



Nurturing Sustainable Water Ecosystems

SUSTAINABILITY REPORT 2021





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Nurturing Sustainable Water Ecosystems

The theme captures Air Selangor's commitment to collaborate harmoniously on matters regarding sustainable water resources, from protection against water pollution to delivery of quality water services. This commitment includes operational excellence and governance that ensures clean and safe treated water to consumers.

About This Report

This annual publication of Pengurusan Air Selangor Sdn. Bhd. ("Air Selangor" or "the Company") Sustainability Report aims to provide the Company's stakeholders with detailed, concise, and balanced information about the efforts taken to create value for customers through sustainable water management. This report outlines the Company's approach to managing impacts arising from its business operations on the economy, environment, and society.

The content of this report mirrors the previous report¹ with updates on initiatives/information and year-on-year data without any changes to the scope. The information in this report covers the reporting period from 1 January to 31 December 2021. The scope and boundary of this report cover all of Air Selangor's business operations in Malaysia which include its headquarters, 10 customer service offices, 12 regional offices, and all operational assets located in Selangor, Kuala Lumpur, Putrajaya, and Pahang.

This report has been prepared in accordance with the Global Reporting Initiative ("GRI") Standards – Core Option and the Sustainability Accounting Standard ("SASB") for Water Utilities and Services. The relevant GRI indicators and Sustainability Disclosures Topics and Accounting Metrics are listed in the GRI Content Index and SASB Standards table, respectively on pages 112 to 116.

Some data from previous years have been restated and this has been indicated in the footnotes of tables and charts, and in the footnotes of the Performance Data section of this report where applicable.

¹ The previous Sustainability Report was published on Air Selangor's website on 30 June 2021.



All feedback and comments on the sustainability report are appreciated. For any queries, please feel free to contact us via the following channels:

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Sustainability Report online

Bismillahirrahmanirrahim.

As we reflect on the learnings we had over the past year, it is evident that the COVID-19 pandemic has presented a challenge like no other. 2021 was a year of change as the country learned to adapt to living with COVID. Undeniably, the pandemic has taken a toll not only on the entire country but especially on Selangor, Kuala Lumpur and Putrajaya, being the economic crux of Malaysia. We must remain steadfast as we continue the battle toward endemicity for better days ahead.



Chairman's Note

However, it is not always gloom and doom. I must congratulate Air Selangor on the second publication of its Sustainability Report – proving its unwavering commitment to supporting the United Nations' Sustainable Development Goals ("SDGs") within its capabilities as the nation's largest water services company despite the challenges of the pandemic.

When it comes to factoring sustainability and environmental, social and governance ("ESG") criteria into operational and corporate decision-making, momentum has been rather slow in Malaysia. While corporates in the US, Europe and some parts of Asia have adopted such practices at a rapid pace, we are still playing catch-up not only in the sense of putting it to practice via our operations but also in laying the foundational considerations in our actions.



The United Nations Environment Programme Copenhagen Climate Centre (“UNEP-CCC”) “Emissions Gap Report 2021” underscores a few key concerns of which its main aim is to warn us of the catastrophic gap between what needs to be done on climate change against what governments and companies are doing at present. This warning must be specially taken up by everyone including us at Air Selangor, as the impacts of climate change would be immensely costly for us all. According to the Asian Development Bank (“ADB”), six out of the 10 nations most affected by extreme weather events are in the Asia-Pacific. In addition, about USD48.7 billion in annual damages was reported to be caused by disasters in Asia over a 10-year period from 2007 to 2016. Alarmingly, the numbers keep on increasing year on year.

Closer to home, some parts of the country were hit by devastating floods in 2021 affecting livelihoods and businesses with Klang Valley being hit the hardest. The Department of Statistics Malaysia reported that losses due to floods amounted to RM6.1 billion with damages to public assets and infrastructures making up the most of the losses at RM2.0 billion. The Selangor State Government has channelled a total of RM118.25 million in aid to families affected by the flood and allocated more than RM7.0 billion to implement long-term measures in mitigating the future impact of floods.

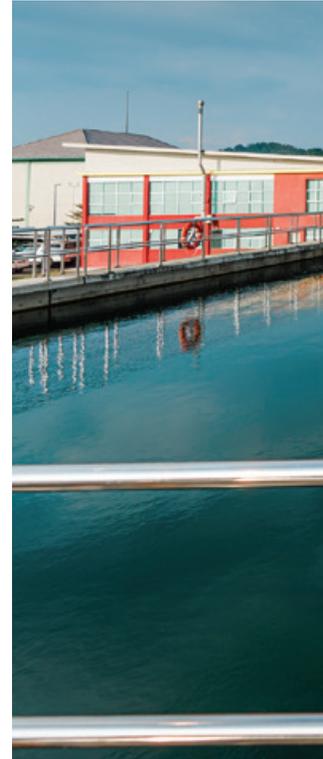
This is indeed cause for serious concern and presents a sobering challenge; especially as Air Selangor aims to be the leading water services company in the region by 2030. So we need to be well poised to take it up.

“

I believe it is time for utility services companies to elevate their role to be more sustainable. This is in line with the vision of making Selangor a smart and sustainable city in the future. Thus, the first step is to recognise that we have ourselves, through the range of our operations, the opportunities to make better choices and be more sustainable.

”

Let us be reminded that Air Selangor’s aim to be a sustainable organisation will not be an easy one but possible nonetheless. The environmental threats we face today are greater than what we have ever encountered before in modern history. Carbon dioxide levels in the air are recorded to be at their highest levels in 650,000 years while the average sea level of the world has risen nearly 7 inches over the past 100 years alone. This has tremendous impact on our operations, especially in ensuring a sustainable water ecosystem for all our stakeholders.



Where once we were questioning whether climate change is a reality, today the world is demanding immediate, purposeful and meaningful actions. In this regard, it should be pointed out that meaningful and positive action against climate change can only be borne out of a genuine sense of responsibility.

I believe it is time for utility services companies to elevate their role to be more sustainable. This is in line with the vision of making Selangor a smart and sustainable city in the future. Thus, the first step is to recognise that we have ourselves, through the range of our operations, the opportunities to make better choices and be more sustainable. And for that, I am proud of Air Selangor for the accountability and action they are taking, and which are presented in this Sustainability Report.

We have seen the growing awareness and momentum for global accountability signified by landmark developments like the Paris Agreement under the United Nations Framework Convention on Climate Change (“UNFCCC”). As a signatory to the Paris Agreement since December 2012, Malaysia has committed to a reduction of greenhouse gases by 45% by 2030. This consists of an unconditional reduction of 35% and a further 10% conditional reduction upon the receipt of climate finance, technology transfer, and capacity building from developed countries. The question is, how can we play our part to support Malaysia’s commitment?

Air Selangor has always been mindful of the effect of its operations on the environment and continuously incorporates sustainable considerations, particularly from the viewpoint that



With rapid urbanisation, it is projected that by 2050, 88% of Malaysia's population will be living in cities and more than half of that will be centred in Selangor, Kuala Lumpur and Putrajaya. Thus, the need to ensure sustainable water supply in the future becomes an even bigger priority.



climate change presents the single biggest threat to human development. With rapid urbanisation, it is projected that by 2050, 88% of Malaysia's population will be living in cities and more than half of that will be centred in Selangor, Kuala Lumpur and Putrajaya. Thus, the need to ensure sustainable water supply in the future becomes an even bigger priority.

Selangor's 2020 Budget saw an allocation of RM1.5 million for green volunteerism, RM50,000 for river conservation efforts, RM500,000 to plant 5,000 trees statewide, RM600,000 to set up recycling centres at all local councils, RM6.85 million for solid waste management, RM40 million for Taman Rakyat Selangor project and allocations to fix solar panels at all local councils. As much as Selangor is already moving towards becoming a green state, more needs to be done. Effective strategies are just mere plans without the concerted support from all relevant parties to pledge, act and commit to being sustainable.

Now that there is the momentum to tackle climate change head-on at the state level, Air Selangor must be prepared to intervene meaningfully by integrating adaptation to climate change into planning, decision-making and operational processes as it is a necessary strategy for sustainable development in the long term. By supporting the SDGs, Air Selangor has already identified what needs to be done for them to make progress in this regard. This is a good first step to participating in the bigger picture of Malaysia's commitment to the Paris Agreement.

There is little doubt that climate change will impact the water ecosystem at large and it is therefore imperative that mechanisms are introduced to allow sharing of knowledge and experience. In this regard, I would encourage greater cooperation amongst the agencies as there can be so much we can achieve when we band together and do the best we can, to overcome any challenges that come our way. I would like to thank the Board, the senior management team, and everyone at Air Selangor for their unwavering commitment all these years. I wholeheartedly believe that Air Selangor will not only be the leading water services company in Asia by 2030, but also a role model for a sustainable operator in the industry.

Let us together strive to nurture a sustainable water ecosystem for a better tomorrow, Insha-Allah.

Thank you.

**YANG AMAT BERTHORMAT
DATO' SERI AMIRUDIN BIN SHARI**
Chairman

Message from the Chief Executive Officer



Dear Valued Stakeholders,

I am delighted to present Air Selangor's second Sustainability Report which details our 2021 sustainability efforts and commitment to inculcate a sustainability culture throughout our value chain, and towards making a meaningful difference in the lives of our stakeholders.

This report contains details that showcase our achievements and undivided commitment in our continuous journey to deliver clean water to our customers, build strong business and community partnerships, and nurture an engaging work environment, all while achieving business excellence. Prepared in accordance with the standards set by the Global Reporting Initiative, and in alignment with five of the 17 SDGs, I hope the readers will find the content of this report enlightening and insightful.

As we step into an era of global uncertainties, we must continuously improve the sustainability of water systems for future generations. The pandemic and the devastating floods that affected the nation in 2021 were clear indicators that we need to expedite responsive solutions toward mitigating and managing climate change, resilient business practices, and adapting to meet the circular economy trends that are collectively driving the new economy.

According to the Organisation for Economic Co-operation and Development (“OECD”) Policy Responses to COVID-19 report, for the economic recovery from the pandemic to be durable and resilient, a return to ‘business as usual’ and environmentally destructive activities must be avoided. The key dynamics to rebuilding with confidence would include alignment with long-term emissions reduction goals, factoring in resilience to climate impacts and increasing circularity of supply chains amongst others.

Air Selangor Sustainability Strategy 2020-2022 supports the company’s vision to be the leading water services provider in Asia by 2030. On this front, we have prioritised our focus on fortifying the resilience of water services, by improving overall customer experience and working with stakeholders along the value chain for positive action, cooperation, and contributions that will enhance water infrastructure, policies, conservation, and security. It is crucial that we help solve the grand challenge for the future of the water ecosystems. It means that there is enough water to meet multiple needs of our consumers, from agriculture, commercial, personal and industrial.



It also means that water supply remains consistent despite the challenges of climate impacts that is of global concerns now. To that end, as a company we are pushing through sustainable water management without compromising the ability of future generations to do the same.

Despite operational and business challenges faced last year, Air Selangor recorded RM2.18 billion in revenue. A total of RM1.23 billion in Capital Expenditure (CAPEX) contracts were awarded last year mainly to develop Stage 1 of the Rasau Water Supply Scheme project which is targeted for completion in 2025. The development of this project is vital to address the ever-increasing water demand in the Klang and Petaling regions.

Let me take you through some of the year’s milestones in this regard.

Expanding Water Supply Stewardship

Since Air Selangor was established, our mandate is to abstract, treat and distribute water to approximately 8.4 million consumers in Selangor, Kuala Lumpur and Putrajaya, following the restructuring of the state water-service industry. Since then, Air Selangor has striven to drive more effective and efficient integration of the water treatment and distribution operations, towards delivering the best experience to our customers.

Average Water Reserve Margin
13.63%

▲ 1.76%

Reduced NRW in 2021
27.93%

▲ 0.60%

Call Centre Service Levels in December 2021
90%

▲ 41% From June 2021

Sesama Mara CSR Fund in 2021
RM450,704

▲ 40%

This involves the continuous maintenance and upgrading of our assets and infrastructures.

We have successfully increased the average water reserve margin to 13.63% against the targeted 13.15% which is a year-on-year improvement of 1.76%. We have also executed rigorous assets maintenance, completing 102% of planned preventive maintenance and 96% of planned conditioned-based maintenance of our assets.

More details are available on pages 66 - 67

Harnessing Digital Efficiencies

As quality service and customer safety are at the forefront of our operations, Air Selangor constantly look to upgrade its mobile communication channels to provide efficient non-physical contact alternatives in our service offerings. In May 2021, two of our mobile services, 'Air Selangor Consumer Mobile Application' and 'Operations Mobile Application' received recognition for excellence during the Malaysia Technology Excellence Awards 2021 Mobile-Utilities Category.

Towards better service excellence, our call centre capacity has also been expanded to provide better, more timely responses. Service levels were successfully improved to 90% in December compared to 49% in June 2021. Special attention was also paid to reducing the frequency of repeated calls and critical customers were prioritised through the enhancement of the complaint management system.

More details are available on page 18 and 55.

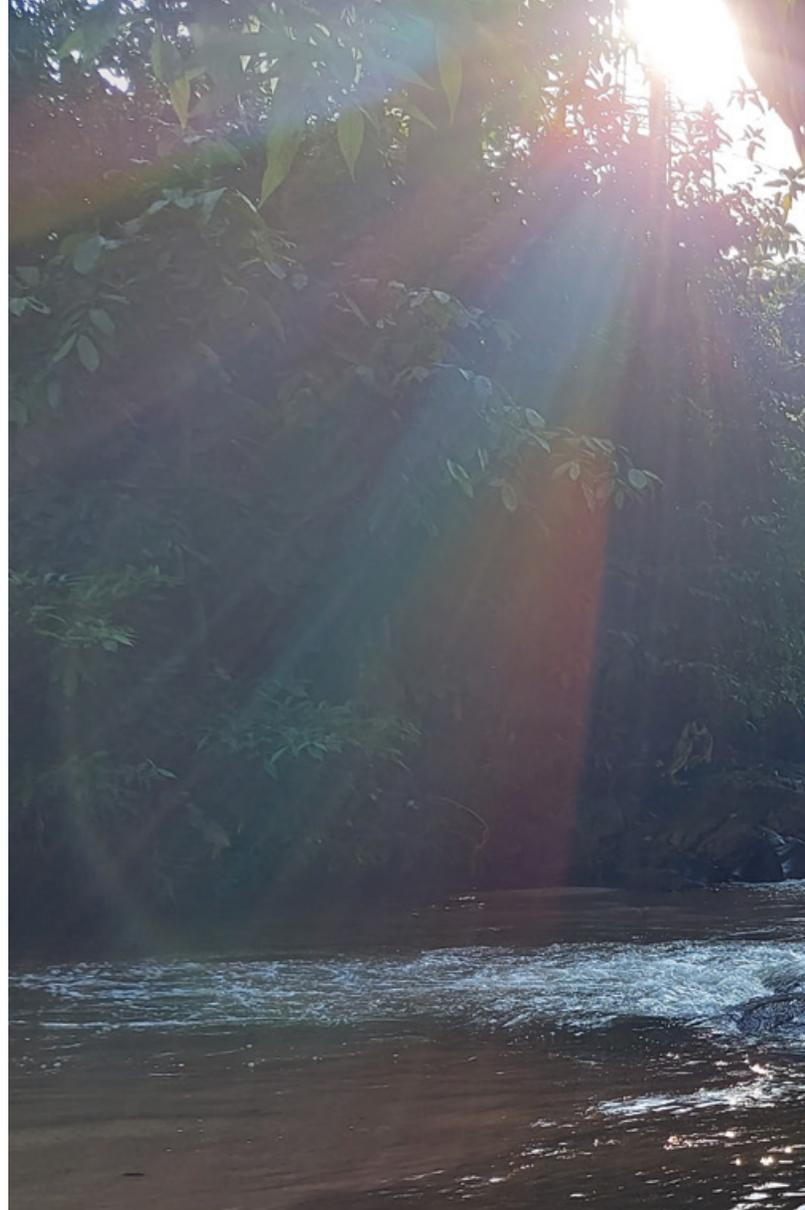
Towards Improving Water Resource Efficiency

There is a growing need for the water economy to become a fully circular one, through collaborations, research, innovation, new technologies and new operating methods.

We have started our journey in our continued bid to safeguard water security, we entered into a joint venture with Indah Water Konsortium Sdn. Bhd. ("IWK") on 16 March 2021, to embark on a water reclamation initiative that will further expand the water services industry in Malaysia.

On top of that, showcasing our commitment toward increased efficiency, we have set our Non-revenue Water ("NRW") targets of 25% by 2025, 20% by 2037, and 15% by 2049. Ensuring that we achieve our NRW targets, we have been implementing these various initiatives including the Physical Loss Reduction programme, Commercial Loss Reduction programme, Pipe Replacement programme, and others. With ongoing efforts to reduce NRW, Air Selangor successfully achieved an NRW rate of 27.93% in 2021, an improvement of 0.60% compared to 28.53% in the previous year.

More details are available on page 65 and 76.



Armoring Ourselves to Tackle Climate Change

We believe that our journey to sustainability isn't a lonely one. Malaysia has documented its commitment to climate change mitigation boldly in the 12th Malaysia Plan (12MP). With the aim to be carbon neutral by 2050 at the earliest and to overhaul its energy, transportation as well as land-use sectors we are seeing industry players and corporates banding together to make the change. Although climate change disaster seems like a distance away from a fortune for Malaysia in the near future, we shall not discount the potential it might bring to the country which might impact the water sources at large.

In anticipation of the impact of climate change on the sustainable water supply especially for our consumers in Selangor, Kuala Lumpur and Putrajaya, Air Selangor has set up a climate change task force to strategise and implement an action plan to mitigate the incoming impact. We need to be ahead of the game in ensuring that we minimise if not eradicate the impact altogether, staying true to our commitment to provide 'water forever' to our consumers.



Serving Our Stakeholders

Last but not least, pivotal to our vision and mission, is our commitment to our stakeholders.

Our employees are the vital drivers of our performance and growth. Much effort has been focused on taking care of our people and ensuring workplace safety during these challenging times. We have worked to speed up vaccinations for our employees through the State's vaccination programme and achieved a 99.90% fully vaccinated record by the end of the year.

In helping the underprivileged communities, our investment in the initiatives under our flagship Sesama Mara corporate social responsibility programme amounted to RM450,704 in 2021, an increase of 40% from RM321,690 in 2020. The initiatives under four core pillars are focused on supporting low-income households in ensuring improved access to equity.

Strong partnerships are key to the achievement of our upcoming targets and goals. I am grateful for the cooperation of industry and state partners to date and hope that we can further work together to realise effective solutions to surmount the future challenges that will face the water industry.

In a nutshell, achieving sustainable water ecosystems requires a multidisciplinary and holistic approach. Following the United Nations General Assembly's recognition of 'the right to safe and clean drinking water and sanitation as a human right', water is essential for the full enjoyment of life for all human beings. Globally it means to provide each person on the planet with affordable access to a minimum of 20 to 50 litres of daily water required to sustain life. Locally it means, our effort to ensure that every single person in Selangor, Kuala Lumpur and Putrajaya has access to clean and safe water, especially for underprivileged households where access to alternative sources might be hard to come by. Air Selangor is constantly working to upgrade systems and processes as we are focused on our mission to be the best water services provider in the region by 2030.

Thank you.

SUHAIMI KAMARALZAMAN
Chief Executive Officer

About Air Selangor

4,991
million litres
of clean and safe water
is produced daily

Air Selangor is Malaysia's largest water operator and serves as the sole public water services provider for Selangor, Kuala Lumpur, and Putrajaya ("Distribution Area") since September 2019. It is responsible for abstracting, treating, and distributing treated water supply to 8.4 million consumers consisting of residential, commercial, and industrial users, as well as government buildings, places of worship, and other vital establishments that bind the states' socio-economic fabric.

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.

Air Selangor delivers clean and safe water to its consumers through various water treatment facilities and assets with daily production averaging 4,991 million litres. As an essential services provider for highly mature and primarily urbanised areas like Selangor, Kuala Lumpur, and Putrajaya, Air Selangor plays an important role in supporting Malaysia's economic growth through a dedicated team of over 5,000 people who work around the clock to ensure continuous supply of high-quality water for all.

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.

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.

Joy in Every Drop

Joy in Every Drop or 'Setiap Titis Bermakna' describes the aspiration behind everything we do at Air Selangor. It represents the Company's commitment to delivering the highest standard of services for consumers, providing a healthy working environment for employees to thrive, and opportunities for business partners to grow together.

Striving to provide clean, safe, and affordable water for consumers, every drop of water supplied is full of care and reflects the passion for innovation so that consumers can create joyful memories with their loved ones.

As Air Selangor works to ensure the best customer experience, it also works with its employees and business partners to create a joyful working environment for all to grow.

Our Assets

Dams

8^{1,2}

Active Storage
for Dams

100%

Hybrid Off-river
Augmentation System
("HORAS") 600

1

Off-river
Storage ("ORS")

3

Water Treatment
Plants ("WTPs")

34³

Average Production
Volume

4,991

million litres per day
("MLD")

Pipe length
(mapped using GIS)

**30,008
km**

Accredited
Regional Laboratory

3

Water Sampling
Stations

1,122

River Monitoring Stations

15

Hybrid Distribution Water Quality Real-time Analyser ("HYDRA")

190

Off-plant Autonomous Chlorine Injection System ("OACIS")

27

Pump Houses

728

Service Reservoirs

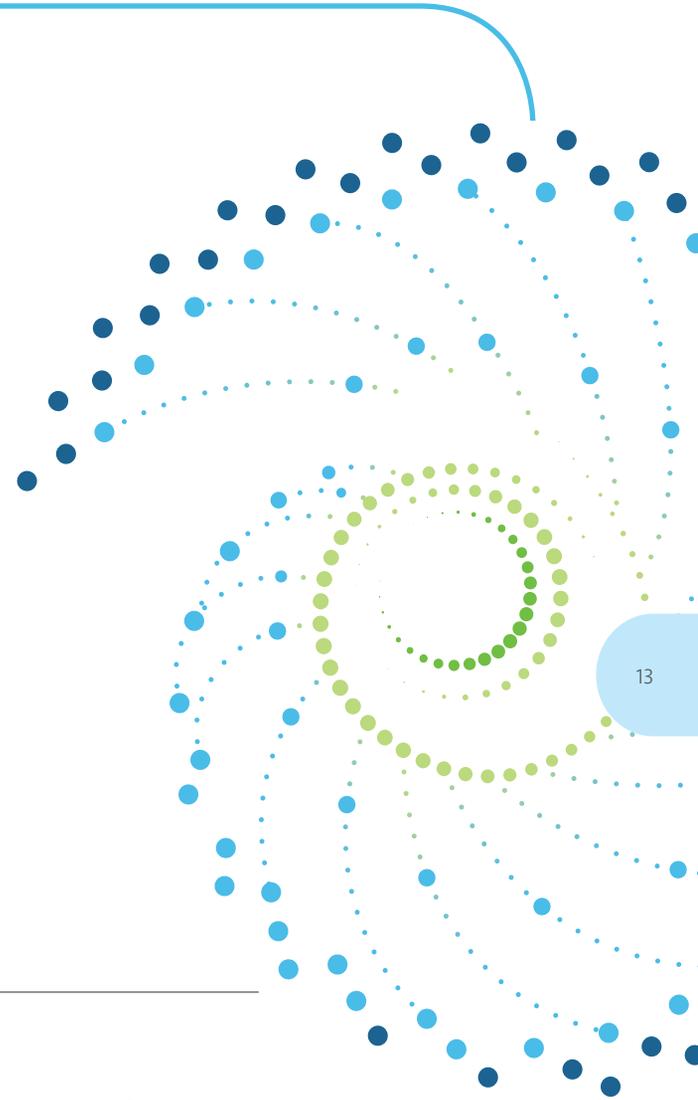
1,599

Active Operational Vehicles

1,172

Workforce

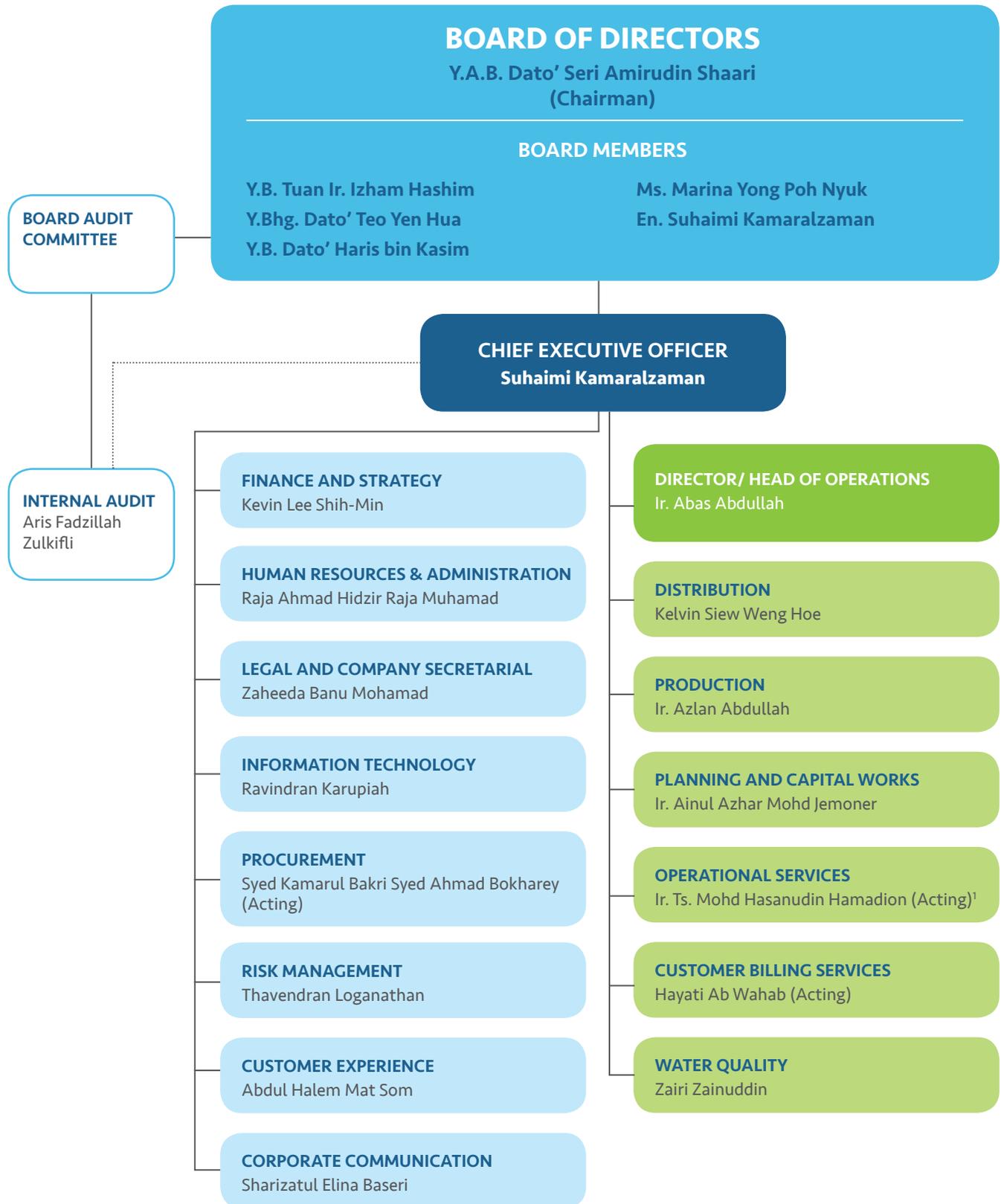
5,056



² Seven dams are under the supervision of Air Selangor, and one dam i.e., Batu Dam is under the supervision of the Department of Irrigation and Drainage. A list of dams/ORs/HORAS 600 is available on page 66.

