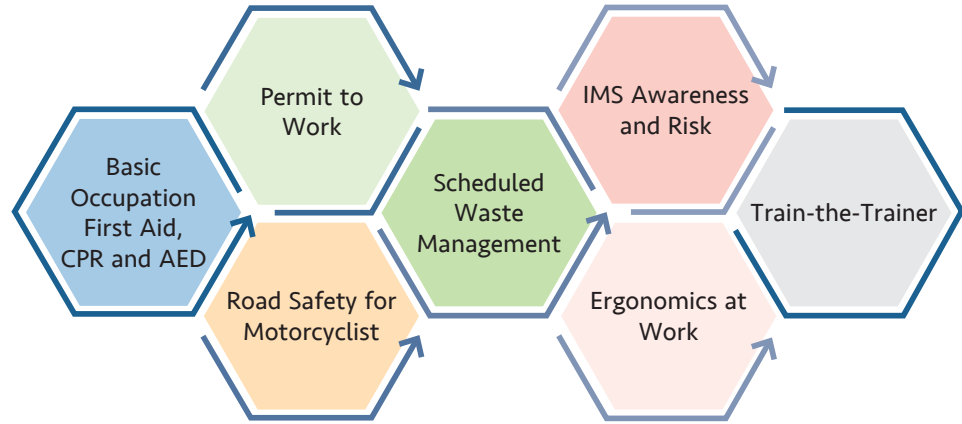
### Hazard Identification, Risk Assessment and Determining Controls (HIRADC)

The Hazard Identification, Risk Assessment and Determining Controls (HIRADC) was established in 2019 to implement and maintain ongoing hazard identification, risk assessment and determination of necessary controls for all activities at all our facilities.

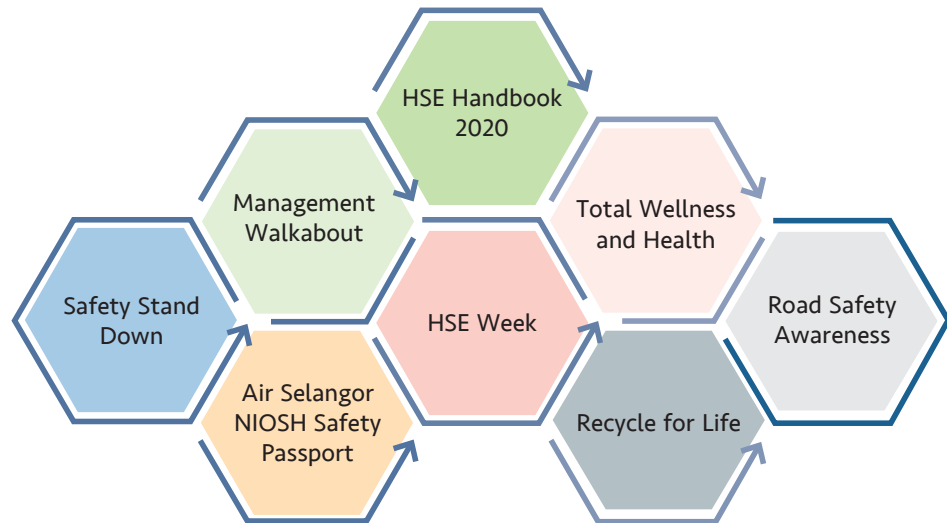
The establishment of HIRADC is in line with the requirements set by OHSAS 18001:2007, Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000, and Industry Code of Practice for Safe Working in a Confined Space 2010.

### HSE Programmes

Several HSE training programmes were conducted in 2020 for employees in the high-risk category. The training programmes include the following:



The HSE Section also organised several activities to raise awareness on the importance of health, safety and environment at the workplace for employees. Some of the activities organised are as follows:



### HSE Week

In September 2020, Air Selangor launched its annual HSE Week with the theme of 'Behavioural Safety: Looking Beyond Workers'. The HSE Week was held to communicate HSE best practices to all employees and elevate the awareness and participation levels of employees in managing HSE issues within the workplace.