³ Thirty-one WTPs are operated by Air Selangor, and three WTPs are under appointed parties.

Leadership Team



¹ Effective 1 September 2021. The organisational chart is valid as of 31 December 2021.

Our Customers



DOMESTIC

Domestic customers include residential properties which form the largest part of the total number of registered accounts with Air Selangor.

2,230,180

accounts
(87.21%)



COMMERCIAL

Commercial customers include industries, commercial areas, and ships.

313,256

accounts
(12.25%)



OTHERS

Other customers include government offices, religious and charitable institutions.

13,812

accounts
(0.54%)

Key Highlights Of 2021

Reclaimed Water Venture between Air Selangor and Indah Water Konsortium

On 16 March 2021, Air Selangor entered into a joint venture with Indah Water Konsortium Sdn. Bhd. ("IWK") to embark on a water reclamation initiative that will further augment the water services industry in Malaysia. In line with Air Selangor's long-term commitment to the sustainable development of the water industry, this collaboration aims to optimise the nation's available water resources while contributing towards environmental protection efforts.

Rasau Water Supply Scheme

The Rasau Water Supply Scheme is part of Air Selangor's long-term commitment to provide customers with a sustainable water supply to address the ever-increasing water demand in its Distribution Area. In 2021, Air Selangor has awarded contracts for two project packages namely, Package 2 and 3 with the contract for Package 1 expected to be awarded in the third quarter of 2022.

Non-revenue Water Achievement

Air Selangor is committed to achieving its NRW targets of 25% by 2025, 20% by 2037, and 15% by 2049. To meet these targets, various initiatives have been implemented including the Physical Loss Reduction programme, Commercial Loss Reduction programme, Pipe Replacement programme, and others. With ongoing efforts to reduce NRW, Air Selangor successfully reduced NRW to 27.93% in 2021, an improvement of 0.60% compared to 28.53% in the previous year.

Enhancement of Customer Relations System

Air Selangor expanded its call centre capacity to better serve customers and to reduce customer waiting times via prioritised volume management during peak periods. With this initiative, service levels successfully improved to 90% in December compared to 49% in June 2021. Special attention was also paid to reducing the frequency of repeated calls and critical customers were prioritised through the enhancement of the complaint management system, which includes returning dropped calls.

Integrated Management System Certification

In 2021, Air Selangor received recognition for the successful implementation of the Integrated Management System consisting of five management standards namely ISO 9001:2015 Quality Management System, ISO 14001:2015 Environmental Management System, ISO 45001:2018 Occupational Health and Safety Management System for the entire organisation, ISO/IEC 27001:2013 Information Security Management System for headquarters, selected WTPs and selected regional office for distribution, and ISO 55001:2014 Asset Management System for headquarters and 29 WTPs. With this, we aim to better drive our business towards streamlined processes and efficient business processes.

The certification scope for each ISO is elaborated further under Feature Story: Integrated Management System Certification on pages 47 to 48.

Malaysia Book of Records for 'Largest Participation for a Virtual Patriotic Song Performance'

Air Selangor was recognised by the Malaysia Book of Records for this event in commemoration of Malaysia's 64th National Day celebration. A total of 3,126 employees participated via an online platform where they sang 'Tanggal 31 Ogos' by the late Sudirman Haji Arshad. This was held to demonstrate patriotism and love for the nation whilst supporting the spirit of #kitajagakita throughout the COVID-19 pandemic.

Sesama Mara

Air Selangor's Flagship Corporate Social Responsibility ("CSR") programme, Sesama Mara, continued in 2021 with five initiatives namely, Box of Hope, Plumbing Apprenticeship Programme, Empowering B40 Women, Plumbing Assistance Service, and Empowering Online Learning: For Children of Air Selangor Employees. These initiatives have benefitted various low-income households with a total investment amounting to RM450,704.

Air Selangor Water Handbook

Air Selangor published and launched the 'Water Handbook – Sustainable Consumption and Conservation for Individuals and Organisations', in collaboration with Universiti Malaya to encourage sustainable water consumption. The handbook contains three main pillars namely, Sustain, Conserve, and Restore to introduce readers to ways to use water more sustainably.

In support of the publication of this handbook, the Hydro Squad with local personalities Nabil Ahmad, Aishah Sinclair and Arwind Kumar to promoted water conservation efforts and education. The Hydro Squad conducted the Water Conservation Master Class programme on Air Selangor's Facebook and YouTube social media platforms to elevate public awareness and ultimately refer them to the handbook as a guide for prudent water consumption.

Extension of Supply to Orang Asli Villages

Although 99.8% of the population in Air Selangor's Distribution Area has access to Air Selangor's water supply, efforts to reach consumers in more remote areas continued as part of the 'Extension of Supply – Towards 100% Supply Coverage' Programme. The programme aims to extend the current piping infrastructure to areas where Air Selangor's distribution network was previously unavailable. In March 2021, a treated water supply distribution project to reach an additional 280 consumers in two Orang Asli villages in Bukit Lagong, Gombak and Bukit Kechil, Kuala Langat was completed.

Air Selangor Virtual Hydro Run

In conjunction with World Water Day on 22 March 2021, Air Selangor organised the Virtual Hydro Run to create awareness of the importance of water and how the public can help protect our water sources. Apart from this, Air Selangor also intended to inspire individuals to adopt healthier lifestyles by incorporating workouts at home. This programme saw participation from 5,000 people, and event proceeds totalling RM50,000 were donated to Friends of River Malaysia ("FoRM").

Air Selangor River Care Programme

On World River Day 2021 on 26 September, Air Selangor collaborated with FoRM to organise a recreational plogging activity at Denai Universiti Kebangsaan Malaysia ("UKM"), Bangi, involving staff from both parties. Other than the plogging activity, Air Selangor presented a donation of RM50,000 collected from the proceeds of the Virtual Hydro Run and a woodchipper machine worth RM13,000 to FoRM in support of their river conservation efforts. During the year, four river care programmes were embarked on with FoRM to clean up the rivers within the vicinity of Taman Melawati, Kuang and Rincing Hilir.

Awards

Air Selangor triumphed in the Malaysia Technology Excellence Awards 2021 Mobile-Utilities Category in May 2021 for the 'Air Selangor Consumer Mobile Application' and 'Operations Mobile Application'. The award was organised by the Singapore Business Review and aims to crown top-tier organisations with the most innovative and unique IT initiatives and solutions in Malaysia.



Air Selangor Consumer Mobile Application

The Air Selangor Consumer Mobile Application was recognised for its innovative cloud-powered platform in delivering the best customer experience. Through the app, consumers can access real-time updates on water services disruption, billing, payment, and highlights about water services in their community.

Operations Mobile Application

Operations Mobile Application ("OMA") was recognised for its contribution to operational excellence whereby it consolidates and streamlines processes and activities for the ease of the operations team, ensuring asset performance and uninterrupted water supply.



Our Business Plans

As the sole water services provider for Selangor, Kuala Lumpur, and Putrajaya, Air Selangor is committed to ensuring a sustainable supply of clean and safe water for its customers.

However, there are several key operational challenges faced, predominantly, the continuous increase in water demand due to population growth, urbanisation, and industrialisation, and the threat to water security resulting from climate change and raw water pollution. In ensuring it remains resilient and responsive in meeting consumer water needs, the Company is guided by its 30-year business plan consisting of seven Strategic Plans & Initiatives (“SPIs”) and eight Key Result Areas (“KRAs”) which have been approved by Suruhanjaya Perkhidmatan Air Negara (“SPAN”).

A Capital Expenditure (“CAPEX”) of over RM35 billion has been earmarked for this business plan which will be utilised to upgrade existing water infrastructure, improve operational efficiency, and source new water resources. The business plan will be reviewed from time to time, in response to the changing operating environment of the water services industry.

Air Selangor's Strategic Plans and Initiatives

Tracking and monitoring of real-time progress and performance of Air Selangor's SPIs are managed through the Air Selangor Strategic Plans and Initiatives Realisation ("ASPIRE") Dashboard using Big Data Analytics solutions. The ASPIRE Dashboard project which was completed in 2021 is an executive intelligence single touchpoint dashboard that measures business performance and productivity through key drivers namely, strategic indicators, tactical drivers, and operational measures. It also identifies CAPEX spending for each SPI.

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 that 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

Why ASPIRE Dashboard?

1 The New Game Changer for Air Selangor

Organisational Excellence – Empower strategic and agile business decisions through Data Analytics to unlock high-performance excellence.

Digital Transformation – Enrich adoption of using the right data at the right time to foster efficiency and greater resource management through an integrated digital platform to nurture a Digital Work Culture.

Data-Driven Organisation – Build a data strategy to deliver digital water solutions aligned across the company through a single source of information.

2 Intelligence @ Anytime, Anywhere

Being a unique cloud-powered platform, it is designed with interactive data visualisation enabled through Microsoft Azure with Power BI tool, leveraging on an Enterprise Data Lake. It is accessible with a single click via mobile phone, computer, and tablet.

ASPIRE further draws on Machine Learning to yield analytics use cases by synthesising structured and unstructured data across more than 20 source systems from 13 key departments to provide predictive insights on aspects related to production, distribution, reserve margin, consumption, pipe burst index, non-revenue water, operational costs, WTP rehabilitation, and customer digital experience.

3 Business Value

Provides a holistic view of Air Selangor's operations performance.

Assists in locating the potential improvement across departments in an automated and easily accessible manner.

4 Pioneering WAIDI & WAIFI

With ASPIRE, Air Selangor is the pioneer in the Malaysian water industry to use Water Average Interruption Duration Index ("WAIDI") and Water Average Interruption Frequency Index ("WAIFI") as matrixes to reduce water disruption occurrence using statistical measures.

5 The Future

By 2023, ASPIRE will provide a Digital Space for Air Selangor staff to collaborate with industry players and researchers to share and innovate data-related efforts to establish a circular digital working culture.

SPI Achievement

SPI 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.

Achievements in 2021:

- Successfully increased the average water reserve margin to 13.63% against the targeted 13.15%. This is a year-on-year improvement of 1.76%.
- Awarded contracts for Package 2 and Package 3 of Rasau Water Supply Scheme amounting to RM896.29 million.

SPI 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.

Achievements in 2021:

- Completed 102% of planned preventative maintenance of assets.
- Completed 96% of planned condition-based maintenance of assets.
- Completed 8,791 corrective maintenance of assets.
- Completed pipe replacement works for 154 hotspots.
- Completed rehabilitation works for 44 unused reservoirs out of 144 identified.
- Completed refurbishment works for 9 pump houses out of 54 identified.
- Purchased and received 71 units of various vehicles to enhance operational capability and improve the efficiency of fleet movement during service disruptions.

SPI 3

Improving Operational Efficiency
Digital Utility of the Future**Objectives:**

- Leverage the 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.

Achievements in 2021:

- Launched new Operations Business Intelligence for Closed-Loop Customer Management ("OBI-CLCM") to improve customer complaints management.
- Completed ASPIRE dashboard.
- Capacity of the Intelligent Command Centre ("ICC") covered 74.53% of all active reservoirs and pump houses.
- Completed Radio Frequency Identification ("RFID") tagging for 24,331 assets.
- Covered a total of 2,903 km of pipeline and 369 reservoirs using online Hydraulic Modelling Prediction.

SPI 4

Towards Best Customer Experience Drinkable Water from Tap by 2028 and Best Customer Service



Objectives:

- Improve our service delivery and exceed customer expectations in terms of reliability, responsiveness, and quality continuously.

Achievements in 2021:

- Achieved call centre service level of 90% in December.
- Achieved 101.74% of meter replacement works.
- Completed the pilot installation of 8,041 Advanced Metering Infrastructure (“AMI”) meters in the Sepang Region.
- Achieved Water Quality Complaint Index ratio of 0.54 complaints per 1,000 connections, below the targeted 0.6.
- 96.70% completion of works for 6 watercourses under the ‘Trust our Tap’ initiative.
- Achieved water quality targets as follows:

Parameter	MOH Target	Achievement
<i>E. Coli</i>	≥ 99.85	100.00
Free Residual Chlorine (“FRC”)	≥ 98.15	99.97
<i>E. Coli</i> & FRC	≥ 99.95	100.00
Turbidity	≥ 98.00	99.99
Aluminium	≥ 90.00	96.74

SPI 5

NRW Reduction

NRW Reduction by 25% by 2025,
20% by 2037, 15% by 2049



Objectives:

- Reduce water loss throughout our operations, targeting to achieve 25% by 2025, 20% by 2037, and 15% by 2049.
- Optimise operational costs and increase our revenue

Achievements in 2021:

- Achieved NRW reduction of 27.93% surpassing the target of 28.00% as set by SPAN.
- Achieved Pipe Burst Index of 6.37 bursts per 100 km of pipeline against the benchmark of 13 bursts per 100 km per year¹.
- Achieved water supply target as follows:

Parameter	SPAN Target	Achievement
Repair and resume water supply within 24 hours for communication pipe failure	80.00%	84.30%
Repair and resume supply within 24 hours for the failure of mains of diameter less than 200 mm	80.00%	86.40%
Repair and resume supply within 36 hours for failure of mains with a diameter 200mm > diameter < 600mm	90.00%	96.10%
Repair and resume supply within 48 hours for the failure of mains of a diameter greater than 600mm	95.00%	98.20%

¹ Based on Unavoidable Annual Real Losses (UARL) and Infrastructure Leakage Index (ILI), Allan Lambert, Water Loss Research and Analysis Ltd, United Kingdom, 2019, the benchmark pipe burst index is at 13 bursts per 100 km per year.

SPI 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.

Achievements in 2021:

- Recorded Lost Time Injury Frequency Rate ("LTIFR") of 0.53.
- Launched the first Fitness Centre at Headquarters for employee benefit.
- Achieved 80% score in overall Employee Engagement Survey and maintained our position at the Top Quartile of Malaysia Country Norm.
- Employees are provided with access to professional counselling services for employees as part of Air Selangor's efforts to improve mental wellbeing.
- Continuation of the COVID-19 Command Centre to facilitate pandemic response within the Company towards maintaining business continuity and protecting employee health.
- As part of Air Selangor's succession planning, twenty-five employees from the Corporate Talent Pool were selected to participate in a 2-year exclusive Talent Leadership Development Programme.
- Air Selangor has enrolled a pool of 891 employees, representing 53% of the technical positions, into various competency certification programmes recognised by the Jabatan Pembangunan Kemahiran ("JPK"), Ministry of Human Resources, Malaysia. As a result, the 891 employees have also received the Malaysian Skills Certificate ("SKM"), a formal, nationally recognised certificate issued by the Government.

SPI 7

Environmental Stewardship Waste Zero Environment



Objectives:

- Operate responsibly, minimising our impact on the environment, and adhere to regulations.
- Towards a zero-waste environment, optimising resource use and reducing our carbon emissions.

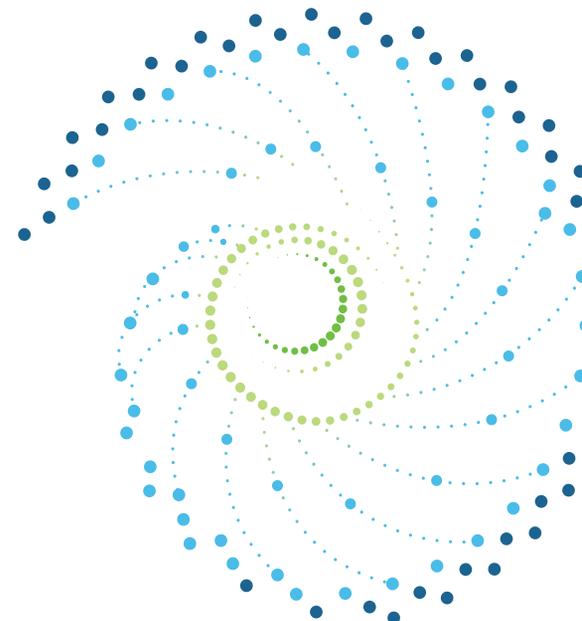
Achievements in 2021:

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

Scope	Compliance (%)
WTPs	84.32
Distribution Activities	65.47

- Recorded carbon emissions and carbon emissions intensity as follows:

Total Carbon Emissions (tCO ₂)	579,937.53
Produced Volume Carbon Intensity (kgCO ₂ /m ³)	0.318
Billed Volume Carbon Intensity (kgCO ₂ /m ³)	0.440





OUR FINANCIAL PERFORMANCE

The financial sustainability of water operators is highly dependent on the water tariff. SPAN has established a Tariff Setting Mechanism (“TSM”) (to be implemented in Selangor, Kuala Lumpur, and Putrajaya) that has taken into consideration the need for equitable access including water conservation and prudent water use by consumers. Under the current tariff structure for our Distribution Area, the domestic water tariff rate for the first 20m³ (this is the average amount of water required for subsistence for a household) is kept at an affordable rate whilst additional water consumption above 20m³ is charged at an increasing rate. A similar tiered rate system is also imposed on non-domestic customers.

However, the current tariff revenue generated by Air Selangor is insufficient for it to achieve full-cost recovery. Therefore, regular tariff reviews are important to ensure that the water infrastructure is properly maintained for optimum operating conditions, the quality of water and services are safeguarded, the replacement and upgrading of ageing infrastructure can be executed in a timely manner and increasing water demand can be managed and met.

A sustainable business model which will enable Air Selangor to defray both Operational Expenditure (“OPEX”) and CAPEX, earn regulated and sustainable returns, and cover environmental and social costs, is vital for the water services industry in the long term. Nonetheless, Air Selangor currently operates its business within a tariff environment that does not allow for full-cost recovery. Revenue earned by Air Selangor in 2021 was sufficient only for the defrayment of OPEX, and partial defrayment of lease rental and CAPEX for the year. Against the operational and business challenges faced arising from the pandemic, and amidst the unsustainable tariff environment, Air Selangor recorded RM2.18 billion in revenue for 2021, in-line with the revenue achieved in 2020. In 2021, Air Selangor awarded approximately RM1,230.12 million in CAPEX contracts, a significant increase of 240.00% from 2020 mainly due to contracts awarded for the development of the Stage 1 Rasau Water Supply Scheme.

Revenue

RM2.18
billion

CAPEX

(contracts awarded)

RM1.23
billion

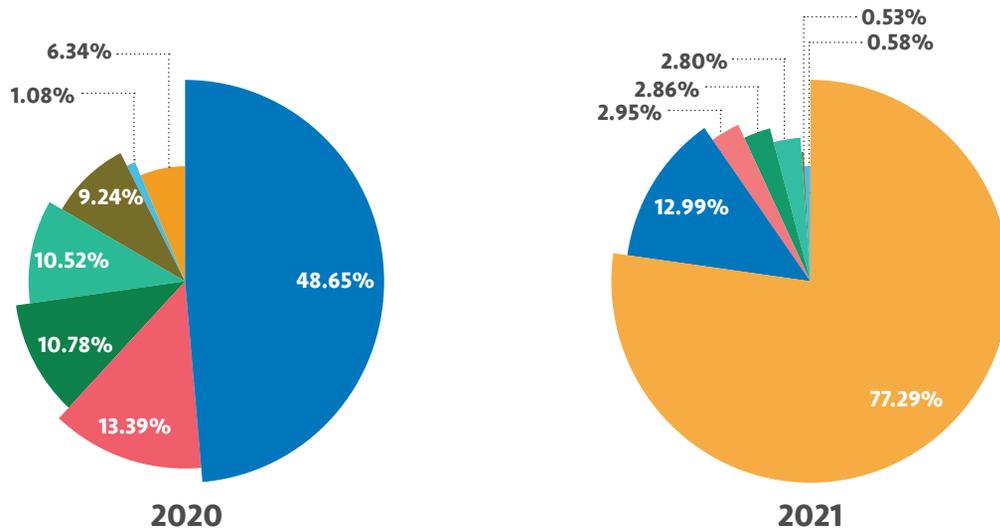
OPEX

RM2.43
billion

CAPEX (Contracts Awarded)	2020 ¹ (RM mil)	2021 (RM mil)
SPI 1 - Water Forever	22.92	950.79
SPI 2 - Improvement to Asset Reliability & Resilience	175.97	159.80
SPI 3 - Improving Operational Efficiency	48.45	36.29
SPI 4 - Towards Best Customer Experience	38.98	35.17
SPI 5 - NRW Reduction	38.05	34.41
SPI 6 - Creating a Conducive Working Environment	33.43	6.57
SPI 7 - Environmental Stewardship	3.90	7.09
Total	361.71	1,230.12

¹ Includes new contracts awarded in 2021 under the 2020 CAPEX budget

CAPEX (Contracts Awarded)

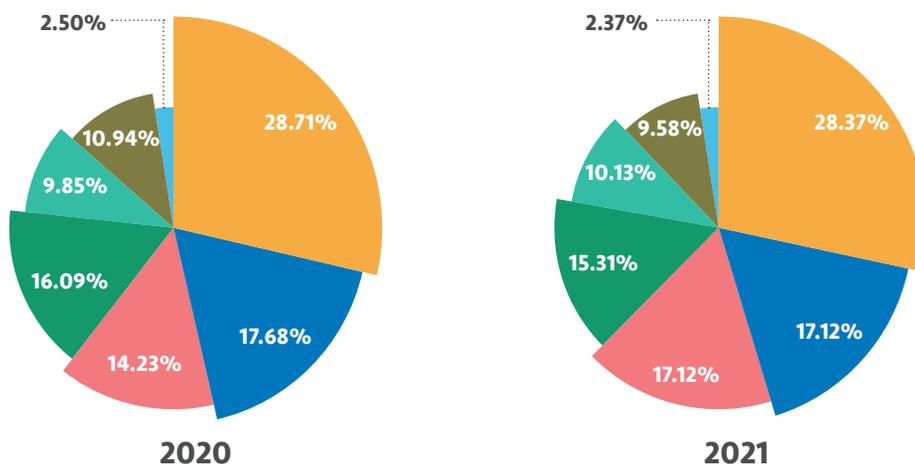


- Water Forever (SPI 1)
- Improvement to Asset Reliability & Resilience (SPI 2)
- Improving Operational Efficiency (SPI 3)
- Towards Best Customer Experience (SPI 4)
- NRW Reduction (SPI 5)
- Creating Conducive Working Environment (SPI 6)
- Environment Stewardship (SPI 7)

Air Selangor recorded OPEX of RM 2.43 billion in 2021, with major expenditures being finance and leasing cost, followed by staff costs, and repair and maintenance cost. The 2021 OPEX increased by 5.31% compared to the 2020 OPEX.

OPEX	2020 (RM mil)	2021 (RM mil)
Finance and leasing cost	662.97	689.91
Staff	408.19	416.24
Repair and maintenance	328.74	416.23
Purchase of water	371.52	372.29
Others	227.44	246.42
Electricity	252.59	232.97
Chemical	57.80	57.69
Total	2,309.25	2,431.75

OPEX



- Finance and leasing cost
- Staff
- Repair and maintenance
- Purchase of water
- Others
- Electricity
- Chemical

Sustainable Financing

In October 2021, Air Selangor completed its second issuance under its existing RM10 billion Sukuk Murabahah Programme. The RM1 billion issuance comprised the inaugural issuance of RM430 million Sustainable and Responsible Investment Sukuk Kelestarian Air Selangor (“SRI Sukuk”) and the second tranche of RM570 million Islamic Medium-Term Notes (“IMTNs”) across four series from 7 years to 20 years.

The proceeds from the SRI Sukuk will be utilised to finance eligible projects that comply with Air Selangor’s Sustainable Development Sukuk Kelestarian Framework. Eligible projects include projects relating to sustainable water supply, sustainable water management, renewable energy, and green building/

assets, all of which are in line with Air Selangor’s sustainability strategies. The proceeds from the IMTNs will be utilised to finance, amongst others, Air Selangor’s capital expenditure and working capital requirements.

The first SRI Sukuk Allocation and Impact report is expected to be completed in the fourth quarter of 2022.

Air Selangor’s Sukuk Murabahah Programme was reaffirmed with the long and short-term ratings of AAA with stable outlook and P1 respectively by RAM Rating Services Sdn Bhd on 13 September 2021. The AAA rating indicates superior safety for payment of financial obligations while the P1 rating reflects high safety for payment of financial obligations in the short term.

Key Performance Data

 <p>Water Reserve Margin 13.63% ▲ 1.76%</p>	 <p>Yearly Average Non-Revenue Water 27.93% ▼ 0.99%</p>	 <p>Overall Treated Water Quality Compliance 99.80% ▲ 0.05%</p>																	
 <p>Pipe Burst Cases per 100 km per year 6.37 ▼ 2.5</p>	 <p>Pipe Leak Cases 135,413 ▲ 10,799</p>	 <p>Pipes Replaced 96.80km ▲ 11.2 km</p>																	
 <p>e-Bil Sign Up rate by Customers 51.48% ▲ 27.78%</p>	 <p>Asset Condition Score 2.00¹ ▼ 0.14</p>	 <p>Revenue RM2.18 billion ▲ RM0.005 billion</p>																	
 <p>Carbon Emissions Intensity 0.440 kg CO₂/m³ ▼ 0.001 kg CO₂/m³</p>	<p>Gender Diversity²</p> <table border="1"> <thead> <tr> <th></th> <th>Management</th> <th>Executive</th> <th>Non-executive</th> <th>Overall</th> </tr> </thead> <tbody> <tr> <td> Male</td> <td>67%</td> <td>61%</td> <td>85%</td> <td>80%</td> </tr> <tr> <td> Female</td> <td>33%</td> <td>39%</td> <td>15%</td> <td>20%</td> </tr> </tbody> </table>					Management	Executive	Non-executive	Overall	 Male	67%	61%	85%	80%	 Female	33%	39%	15%	20%
	Management	Executive	Non-executive	Overall															
 Male	67%	61%	85%	80%															
 Female	33%	39%	15%	20%															
 <p>Lost Time Injury Frequency Rate 0.53 ▼ 0.74</p>																			

¹ Score is between 1 (Very Good) and 5 (Extremely Critical).

² Gender diversity in 2020 was 79% male and 21% female.

³ Data as of December 2021. Data presented next to arrows for increment or reduction, are in comparison to 2020.



Our Sustainability Approach

Sustainability at Air Selangor is guided by the Air Selangor Sustainability Framework which supports the Company's Vision and Mission. The efforts taken are underpinned by the Air Selangor Core Values and sustainability material matters identified through materiality assessments that we undertake. The Sustainability Framework sets out the company's approach to sustainability, defines how sustainability is governed and identifies initiatives to be carried out in line with the sustainability strategies, reporting performance, and stakeholder engagement.

Sustainability Governance

At Air Selangor, sustainability efforts are driven by the Sustainable Development Unit and supported by the Sustainability Working Committee. The Management Committee (“MC”) has oversight to ensure effective implementation and integration of sustainability across the organisation. The Management communicates relevant sustainability updates to the Board of Directors (“Board”) every quarter.



Our Contribution to the Sustainable Development Goals

As a water services provider, Air Selangor has identified five priority SDGs to contribute towards, particularly 6, 8, 12, 13, and 16. SDG 6 is the main priority, in line with Air Selangor’s business of providing clean water and managing water resources sustainably for the benefit of its stakeholders. By delivering targeted outcomes under SDG 6, Air Selangor is also positively contributing to the other SDGs.



The following summarises our approach toward the achievements of the SDGs, which includes:

1. Aligning Air Selangor’s long-term sustainability strategy under each of the priority SDGs with the regulators’ focus areas and the operating landscape.
2. Building evidence by monitoring and reporting data to demonstrate progress and highlight areas for improvement.
3. Engaging with various stakeholders along the value chain, including regulators and policymakers to strengthen partnerships towards achieving the SDGs for the industry.

Our Priority SDGs & SPIs that support them	Our Contribution (2021)
 <p>SPI 1, 2, 3, 4, 7</p>	<ul style="list-style-type: none"> • Supplied treated water to 280 consumers in two <i>Orang Asli</i> villages in Bukit Lagong, Gombak and Bukit Kechil, Kuala Langat. • Achieved 100% compliance to the Ministry of Health (“MOH”) Quality Assurance Programme (“QAP”) with zero violations for <i>E. Coli</i> and zero simultaneous violations incidents for <i>E. Coli</i> & free residual chlorine. • Achieved 99.80% compliance with the MOH Drinking Water Quality Standards (“DWQS”). • Actively monitored raw water quality at all intake sources through a team of technical experts who will notify the relevant authorities if pollution is detected. • Joint venture with IWK to embark on water reclamation initiatives. The maiden water reclamation plant in Setia Alam is currently able to supply up to 4.0 million litres per day (“MLD”) of reclaimed water. • Working towards a zero effluent discharge operating model for all WTPs to minimise the impact on the environment. • Committed to reducing water loss in its operations and has successfully reduced this to 27.93% in 2021 from 28.53% in 2020. • Actively promote water conservation through various educational and awareness programmes in partnership with educational institutions and state assemblymen (“ADUN”). This includes distributing free water thimbles and promoting the Air Selangor Water Handbook to help consumers reduce water use. • Published the ‘Water Handbook – Sustainable Consumption and Conservation for Individuals and Organisations’, to introduce ways to use water sustainably. • Conducted four River Care programmes in collaboration with FoRM.
 <p>SPI 1, 2, 3, 6</p>	<ul style="list-style-type: none"> • Employed more than 5,000 skilled employees and provided them with competitive remuneration and benefits. • Identifying ways to improve diversity at the workplace and creating equitable opportunities for growth, welfare, and well-being. In 2021, our employee turnover rate was at 6.44%. • Promoted the importance of road safety, especially to its meter readers who are always on the road, by organising programmes to prevent road accidents such as Health, Safety and Environment (“HSE”) Stand Down and distribution of motorcycle high visibility vests. • No direct hiring of migrant labour. All suppliers and vendors are also required to adhere to appropriate health and safety standards in managing their employees/workforce as stipulated in their contracts.

Our Priority SDGs & SPIs that support them	Our Contribution (2021)
 <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p> <p>SPI 1, 3, 4, 7</p>	<ul style="list-style-type: none"> • Optimising the water treatment process and chemical usage by using technology such as advanced treatment processes. The chemicals are certified by SPAN, SIRIM, and/or Jabatan Kemajuan Islam Malaysia ("JAKIM"), where applicable. • Managing the various residuals from the water treatment process to meet full compliance with the Environmental Quality (Scheduled Wastes) Regulation 2005. • Continuously exploring recycling solutions to treat effluents and thus reduce freshwater abstraction. • Reduced impact on the environment by implementing GSR, the Recycle for Life campaign, and optimised how energy and other resources are used by implementing Energy Savings Pilot Projects. • Assessing the use of alternative coagulants to reduce the amount of residuals produced and landfilled. • Publication of annual sustainability report in accordance with GRI Standards.
 <p>13 CLIMATE ACTION</p> <p>SPI 3, 7</p>	<ul style="list-style-type: none"> • Working towards climate-proofing its operations to ensure a sustainable water supply. • Adopted new methods of raw water storage via ORS and HORAS 600 to minimise the impacts of water scarcity that may arise due to climate change. • Taking steps to reduce internal carbon emissions through efficiency measures and renewable energy opportunities. • Identified plans for climate change impact preparedness.
 <p>16 PEACE, JUSTICE AND STRONG INSTITUTIONS</p> <p>SPI 1, 2, 3, 4, 7</p>	<ul style="list-style-type: none"> • Introduced mandatory e-learning module on Anti-Bribery and Anti-Corruption Module for all employees to ensure awareness. • Organised Engagement with Rasau Water Supply Scheme Bidders and Tender Briefing to reiterate Air Selangor's zero-tolerance policy towards acts of corruption and bribery. • Continuous service delivery improvement by engaging stakeholders, and being responsive to customers, while communicating challenges, strategies, and performance transparently.

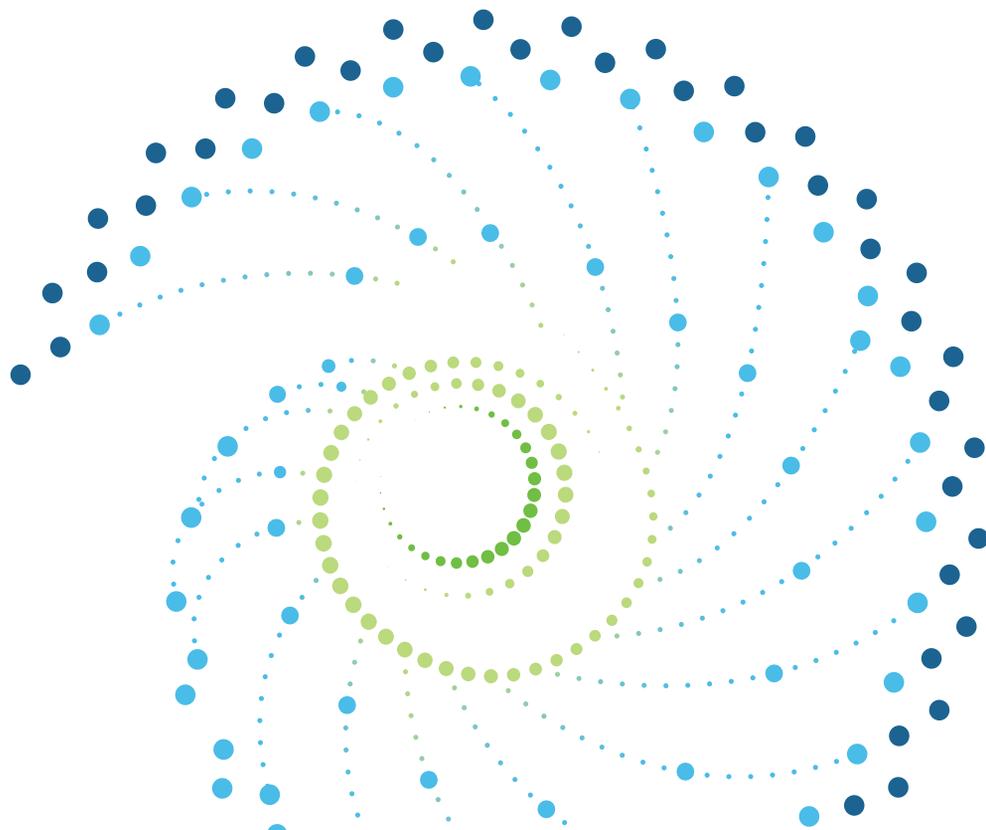
Stakeholder Engagement

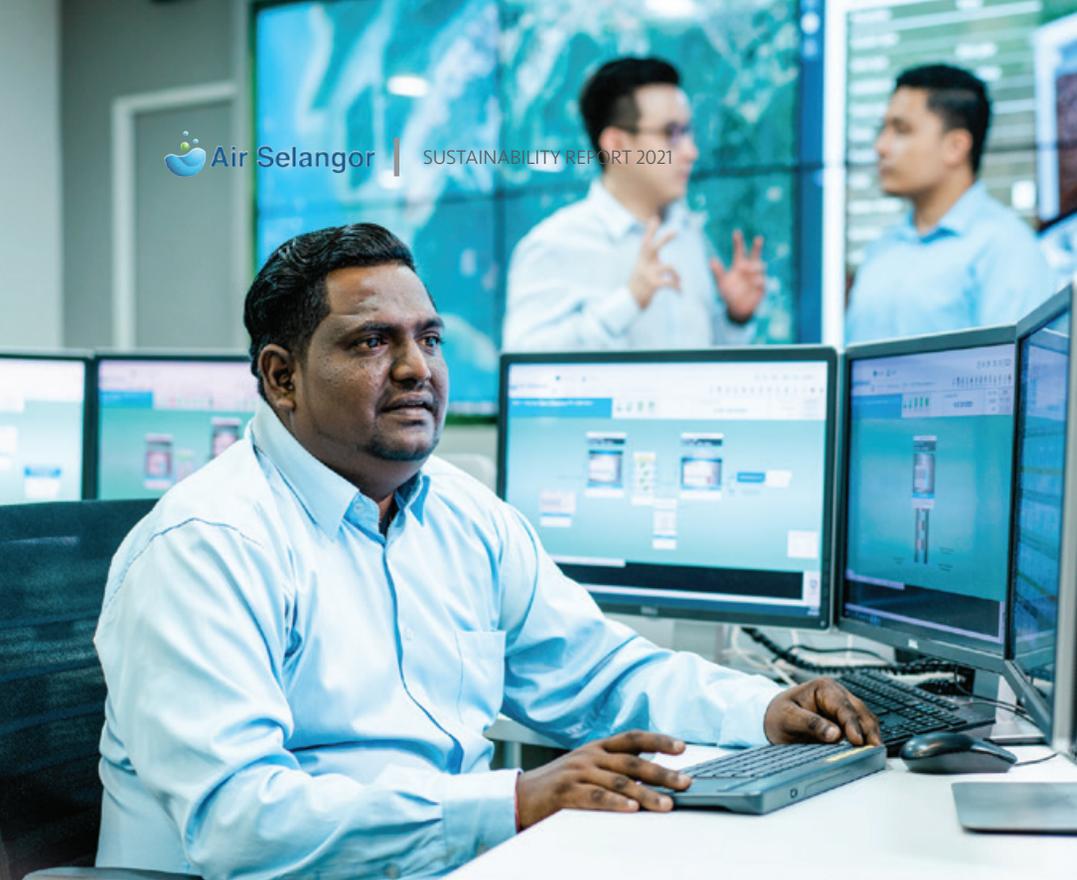
Air Selangor’s stakeholders refer to groups or individuals who are impacted by its business operations and/or whose business activities impact the Company. The Company interacts with various stakeholders through identified communication channels, as part of its business operations. Stakeholder engagement is an important practice to help Air Selangor better understand issues and concerns raised by multiple groups, obtain further business insights to improve overall business outcomes and strengthen working relationships.

Stakeholder engagement as a function and focus area falls under 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 the various engagements with stakeholders on a variety of sustainability topics.

Stakeholder Group	Approach / Platforms	Top Areas of Concern
Directors	<ul style="list-style-type: none"> Board and Board Committee Meetings 	<ul style="list-style-type: none"> Financial and operational performance Capital investments and initiatives Risk management Sustainability
Regulators	<ul style="list-style-type: none"> Meetings Events Workshops Site visits Enforcement activities 	<ul style="list-style-type: none"> Adherence to regulations and license requirements Business plan and operational performance Tariff rates Pollution Compliance with MOH DWQS Speedy and accurate water quality test results Engagement and communication Climate change Environmental performance
Customers	<ul style="list-style-type: none"> Service counters Open counters Helpline Social media Mobile application Air Selangor’s website Media Reports Campaigns Complaint investigation 	<ul style="list-style-type: none"> Service reliability and billing accuracy Continuous water supply Optimum water pressure Water quality Engagement and communication Brand perception and trust Timeliness of resolutions and responsiveness to complaints Awareness and educational matters
Developers	<ul style="list-style-type: none"> Meetings Electronic Development Plan Approval System (eDPLAS) application 	<ul style="list-style-type: none"> Efficient and transparent water supply application process Integrity and governance
Employees	<ul style="list-style-type: none"> Employee engagement survey Employee training and employee engagement events Internal newsletters and bulletins Performance reviews Total Asset Management System (“TAMS”) Manuals and procedures 	<ul style="list-style-type: none"> Engagement and communication with Management Competitive remuneration and benefits Workplace health and safety Employees’ mental health Succession planning and talent pool Opportunities for learning and development Internal system capability, reliability, and performance in conducting day-to-day tasks

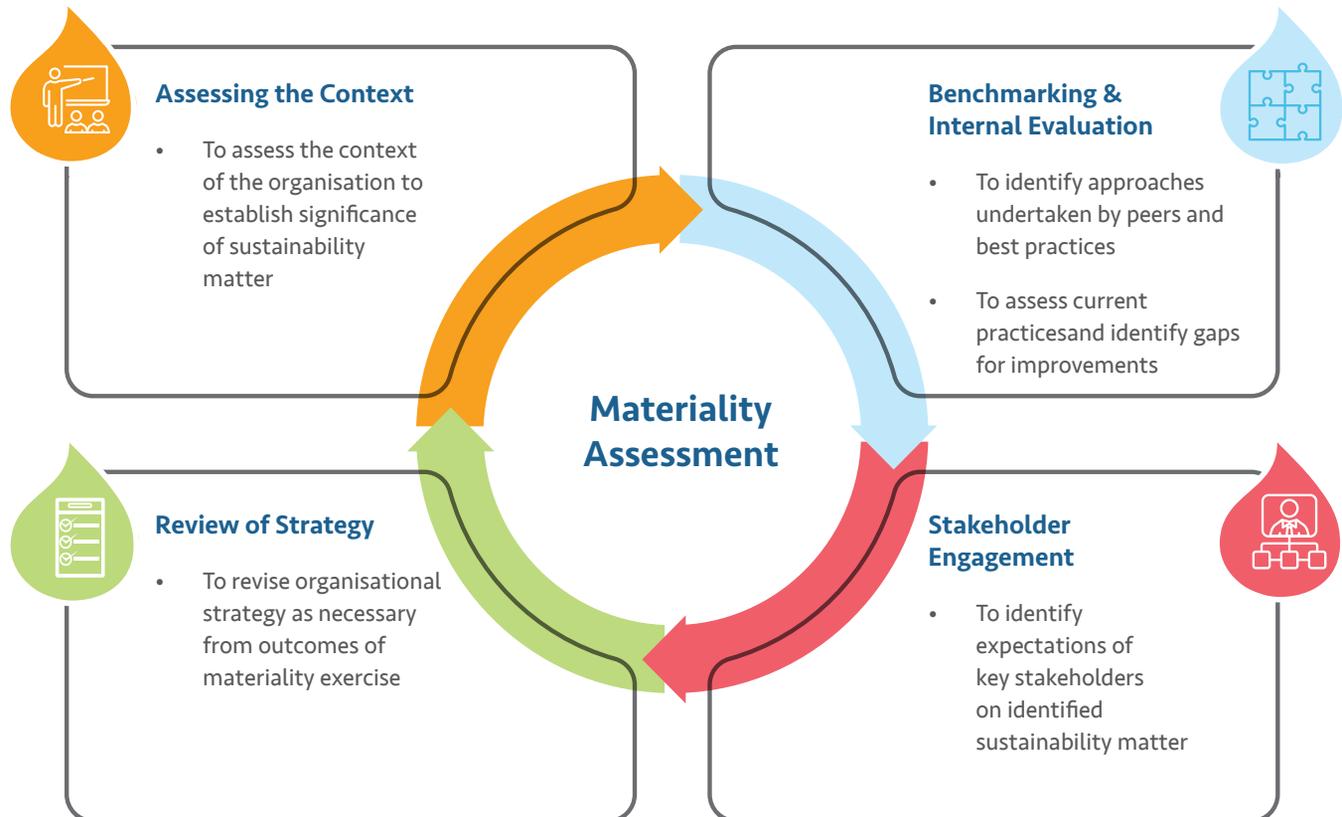
Stakeholder Group	Approach / Platforms	Top Areas of Concern
Vendors/Suppliers/ Contractors	<ul style="list-style-type: none"> • Procurement manual • Performance reviews • Vendor surveys • Training and events • Meetings • Site visits • Air Selangor’s website • TAMS’ Supplier Portal • Telegram • Tender advertisement 	<ul style="list-style-type: none"> • Fairness and transparency in the tender process • Impartial and comprehensive tender evaluation • Business ethics • Vendors’ performance • Vendors’ due diligence
Local Communities/ NGOs	<ul style="list-style-type: none"> • Meetings • Engagement sessions, community events, and CSR programmes • Campaigns 	<ul style="list-style-type: none"> • Philanthropy and charitable giving • Environmental performance • Brand perception and trust • Engagement and communication • Partnerships and collaboration • Awareness and educational matters
State Assemblymen, Government Agencies, Industry Groups, Academic Institutions and Others	<ul style="list-style-type: none"> • Community programmes/ events • <i>Sidang Dewan Undangan Negeri (“DUN”)</i> • Briefings and engagement sessions • Townhall • Research collaborations 	<ul style="list-style-type: none"> • Partnerships and collaborations • Engagement and communication • Timeliness of resolutions and responsiveness to complaints • Awareness and educational matters
Media	<ul style="list-style-type: none"> • Press conferences • Events • Air Selangor’s website • Engagement sessions 	<ul style="list-style-type: none"> • Dissemination of information • Engagement and communication





Materiality Assessment

In 2019, Air Selangor conducted its first materiality assessment which included a literature review, peer benchmarking exercise, SDG mapping, and stakeholder engagement to identify its material sustainability matters relating to the economy, environment, society, and governance.



From this materiality assessment, material sustainability matters were identified which are managed by deploying key five strategies, namely:

- Governance and Integrity;
- Environmental Impact; and
- Data and Process Management;
- Social Responsibility
- Communication and Engagement;

Air Selangor’s Sustainability Strategy

Air Selangor derived a set of strategies for OP1 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 and future plans that are aligned with the company’s sustainability ambition and have been approved by Management for implementation.

The progress of these strategies is disclosed in the following pages of this report.

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 & 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 & Resilience SPI 3: Improving Operational Efficiency		
b. Establish a system for monitoring and analysing sustainability related data.	SPI 3: Improving Operational Efficiency		

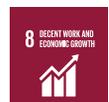
Strategy 3 Transparent Communication

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 an 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 a Conducive Working	 

In 2021, Air Selangor developed a longer-term sustainability strategy up to 2030 in line with business plans and emerging sustainability risks and opportunities for its business operations. This strategy is being deliberated and will be disclosed in the next sustainability report upon approval.



Enhancing Governance and Integrity

Operating under the purview of the Selangor State Government, Air Selangor has adopted a robust governance mechanism to comply with regulations set by relevant authorities such as SPAN and Lembaga Urus Air Selangor (“LUAS”). This has been designed to monitor and address business risks and ensure business efficiency in meeting stakeholders’ expectations.

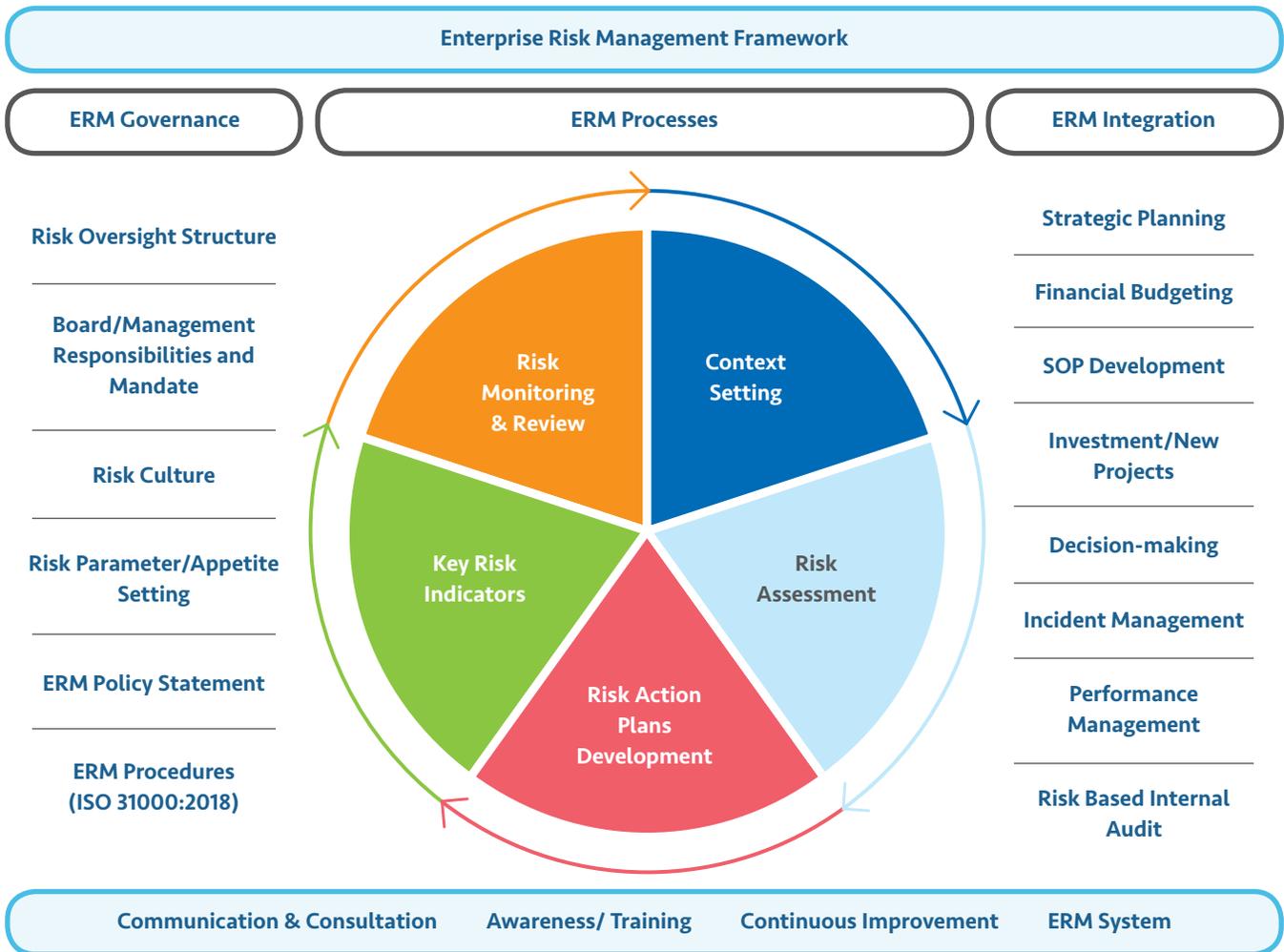
Minimal disruptions to business operations resulting from internal and external risk are a top priority as Air Selangor is the sole water services provider in the most populous areas of Malaysia. Therefore, business continuity management processes have also been put in place to address these risks. Apart from these, the importance of integrity is also emphasised in the way all business dealings are conducted at Air Selangor. With adequate procedures in place to fight against unethical behaviour, the Company aims to achieve high-quality outcomes in its business objectives.