During the HSE Week, various activities were carried out such as launching of HSE Guide, explore, health talks, blood donation drive, contest on road safety, face mask challenge, green corner, Recycle for Life, River Care Programme, and trees transplanting activities, among others.





**HSE WEEK 2020**



▶ Senior management participating during HSE Week 2020.

**Occupational Safety and Health Performance**

We have started monitoring our Lost Time Injury Frequency Rate (LTIFR) and Lost Time Injury (LTI) trends in 2020, as occupational safety and health remains one of our top priorities. As of December 2020, we successfully achieved LTIFR of 1.27 against our target of 1.43.

As of December 2020, there were a total of 21 LTI cases but no fatal injuries among our employees. The high number of LTIs among our employees were partly due to the nature of work performed by our large number of non-executive employees who do not only work on-the-ground but are also exposed to all kinds of hazards due to poor site conditions. We continuously monitored other type of accidents such as road and commuting accidents. Throughout 2020, a total of 17 road accidents and 55 commuting accidents were recorded. The data for LTI and LTIFR in 2020 will serve as a baseline for us to further improve our safety performance in 2021 and beyond.

Our OSH performance is audited to ensure processes and policies put in place are effective and to identify areas for improvement. The incident reporting flow and process is audited yearly by an appointed certification body to ensure adherence with procedures and local regulations.

Internally, all workplace incidences resulting in workplace absenteeism for more than four consecutive days will be reported to the Department of Occupational, Safety and Health (DOSH) and annual reporting will also be submitted within the stipulated time frame given.

**Road Awareness Safety Campaign**

In response to the high number of traffic accidents among our employees, Air Selangor conducted a series of road safety awareness campaigns since February 2020. The purpose of these campaigns was to promote better driving practices and road safety tips to reduce the risk of accidents.

As part of the year-long road safety awareness campaign, we also invited the Malaysian Institute of Road Safety Research (MIROS) to conduct a talk on road safety in October 2020. Apart from this, we also collaborated with PUSPAKOM to provide voluntary vehicle inspections for our employees.

For employees with specific responsibilities such as meter reading, leak inspections and enforcement who spent long hours on the road were sent for defensive driving courses. However, due to the COVID-19 pandemic, some of these programmes must be put on hold. The road safety awareness campaign will be continued in 2021.



▶ Participants inspecting their vehicles as part of the road safety training module.



▶ Participants were briefed on road safety tips.



▶ Road safety tips displayed on our premises.

**LTIFR performance**

**1.27**

Against target of **1.43**



## COVID-19 Pandemic Response

As the COVID-19 pandemic accelerated in Malaysia, Air Selangor prepared measures to minimise employees' risk exposure as the water sector is one of the identified essential services sectors which needed to operate as usual, even during lockdown periods.

The COVID-19 Command Centre was established in March 2020 to steer the company towards recovery and operational continuity. This 13-member team is in charge of managing all COVID-19 related issues, monitoring each COVID-19 case, and is responsible for communicating accurate information to COVID-19 Steering Committee, chaired by the CEO for decision making during the pandemic. In 2020, a total of 1,008 COVID-19 related cases were reported and managed by the Air Selangor COVID-19 Command Centre. Out of the 1,008 COVID-19 related cases, there were two confirmed COVID-19 cases recorded.

We believe that it is our responsibility to provide continuous water supply to our customers and hence, business continuity is critical. Therefore, we needed to ensure that there was no significant impact on our manpower and assets. Our primary response to the pandemic focused heavily on ensuring business continuity while preventing further transmissions.

To reduce risk of COVID-19 infection within the company, we arranged for mass swab testing for all employees. We also conducted frequent swab tests for our frontliners such as counter personnel, as well as employees who may have been in close contact with a confirmed case of infection.

Air Selangor also collaborated with the MOH and National Crisis Preparedness and Response Centre (CPRC) to organise a talk on psychosocial distress for our employees who were either found to be COVID-19 positive or who had a close contact with COVID-19 patient(s). Conducted in December 2020, via an online platform, it provided selected employees with relevant information on COVID-19 and guidance in managing mental health.