Robust Governance Framework

Towards achieving its business objectives, Air Selangor has implemented a robust governance framework that encompasses strategic decision-making processes, transparency, and integrity principles, with clear accountability. A comprehensive governance framework must be underpinned by effective risk management and mitigation measures to ensure material risks are adequately managed.

Enterprise Risk Management Framework

Air Selangor adopts an Enterprise Risk Management (“ERM”) Framework which is designed to manage risk systematically and holistically. The framework is aligned with the ISO 31000:2018 Risk Management guidelines and consists of ERM governance which includes Board and Management responsibilities, risk culture, risk appetite, and policy and procedures; ERM processes; and ERM integration in key business activities.



The Board is responsible for overseeing the establishment, implementation, effectiveness, and adequacy of the ERM Framework, and for providing recommendations and direction for business risks and emerging risks. The Risk Management Committee (“RMC”) which consists of members of the MC act as an advisor for key risks and ensures the effectiveness of the implementation of internal controls throughout the Company, while being responsible for the implementation of the ERM Framework and policy. The Risk Management Department (“RMD”) oversees the identification and management of risks, and performance monitoring of risks action plans for the enterprise level and critical projects, whilst providing risk management advisory, and awareness creation among employees.

Key Business Risk and Management Strategies

At Air Selangor, an Annual Risk Assessment is carried out to identify the key business risks that may hinder the organisation to achieve its business objectives and to ensure the risk management strategy is relevant, adequate, and effective to manage the risk exposure that may contribute from the ever-evolving internal and external business landscape.

Key Business Risks	Key Risk Management Strategies & Action Plans
<p>Delay in tariff increase</p> <p>Water tariff revision is important to ensure sustainable returns for effective cost recovery and improved water services for consumers.</p>	<ul style="list-style-type: none"> • Delays in tariff review are managed through reviewing and revising the financial budget for 2021 and the 30-year business plan.
<p>Potential shortfall of raw water</p> <p>Raw water availability is affected by various factors such as pollution and climate change. These events affect Air Selangor’s ability to meet consumer demand.</p>	<ul style="list-style-type: none"> • In addressing this risk, the activation of HORAS 600 and <i>Operasi Pengepaman Air Kolam (“OPAK”)</i> is vital to increase river levels for raw water extraction. • In addition, raw water storage such as ORS enables Air Selangor to store raw water and ensures continuity of water supply to consumers. • Air Selangor conducts feasibility studies on water sources, including identifying new water resources. • The reclaimed water venture between Air Selangor and IWK provides an alternative water source that can reduce the dependency on surface water.
<p>Raw water pollution</p> <p>Raw water pollution incidents affect Air Selangor’s operations leading to water supply disruption for consumers.</p>	<ul style="list-style-type: none"> • River monitoring systems (“RMS”) were installed to monitor real-time raw water quality which can help in the early detection of poor water quality. • Periodic river surveillance is conducted by Pasukan Khas Lembangan dan Alur Air (“PAKAR”) which complement surveillance activities carried out by Skwad PANTAS from LUAS. • OPAK and HORAS also serve to increase the dilution factor during incidences of raw water pollution. In the future, the impact of pollution can be further reduced upon the completion of Skim Jaminan Air Mentah (“SeJAM”) led by the Selangor State Government. • The development of Langat 2 WTP and Rasau Water Supply Scheme, and water grid interconnectivity is expected to increase the water reserve margin and also minimise the impact of raw water pollution on consumers. • Air Selangor also encourages participation from selected local communities to fight against raw water pollution incidents through the Friends of River programme.
<p>Brand and reputational risk</p> <p>Maintaining the Air Selangor brand and reputation is crucial to ensure good brand positioning, customer acceptance and continued license to operate.</p>	<ul style="list-style-type: none"> • Air Selangor has formalised its social media protocol and strategy to support efforts toward delivering the best experience to customers. • Air Selangor conducted customer service experience workshops, strengthened case resolution visibility and system enhancement, completed an annual customer engagement survey, and improved stakeholder engagement to address this risk.

Key Business Risks	Key Risk Management Strategies & Action Plans
<p>Environmental risk</p> <p>Air Selangor's operations result in impacts on the environment where the Company produces effluent, water treatment residuals, and solid waste which need to be managed in accordance with the Environmental Quality Act.</p>	<ul style="list-style-type: none"> • In managing effluent and residuals, Air Selangor developed Residuals Treatment Facility ("RTF") within its WTPs. There are also RTFs currently being developed and under planning to ensure full compliance with environmental regulations. • The residuals produced can potentially be reused for other applications, and Air Selangor is working toward identifying alternative use of residuals to reduce the volume of residuals from being landfilled. • Implemented asbestos removal procedures for Asbestos Cement ("AC") pipes. • Organised environmental awareness programmes on Scheduled Waste Compliance and 4R activities.
<p>Low reserve margin</p> <p>The water reserve margin is important to ensure availability and continuous water supply to customers, in meeting water demand.</p>	<ul style="list-style-type: none"> • The construction of the Rasau Water Supply Scheme will help increase the water reserve margin and reduce dependence on the Sungai Selangor river basin. • Increasing the coverage of the distribution pipeline to optimise distributable capacity from WTPs to customers.
<p>Potential shortfall in meeting the NRW target</p> <p>NRW is one of the key indicators for operational efficiency.</p>	<ul style="list-style-type: none"> • Air Selangor continuously improves its billing efficiency and accuracy to minimise potential shortfall in NRW. • Implementation of NRW programmes. • Continuous asset improvement programme to improve asset performance and reduce leakages. • To enhance pipe replacement project planning. • Formulated 5-years plan for Commercial Loss Reduction programme. • Implemented Field Service Management.
<p>Project delay</p> <p>Project delay may lead to increased project costs, inability to improve performance or service quality and affects the achievement of SPIs.</p>	<ul style="list-style-type: none"> • Developed a project risk assessment framework and implemented project risk assessment for construction and infrastructure projects (under CAPEX). • Introduced more stringent tender evaluation to manage projects with high investment value.
<p>Succession planning</p> <p>As the sole water operator in Kuala Lumpur, Selangor, and Putrajaya, succession planning is important to ensure smooth operations.</p>	<ul style="list-style-type: none"> • Each department and region is expected to identify and create relevant succession plans relevant to their specific job scope. • Established Talent Programme and Talent Council to drive efforts in further developing top talent within the Company.
<p>Land acquisition challenge</p> <p>Land acquisition is vital for the future development of water treatment and distribution assets to meet consumer demand.</p>	<ul style="list-style-type: none"> • Formalised the land settlement agreement with State Government. • Dedicated staff to manage land paperwork for Rasau Water Supply Scheme. • Dedicated and experienced land liaison officer to manage Land Offices and local authorities for Rasau Water Supply Scheme.

¹ The Air Selangor Risk Profile outlined here is valid as of 31 December 2021



Governance and Risk Information System

As part of continuous efforts to improve the efficiency of risk management processes, Air Selangor introduced the Governance and Risk Information System (“GARIS”), an online platform to capture risk and compliance information for risk assessment, monitoring, and reporting. GARIS has improved the efficiency of risk assessment within Air Selangor where the system can capture risk action plans, assign management accountability and ownership, monitor key risk indicators, and risk action plan implementation, and enhance risk profile visualisation and reporting.

Moving forward, Air Selangor is planning on leveraging big data to improve risk analytics capability and to support predictive risk management, which will further enhance the quality of decision-making.

Business Continuity Management

The operational resilience of Air Selangor is critical to ensuring continuity in the provision of services to our consumers through periods of disruptions, maintaining orderly operational conditions and sustaining public confidence in our service delivery.

Business continuity is an integral pillar of our operational resilience. Business continuity management (“BCM”) entails an enterprise-wide framework, policies and processes that enable Air Selangor to respond, recover and resume operations of critical business functions from operational disruptions that arise from internal or external risk events. We strongly believe in having effective business continuity management to minimise operational, financial, and reputational risks that can materially impact the organisation.

Air Selangor’s BCM Framework is guided by the ISO 22301:2019 Business Continuity Management Standards. It is designed to ensure the continuity of critical business functions in the event of major disruptions by accelerating the decision-making

processes and enabling an effective recovery response. Each department in Air Selangor uses the BCM Framework to conduct Business Impact Analysis (“BIA”) and to subsequently develop appropriate Business Continuity Plans (“BCP”).

Annual awareness is delivered to ensure employees understand the importance of BCM and the role they have to play when needed. Great importance is placed on ensuring the employee base, in general, is aware of the BCM efforts being undertaken by the organisation and their specific role in the larger scheme of things. For 2021, the focus has been on all BCM Coordinators and other key staff such as Heads of Departments, Head of Region and all the Section Heads across the board. Moving forward, an e-learning module will be developed to enable all staff to embrace the knowledge and best practices of BCM.

Multiple workshops are also conducted annually to ensure staff are trained in a very practical way of preparing the BCM Risk Assessments (“RA”), BIAs and BCPs. In 2021, Air Selangor successfully established the RA, BIAs and BCPs for all 14 departments and 10 regional offices. In performing the RA, the following key factors were considered, and where applicable, action plans were defined to close out the gaps.

1. Key personnel (including decision makers and recovery personnel);
2. Office premises and facilities within the same or adjacent geographical location or region;
3. Critical business information and records;
4. IT systems and infrastructure as well as other support facilities (including network devices and peripherals); and
5. Services of key service providers or vendors (including outsourcing vendors).

In 2022, the existing BCM Governance will be rolled-out to the Production Department, including all WTPs. Currently, 26 WTPs are already certified for BCM, with the remaining five WTPs targeted for certification by 2022.

Crisis Escalation Process

Air Selangor has already established a structured escalation procedure to manage disruptions in water services to our consumers. In 2021, Air Selangor established a crisis escalation matrix to address other crises that are not related to water i.e., fire, flood, pandemic, loss of resources, system failures, third party failures etc. The escalation process was developed to complement the existing procedures on water supply disruption incidents and HSE incidents.

The objectives of the new crisis escalation matrix is to streamline the escalation processes for non-water incidents and to expedite incident reporting.

Moving forward, Air Selangor plans to further enhance its Crisis Management Plan by streamlining its recovery governance mechanism, strengthening the identification of the severity level of incidents, and improving the crisis escalation process, which ultimately will ensure better crisis management across Air Selangor.

Business Continuity Plan to Mitigate the Impact of COVID-19 Pandemic

During the surge in the number of COVID-19 cases in 2021, Air Selangor experienced employee shortages in several departments, regions, and water treatment plants, due to quarantine requirements. Key actions taken include:



Buddy Region

This was implemented for Regional Offices where each primary regional office is paired with three other supporting regional offices. These supporting offices will serve as backups for the primary office. The pairing is based on several factors such as the distance between the regional offices and the size of the customer base. The Buddy Region, approved by the Management in June 2021, helped ensure there was adequate manpower planning for critical functions and seamless staff deployment when needed throughout 2021.



Cross Training

The Risk Management Department initiated the Cross-WTP Manpower Training programme in collaboration with the Air Selangor Learning Centre. This training programme aims to equip employees with the necessary skills and knowledge to handle and operate various types of machinery and equipment in different WTPs, and other varying operational procedures which are unique to certain WTPs. This initiative will also create a multi-talented and well-trained workforce that can help maintain business continuity despite the movement or unavailability of critical personnel.



Strengthening Principles of Business Integrity

Air Selangor continues its commitment to upholding the highest standards of integrity, transparency, and accountability in conducting its business operations. We understand the critical role in providing clean and safe water, where our public reputation and business operations may be at risk if ethical behaviour is not upheld.

Air Selangor has implemented the Anti-Bribery and Anti-Corruption (“ABAC”) Framework, Policy and Procedures which apply to its employees, directors, and business partners. The policy and procedures complement and shall be read together with other internal policies and procedures such as the Employee Handbook, Employee Code of Ethics, Code of Ethics for Business Associates, Whistleblowing Policy, No Gift Policy, Corporate Social Responsibility Policy, Job Rotation Policy, Manpower Planning Guidelines, Conflict of Interest Policy, and standard operating procedure (“SOP”) on Employee Discipline.

On 15 June 2021, the management and monitoring of whistleblowing reporting were transferred to the Integrity Section, within the Risk Management Department. This transfer of function is in-line with the expectations of the following regulation and guidelines:

- *Arahan Yang Amat Berhormat Perdana Menteri Siri 1 No.1 Tahun 2018*
- Section 17A, Malaysian Anti-Corruption Commission (“MACC”) Act (Amendment) 2018
- Guidelines on Adequate Procedures according to Subsection (5) of Section 17A under the MACC Act 2009
- Guidelines on Management of Integrity Unit and Governance by MACC

This change has enabled Air Selangor to demonstrate stronger adherence to the requirements under Section 17A’s adequate procedures, which include independent audits by the Internal Audit Department (“IAD”) to evaluate the effectiveness of the Whistleblowing Policy and related processes.

All whistleblowing reports can be made via etika.air@airselangor.com. This whistleblowing channel is available to anyone who wants to raise concerns about unethical behaviour by Air Selangor’s employees, Directors, and/or business partners, which violates the ABAC Policy and Procedures.

In addition, to ensure compliance with the Corporate Liability Provision in the MACC Act, Air Selangor organised various programmes throughout the year which included corruption risk assessments, awareness sessions, engagement with employees and vendors, and integrity roadshows, among others.

Feature Story:

Anti-Bribery and Anti-Corruption Module

At Air Selangor, great emphasis is placed on the importance of ethical behaviour among employees in conducting day-to-day business, and while interacting with colleagues, business partners, and authorities. Since the establishment of the Integrity Section under the Risk Management Department, various initiatives have been implemented to elevate the level of awareness, and the adoption of relevant practices, and to further embed a culture of integrity among employees.

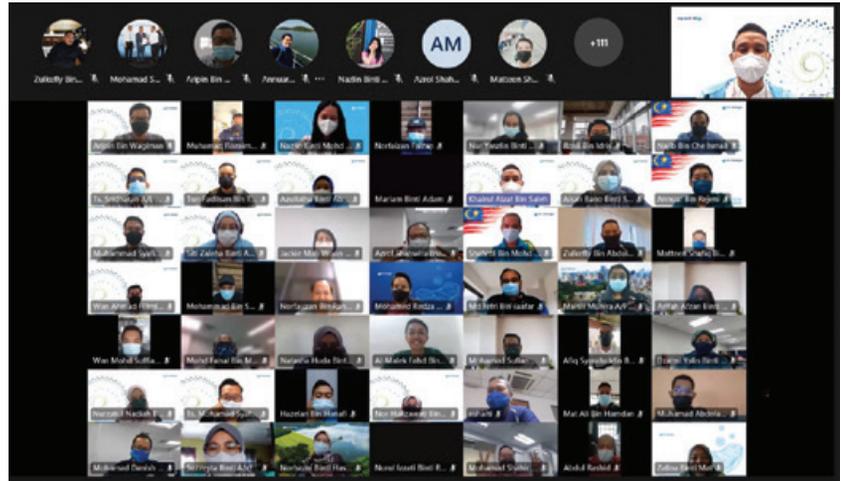
On 21 June 2021, Air Selangor marked a new milestone where a compulsory ABAC module was launched for all employees, accessible via the internal e-Learning platform. This interactive module aims to create awareness of the definition of corruption, laws and regulations, internal reporting procedures, and others as listed in the following:



A total of 99% of employees completed the course, and those who scored below 80% for the course assessment, attended the ABAC Crash Course, as part of efforts to ensure all employees understand the ABAC policy and procedures. Five separate crash courses were conducted throughout October and November through a mix of virtual and physical classroom mediums.

Integrity Virtual Roadshow: Speak Up

Following the transfer of the management and monitoring of whistleblowing reporting to the Integrity Section, the Integrity Virtual Roadshow was held to increase awareness across the organisation about the new Whistleblowing policy and procedure. A total of 12 sessions were carried out with the participation of 758 employees, where information such as the Whistleblower Protection Act and Air Selangor’s whistleblowing policy and procedure were shared.



Engagement with Rasau Water Supply Scheme Tender Bidders

Given the nature and size of the Rasau Water Supply Scheme, Air Selangor reiterated its zero-tolerance policy toward acts of corruption and bribery during an engagement session with the project bidders. The CEO especially highlighted Air Selangor’s commitment to fighting against corruption and bribery specifically concerning the tender processes. A total of 86 participating bidders attended the session.

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Air Selangor's panel land surveyors participated in the Integrity Awareness event

Anti-Corruption and Integrity Awareness session was held with the Rasau Water Supply Scheme project team to brief them on the **ABAC Policy and Procedures**

Integrity Surveys

To further improve the way issues of corruption are addressed and managed, Air Selangor conducted two surveys, one for employees and another for tenderers via the Tenderer's Satisfaction Survey. The Tenderer's Satisfaction Survey was participated by 56 contractors. Generally, the Tenderer's Satisfaction Survey showed a good overall improvement, particularly on the completeness and clarity of the scope of work, the turnaround time for tender evaluation and award, and fairness of tender evaluation for the award of contracts. However, there was also feedback received on the improvement of whistleblowing awareness sessions for tenderers, which will be addressed in 2022.

Corruption Risk Management

In 2021, eight whistleblowing cases were recorded and four of the reports were potential corruption cases. Only one case was valid and was forwarded to Human Resource and Administration Department ("HRAD") for further investigation. Air Selangor also further enhanced the Corruption Risk Management ("CRM") approach as the team expanded. There were multiple exercises related to CRM namely the annual CRM assessment, monitoring action plans, due diligence of high-risk departments, ISO Integrated Management System, and Integrated Risk Assessment ("IMSIRA") and analysing of historical corruption cases from 2018 to 2020. These activities will be consolidated to ensure consistent delivery of intended outcomes and optimised use of resources. All CRM initiatives were conducted simultaneously during CRM engagements with the different departments.

Other Programmes



A total of 248 participants attended the Vendor Engagement Session with Emergency Pipe Panel Contractors



Standardising Data and Processes

Greater process efficiency is vital to meet emerging demands for enhanced speed, quality and sustainability. Throughout 2021, Air Selangor has been working to streamline the implementation and adoption of various operating standards, policies, procedures, data, and information throughout the Company. Standardised data and processes are vital for the Company to achieve business efficiency and ultimately deliver desired business performance and services that exceed customer satisfaction.



Feature Story:

Integrated Management System Certification

Air Selangor strives to ensure operations and processes are streamlined throughout the organisation as part of efforts to increase business efficiency and maintain the highest standards of service delivery. Prior to 2021, Air Selangor had multiple management systems managed by different functions within the Company which were inherited from previous entities before the completion of the merger exercise. Therefore, an exercise was initiated to implement an Integrated Management System (“IMS”) to serve as an overarching approach toward meeting all desired standards requirements in a unified manner which improves efficiency and reduces the cost of audits and duplication while maximising resources.

In 2021, Air Selangor received recognition for the successful implementation of the Integrated Management System consisting of five management standards as shown below.



Feature Story:

Integrated Management System Certification

The certification scope for each management system is presented below.

ISO Scheme	Certification Scope
ISO 9001:2015 Quality Management System, ISO 14001:2015 Environmental Management System, ISO 45001:2018 Occupational Health and Safety Management System	Provision of corporate management services for Headquarters, management, operation, and maintenance of water treatment plants, and distribution and storage of treated water.
ISO/IEC 27001:2013 Information Security Management System	Provision of corporate management services for Headquarters, management, operation, and maintenance of water treatment plants, and distribution and storage of treated water.
ISO 55001:2014 Asset Management System	Provision of water supply services from the processing of raw water until the Bulk Supply Rate meter, which includes the provision of corporate management support services, operations, and maintenance of water treatment plants.

In working towards achieving the IMS for Air Selangor, various programmes were conducted throughout the year to drive integration and improve employees' awareness. Among key programmes organised are listed below.

IMS Briefing and Awareness Sessions

As Air Selangor began the journey towards achieving IMS, awareness sessions were organised for all departments as a vital step towards ensuring all departments are ready for the implementation of the integrated management system.

Integrated Risk Assessment

Air Selangor established Integrated Risk Assessment as a tool for identifying risks and opportunities arising from Air Selangor's business operations and activities.



Embedding Digitisation

Most organisations have rapidly embraced digitalisation in response to a changing business environment that has been fuelled by the COVID-19 pandemic. Air Selangor has also rolled out various initiatives focusing on expanding the digitalisation of its operations, particularly on the active application of big data capabilities. Air Selangor has successfully built an enterprise data lake, streamlined data compilation and reporting for improved efficiency, where information is ultimately used to support robust decision making. In line with the aspiration to become a data-driven organisation, the big data initiative will shape the way of working and it is hoped that improvements in organisational productivity and the quality of customer service delivered will be seen.

Feature Story:

Intelligent Command Centre

Transitioning from the Operation Command Centre (“OCC”) to the ICC in 2019 was a step towards meeting the aspiration of moving towards digitalising the way we work. The commissioning of the ICC was completed in January 2021. The ICC has end-to-end integration of downstream key operational parameters, allowing live monitoring and fast response to any anomalies or issues on site. The ICC also plays a vital role during Emergency Response Plan (“ERP”) by providing real-time data through close monitoring of the recovery plan and supporting data-driven decisions.

Improvements in the ICC have been made throughout the year; Air Selangor is now able to not only monitor but also control certain key functions through Supervisory Control and Data Acquisition (“SCADA”) capabilities such as water flow and pressure, reservoir level, and pump/valve control. Additionally, regional detailed live monitoring increased the efficiency of detecting anomalies within each region’s operations with primary supervisory control by Headquarters. The ICC system expansion also consists of trend analysis capabilities, operation anomalies detection, and severity alarm management.

Data Analytics Centre

In 2021, Air Selangor’s Data Analytics Centre (“DAC”) continued its efforts in anchoring and creating organisation-wide capabilities for big data analytics. This is an important initiative in driving business growth and promoting data-driven decision-making within the Company.

DAC introduced Exploratory and Predictive Analytics which focuses on obtaining insights to derive business decision-making in various areas across business operations.

Exploratory Analytics

OBI-CLCM	OBI-CLCM aims to ensure timely complaint management, tracking resolution and field activities and creates a feedback loop to keep customers informed of their complaint status. The OBI-CLCM manages customer complaints on billing, meter, pipe burst/pipe leak incidents, water quality, water supply, and payment.
Factors Affecting Pipe Vulnerability	This initiative focuses on prioritising pipe replacement based on Pipe Vulnerability Index (“PVI”). This prevents the occurrence of pipe bursts and non-revenue water loss.
Digital versus Non-Digital Customer Analysis	Identification of targeted digital customers for conversion to e-Bil payment method.

Predictive Analytics

Predictive Maintenance for Meter Replacement Programme	Identification of residential meters due for a replacement to prevent meter impairment issues.
Water Pressure Optimisation	Optimal water pressure adjustment for selected key District Metering Zones (“DMZ”) through simplified automation based on data benchmarking.

Enterprise Content Management System

Air Selangor has embarked on an Enterprise Content Management System (“ECMS”) since 2020 to create a structured way of managing content creation, classification, security and protection, retention, and disposal of information.

Air Selangor established its ECM Framework in 2020 to guide the implementation strategy, establish governance, identify roles and responsibilities, determine the organisation structure to drive ECM practices, set requirements for ECM systems, and embed awareness and culture among employees. The ECM system will leverage a robust technological solution that can integrate with existing systems within Air Selangor to ensure streamlined and more efficient processes throughout the Company.

Moving forward, Air Selangor will focus on implementing ECM solutions within the company whilst strengthening ECM execution.

Digitalising the Way We Work

In supporting the aspiration to become a digital utility of the future, Air Selangor rolled out initiatives that promoted operational efficiency across the business such as customer management, employees' administration, and asset inventory and maintenance, among others. Throughout this report, the specific digitalisation initiatives in the relevant topics are also disclosed.

Apart from these efforts, the following programmes were initiated to further expand the use of digital platforms in the organisation.



This internal platform is used for users to lodge complaints or issues faced with the IT applications and devices within our Company. Through this application, the lodged complaints are trackable with a specified turnaround time, to ensure records are kept and issues are efficiently resolved.



In 2021, Air Selangor have completed its pilot implementation of the Identity and Access Management ("IAM") system which will reduce cybersecurity risk related to identity management. IAM enables system administrators in managing digital identities and user access to information and data, systems, and resources within the organisation. Information Technology Department ("ITD") has integrated the IAM with several Air Selangor business applications such as iERP and Laboratory Information Management System ("LIMS"), among others. ITD will continue to implement IAM on other applications in 2022.



As part of Air Selangor's efforts to continue providing the best customer experience, the Change of Ownership online application was upgraded to the eForm platform in June 2021 and as of December 2021, it had gathered a total of 13,832 applications.

Security Access Management System

The Security Access Management System ("SAMS") is a new security system introduced in December 2021 by Air Selangor. Its function is to increase the security system for registration of our employees to Air Selangor premises. Besides that, it is also used by visitors, contractors, and other stakeholders, to reduce the time to collect and gather personal information during registration and effectively manage stakeholders' data and personal information. This new digitalisation process is more secure and optimises the existing process flow.

Registration for entry to each Air Selangor premise is done through this online system. This is in line with the company's SPI 7, where this initiative contributes toward a zero-waste environment through the established paperless process. Other than that, SAMS is also integrated with our door access system to effectively monitor employees' and visitors' movement at our premises.

Through the implementation of SAMS, Air Selangor eliminated manual processes for visitor registration, increased ease of access, improved the safety and effectiveness of information

personal data storage of visitors, and prevented intrusion. The system also integrates existing company requirements such as the provision of a Construction Industry Development Board ("CIDB") card, Air Selangor National Institute of Occupational Safety and Health ("NIOSH") Safety Passport ("ANSP"), permit to work and mandatory COVID-19 vaccination certificates.

Closed Circuit Television (CCTV)

The use of Closed-Circuit Television ("CCTV") is important to improve security controls in Air Selangor premises or other assets that are vulnerable to trespassing and criminal activities. Air Selangor has made a significant investment of RM3.7 million to develop a CCTV system implemented in three phases from 2019 to 2021. Through this initiative, 947 cameras were installed, involving 135 premises and other assets including regional offices, dams, WTPs, stores, pump houses and reservoirs. The CCTV system will assist the company's security team and Polis Diraja Malaysia ("PDRM") in reducing crime rates in these areas.

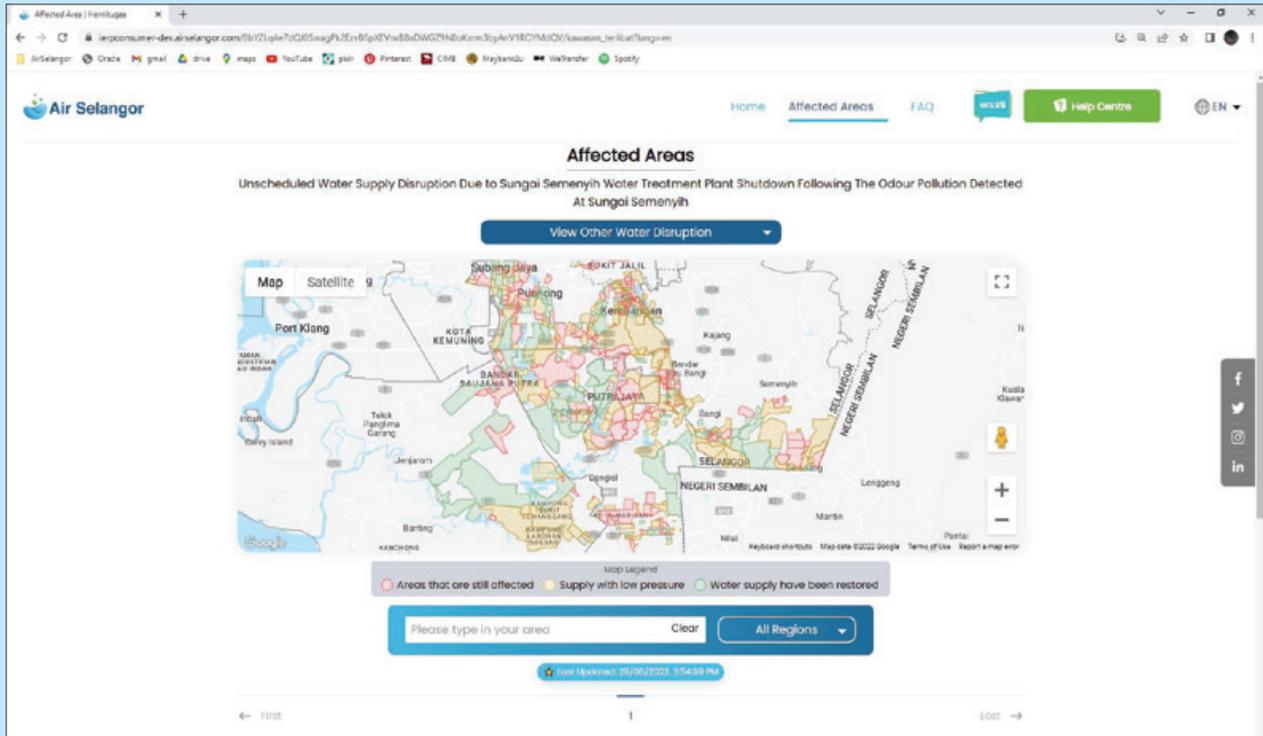


Transparent Communication

Air Selangor believes that transparent communication is vital in building customer trust and assurance. The establishment of easily accessed feedback channels have been a priority over the last few years in enhancing customer engagement. Customers must be well-informed, especially regarding notices about changes to counter operations, announcements on water supply, and maintenance and upgrading works, among others. To communicate with customers, a host of channels are provided and actively used by Air Selangor as mediums to communicate. These include various social media platforms, the mobile application, the company's website, and digital and traditional media.

Beyond vital service information and feedback, efforts are taken to help customers better understand the role of Air Selangor in the water industry and to communicate how customer support is essential in the journey towards achieving sustainable water management. Information about Air Selangor's business operations, initiatives to provide continuous and quality water supply, and details of engagement programmes with stakeholders are also shared across these platforms.

Feature Story: Development of Henti Tugas Microsite



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The Air Selangor Henti Tugas microsite was launched in April 2021 to serve as a platform for customers to obtain information related to water supply disruptions. The information available on the website includes areas affected, location of local service centres or *Pusat Khidmat Setempat* (“PKS”), location of public water taps, location of commercial water filling stations, and incident status updates. The website is also integrated with the Air Selangor mobile application and contains other features such as the movement of water tankers and ICC for reservoir levels.

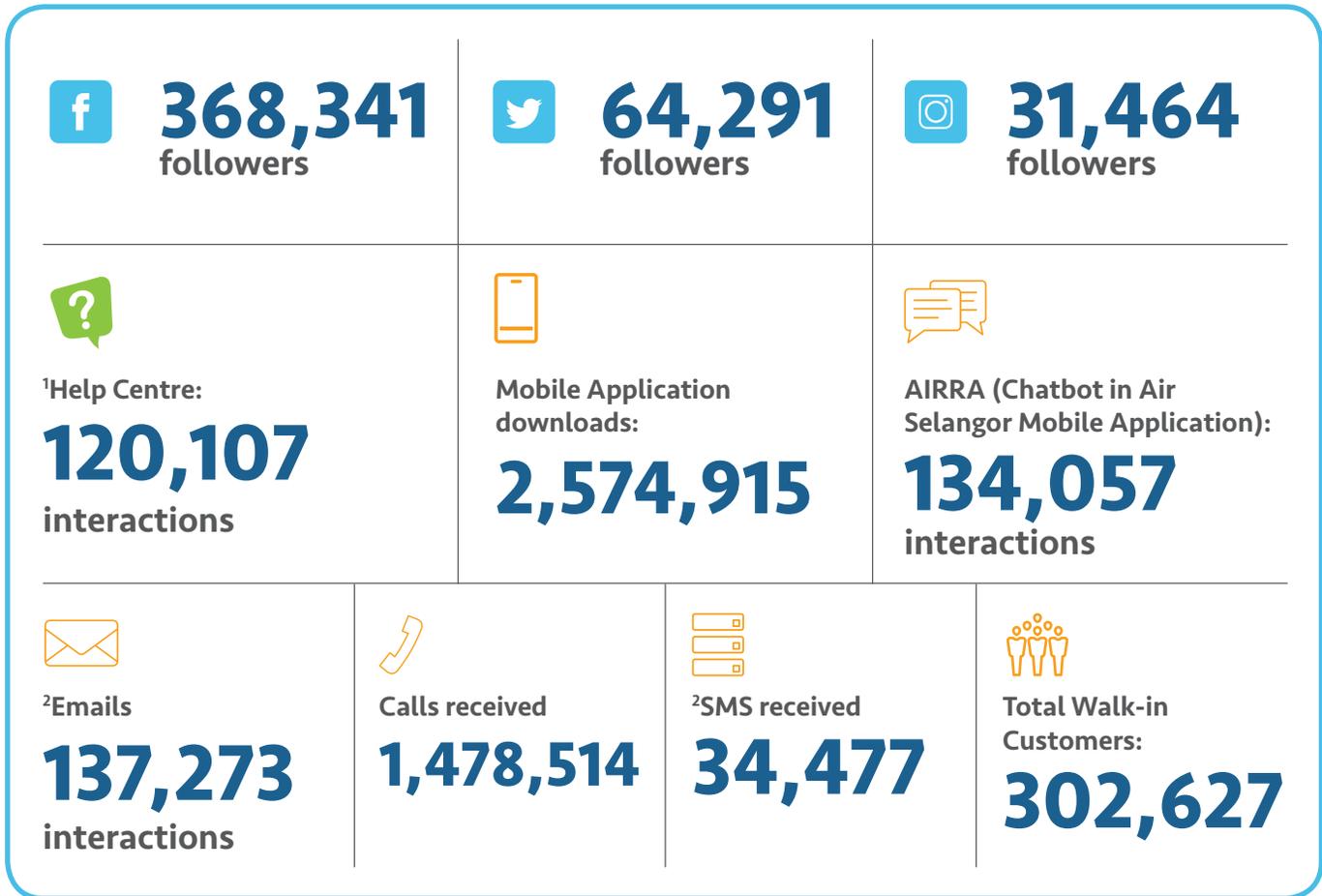
Moving forward, the Content Management System (“CMS”) for Henti Tugas microsite will be integrated with Air Selangor’s OMA platform for the convenience of incident and recovery management reporting by site personnel and field operations during ERP activation, which relies on mobile communications. The integration is targeted to be completed by July 2022.

During the scheduled shutdown of SSP1 WTP in October 2021, a total

of **312,559** users have rated the Henti Tugas site, where **95.39%** rated it **Good, Very Good or Excellent.**

Streamlining the Communication Platform

Air Selangor uses various mediums and platforms to reach out to customers as much as possible. Inclusive communication is important for customers to access information about Air Selangor’s services based on their lifestyles and preferences. With that in mind, both digital and non-digital platforms for communications were established which include social media platforms such as Facebook, Twitter, and Instagram, the Air Selangor Help Centre on the company’s website, the Air Selangor mobile application, the call centre, and walk-in counters.



¹ The Help Centre was introduced in July 2021

² Data included for January to June 2021. Effective 1 July 2021, email and SMS channels are no longer available

With the implementation of the online guide form on www.airselangor.com and enhancements made to the Air Selangor Mobile Application, other channels such as the email service, short message service (“SMS”), and complaints through the WhatsApp Application were terminated beginning 1 July 2021. This is to further streamline the complaint process for more effective management and resolution.

Additionally, from 1 July 2021, only customers who have registered for e-Bil will receive full access to the Air Selangor Mobile Application to encourage more customers to sign up for e-Bil notifications. This includes access to customer account information, monthly water bill statements, water usage trends, and bill payment statements.



Air Selangor Internal Portal

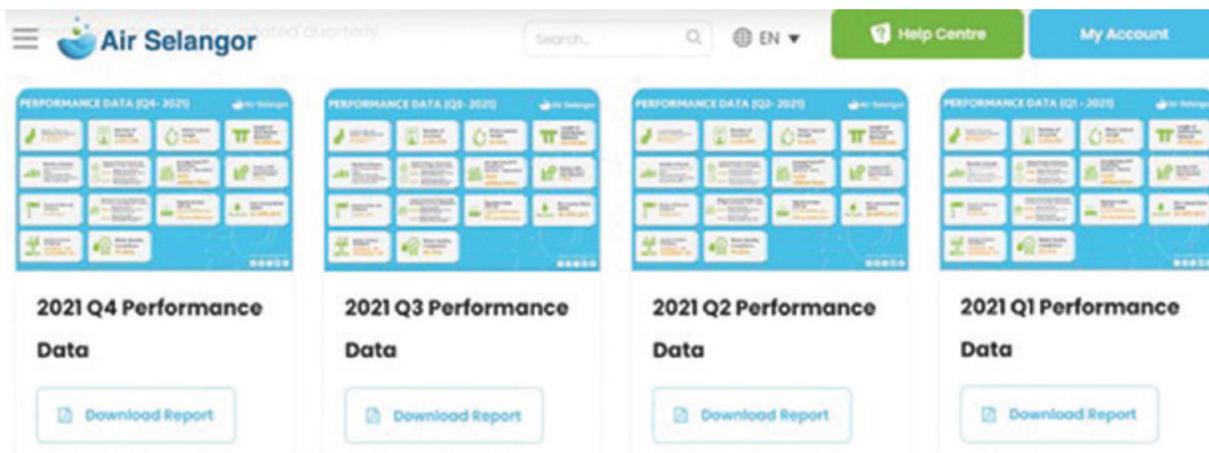
Apart from communicating with customers, Air Selangor recognises the importance of internal communication among its employees, internal departments, regional offices and management team. Transparent and up-to-date information is important to increase efficiency and encourage knowledge sharing.

Hence, in July 2021, Air Selangor introduced its newly revamped intranet site for employees named PARSEL. The name PARSEL was derived from the combination of “Portal” and “Air Selangor” and was selected as the winning entry from our internal ‘Name It! & Win It!’ contest.

Employees can view important announcements, corporate updates and access policies and procedures on PARSEL.

Air Selangor’s Performance Dashboard

In 2021, Air Selangor began providing more frequent quarterly updates on key performance indicators for its operational performance via the company’s website. This is part of efforts taken to further enhance transparent communications with all stakeholders. This performance data can be accessed at <https://www.airselangor.com/about-us/performance-awards/>



Providing the Best Customer Experience

Air Selangor is committed to always providing excellent services to its customers, in line with the Core Value of – the Highest Standard of Services and per SPI 4: Towards Best Customer Experience. At Air Selangor, all employees serve as brand ambassadors where everyone can collectively play their part to further enhance customer satisfaction and the brand image.

In 2021, Air Selangor took big steps toward improving its customer service platforms with the enhancement of its call centre and other touchpoints such as the mobile application and a new Help Centre. The Company has also improved the management of critical cases and has been engaging with its stakeholders regularly. Air Selangor will continue to listen to feedback from customers on ways to improve service quality and delivery.

Enhancement of Call Centre

In July 2021, Air Selangor expanded its call centre capacity to further enhance customer experience and service delivery. It is now a complete Customer Experience Call Centre which complies with the COPC CX Standard. COPC CX is an internationally recognised performance management system for call centres and customer experience operations.

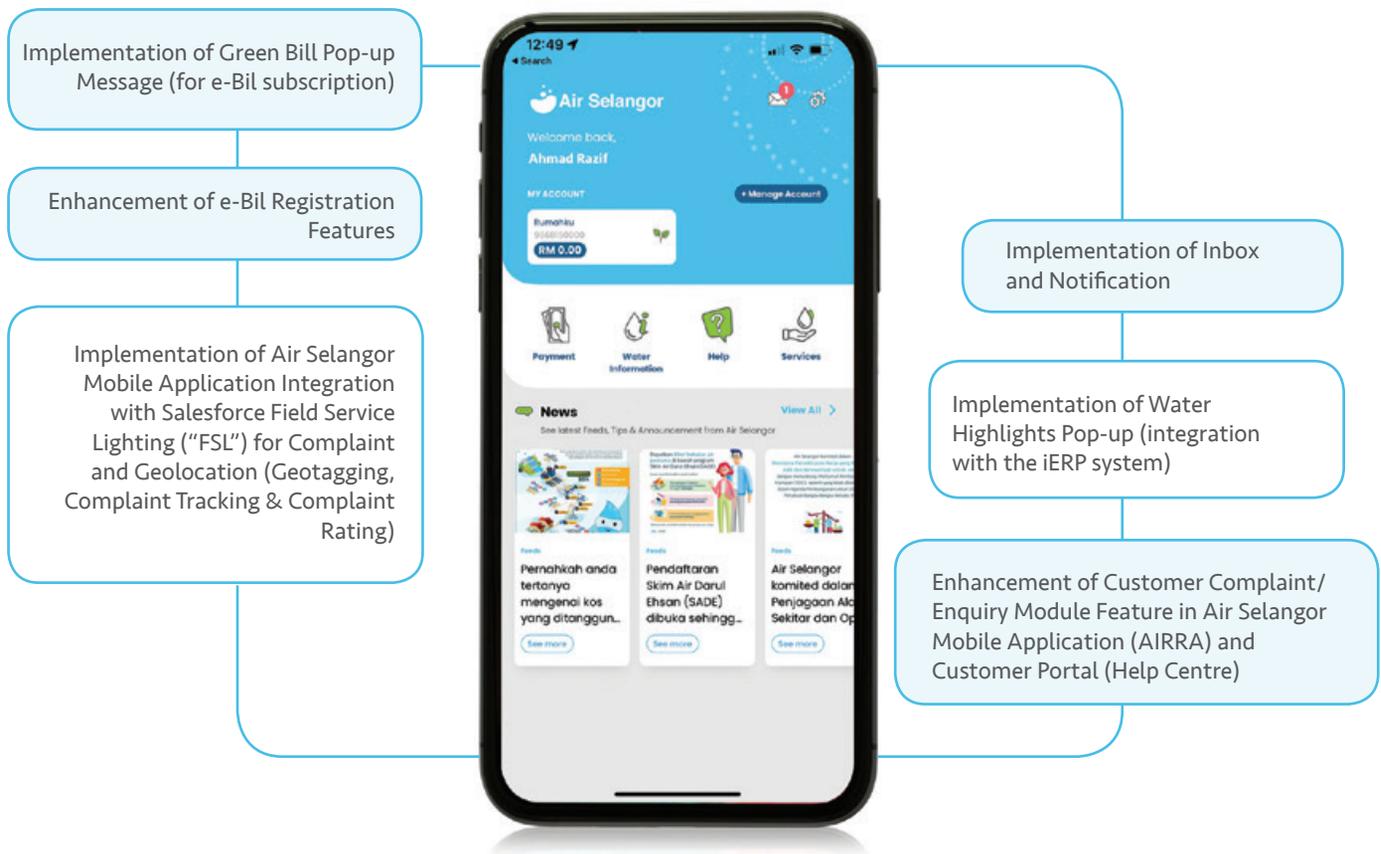
With an improved system, customer calls via our hotline can be attended to within 30 seconds during normal call traffic. The call centre is also equipped with a fully Interactive Voice Response (“IVR”) system that simplifies overall interaction with customers. The customer waiting time has also improved via prioritised volume management during peak periods for fast and efficient service.

In addition, the call centre utilises Robotic Process Automation (“RPA”) technology which simplifies the complaint management and follow-up processes to expedite case resolution. Through this RPA system, unresolved cases will also be flagged to prevent any complaint cases from being unattended. After completing the enhancement of our call centre operations, the service level has increased to 90% in December from 49% in June 2021.

Enhancement of Air Selangor Mobile Application

The number of downloads of Air Selangor’s mobile application increased by 44.11% in 2021 compared to the previous year. As a result of this significant increase, it was observed that more customers preferred to use the mobile application for transactions with Air Selangor. Therefore, the Company will be continuously enhancing the functionalities of the mobile application to meet customers’ expectations. Various new features have been introduced into the application to improve customers’ experience such as:

New Features on the Air Selangor Mobile Application

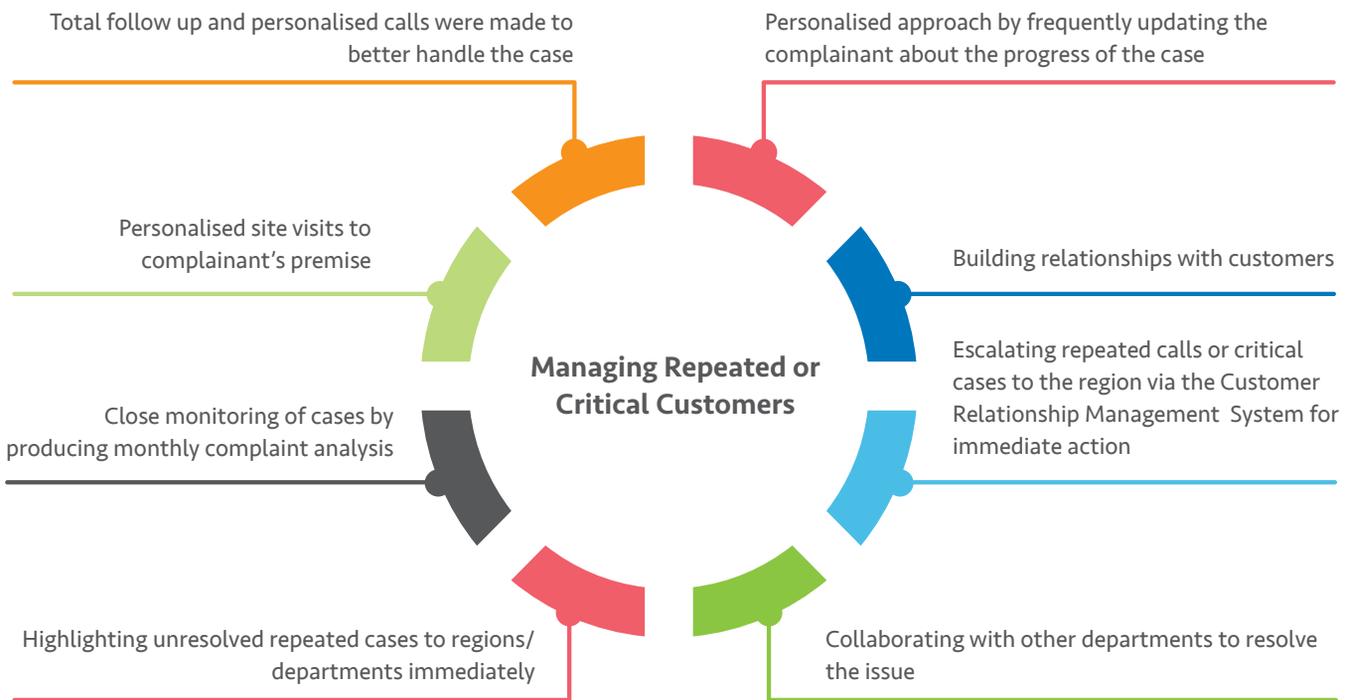


Preferred Platform for Customer Complaints

As part of efforts to deliver the best customer experience, Air Selangor created an integrated platform which is known as the Help Centre. This is available on the company’s website and mobile application for customers to make complaints, submit inquiries, request water supply reconnection, and check the status of queries submitted. The Help Centre provides the opportunity for customers to track the progress of their complaints.

Managing Repeated or Critical Customers

Air Selangor strives to resolve issues faced by customers as early as possible. However, there are instances where repeated complaints are received due to various factors. To address this, several measures in managing repeated complaints or critical customers were implemented. These were:



Customer Experience Engagement Programme

Throughout 2021, various stakeholder engagement programmes were conducted with customers, local authorities, non-governmental organisations (“NGOs”), other industry leaders, and industry peers. The aim was to strengthen working relationships with them, provide platforms for knowledge sharing and facilitate the exchange of ideas on customer service, obtain views from stakeholders on Air Selangor’s service quality, to further earn support from consumers in the journey towards excellent customer experience.

1 Sesi Kopi 1.0 Bersama Customer Experience Department, Air Selangor



On 12 August 2021, *Sesi Kopi* 1.0 virtual dialogue session was conducted with the Heads of Customer Service from other water operators which are Ranhill SAJ Sdn. Bhd, Syarikat Air Negeri Sembilan Sdn. Bhd., Syarikat Air Melaka, Perbadanan Air Pulau Pinang, and Syarikat Air Perlis.

2 Bowl Down Barriers!



Bowl Down Barriers! With Local Authorities from all regions organised on 8 November 2021.