Air Selangor also carried out COVID-19 readiness inspections to ensure compliance with COVID-19 SOPs at the workplace, which included physical distancing markings on floors and meeting rooms, disinfection activities by janitors, displaying relevant signages and posters on SOPs, temperature screening and availability of MySejahtera QR code for check-ins. All Head of Departments were encouraged to allow employees who had non-critical roles to work from home during the MCO. All our employees were also provided with the necessary personal protective equipment (PPE) such as face masks and hand sanitisers.




▶ Swab testing for all employees

# CORPORATE SOCIAL RESPONSIBILITY “SESAMA MARA” PROGRAMMES

*Sesama Mara*, which means ‘Together We Move Forward’, is the overarching theme for Air Selangor’s Corporate Social Responsibility (CSR) programmes consisting of grassroots initiatives to give back to surrounding communities and strengthen our ties with local communities, residents’ associations, local authorities and non-governmental organisations. In 2020, a total of five initiatives were launched by Air Selangor.



 *Delivering the Box of Hope*

## Box of Hope

The Box of Hope initiative was launched on 30 June 2020 to aid the B40 communities who were impacted by the COVID-19 pandemic. In the spirit of ‘Pay It Forward’, we encourage our customers to donate food or essential items to the Air Selangor Box of Hope for further distribution by Yayasan Food Bank Malaysia to the identified B40 households.

The specially marked collection boxes were placed at Village Grocer supermarkets located at Tamarind Square Cyberjaya, MyTown Cheras, 1 Mont Kiara, i-City Mall Shah Alam and Melawati Mall where items such as flour, rice, canned food, milk, and cooking oil were collected. Non-perishable items such as books, toys and clothes were also collected at additional Box of Hope placed at selected Air Selangor Regional Offices namely, Kuala Lumpur, Petaling, Klang, Gombak and Hulu Langat offices.

This initiative received wide support, with enough essential food items collected for 320 families in need, particularly those living in the People’s Housing Project (PPR) flats around Selangor and Kuala Lumpur.

In response to the spread of the COVID-19 pandemic and the SOPs in place, members of the public were also encouraged to make online monetary donations to the Box of Hope initiative.



### Plumbing Apprenticeship Programme

On 14 August 2020, we launched the Plumbing Apprenticeship Programme to help those who lost their jobs due to the economic turmoil created by COVID-19 pandemic by imparting new income-generating skills. Through this apprenticeship programme, successful applicants attending the technical training will be able to explore new career opportunities as a certified plumber. The programme was made available to all interested individuals who are permanent residents of Selangor, Kuala Lumpur, and Putrajaya or who have resided in these areas for more than three years, but subject to other terms and conditions set out by Air Selangor.

All 45 eligible participants are fully sponsored by Air Selangor, including course fees, safety equipment (PPE) and basic plumbing equipment. Upon completion of the programme, participants are awarded a Certificate of Achievement and a Green Card, both recognised by the Malaysian Construction Industry Development Board (CIDB) and SPAN. With these qualifications, the participants are recognised as a certified internal plumber.

This Plumbing Apprenticeship Programme is implemented in collaboration with Akademi Binaan Malaysia (ABM) who conducts the five-day course at their workshop in Kuala Lumpur. It is primarily a technical course and covers topics such as Introduction to Water Supply System and Internal Water Pipe Installation System.

However, this programme has been delayed for implementation due to the various mandated movement control orders which did not allow physical training activities. This programme will resume in 2021.



### Plumbing Assistance Services for the Less Fortunate

A poor plumbing system potentially impedes access to a clean and safe water supply. The cost of maintaining and repairing an indoor plumbing system can be out of reach for some households especially underprivileged communities.



Recognising this, Air Selangor launched an initiative to help those in need of financial aid to repair the internal plumbing system in their homes. Introduced in August 2020, the Plumbing Assistance Service aims to help reduce the burden of repair costs and incidences of high water bills due to unrepaired leaks.