3 Let’s Talk Leadership 1.0 Programme



On 25 November 2021, this inaugural event successfully gathered industry leaders including Tenaga Nasional Berhad, Telekom Malaysia™, Malaysia Airlines, Shopee Malaysia, Universiti Teknologi Mara, and Air Selangor, to share about customer service in the pandemic era with the theme of “Digitalisation vs Human Touch”.

4 It’s High Time for Hi-Tea!



It’s High Time for Hi-Tea! – A networking event with Non-Governmental Organisations and Local Authorities was conducted on 29 November 2021.

5 Let’s Get Candid (Focus Group)



Let’s Get Candid is a bilateral focus group dialogue session involving Air Selangor’s employees from five regional offices and industrial consumers with high water use, conducted on 2 December 2021.

Customer Satisfaction Index Survey 2021

In July 2021, Air Selangor conducted the Customer Satisfaction Index (“CSI”) Survey with customers. A total of 5,816 responses were secured from residential and commercial customers.

Based on the results received, Air Selangor’s 2021 Net Promoter Score (“NPS”) and Customer Satisfaction (“CSAT”) score improved to +5.00 and 72.10% respectively, a significant increase from the -23 recorded for NPS and 63.60% for CSAT in the previous year. Among areas that required further improvement were Customer Service, billing and payment. Efforts on matters such as water disruption management, water quality, water supply restoration, and communication with the public will be further enhanced and additional action plans will be developed to address the gaps highlighted in the survey.

Air Selangor Corporate Reputation Survey 2021

In October 2021, Air Selangor conducted a Corporate Reputation Survey for key stakeholders such as Members of Parliament (“MPs”), ADUN, NGOs, vendors, government agencies, media, and community leaders. The survey gathered 586 responses via an online platform and phone interviews.

In terms of corporate trust, Air Selangor was rated at 78.00%, which was higher than the average ratings of other utility brands across multiple markets which stood at 72.00%. Different stakeholder groups have given positive ratings to the following attributes:



Moving forward, Air Selangor will further examine the recommendations provided from the survey and prepare an action plan to address the gaps identified.

**Air Selangor’s
2021 Net
Promoter Score**

+5.00
(2020: -23)

**Customer
Satisfaction score**

72.10%
(2020: 63.60%)

**Corporate Trust
78.00%**

Water Services Complaints

In 2021, 655,704 complaints were recorded with the top three issues being water supply interruption, pipe leaks, and billing. For details on how issues relevant to water supply interruption and pipe leaks are managed, please refer to pages 67 and 68, respectively.

For issues on billing, the top three causes were bills not received, high bills, and faulty meters with the number of complaints recorded being 10,077, 64,387, and 168,533, respectively. To address these complaints, several coordination meetings were held between Customer Billing Services (“CBS”), ITD, DAC, and Customer Experience Department (“CXD”) to identify workable solutions. In the case of faulty meters, the metering team will investigate and perform a meter analysis apart from replacing critical meters within 24 hours. These are part of initiatives undertaken to prioritise resolutions for critical meters as opposed to the normal three working days allocated for faulty meter complaints.

PERFORMANCE DATA

DESCRIPTION	2018	2019	2020	2021
SOCIAL				
CUSTOMERS				
Number of calls received	1,553,584	1,693,689	1,591,819	1,478,514
Number of SMS received	40,351	96,144	75,625	34,477
Number of emails received	137,661	140,991	145,113	137,273
Number of walk-in customers	509,718	486,584	341,575	302,627
Number of Facebook followers	78,987	168,502	313,885	368,341
Number of Twitter followers	7,631	17,880	49,400	64,291
Number of Instagram followers	2,026	7,138	23,500	31,464
Number of downloads of mobile application	120,488	316,584	1,786,736	2,574,915
Number of AIRRA interactions	-	-	167,072	134,057
Number of Help Centre interactions	-	-	-	120,107
e-Bil sign up rate by customers (%)	-	18.90	23.70	51.48





Operational Excellence

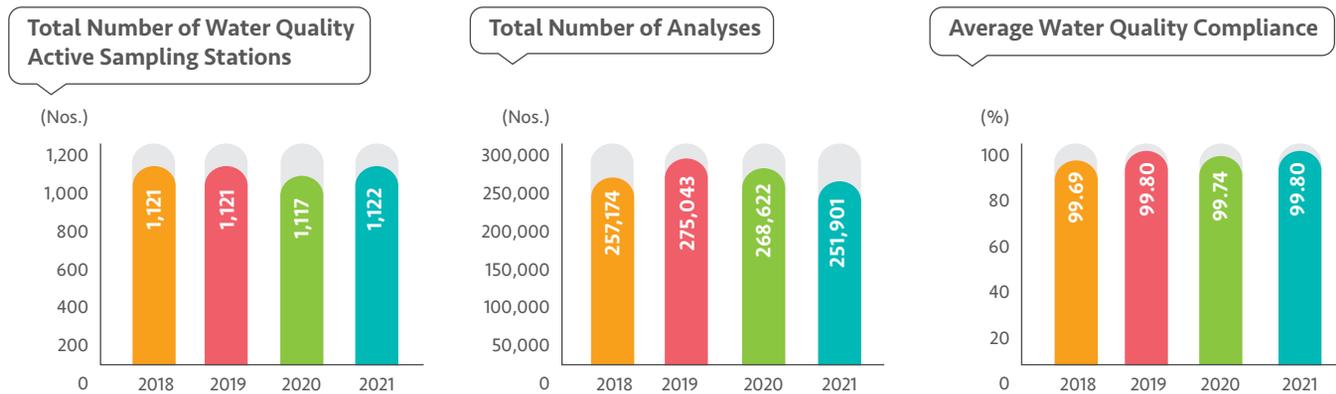
At Air Selangor, the focus area is to maximise operational excellence and ensure clean treated water for all. This is backed by the SPIs, particularly Water Forever, Improving Asset Reliability & Resilience, Improving Operational Efficiency, and Towards Best Customer Experience. The operational excellence strategies employed help to identify better and more efficient ways to provide safe, clean, and sustainable water services for customers. In addition, innovative technology and process optimisation are leveraged to plan for and implement measures toward achieving the highest water quality standards, securing future water supply, reducing water disruption, and optimising asset management.

Ensuring Highest Water Quality Standards

Under Air Selangor SPI 4: Towards Best Customer Experience, the target is to provide drinkable water directly from the tap by 2028. Air Selangor abstracts surface water from dams and river intakes and treats it to the highest quality that meets the MOH DWQS. To guarantee that water quality is maintained from the WTPs to customers' taps, frequent monitoring is conducted, and preventative measures are implemented, by optimising technology solutions throughout the distribution network.

Water Quality Monitoring and Compliance

As of December 2021, there were a total of 1,122 active water quality sampling stations at Air Selangor. Out of these active water quality sampling stations, 650 (57.93%) are under mandatory monitoring by MOH, 403 (35.92%) are monitored by Air Selangor and 69 (6.15%) are jointly monitored. The total number of sampling stations is reviewed on a bi-annual basis where the number is dependent on changes in water supply patterns due to the expansion of the distribution network resulting from new residential, commercial, and industrial developments. The frequency of monitoring at these stations is according to the requirements set by MOH. The results obtained from these monitoring activities are then used to generate an overall water quality performance for Air Selangor. As of December 2021, 251,901 analyses were conducted with a result of 99.80% compliance with the MOH DWQS.



Air Selangor operates three regional laboratories that are accredited with ISO 17025:2017 (general requirements for the competence, impartiality, and consistent operation of laboratories). These laboratories located at Sg Selangor Phase 2 ("SSP2") WTP, Sg Labu WTP and Sg Semenyih WTP are well-equipped with advanced analytical instrumentations namely Liquid Chromatography Mass Spectrometry Quadrupole Time of Flight ("LCMS-QTOF"), Inductively Coupled Plasma Mass Spectrometry ("ICPMS"), Gas Chromatography-Mass Spectrometry ("GCMS"), and Total Organic Carbon ("TOC") Analyser.

Additionally, Air Selangor has 20 professional registered chemists and microbiologists tasked with the day-to-day responsibilities of ensuring the water quality analysis is conducted according to national standards and accredited methods. Furthermore, advanced extraction and quantitative analysis methods are being developed to test for emerging pollutants in water sources, as well as to trace and identify any potential new pollutants or water treatment disinfection by-products. Air Selangor has also started in-house monitoring of the additional microbiological and chemical parameters in addition to current parameters monitored as specified in the MOH standards for treated water.

For on-site water quality analysis and verification, Air Selangor has 22 sampling team personnel who are responsible to conduct sampling and on-site analysis at 535 points from 34 WTPs and 10 regions around Selangor, Kuala Lumpur, and Putrajaya. Four on-site physical parameters are accredited by the Department of Standards Malaysia namely pH, turbidity, colour and FRC. Meanwhile, physical sampling is necessary as there are crucial parameters like microbiological, heavy metals and organic compounds that will be analysed at a regional laboratory using an accurate and precise accredited method.

Air Selangor utilises Laboratory Information Management System ("LIMS") to manage sample registration, record on-site sampling activities and manage laboratory analysis data covering all water sampling points distributed across Selangor, Kuala Lumpur, and Putrajaya. At Air Selangor's laboratories, LIMS operates as a tool to effectively manage the flow of samples and associated data to generate electronically signed reports and improve laboratory efficiency in data management.

Air Selangor has also installed innovative equipment along the distribution network to ensure customers are supplied with the highest quality of treated water. For example, 100 new Hybrid Distribution Water Quality Real-Time Analyser (“HYDRA”) stations were activated in 2021 which brought the total number of units installed to 190. HYDRA analyses real-time water quality data for physical parameters at 15-minute intervals within the distribution network. These HYDRA stations are equipped with alarms that will be triggered upon detection of abnormalities in water quality. Once an alarm is triggered, the investigation team will be deployed to immediately conduct on-site verification and if necessary, take appropriate actions to remedy any violations detected at the stations.

In addition, five more automatic secondary chlorination system stations known as Off-Plant Autonomous Chlorine Injection System (“OACIS”) were installed to boost chlorine levels in the distribution pipeline and to maintain water quality. With a total of 27 OACIS stations, Air Selangor successfully reduced FRC violations to 12 violations this year compared to 31 violations the year before.

Pipe Cleaning and Reservoir Cleaning

As a proactive measure in improving the quality of treated water supplied to customers, reservoir cleaning works are usually scheduled once every six years. The cleaning works include surface and internal structure deep cleaning, disposing of physical sedimentation, valve and internal installation repainting, and disinfection. For pipe cleaning works, pressurised and non-pressurised cleaning methods are used to eliminate sedimentation, biofilm, and soft mineral scale inside the pipeline. Affected customers are notified before the scheduled cleaning works are carried out as the water supply is halted during this process.

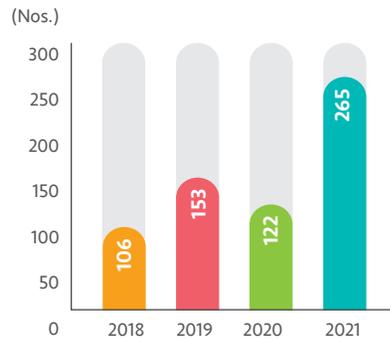
In 2021, 9,027 scheduled pipe cleaning works and 265 scheduled reservoir cleaning works were completed.



Total Number of Pipe Cleaning Works



Total Number of Reservoir Cleaning Works

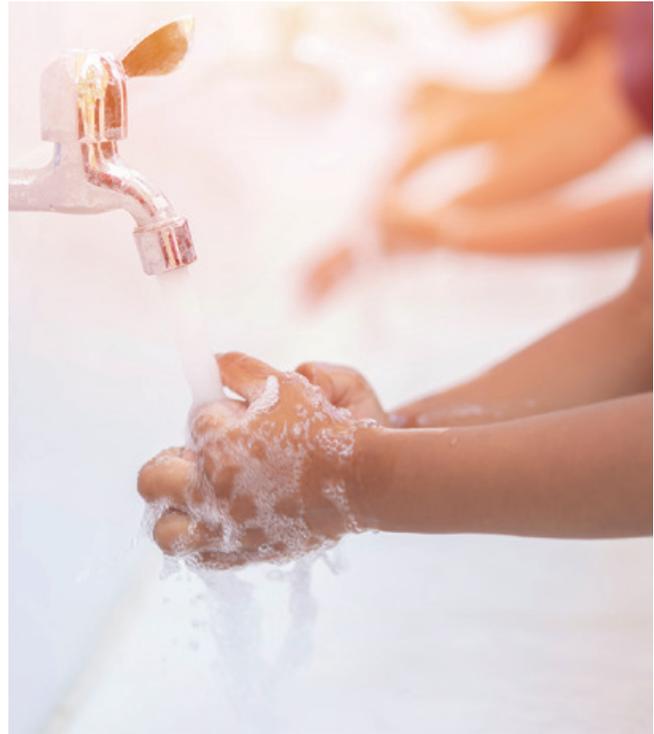


Water Quality Complaints

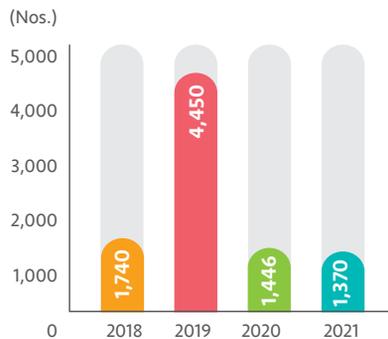
Water quality complaints lodged with Air Selangor are attended to and investigated within 24 hours. Air Selangor recently developed an internal manual to guide the regional offices in ensuring effective handling of abnormal water quality issues.

In 2021, Air Selangor achieved a Water Quality Complaint Index ratio of 0.54 complaints per 1,000 connections, below the targeted 0.6. A total of 1,370 valid water quality complaints were received from customers, representing 0.21% of total complaints reported to Air Selangor.

To address these complaints, a water quality assessment involving site testing at the customer premise is conducted and remedial actions will be initiated if deemed necessary. The root causes of the complaints were mainly due to unscheduled disruption in the distribution network, dead-end distribution systems, and changes in the water pressure within the pipeline. However, there were also cases where the root cause of water quality deterioration could not be determined as upon testing, the water quality was found to comply with the MOH DWQS. All complaints were attended to within the stipulated timeline, where Air Selangor resolved 100% of the complaints.



Total Number of Water Quality Complaints



Sustaining Water Supply

The *Rancangan Struktur Negeri Selangor* has estimated that the population would increase from 6.77 million in 2021 to 9.08 million by 2035. With increasing development and a growing population, Air Selangor must prepare to meet the demand of future customers not only in the state of Selangor but across Kuala Lumpur and Putrajaya. Furthermore, Air Selangor recognises the physical risks arising due to climate change that will continue to cause more variations in the natural water cycle, leading to more fluctuations in weather patterns, and higher incidences of extreme weather which could impact the surface water resources utilised by the Company. As such, several measures grounded on SPI 1: Water Forever has been planned and implemented to safeguard water supply for customers' needs.

Feature Story:

Upgrading and Maintenance Work of SSP1 WTP



Sg Selangor Phase 1 (“SSP1”) is one of Air Selangor’s largest water treatment plants with a design capacity of 950 MLD, supplying treated water to 998 areas across the six regions of Petaling, Kuala Lumpur, Gombak, Klang, Kuala Langat, and Kuala Selangor. The scheduled shutdown for SSP1 on 13 October 2021 was to conduct nine major upgrading and maintenance works for critical assets. These works include the replacement of three filtered water pipes, replacement of butterfly valve and sluice valve in treated water pumps, wall coring and cleaning work at the Bukit Mayong Reservoir, clear water tank cleaning and leak repair works for the main treated water pipeline to the Matang Pagar Reservoir.

The maintenance works were rescheduled from Air Selangor’s initial schedule in July 2019 and April 2020 due to water pollution incidents that caused large-scale unscheduled water supply disruptions at the time. There were also challenges facing the planned works due to the COVID-19 pandemic which the team had to overcome. Therefore, the planned shutdown in October 2021 was overdue, but essential to prevent unscheduled plant shutdown resulting from equipment failure. An unscheduled shutdown leads to more severe consequences for consumers, depending on the scope of the repairs required. Domestic and commercial users will not be notified early to store water supply unlike during scheduled shutdowns. Therefore, implementing these scheduled maintenance works is crucial to ensure the operational efficiency of SSP1 and the continuous supply of treated water to customers.

Due to the large-scale assets being replaced or undergoing maintenance, where most of the work is to be done manually, including welding, usage of heavy machinery coupled with a limited workspace, the 14 hours required was carefully and thoroughly planned by the Air Selangor team and approved by SPAN. Competent and experienced contractors were appointed to carry out these works under Air Selangor’s supervision.

The maintenance work was completed at 5:00 AM on 14 October 2021. Once the water treatment system was stabilised, the water supply distribution resumed in stages 12 hours later. The duration of the water supply disruption and recovery in the affected areas varied depending on the distance of consumers’ premises to SSP1 and the water pressure within the distribution system.

To manage impacts from this maintenance and upgrading works to customers, Air Selangor prepared a comprehensive plan including pre-, during, and post-disruption. This is to ensure all affected customers have access to adequate temporary water supply and a smooth recovery. Customers were notified two weeks before the shutdown to provide ample time for preparation including water storage. Air Selangor also issued frequent communication about the scheduled maintenance works throughout the disruption period. In addition, the Henti Tugas Microsite was activated to allow customers to obtain real-time information on the list of areas affected by the shutdown and the progress of water supply recovery in their areas.

Additionally, critical locations were also provided with alternative water supply assistance via tanker trucks to premises such as hospitals, dialysis centres, COVID-19 Quarantine and Treatment Centres (“PKRC”) and Vaccination Centres (“PPV”), as well as for use at funeral ceremonies. At the same time, the public was provided with alternative access to treated water via numerous public water taps and commercial water filling stations. Water supply to all affected areas was fully recovered on 16 October 2021. In total, the disruption period was 81.5 hours, 2.5 hours ahead of schedule.

Feature Story:

Reclaimed Water Venture between Air Selangor and Indah Water Konsortium



The reclaimed water joint venture between Air Selangor and IWK is in line with Air Selangor's long-term commitment to ensuring a sustainable water supply for its customers whilst contributing to environmental protection efforts.

Central Water Reclamation Sdn. Bhd. ("Central Water"), a special purpose vehicle company that is 60% owned by Air Selangor and 40% owned by IWK, was set up to develop and operate water reclamation plants which are equipped with advanced treatment technologies to treat and produce reclaimed water from bio-effluent generated in IWK's sewerage treatment plants ("STP"). Air Selangor will then purchase the reclaimed water in bulk for distribution directly to industrial consumers through dedicated distribution

networks, providing an alternative source of water to industries for non-potable applications.

Central Water's maiden project is a water reclamation plant located in Setia Alam, Selangor, which can supply up to 4.0 MLD of reclaimed water, with plans to subsequently increase the supply capacity to 7.5 MLD.

Moving forward, Air Selangor and IWK have agreed to explore other collaborative efforts concerning IWK's other STPs, including the plants located at Section 23, Shah Alam and Pantai 2, Kuala Lumpur, to further develop the reclaimed water industry and expand supply to other industrial customers.

Water Production

The raw water supply for Air Selangor comes from dams and rivers across Selangor and Pahang. This raw water is then treated across the 34 WTPs with a total designed capacity of 6,035 MLD before the treated water is then distributed to customers.



Dams/ORS/HORAS

Northern Region

Sg Selangor

Sg Tinggi

Batu¹

Klang Gates

Tasik Subang

HORAS 600

Dams/ORS/HORAS

Southern Region

Sg Langat

ORS Sg Labu

ORS Semenyih 2

ORS Labohan Dagang

Semenyih

Kelau²

¹ Batu Dam is under the supervision of the Department of Irrigation and Drainage

² 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 Bahru

North Hummock

Rantau Panjang

Sg Batu

Rasa

Sg Dusun

Sg Rangkap

Sg Rumput

Wangsa Maju

Sg Selisik

Water Treatment Plants

Sg Sireh

Sg Tengi

Sg Selangor Phase 1

Sg Selangor Phase 2

Sg Selangor Phase 3

Southern Region

Bukit Tampo

Cheras Mile 11

Labohan Dagang

Salak Tinggi

Semenyih 2

Langat 2

Sg Labu

Sg Langat

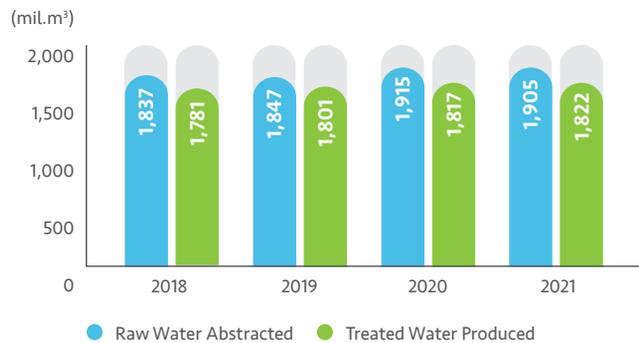
Sg Lolo

Sg Pangsoon

Sg Semenyih

Sg Serai

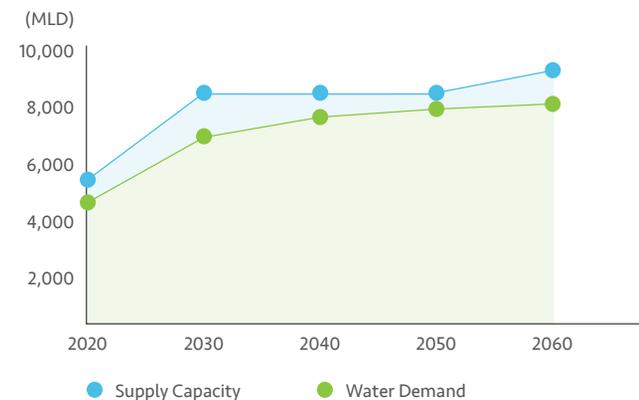
Volume of Water Abstracted and Produced



Water Reserve Margin

The water reserve margin is referred to as the difference between the distributable capacity of the water treatment system against the current demand. A sufficient amount of reserve margin is crucial to secure a continuous water supply in any event of disruption. Air Selangor is committed to achieving a minimum of 15% reserve margin and as of December 2021, the reserve margin was at 13.63%, an improvement from 11.87% in 2020.

Water Supply and Water Demand Projection



To increase the reserve margin, Air Selangor implemented various projects which focused on identifying alternative raw water sources, developing new water treatment plants, and conducting major improvement works for its Production assets.

Air Selangor's current biggest project is the Rasau Water Supply Scheme which has been divided into two stages namely Stage 1 and Stage 2 with target completion in 2025 and 2028, respectively. The Rasau Water Supply Scheme taps into a new raw water source which is downstream of Sg Klang and the water abstracted will be pumped and stored in nine existing Off River Storage ("ORS") ponds. Rasau Water Supply Scheme Stage 1 with a capacity of 700 MLD is targeted to be completed by 2025. It will supply treated water to an estimated 467,000 consumer accounts in the Klang Region.

The tenders for three packages under Stage 1 of the Rasau Water Supply Scheme valued at RM4 billion were issued in May 2021 and closed in August and September of the same year. Air Selangor has awarded the contract for Package 2 and 3 in December 2021.

Package 2 consists of design and build works for a treated water pumping station, twin pumping mains to Bukit Lipat Kajang low-level reservoirs, distribution pipes and interconnection works, with an estimated pipeline length of 42 km. Package 3 comprises the design and build works for the new Bukit Lipat Kajang low-level and high-level reservoirs, a new Bukit Lipat Kajang low-level pumping station, and associated interconnection works. Package 1, which is the WTP and its associated facilities is expected to be awarded in the third quarter of 2022.

Water Supply Disruption

Air Selangor's scope of responsibility begins from the raw water intake where water is abstracted, to the supply of treated water via the customer meter. These processes require regular preventive maintenance to avoid any undesirable disruptions

to customers' water supply. Disruptions from treated water production typically occur due to scheduled and unscheduled shutdowns of WTPs, whereas pipe leaks, pipe bursts, pump house, and reservoir failures are the leading cause of disruptions in the distribution network.

Air Selangor has implemented several initiatives to reduce the number and duration of service disruptions including proactive predictive maintenance works, early detection systems and mitigation plans to further minimise service disruptions to customers. Before the commencement of any maintenance or upgrading works, a communication plan and a comprehensive response plan are put in place. In case of major supply disruption, either scheduled or unscheduled, the ERP will be activated to facilitate the management of affected customers.

Incidents	Number of Disruptions	Duration (hours)	Average No. of Affected Accounts
Water Outages: Pipe Size > 600mm	45	1,022.0	4,706
Unscheduled Pump House Breakdown	54	518.0	740
Reservoir Issue	119	1,173.0	1,955
Unscheduled WTP Shutdown	5	276.0	272,590
Scheduled Disruption due to Maintenance and Upgrading Work	5	318.5	189,221

The leading causes of water supply disruption and the respective actions taken to resolve the issues are explained in the following sections.

96.80km

of new pipeline has been laid, with a total of 556.14 km of total pipe length laid since 2016.

(As of 31 December 2021)

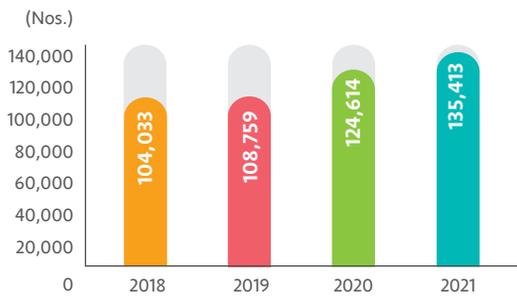
Pipe Leaks, Pipe Burst, and Pipe Replacement

Air Selangor distributed treated water supply to 2.56 million accounts through its 30,008 km pipe network. Due to ageing, environmental factors and changing internal water pressures, pipes are bound to deteriorate over time. Pipe leaks if left unreported will cause customers to suffer from low water pressures. If these are further left unchecked, the leaks may lead to pipe bursts and cause bigger disruption to customers.

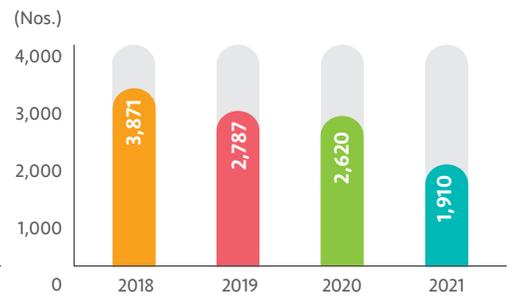
With an immense distribution network, Air Selangor leverages technology to assess the overall condition of the distribution network and monitor its performance. The increased number of pipe leaks recorded throughout the year is due to early detection by Air Selangor’s Leak Specialists and Leak Inspectors under the Active Leakage Control Programme. Pipe burst reduction is due to establishment of DMZ and Pressure Monitoring Zone (“PMZ”) via pressure management. Pipe repair works are then carried out by competent panel contractors within 24 to 48 hours upon detection.

In addition, pipe replacement projects are ongoing for ageing pipes and pipes that are beyond economic repair. As of 31 December 2021, 96.80 km of new pipeline has been laid, with a total of 556.14 km of total pipe length laid since the programme started in 2016.

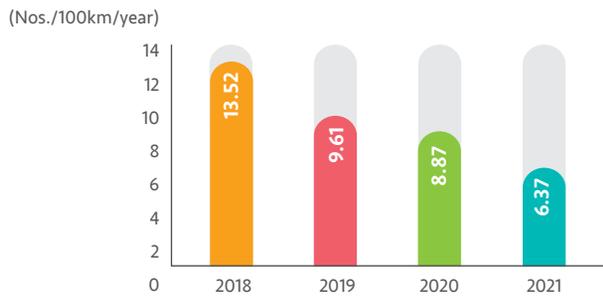
Total Number of Pipe Leak Cases



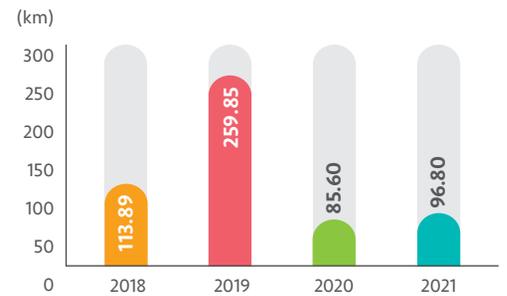
Total Number of Pipe Burst Cases



Pipe Burst Index



Length of Pipe Laid



Pump Houses and Reservoirs

Pump houses and reservoirs are essential assets in the water distribution system to regulate water pressure and maintain a steady supply. Pumps move the water to where it is needed from upstream raw water abstraction to the downstream delivery of treated water to homes and businesses. Reservoirs serve to balance the demand from customers and serve as a temporary backup supply during the shutdown of water treatment plants. Therefore, the upkeep of these assets is important in ensuring a steady supply of treated water.

Air Selangor owns 728 pump houses, with 649 classified as active pump houses and the rest being non-active, abandoned, or under rehabilitation. Other assets include 1,404 active reservoirs (1,599 in total). Among the causes for the unscheduled breakdown of pump houses were pump airlock, electricity disruption due to floods, failure of the electrical panel, and technical issues with the SCADA system. For reservoirs, issues such as low levels due to high demand, and pump and electrical malfunction are the main reason for breakdowns. Recently, flooding led to the disruption of reservoir operations due to electricity supply disruption and low pressure to the trunk mains as water demand from the flood areas was high.

In 2016, 144 reservoirs and 54 pump houses were identified as assets requiring rehabilitation to minimise incidents of pump house breakdown and reservoir malfunction. Due to the high number of these assets, a 10-year timeline has been identified to implement all necessary works. As of December 2021, a total of 44 reservoirs and 9 pump houses were rehabilitated.

Emergency Response Plan

Air Selangor's ERP is guided by the ERP Manual and *Garis Panduan Permohonan & Kelulusan Gangguan Bekalan Air Berjadual*. ERP incidences are now managed via the iERP Content Management System ("CMS") which was established to assist employees in managing the information required during an ERP event. Based on the inputs keyed in from the various section and departments, the CMS provides a dashboard overview of the areas affected and the status of recovery. This enables Air Selangor to issue frequent updates to authorities, media and customers on supply disruptions and recovery status for affected areas. Through this system, water tankers mobilisation, location of static tanks, filling stations and PKS can be managed. Customers are also able to access this live information through the Henti Tugas Microsite as explained on page 52. By having a comprehensive recovery plan and allocating sufficient supporting staff during ERP activation, customers' difficulties can be eased while waiting for water restoration.

In 2021, 10 ERPs were activated resulting from scheduled shutdowns for upgrading and maintenance works for our critical assets, unscheduled shutdowns due to floods, and raw water pollution.



Pasukan Khas Lembangan & Alur Air

Air Selangor’s River Basin Surveillance Team, better known as Pasukan Khas Lembangan dan Alur Air (“PAKAR”) have continued to assist the Local District Authority (“PBT”) and LUAS in protecting raw water sources from water pollution. Activities undertaken by PAKAR include river surveillance and raw water quality assessments over 230 sampling points across six catchment areas. The PAKAR team also maintains 15 river monitoring stations (“RMS”) along selected rivers which are used to monitor water quality trends and act as an early warning system in detecting potential pollution incidents. Additionally, PAKAR has dedicated Unmanned Aerial Vehicles (“UAV”) that are used to conduct catchment and industrial area profiling to identify sources of discharge and land use that may lead to water pollution.

PAKAR investigates pollution complaints from the public, social media, and authorities. Through the investigation conducted, Air Selangor works with authorities involving litigation against alleged polluters. Apart from this, the PAKAR team works hand in hand with LUAS and other relevant agencies through the Ops Sumer Air Project for fast joint action and communication among agencies during pollution incidents, and actively participates in the review of Environmental Impact Assessments (“EIA”) and Terms of Reference (“TOR”) for projects surrounding the rivers.



PAKAR surveillance scope:

230 sampling points.

6 catchment areas.

15 river monitoring stations.

Facilitating Asset Management

To ensure effective service delivery throughout the company's operations, asset and infrastructure maintenance is important. Frequent failure of these assets will be detrimental, affecting production capacity, the distribution network, and ultimately customers. Therefore, several initiatives under SPI 2: Improvement to Asset Reliability and Resilience has been implemented as part of effective asset management.

Air Selangor's growing asset inventory is monitored throughout its entire life cycle, from acquisition to asset retirement through the internal Total Asset Management System ("TAMS"). A total of 97,095 assets have been registered in TAMS with an estimated asset growth to 107,048 by 2023. 100% of registered assets have been assessed with an overall Asset Condition Score of 2.00 (Good Rating), an improvement from the 2020 score of 2.14.

In addition, Air Selangor utilises a Work and Asset Management System ("WAMS") to efficiently schedule, record, and evaluate assets maintenance works for both Preventive Maintenance ("PM") and Corrective Maintenance ("CM"). As of 2021, WAMS achieved 58% overall user utilisation. The asset management system has been streamlined through ISO 55001 accreditation. Air Selangor's Production Department received its ISO 55001 accreditation at the end of December 2021, with a target to achieve certification for the Distribution Department by 2022.

Further embedding digitalisation and innovation in Air Selangor's operations, the TAMS Mobile RFID Project was initiated. In 2021, an additional 8,829 assets were tagged, bringing the total number of assets to 24,331 tagged under this project. Air Selangor is planning to migrate RFID TAMS to Air Selangor OMA. With this migration, the function of OMA will be expanded further to a total of seven modules namely, Asset Details, Operational Reading, Work Request, Asset Registration, Work Order and Work Activity, Maintenance Management, and Energy Management.

As Air Selangor continuously seek innovative solutions, the Company has established the Product and Technology Working Committee under the Operational Services Department to research, review and recommend new products and technologies for the approval of the Air Selangor Technical Policy Committee chaired by the Head of Operations.

Asset Criticality Rating Guideline

In 2021, the Asset Management Section has developed an Asset Criticality Rating ("ACR") Guideline. The asset criticality analysis provides a rating of an asset, based on identified parameters that reflect the potential risk of asset failures. The rating is determined using a quantitative formula to ensure that asset reliability is approached from a risk perspective. Once an asset rating is determined, maintenance work can be prioritised, and the risk associated with each asset can be effectively mitigated. This methodology has been implemented across Air Selangor Production's assets beginning of 2021 and is planned to be expanded across all other assets registered in TAMS by 2023.



Air Selangor's growing asset inventory is monitored throughout its entire life cycle, from acquisition to asset retirement through the internal Total Asset Management System ("TAMS"). A total of 97,095 assets have been registered in TAMS with an estimated asset growth to 107,048 by 2023. 100% of registered assets have been assessed with an overall Asset Condition Score of 2.00 (Good Rating), an improvement from the 2020 score of 2.14.



Partnering with Our Suppliers

Supplying treated water to over 8.4 million people requires an enormous operation, including support from vendors, contactors, consultants and suppliers that provide services and products. In 2021, Air Selangor engaged a total of 3,471 active vendors, with 99% of procurement spending directed towards supporting the local economy.

Vendor performance is monitored via performance assessments upon completion of their contracts, services, work, or delivery of supplies to ensure they meet service deliverables. The performance reviews for our panel consultants and contractors 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 with health, safety, and environmental requirements.

In 2021, Air Selangor organised an award ceremony to recognise top-performing strategic panel consultants and contractors in 2019/2020 who were assessed according to specific evaluation

criteria. Twenty vendors were recognised for their excellent services. These awards serve to promote a high-performance culture amongst our vendors and also improve and strengthen business relationships.

CEO engagement sessions with vendors were also organised to provide a platform to discuss issues and challenges effectively. Air Selangor also held various sharing sessions throughout the year to provide more guidance to vendors, particularly regarding issues on business processes, policies, and guidelines.

Engagement with

3,471 active vendors.

With

99% local procurement.

A total of four engagement events were held through physical, virtual, and hybrid methods this year on the following:

1 Engagement with Tenderers of Rasau Water Supply Scheme and Tender Briefing



2 Vendor Engagement with Emergency Pipe Panel Contractors



3 Vendor Engagement with Panel Consultants



4 Air Selangor and Sustainability



Performance Data

DESCRIPTION	2018	2019	2020	2021
OPERATIONS				
Total number of accounts	2,334,224	2,412,735	2,491,888	2,557,248
Number of accounts by type				
• Domestic	2,014,227	2,091,711	2,166,925	2,230,180
• Commercial	306,496	307,401	311,237	313,256
• Others	13,501	13,623	13,726	13,812
Total number of consumers	8,056,908	8,366,844	8,400,500 ¹	8,418,100
Total number of dams	7	7	8 ^{2,3}	8 ^{2,3}
Total number of WTPs	33	34	34	34 ⁴
Average water demand (MLD)	4,857	4,932	4,965	4,991
Total number of pump houses	653	731	732	728
Total number of service reservoirs	1,574	1,601	1,610	1,599
Total number of HORAS	-	-	1	1
Total number of ORS	2	2	3	3
Total length of pipes (mapped using GIS) (km)	28,641	29,044	29,540	30,008
Water reserve margin (%)	5.87	10.98	11.87	13.63
Average water quality compliance (%)	99.69	99.80	99.74	99.80
Average NRW rate (m ³ method) (%)	31.69	29.66	28.53	27.93
Pipe burst index (no./100 km/year)	13.52	9.61	8.87	6.37
Total number of pipe leak cases	104,033	108,759	124,614	135,413
Length of pipes laid per year (km)	113.89	259.85	85.60	96.80
Total number of pipe cleaning works	6,511	7,960	8,853	9,027
Total number of reservoir cleaning works	106	153	122	265
Total number of active water quality sampling stations	1,121	1,121	1,117	1,122
Overall Asset Condition Score	-	2.24	2.14	2.00

¹ The number of consumers was revised according to the published information by the Department of Statistics Malaysia for the year 2020.

² Kelau Dam was handed over to Air Selangor in 2020.

³ Seven dams are under the supervision of Air Selangor, whereas Batu Dam is under the supervision of the Department of Irrigation and Drainage.

⁴ Thirty-one WTPs are operated by Air Selangor, and three WTPs are under appointed parties.



Reducing Environmental Impact

Air Selangor places a high priority on ensuring that it operates responsibly and continuously strives towards achieving SPI 7: Environmental Stewardship – Waste Zero Environment. The process of abstracting, treating, and distributing clean water utilises various natural resources such as raw water, energy, and chemicals. These processes result in water treatment residuals and carbon emissions among other environmental impacts. Air Selangor's offices also utilise energy and produce waste from daily operations. As such, it is important for Air Selangor to comply with existing environmental regulations and to also identify current gaps throughout the value chain to further minimise its impact on the environment. By monitoring related activities and performing regular surveillance to prevent environmental pollution, Air Selangor stays guided by its Health Safety and Environment Policy. Air Selangor has also been certified with the ISO 14001:2015 Environmental Management System.

Conserving Our Water Resources

Water is an essential resource for all living beings, but water scarcity has become increasingly common worldwide, and this issue has been earmarked as one of the world's most important environmental concerns. The demand for clean water supply has increased rapidly in tandem with the growth in the human population. Increasing urbanisation and the development of commercial and industrial areas also increase the risk of raw water pollution which can impact the availability of clean water sources.

Moreover, appropriate water pricing is crucial to encourage prudent use of this precious resource. However, the water tariff for Selangor has not been revised since 2006 despite the increase in the operational cost to produce treated water. This low price placed on clean water distorts the actual value of clean water where end users are more likely to over utilise this resource and develop wasteful habits.

To change public perception, several campaigns were initiated to increase awareness of the importance and need to ensure water security and water conservation. In conserving water produced, Air Selangor also invested heavily to continuously reduce the volume of treated water loss or NRW through in-house programmes.

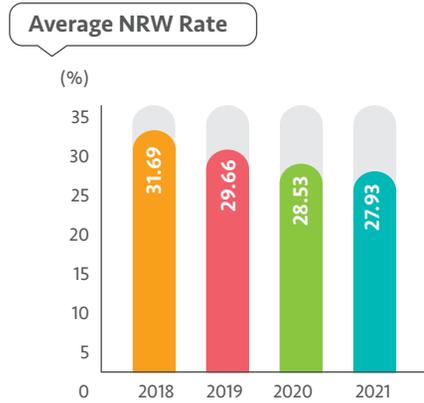
Non-Revenue Water

Precious water resources and the energy and chemicals used to treat and distribute clean water are wasted when the treated water is lost before reaching customers' premises. NRW is an important matter to manage for any water operator, and in the case of Air Selangor, NRW Reduction has been prioritised as an SPI where the targets are to achieve NRW of 25% by 2025, 20% by 2037, and 15% by 2049. In 2021, Air Selangor successfully reduced the NRW rate to 27.93% exceeding SPAN's target of 28.00%.

In 2021, the NRW reduction programme comprising the Physical Loss Reduction Programme and Commercial Loss Reduction Programme continued to be implemented by the Distribution Department. Under the Physical Loss Reduction Programme, the Active Leak Detection programme identified 99,523 leaks through the fieldwork undertaken by Leak Inspectors and Leak Specialists. Air Selangor also relied on 127 pressure transient sensors installed on strategic trunk mains to assist in detecting damaging transient and leaks. Supported by pipe replacement projects, Air Selangor achieved total savings of 160.80 MLD from the Physical Loss Reduction Programme. For the Commercial Loss Reduction Programme, Air Selangor successfully saved 31.70 MLD through meter replacement and meter relocation works.

NRW Savings in 2021 is **192.50 MLD**

This is equivalent to filling up 77 Olympic-sized swimming pools daily. The NRW savings is equivalent to an estimated 4.78 tCO₂ emissions avoided daily.



Water Conservation Programme

Apart from ensuring a sustainable water supply, reducing water demand is an important factor for Air Selangor to ensure the ability to continuously provide clean water into the future. By managing water demand, Air Selangor would be able to provide more customers without having to produce more water and it also reduces the additional investment needed to construct new water producing infrastructure. The money saved can potentially be directed to other asset improvement and maintenance initiatives, which ultimately ensures that all customers receives the best quality of water with minimal disruption. As a water utility company, Air Selangor supports the target average daily water consumption by the Ministry of Environment and Water which is 180 litres per capita per day (“LCD”) by 2025.

In 2021, the average daily water consumption per capita in Kuala Lumpur, Selangor, and Putrajaya stood at 287 litres. The average daily consumption per capita in 2021 has increased by 10.81% from 259 LCD in 2020 recorded for Kuala Lumpur, Selangor, and Putrajaya, and 59.44% higher than the target of 180 LCD set by the government. This increase in average consumption was also attributed to the COVID-19 pandemic where more people stayed at home. The higher-than-average water consumption of our customers is a trend that Air Selangor hopes to reverse to ensure the sustainability of future water resources.

Water Conservation Engagement Programme

The Water Conservation Unit partners with various government agencies, regulators, local authorities, and NGOs in educating the public on the importance of efficient water use and how these efforts contribute toward water supply sustainability.

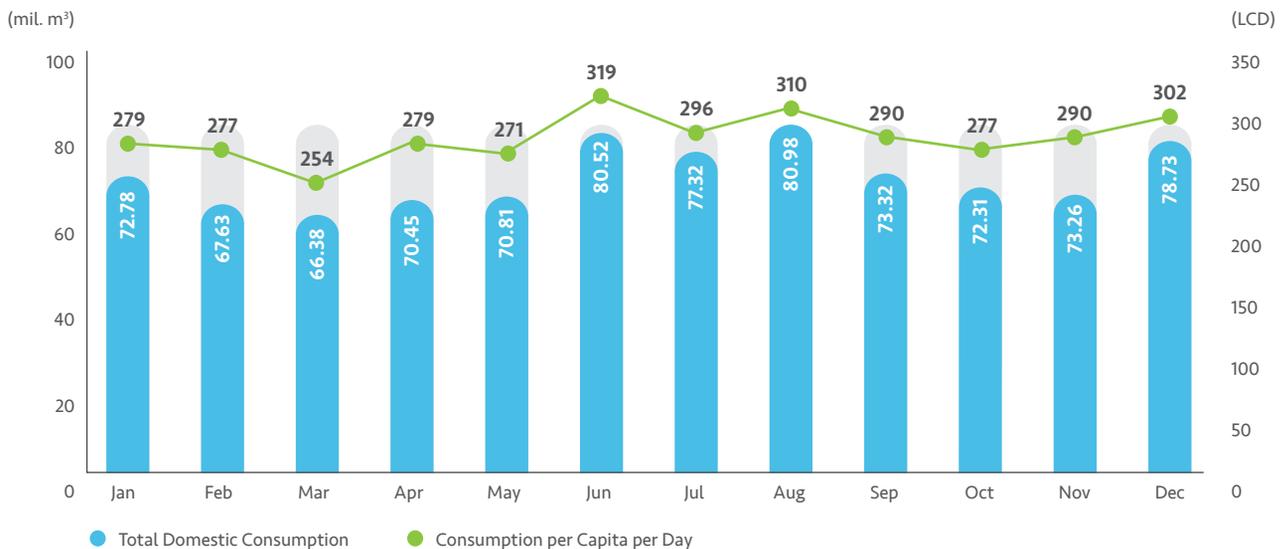
In 2021, some of the initiatives carried out included two water conservation awareness programmes with ADUN, a webinar in collaboration with the Global Environment Center (“GEC”) during World Water Day, and an active participant in Sepang and Putrajaya Low Carbon City Initiatives. Air Selangor also participated in an online engagement programme with the local community of Desa Pinggiran Putra and Zone Sierra Putri and conducted talks on “*Kempen Jimat Air, Misi Didik Pengguna*” for the Selangor State Exco of Consumer Affairs & Halal Industry.

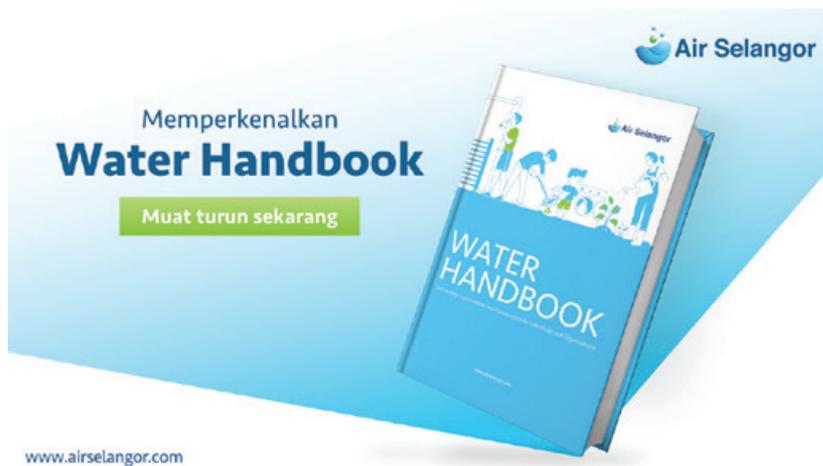
Apart from partnering with government agencies and NGOs, water conservation initiatives were expanded to include religious institutions, where water conservation talks were held at the following mosques:

- i. Masjid Al Falah USJ 9, Subang Jaya
- ii. Masjid Jamek Sultan Hisyamuddin, Sabak Bernam
- iii. Surau As Sajdin, Taman Selat Damai, Klang
- iv. Masjid Tuanku Mizan Zainal Abidin, Putrajaya

During all in-person engagement events, water thimble packs are distributed, and demonstrations are held for participants to learn how to install these water thimbles in their own homes.

Total Domestic Consumption and Consumption per Capita per Day





Collaboration with Universiti Malaya

On 2 April 2021, Air Selangor signed a Memorandum of Understanding (“MOU”) with Universiti Malaya to establish mutually beneficial collaborations benefitting both parties, including research projects on river management and water pollution, and water conservation and river restoration programmes, as well as digital exhibitions.

Through this collaboration, Air Selangor aimed to provide bilateral support in advocating for sustainable water education and practices. This collaboration also culminated in the publication of the ‘Air Selangor Water Handbook’ on 13 October to educate consumers on the importance of sustainable consumption and conservation. Moving forward, there are plans to jointly organise activities for public awareness.

Water Handbook and Water Conservation Master Classes

The Water Handbook published by Air Selangor in collaboration with Universiti Malaya focuses on three main pillars, namely Sustain, Conserve and Restore to emphasise the efforts to be adopted by consumers in using water sustainably. The Water Handbook can be accessed through <http://www.airselangor.com/about-us/sustainability/waterhandbook/>.

To reach a wider audience and to provide practical engagement with the public, Air Selangor introduced the Hydro Squad featuring Nabil Ahmad, Aishah Sinclair, and Arwind Kumar to educate the public on the importance of using water carefully. The Hydro Squad helped to promote the Water Handbook through monthly Master Classes by providing practical examples, know-how, and checklists on how individuals can play their part, as well as sharing projects that they can complete with their family and friends.

A total of six Master Classes with the Hydro Squad featuring Air Selangor’s subject matter experts were published on Air Selangor’s social media accounts.





Protecting Our Raw Water Sources

The monitoring and protection of the state’s raw water sources fall under the jurisdiction of LUAS. Since Air Selangor’s business operations are highly dependent on a continuous supply of raw water, it has also taken the initiative to safeguard rivers from the risk of pollution. One initiative that Air Selangor continued to implement in 2021 was the River Care programme to instil greater importance in ensuring the cleanliness of the river among local communities who live nearby.

On World River Day 2021 on 26 September 2021, Air Selangor collaborated with FoRM to organise a recreational plogging activity at Denai UKM, Bangi, involving staff from both parties. Other than the plogging activity, Air Selangor presented a donation of RM50,000 collected from the proceeds of the Virtual Hydro Run and a woodchipper machine worth RM13,000 to FoRM in support of their river conservation efforts. Throughout 2021, four river care programmes were embarked on with FoRM to clean up the rivers within the vicinity of Taman Melawati, Kuang, and Rincing Hilir.



Smart Water Meter

Air Selangor is moving forward with its efforts at digitalisation with pilot projects on smart water meters in selected areas. The Advanced Metering Infrastructure (“AMI”) smart water meter pilot project in the Sepang Region started in 2019 with 8,041 meters using NB-IoT communication connectivity technology. To date, another pilot project on smart water meters using Radio Frequency (“RF”) communication connectivity is being tested in Kuala Lumpur, Gombak, and Petaling Region.