The service was offered to Malaysians residing in Selangor, Kuala Lumpur and Putrajaya, especially for those who live in PPR, low-cost housing and in rural areas with monthly household income lower than RM3,561. Each applicant is only eligible to receive one-off assistance.

All repair works were carried out by contractors who are accredited and registered with SPAN. Moving forward, this programme will be integrated into our overall corporate social responsibility activities to reach more communities in need.

### Empowering Online Learning: For Children of Air Selangor Employees

In Malaysia, the COVID-19 pandemic resulted in the closure of schools and educational institutions. Students transitioned to online classes, hugely depending on digital devices such as computers, laptops or mobile phones to support their learning.

Conscious of the high cost of living and the need to adapt to the new normal, Air Selangor provided additional support to its employees through the Empowering Online Learning programme, an internal initiative that helped alleviate the financial burden experienced by some Air Selangor employees due to the additional costs required to purchase these tools for their children.

Understanding the shift to online learning during the pandemic, and to help prepare for the start of the school year on 21 January 2021, 45 eligible Air Selangor employees received one laptop unit and a one year data plan subscription for each of their school children.

**EMPOWERING ONLINE LEARNING**



▶ Selected Air Selangor employees each received one laptop unit and a one year data plan subscription.

**Empowering B40 Women: Air Selangor Face Mask**

The Empowering B40 Women: Air Selangor Face Mask programme is a collaboration with two social enterprises - Komuniti Tukang Jahit (KTJ) and KL Sketch Nation, to produce eco-friendly reusable face masks for our workforce. In the process, KTJ helped women from low-income families, especially those affected by the COVID-19 pandemic, to generate additional income to meet their household expenses, while the KL Sketch Nation brought together the creative community through to produce a special design for Air Selangor’s face masks.

Through the collaboration, Air Selangor placed an order for 6,000 face masks in October 2020, which are being distributed in stages to all Air Selangor employees, with priority given to frontliners who have direct interaction with consumers. As an alternative to disposable face masks, these special Air Selangor’s face masks are manufactured in accordance with the standards set by MOH. A total of 20 women from KTJ were involved in the production of these masks.



▶ Our auxiliary policemen wearing the Air Selangor face mask produced by KTJ.

**Skim Air Darul Ehsan (SADE)**

The Skim Air Darul Ehsan (SADE) was introduced by the Selangor state government to ensure the underprivileged communities were provided with access to clean water. Low-income households are eligible to receive the first 20m<sup>3</sup> of water supply monthly for free, worth RM11.40. The objective of SADE is to alleviate the cost of living for low-income families. However, usage above the first 20m<sup>3</sup> allocation is charged accordingly.

To qualify for the scheme, applicants are required to fulfil the following criteria:

- 1 The applicant must be a Malaysian citizen and resides in the state of Selangor.
- 2 The monthly household income must be RM4,000 and below (husband and wife’s income or individual income if single/without spouse).
- 3 Applicable only for residential premises with individual meters.
- 4 Each applicant can only apply for one account or premise only.

Air Selangor processed the applications for SADE over several phases. The first three phases were implemented from 30 September 2019 to 31 December 2020, where we received a total of 243,665 applications and of these, 215,303 applications or 88% were approved.

## PERFORMANCE DATA

DESCRIPTION	2018	2019	2020
<b>SOCIAL</b>			
<b>EMPLOYEES</b>			
<b>Total number of employees</b>	4,520	4,802	<b>5,022</b>
• <b>By Gender</b>			
– Male (%)	79.29	79.00	<b>78.97</b>
– Female (%)	20.71	21.00	<b>21.03</b>
• <b>By Age Group</b>			
– < 30 years old (%)	21.28	22.89	<b>21.76</b>
– 30 to 49 years old (%)	67.59	66.78	<b>68.44</b>
– ≥ 50 years old (%)	11.13	10.33	<b>9.80</b>
• <b>By Employment Category</b>			
– <b>Management (%)</b>	5.00	4.89	<b>5.20</b>
– <b>By gender</b>			
– Male (%)	69.03	68.51	<b>67.17</b>
– Female (%)	30.97	31.49	<b>32.83</b>
– <b>By age group</b>			
– < 30 years old (%)	0.00	0.00	<b>0.00</b>
– 30 to 49 years old (%)	70.35	69.78	<b>72.51</b>
– ≥ 50 years old (%)	29.65	30.22	<b>27.49</b>
– <b>Executives (%)</b>	21.39	21.57	<b>22.34</b>
– <b>By gender</b>			
– Male (%)	60.49	60.13	<b>60.60</b>
– Female (%)	39.51	39.87	<b>39.40</b>
– <b>By age group</b>			
– < 30 years old (%)	13.85	17.66	<b>19.16</b>
– 30 to 49 years old (%)	78.49	75.28	<b>73.70</b>
– ≥ 50 years old (%)	7.66	7.06	<b>7.14</b>
– <b>Non-Executives (%)</b>	73.61	73.53	<b>72.44</b>
– <b>By gender</b>			
– Male (%)	85.45	85.24	<b>85.48</b>
– Female (%)	14.55	14.76	<b>14.52</b>
– <b>By age group</b>			
– < 30 years old (%)	24.88	25.94	<b>24.10</b>
– 30 to 49 years old (%)	64.23	64.08	<b>66.52</b>
– ≥ 50 years old (%)	10.89	9.98	<b>9.38</b>

DESCRIPTION	2018	2019	2020
• By employment type			
- Permanent by gender			
- Male	3,531	3,726	<b>3,897</b>
- Female	926	987	<b>1,040</b>
- Contract by gender			
- Male	53	68	<b>69</b>
- Female	10	21	<b>16</b>
- Permanent by location			
- Gombak	317	320	<b>333</b>
- Headquarters	1,110	1,194	<b>1,302</b>
- Hulu Langat	277	272	<b>302</b>
- Hulu Selangor	204	210	<b>208</b>
- Klang	360	372	<b>379</b>
- Kuala Langat	140	146	<b>156</b>
- Kuala Lumpur	268	270	<b>276</b>
- Kuala Selangor	143	143	<b>149</b>
- Northern Region	476	557	<b>570</b>
- Petaling	446	460	<b>470</b>
- Sabak Bernam	115	114	<b>116</b>
- Sepang	168	166	<b>179</b>
- Southern Region	435	489	<b>497</b>
- Contract by location			
- Gombak	2	2	<b>4</b>
- Headquarters	30	53	<b>50</b>
- Hulu Langat	3	3	<b>1</b>
- Hulu Selangor	0	1	<b>2</b>
- Klang	1	0	<b>1</b>
- Kuala Langat	2	4	<b>3</b>
- Kuala Lumpur	2	1	<b>2</b>
- Kuala Selangor	1	0	<b>0</b>
- Northern Region	9	9	<b>10</b>
- Petaling	1	2	<b>3</b>
- Sabak Bernam	0	0	<b>0</b>
- Sepang	2	4	<b>3</b>
- Southern Region	10	10	<b>6</b>

DESCRIPTION	2018	2019	2020
<b>Number of employee hires</b>	478	431	<b>436</b>
• By age group			
- < 30 years old	282	290	<b>300</b>
- 30 to 49 years old	194	132	<b>140</b>
- ≥ 50 years old	2	9	<b>3</b>
• By gender			
- Male	378	335	<b>317</b>
- Female	100	96	<b>126</b>
• By location			
- Gombak	32	20	<b>25</b>
- Headquarters	167	205	<b>212</b>
- Hulu Langat	24	14	<b>20</b>
- Hulu Selangor	19	10	<b>12</b>
- Klang	45	20	<b>26</b>
- Kuala Langat	11	8	<b>8</b>
- Kuala Lumpur	34	3	<b>18</b>
- Kuala Selangor	11	5	<b>11</b>
- Northern Region	36	20	<b>33</b>
- Petaling	40	31	<b>20</b>
- Sabak Bernam	8	5	<b>2</b>
- Sepang	14	7	<b>17</b>
- Southern Region	37	83	<b>39</b>
<b>Rate of new hires (%)</b>	10.77	9.21	<b>9.04</b>
<b>Number of employee turnover</b>	111	76	<b>198</b>
• By age group			
- < 30 years old	94	75	<b>101</b>
- 30 to 49 years old	92	73	<b>74</b>
- ≥ 50 years old	52	65	<b>49</b>
• By gender			
- Male	168	152	<b>146</b>
- Female	70	61	<b>78</b>



DESCRIPTION	2018	2019	2020
• By location			
- Gombak	19	10	10
- Headquarters	78	97	103
- Hulu Langat	13	11	6
- Hulu Selangor	9	3	10
- Klang	24	15	17
- Kuala Langat	6	3	3
- Kuala Lumpur	19	18	10
- Kuala Selangor	6	7	7
- Northern Region	9	16	24
- Petaling	20	12	8
- Sabak Bernam	3	3	0
- Sepang	10	4	6
- Southern Region	22	14	20
<b>Average employee turnover rate (%)</b>	5.39	4.57	4.55
<b>Total training hours provided</b>	75,032	129,193	79,721
• Average training hours by gender			
- Male	16.10	25.40	14.60
- Female	18.70	33.10	20.60
• Average training hours by employment category			
- Management	41.90	74.10	26.60
- Executives	28.00	53.30	24.10
- Non-Executives	11.60	16.10	13.00

# GLOSSARY AND INDEXES

## MEMBERSHIP OF ASSOCIATION

- 1 Malaysian Employers Federation
- 2 Meca Consulting Sdn. Bhd.
- 3 Smart Water Networks Forum

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## GLOSSARY

<b>ABAC</b>	Anti Bribery and Anti Corruption	<b>CSAT</b>	Customer Satisfaction
<b>ABM</b>	Akademi Binaan Malaysia	<b>CSI</b>	Customer Satisfaction Index
<b>ADUN</b>	<i>Ahli Dewan Undangan Negeri</i>	<b>CSR</b>	Corporate Social Responsibility
<b>AED</b>	Automated External Defibrillator	<b>DAC</b>	Data Analytics Centre
<b>AESP</b>	Authorised Entrant & Standby Personnel for Confined Space	<b>DC</b>	Disconnection
<b>AGTES</b>	Authorised Gas Testers Entry Supervisor for Confined Space	<b>DOE</b>	Department of Environment
<b>AMI</b>	Advanced Metering Infrastructure	<b>DOSH</b>	Department Occupational, Safety and Health
<b>APCS</b>	Air Pollution Control System	<b>DRP</b>	Disaster Recovery Plan
<b>ASEAN</b>	Association of Southeast Asian Nations	<b>DUN</b>	<i>Dewan Undangan Negeri</i>
<b>ASEAN GBS</b>	ASEAN Green Bond Standards	<b>DWQS</b>	Drinking Water Quality Standard
<b>ASEAN SBS</b>	ASEAN Social Bond Standards	<b>EC</b>	Energy Commission
<b>ASEAN SUS</b>	ASEAN Sustainability Bond Standards	<b>ECMS</b>	Enterprise Content Management System
<b>ASPIRE</b>	Air Selangor Strategic Plans and Initiatives Realisation	<b>eDPLAS</b>	electronic Development Plan Approval System
<b>BAC</b>	Board Audit Committee	<b>EMU</b>	Energy Management Unit
<b>BCM</b>	Business Continuity Management	<b>EPN</b>	Environmental Paper Network
<b>BOD</b>	Board of Directors	<b>EQA</b>	Environmental Quality Act (EQA)
<b>BOFA</b>	Basic Occupational First Aid	<b>ERM</b>	Enterprise Risk Management
<b>BUR</b>	Biennial Update Report	<b>ERP</b>	Emergency Response Plan
<b>CAPEX</b>	capital expenditure	<b>ESS</b>	Employee Engagement Survey
<b>CAR 2014</b>	Environmental Quality (Clean Air) Regulations 2014	<b>FoR</b>	Friends of Rivers
<b>CDM</b>	Clean Development Mechanism	<b>FRC</b>	Free Residual Chlorine
<b>CEO</b>	Chief Executive Officer	<b>GAC</b>	Granular Activated Carbon
<b>CIDB</b>	Construction Industry Development Board	<b>GBP</b>	Green Bond Principles
<b>CIV</b>	Control Inlet Valve	<b>GCMS</b>	Gas Chromatography Mass Spectroscopy
<b>CLO</b>	Customer Liaison Officers	<b>GHG</b>	Greenhouse Gas
<b>CM</b>	Corrective Maintenance	<b>GIS</b>	Geographic Information System
<b>CPR</b>	Cardiopulmonary Resuscitation	<b>GJ</b>	Gigajoule
<b>CPRC</b>	National Crisis Preparedness and Response Centre	<b>GLC</b>	Government Linked Company
<b>CRM</b>	Corruption Risk Management	<b>GPS</b>	Global Positioning System
		<b>GRI</b>	Global Reporting Initiative
		<b>GRIS</b>	GIS Linked River Information
		<b>GSR</b>	Guided Self-Regulation

<b>GWh</b>	Giga-Watt hour	<b>MESTECC</b>	Ministry of Energy, Science, Technology, Environment and Climate Change
<b>HCM</b>	Human Capital Management	<b>mil m<sup>3</sup></b>	million cubic metres
<b>HIRADC</b>	Hazard Identification, Risk Assessment and Determining Controls	<b>MIROS</b>	Malaysian Institute of Road Safety Research
<b>HORAS</b>	Hybrid Off-River Augmentation System	<b>MLD</b>	million of litres per day
<b>HSE</b>	Health, Safety and Environment	<b>MMDP</b>	Middle Management Development Programme
<b>HYDRA</b>	Hybrid Distribution Water Quality Real-Time Analyser	<b>MOH</b>	Ministry of Health
<b>IAS</b>	Internal Audit Department	<b>MOU</b>	Memorandum of Understanding
<b>ICC</b>	Intelligent Command Centre	<b>MT</b>	metric tonnes
<b>ICP</b>	Islamic Commercial Papers	<b>NB-IoT</b>	Narrowband – Internet of Things
<b>ICPMS</b>	Inductive Couple Plasma Mass Spectroscopy	<b>NDTS</b>	National Dual Training System
<b>IETS</b>	Industrial Effluent Treatment System	<b>NGO</b>	Non-governmental Organisation
<b>ILI</b>	Infrastructure Leakage Index	<b>NPS</b>	Net Promoter Score
<b>IMS</b>	Integrated Management System	<b>NRW</b>	Non-Revenue Water
<b>IMTN</b>	Islamic Medium-Term Notes	<b>NVOC</b>	Non-volatile Organic Compound
<b>ISO</b>	International Organisation for Standardisation	<b>OACIS</b>	Off-Plant Autonomous Chlorine Injection System
<b>JAKIM</b>	Jabatan Kemajuan Islam Malaysia	<b>OBI-RM</b>	Operation Business Intelligence for Revenue Management
<b>JMB</b>	joint management bodies	<b>OCC</b>	Operational Command Centre
<b>kgCO<sub>2</sub>/m<sup>3</sup></b>	kilogramme of Carbon Dioxide per cubic metre	<b>OMA</b>	Operations Mobile Application
<b>KRA</b>	Key Result Areas	<b>OP</b>	Operating Period
<b>KTJ</b>	Komuniti Tukang Jahit	<b>OPA</b>	<i>Operasi Pembenihan Awan</i>
<b>kWh</b>	kilowatt-hour	<b>OPAK</b>	<i>Operasi Pengepaman Air Kolum</i>
<b>LCD</b>	litre per capita per day	<b>OPEX</b>	Operating expenditure
<b>LCMSQTOF</b>	Liquid Chromatography Mass Spectrometry Quadrupole Time-of-Flight	<b>ORS</b>	Off-River Storage
<b>LI</b>	Leak Inspector	<b>OSH</b>	Occupational Safety and Health
<b>LMDP</b>	Line Management Development Programme	<b>PAAB</b>	Pengurusan Aset Air Berhad
<b>LS</b>	Leak Specialist	<b>PAC</b>	Powdered Activated Carbon
<b>LTI</b>	Lost Time Injury	<b>PAKAR</b>	Pasukan Khas Lembangan & Alur Air
<b>LTIFR</b>	Lost Time Injury Frequency Rate	<b>PBT</b>	<i>Pihak Berkuasa Tempatan</i>
<b>LUAS</b>	Lembaga Urus Air Selangor	<b>PM</b>	Preventive Maintenance
<b>MACC</b>	Malaysian Anti-Corruption Commission	<b>PPE</b>	Personal Protective Equipment
<b>MC</b>	Management Committee	<b>PPR</b>	People's Housing Project
<b>MCM</b>	million cubic metres	<b>PSWT</b>	Pahang-Selangor Raw Water Transfer
<b>MCO</b>	Movement Control Order	<b>QAP</b>	Quality Assurance Programme

<b>RA</b>	Residents' Associations	<b>tCO<sub>2</sub></b>	Tonne of Carbon Dioxide
<b>RC</b>	Reconnection	<b>TSS</b>	Total Suspended Solid
<b>REEM</b>	Registered Electrical Energy Manager	<b>UARL</b>	Unavoidable Annual Real Losses
<b>RFID</b>	Radio Frequency Identification	<b>UAV</b>	Unmanned Aerial Vehicle
<b>RM</b>	Ringgit Malaysia	<b>UKM</b>	Universiti Kebangsaan Malaysia
<b>RMC</b>	Risk Management Committee	<b>UN</b>	United Nations
<b>RMD</b>	Risk Management Department	<b>UPM</b>	Universiti Putra Malaysia
<b>RORC</b>	Reservoir Operating Control Curve	<b>VOC</b>	Volatile Organic Compound
<b>RTF</b>	Residual Treatment Facilities	<b>VPN</b>	Virtual Private Network
<b>SADE</b>	Skim Air Darul Ehsan	<b>WAMS</b>	Work and Asset Management System
<b>SBG</b>	Sustainability Bond Guidelines	<b>WEDP</b>	Water Expert Development Programme
<b>SBP</b>	Social Bond Principles	<b>WHO</b>	World Health Organisation
<b>SCADA</b>	Supervisory Control and Data Acquisition	<b>WTP</b>	Water Treatment Plant
<b>SD</b>	Sustainable Development	<b>WWF</b>	World Wildlife Fund
<b>SDGs</b>	Sustainable Development Goals		
<b>SJAM</b>	Skim Jaminan Air Mentah		
<b>Sg</b>	<i>Sungai</i>		
<b>SKM</b>	<i>Sijil Kemahiran Malaysia</i>		
<b>SMDP</b>	Senior Management Development Programme		
<b>SOP</b>	Standard Operating Procedure		
<b>SPA</b>	Sampling Stations		
<b>SPAN</b>	Suruhanjaya Perkhidmatan Air Negara		
<b>SPI</b>	Strategic Plans & Initiatives		
<b>SRI</b>	Sustainable & Responsible Investment		
<b>SSP</b>	Sungai Selangor Phase		
<b>SSP1</b>	Sg. Selangor Phase 1		
<b>SSP2</b>	Sg. Selangor Phase 2		
<b>SSP3</b>	Sg. Selangor Phase 3		
<b>SVOC</b>	Semi Volatile Organic Compound		
<b>SW</b>	Scheduled Waste		
<b>SWC</b>	Sustainability Working Committee		
<b>SYABAS</b>	Syarikat Bekalan Air Selangor Sdn. Bhd.		
<b>TAMS</b>	Total Asset Management System		
<b>TAP</b>	Talent Associate Programme		
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure		

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