Air Selangor Internal Water Consumption

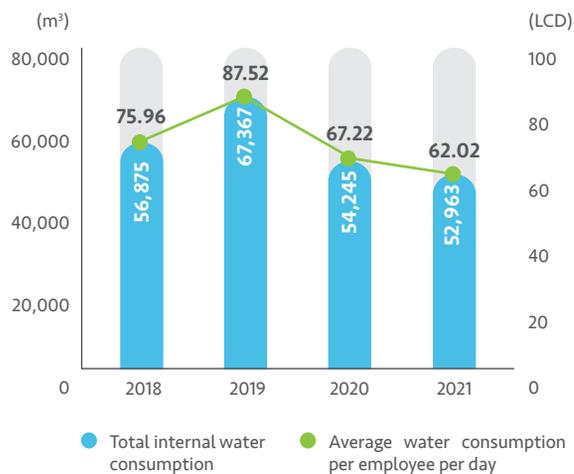
Air Selangor promotes water conservation and efficient use of water throughout its premises. The Company has facilities scattered across 10 regions, consisting of offices and service counters where employees spend a minimum of nine hours daily. To reduce internal water consumption, water thimbles have been installed at the taps on the premises and educational signages have been put up to remind employees and to create a habit and culture of water conservation.

In 2021, the average water consumption stood at 62.02 LCD, a decrease of 7.74% as compared to 66.72 LCD in 2020. The reduction can be attributed to the flexible working arrangement implemented for employees during the various phases of the COVID-19 pandemic.

Managing Energy Use

Air Selangor’s operations utilise significant amounts of energy throughout the treatment processes and distribution network to produce and distribute treated water. These facilities, along with the offices run primarily on purchased grid electricity with diesel fuel generators serving as backup power in case of emergency for selected facilities, whilst operational vehicles use petrol and diesel fuels. Considering the expected rise in energy costs, and to support Malaysia’s commitment to becoming a carbon-neutral nation, Air Selangor is actively seeking opportunities and improving internal efficiencies to manage energy use and reduce its carbon emissions.

Total Internal Water Consumption and Average Water Consumption per Employee per Day



Feature Story:

Energy Savings Pilot Project



Treated water distribution operations utilise up to 22% of total energy consumption in Air Selangor. By optimising the operations of pumps and motors, energy consumption can be reduced while ensuring efficient and continuous delivery of treated water to customers.

Ideally, an energy-efficient pump should be operating according to water demand which varies depending on multiple factors such as weather, the intensity of commercial activities, consumers' daily activities, and festive seasons, among others. To ensure pumps operate based on demand, devices such as Variable Speed Drives ("VSD") can be installed on the pump motor to control the speed and torque of a motor. By reducing the speed of the motor during low demand periods, less electrical energy is needed to power the pump. Some of the Air Selangor pump houses are already equipped with VSD to cater to this varied demand.

However, from energy audits conducted, it was discovered that there were instances where existing VSDs were not optimised to the water demand of the area. Therefore, Air Selangor initiated its first pilot project on the optimisation of existing VSD at Panca Rasmi Pump House, Hulu Selangor. The pump house is subscribed to Tenaga Nasional Berhad ("TNB") E2 tariff, with different charges for on-peak and off-peak periods. By optimising the VSD, the pump operations during off-peak periods increased, reducing the maximum demand during the peak period, therefore reducing the overall cost of electricity for this location. From this project, a 4.64% energy cost reduction is achieved from the baseline, equivalent to RM9,334.35 in monthly cost savings. Another five sites have been identified for the expansion of this project in the future.

Another energy savings opportunity identified for pump houses is the elimination of throttling valves. The throttling valve reduces the volume of water that bypasses the pipe without reducing energy use. To counter this issue, Demand Control Drives were installed to control the flow rate in the pipelines. This pilot project was implemented at Taman Sutera Pump House, Hulu Langat, and resulted in a 24% reduction in energy use, equivalent to 8,046 kWh and RM3,548.29 in monthly cost savings. This initiative will be implemented across 15 other identified sites.

Fleet Energy Management

The company’s fleet vehicles serve an important purpose in day-to-day operations as many technicians utilise them for site work and meter reading. However, these vehicles especially the water tankers are particularly important during service disruptions as these tankers serve to distribute clean water to affected areas. Air Selangor recognises that the usage of fossil-based fuels contributes to the overall carbon emissions generated by the Company and has taken several measures to improve efficiency. The Fleet Management Unit actively monitors individual vehicle fuel consumption and distance travelled using an automated fuel consumption report. Additionally, global positioning system (“GPS”) trackers are installed in every diesel-engine vehicle to monitor fuel efficiency.

Facility Energy Management

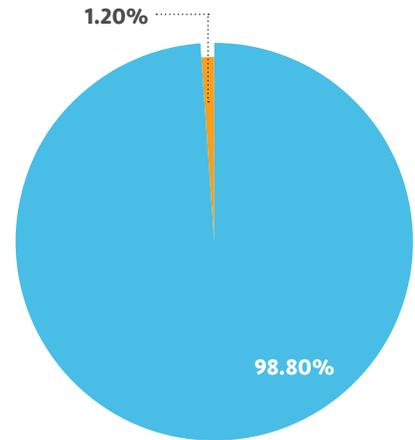
Air Selangor established its Energy Management Policy and Energy Management Objectives in February 2021 to formalise and guide internal initiatives towards energy reduction in its facilities. Throughout the year, Air Selangor continued to expand energy management initiatives, particularly tariff corrections and power factor rectification across all its facilities. Other than the ongoing monitoring and audit conducted by the Energy Management Unit, small electrical fittings and appliances such as lighting and air-conditioning units were also retrofitted to higher efficiency units.

This year, Air Selangor further embarked on two energy savings pilot projects (refer to page 81). Inefficient pumps and motors at two pump houses were also replaced. These continuous efforts at improving energy efficiency since 2021 have resulted in accumulated cost savings of RM18.16 million, equivalent to an 8.27% reduction in energy management cost compared to the 2019 baseline.

Energy Use

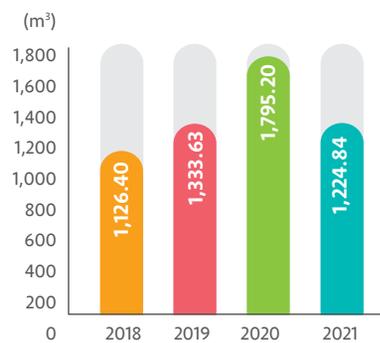
Overall, 98.80% of the energy used originated from secondary energy (purchased electricity), and the remaining is attributed to primary energy (fuels). Total energy use slightly increased by 0.98% from the previous year. This is proportional to the growth in the number of customer accounts and the increase in average water demand. Energy intensity per produced volume of water in 2021 increased from the previous year at 1.979 MJ/m³. Whereas energy intensity per billed water volume is gradually decreasing year on year, with a 0.75% decrease from the previous year at 2.738 MJ/m³. The improvement in energy intensity per billed water volume is a result of effective NRW initiatives that have increased the volume of our billed water.

Breakdown of Types of Energy Use



● Primary (Fuels) ● Secondary (Electricity)

Total Fuel Use

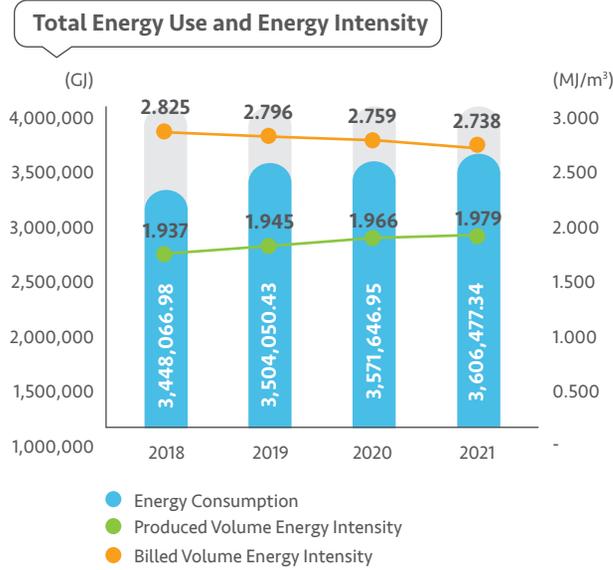


¹ Total Fuel Use for 2020 has been revised to include previously unaccounted accounts.

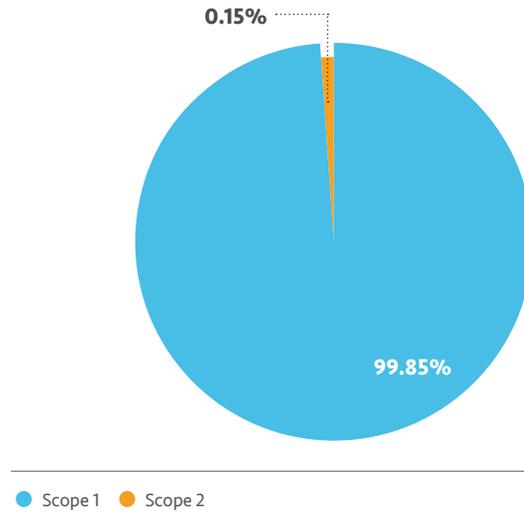
Total Electricity Use



¹ Total electricity use for 2019 and 2020 has been revised to include previously unaccounted accounts.



Breakdown of Carbon Emissions by Scope



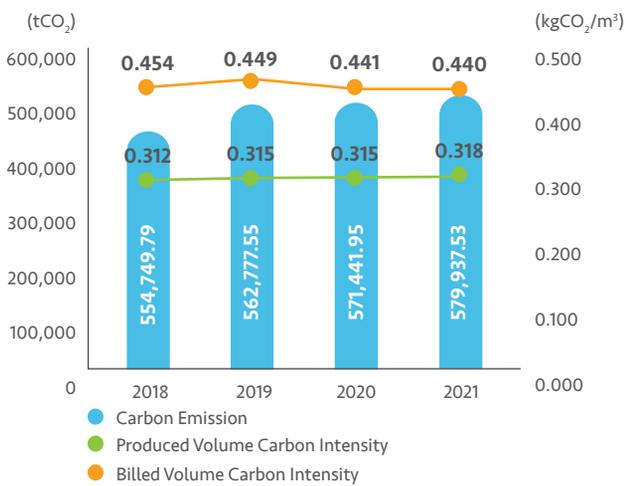
Carbon Emissions

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

Air Selangor’s Scope 1 carbon emissions constituted only 0.15% of total carbon emissions whereas most of the carbon emissions were categorised under Scope 2 or purchased electricity. Overall carbon emissions increased by 1.48% compared to 2020. The carbon emission intensity for produced water volume is at 0.318 kg CO₂/m³, an increase of 1.17% compared to 2020. These increases are proportional to the increase in water demand throughout the year. The emission intensity for billed water volume has reduced by 0.25% from the previous year. This is a result of the effective NRW initiatives that increased the volume of water received by the customer.

Moving forward, Air Selangor will be exploring opportunities in renewable energy generation to reduce its greenhouse emissions and to identify a long-term net-zero target. The Company has completed a feasibility assessment to determine the internal capacity of renewable energy generation and will be planning on installing solar photovoltaic panels at its facilities.

Total Carbon Emissions and Carbon Emissions Intensity



1. The electricity carbon emission factor for Peninsular Malaysia at 0.585 kgCO₂/kWh is based on the 2017 CDM Electricity Baseline for Malaysia report, Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC).
2. The carbon emission factors for diesel and petrol are 0.0189 kgCO₂/MJ and 0.0202 kgCO₂/MJ respectively, based on Malaysia’s First Biennial Update Report (“BUR”) submitted to the United Nations Framework Convention on Climate Change in 2015.
3. The carbon emissions for 2019 and 2020 have been restated based on the revised fuel and electricity use.

Monitoring Air Quality

Air Selangor has equipment such as generators and air pollution control system across 14 WTPs, 8 regional premises, and Headquarters, which are subjected to the Environmental Quality (Clean Air) Regulations 2014 (“CAR 2014”). Air quality monitoring is conducted annually by a certified third party to ensure regulatory compliance, and in 2021, no violations were recorded.

Managing Solid Waste

Air Selangor’s main challenge in managing solid waste from its operations is the high volume of water treatment residuals (“residuals”) generated as a by-product of the water treatment process. These residuals are categorised as Scheduled Waste and require special treatment and disposal methods. Governed by SPI 7: Environmental Stewardship - Waste Zero Environment, Air Selangor is identifying innovative solutions and implementing proactive measures to reduce and repurpose these residuals. The HSE Section have formalised a Waste Management Procedure for waste generated on the premises including domestic and scheduled waste, ensuring the waste is properly managed to minimise the risk of land, air and water contamination per the Environmental Quality Act and Regulations.

Residuals Management

Water treatment residuals management is subjected to the Environmental Quality (Scheduled Wastes) Regulations 2005. Thirty-two of Air Selangor’s WTPs employ conventional water treatment processes where suspended particles are coagulated using aluminium sulphate or “alum”, forming flocs. These flocs are removed during the water treatment process and are channelled through a treatment process in the Residual Treatment Facility (“RTF”), where it is thickened and dewatered.

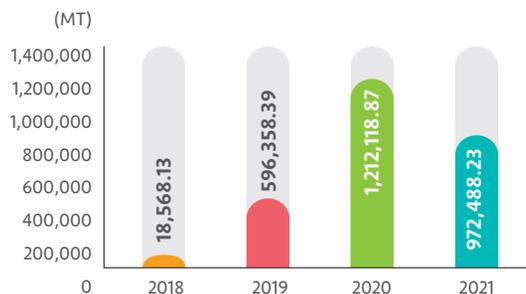
Several dewatering technologies are employed at Air Selangor, including centrifuge decanter, lagoons, drying beds, and geo-tube to reduce the volume of residuals for final disposal. The solid residual is classified as scheduled waste (SW 204) and is collected and disposed of at the approved landfill area. Thirty of the residuals generating WTPs are equipped with RTF and the remaining two WTPs are in the process of having their RTFs constructed. In 2021, a total of 972,488.23 MT of residuals was generated. Air Selangor’s two remaining WTPs that are equipped with advanced ultrafiltration membrane systems do not generate residuals.

The amount of residuals generated is dependent on the quality of raw water where the higher the level of turbidity of raw water, the higher the volume of residuals generated. Various factors influence the turbidity of raw water including rapid land clearing, surface erosion, and the volume of sand, silt and organic matter that flows into the river. However, the significant increase in the amount of residuals generated from 2018 to 2019

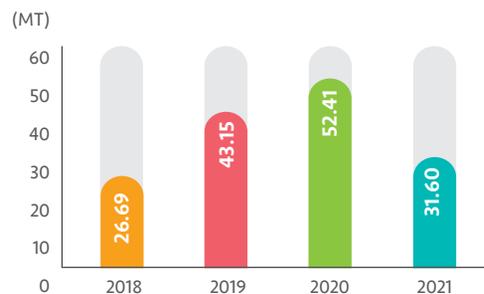
onwards is due to desludging works at SSP2 residual lagoon and the activation of RTFs in WTPs upon completion of the merger exercise of the State’s water industry. This is to reduce non-compliance of untreated effluent and to manage residuals as per requirement under the Environmental Quality (Scheduled Waste) Regulations 2005.

Currently, SPAN and DOE are in the process of declassifying water treatment residuals from the scheduled waste category (SW 204). Therefore, as part of efforts to identify solutions to manage its residuals, Air Selangor appointed Forest Research Institute Malaysia (“FRIM”) to investigate the properties of the residuals generated by the WTPs for potential reuse in agriculture activities and as a material for land reclamation. Such solutions have already been implemented in other countries and Air Selangor is assessing if a similar approach can be taken locally to divert the residuals from the landfill. Landfilling of waste utilises precious resources such as land and energy where the Company aims to achieve a Waste-Zero Environment.

Total Residuals (SW204) Generated



Total Amount of Other Scheduled Waste Generated



Domestic Waste

Although most of the waste generated by Air Selangor comprises residuals, the Company recognises that it is also important to minimise the amount of domestic waste and other scheduled waste generated on its premises. Through the Waste Management Procedure, these types of waste are managed per the Environmental Quality Act and Regulations. The HSE team organised the collection of recyclables throughout the year. Additionally, a seven-day Zero Waste challenge for employees was held in collaboration with Zero Waste Malaysia from 10 to 16 October 2021 to encourage them to build a sustainable lifestyle not just at the office but also at home.

Feature Story:

Recycle for Life Campaign

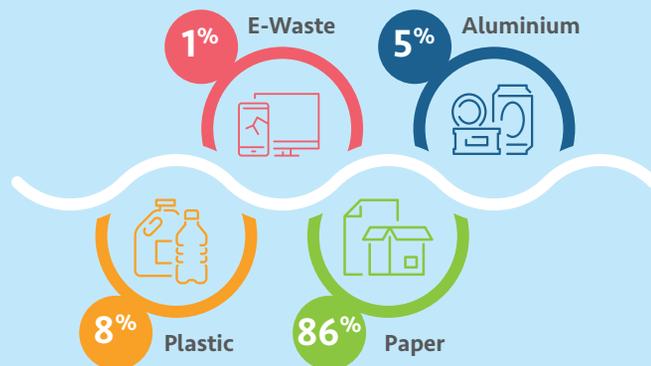


In conjunction with National Recycling Day on 11 November 2021, Air Selangor officially launched the Air Selangor ‘Recycle for Life’ Campaign. This campaign is a continuation of last year’s collaboration with Cenviro to collect recyclables from the offices and facilities.

The Air Selangor ‘Recycle for Life’ programme aims to divert recyclable waste from being landfilled and to encourage greater awareness and practice of recycling among employees. First initiated in 2020, the HSE team organises a monthly recycling collection drive where employees can send their recyclables in exchange for rewards. Throughout the year, a total of 15 collection cycles were initiated, resulting in a total of 11,027 kg of recyclables collected.

The Company expanded its recycling initiative to further collaborate with Life Line Clothing Malaysia for the collection of fabrics and Oillax for the collection of used cooking oil.

To further encourage participation from all employees, departments that collected the most recyclables received rewards. Through this campaign, Air Selangor aims to create a more sustainable-centric culture at the workplace as part of its efforts to further minimise the amount of waste generated on its premises and reduce the amount of waste sent to landfills.



Non-Compliance Incidences

Air Selangor is working towards achieving full compliance with all three applicable environmental regulations, namely Environmental Quality (Clean Air) Regulations 2014, Environmental Quality (Scheduled Waste) Regulations 2005, and Environmental Quality (Industrial Effluent) Regulations 2009, through the adoption of the DOE GSR. In 2021, Air Selangor achieved 84.32% compliance with the DOE GSR for its WTPs and 65.73% compliance for its Distribution activities. The compliance for Distribution activities is low as initiatives towards ensuring 'readiness of scheduled waste store facility' and 'required competent person', are still in progress.

In terms of effluent management, 21 WTPs are required to comply with Standard A and the remaining 13 with Standard B of the Environmental Quality (Industrial Effluent) Regulations 2009. In 2021, Air Selangor recorded 134 violations under the Environmental Quality (Industrial Effluents) Regulations 2009. The violations were detected through in-house effluent samplings and mainly due to insufficient capacity of the existing process units such as functional tanks at some RTFs. Under Air Selangor's resolutions towards full Environmental Quality compliance, the Company is working with DOE to achieve a Zero Discharge target by 2024 which will include the upgrading and rehabilitation works of existing RTFs with plans to recycle effluent back into the WTP thus ensuring zero violations in the future. Additionally, Air Selangor has started construction of a new RTF at Sg Sireh and Sg Batu WTPs.

No violations were recorded under the Environmental Quality (Scheduled Waste) Regulations 2005 and Environmental Quality (Clean Air) Regulations 2014. There were also zero environmental spillage incidences and zero notices of non-compliance received from DOE.

In 2021, Air Selangor recorded zero notices, compounds, or fines for non-compliance with environmental regulations.



Managing climate change risk is a critical aspect for Air Selangor as this could potentially have significant impacts on the ability to ensure a sustainable water supply.



Climate Change – December Flood Incident

On 16 December 2021, Peninsular Malaysia experienced heavy rain over three days including in the Klang Valley. The rainfall recorded on 18 December 2021 exceeded the monthly average rainfall for Peninsular Malaysia for December alone and led to high water levels in the rivers and dams in Selangor. Air Selangor pre-activated its ERP in anticipating disruption to its water supply services due to potential flooding. On 19 December, all eight of the dams were at 100% capacity, and four WTPs which are Salak Tinggi, Cheras Mile 11, Semenyih 2 and Langat 2 were fully shut down due to choked raw water intake, submerged pump houses and TNB power cuts.

Two other WTPs namely Bukit Tampoi and Sg Langat were operating at 40-80% of normal production due to submerged treated water pump houses and high turbidity of raw water. Langat 2 WTP was not flooded but was forced to shut down



due to a TNB power cut at Karak that supplies electricity to Semantan Intake, whereas Sg Serai, Sg Lolo, and Sg Pangsoon WTPs were forced to shut down due to high raw water turbidity.

Apart from the flooding, other assets at Air Selangor's WTPs, distribution pipelines, pump houses and river monitoring stations were damaged in the flood, costing an estimated loss of RM12 million. Despite severe damage and inoperability to some of the assets, customers remained a top priority where the ERP was activated from 19 December until 24 December 2021. Air Selangor deployed 81 tankers and set up static water tanks, and water filling stations and distributed more than 9,000 drinking water bottles to affected areas. An estimated 1,674,653 customers were affected by the flood.

Recognising the impact of floods on business operations, Air Selangor will be strengthening immediate mitigation plans to better prepare for future flood incidents. Air Selangor is



conducting a feasibility study to explore potential initiatives that can be implemented in bracing its business from the climate change impact.

Numerous reports and statements made by local scientists, environmental NGOs and government ministries claimed that the unusual rainfall was an example of one of the impacts arising from climate change. Apart from flooding, climate change can also lead to drought incidences as it impacts the natural water cycle. Managing climate change risk is a critical aspect for Air Selangor as this could potentially have significant impacts on the ability to ensure a sustainable water supply. Therefore, Air Selangor will be further examining the mid-and long-term potential impacts to its operations based on projected climate information and will be identifying the necessary mitigation measures to be put into place. The Company will be further disclosing the way it is managing climate risks and opportunities in future sustainability reports.

PERFORMANCE DATA

DESCRIPTION	2018	2019	2020	2021
ENVIRONMENTAL				
Average domestic water usage per capita (LCD)	233 ¹	232	259 ²	287
Total internal water use (m ³)	56,875	67,367	54,245	52,963
Average internal water usage per employee (LCD)	75.96	87.52	67.22	66.02
Total energy use (GJ)	3,448,066.98	3,504,050.43	3,571,646.95	3,606,477.34
Energy intensity (MJ/m ³)				
• Produced	1.937	1.945	1.966	1.979
• Billed	2.825	2.796	2.759	2.738
Total energy use from electricity (kWh)	946,973,306.42	960,433,004.36	974,685,947.74	989,883,948.48
Total energy use from fuel (MJ)	38,963,073.78	46,491,615.89	62,777,535.68	42,895,122.06
Total CO ₂ emissions (tCO ₂)	554,749.79	562,777.55	571,441.95	579,937.53
CO ₂ emissions intensity (kgCO ₂ /m ³)				
• Produced	0.312	0.312	0.315	0.318
• Billed	0.454	0.449	0.441	0.440
Total CO ₂ emissions (Scope 1) (tCO ₂)	770.41	924.24	1,250.67	855.42
Total CO ₂ emissions (Scope 2) (tCO ₂)	553,979.38	561,853.31	570,191.28	579,082.11
Total scheduled waste generated (SW204) (MT)	18,568.13	596,358.39	1,212,118.87	972,488.23
Total scheduled waste generated (Others) (MT)	26.69	43.15	52.41	31.60
Total amount of chemicals used for water treatment (MT)	112,569.36	116,015.06	115,297.58	64,070.33

¹ Data is obtained from Malaysia Water Industry Guide 2019.

² The 2020 figure for water consumption per capita was revised according to the published information on the estimated number of consumers by the Department of Statistics Malaysia for the year 2020.



Be Socially Responsible

89

Air Selangor, as the largest water operator in Malaysia, serves a critical role in improving the livelihoods of communities, preserving the ecosystems that are nurtured by water and water bodies, and recognises the importance of upholding social responsibility while serving its business purpose.

Air Selangor also recognises the importance of ensuring that its employees are skilled and future-ready to propel the Company towards achieving its business aspirations. Employees are expected to uphold the core values of Professionalism, Integrity, Honesty, Teamwork, and the Highest Standard of Services. Air Selangor believes this instils a sense of belonging, responsibility and commitment toward each employee's personal and professional development while contributing to the goal of sustainable water services for the customers and communities served.



Providing a Conducive Workplace

Air Selangor is committed to providing a conducive working environment for its employees that inclusive promotes productivity which ultimately generates positive returns for everyone. This effort to provide a conducive workplace aligns with SPI 6: Creating a Conducive Working Environment.

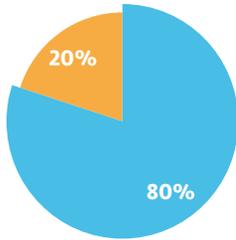
Additionally, Air Selangor supports employee diversity and inclusion, provides various training and development programmes for employees, organises frequent employee engagement programmes, provides free confidential sessions with counsellors (Employee Assistance Programme (“EAP”)), competitive perks and benefits, and most importantly, emphasises its employees’ health, safety, and security.

Diversity and Inclusion

Air Selangor values diversity and inclusivity among its employees, the Management, and at Board level. It believes that diverse backgrounds are important to promote innovation and creativity which ultimately will contribute to greater productivity and business efficiency. Therefore, the hiring processes at Air Selangor are fair, where employees are selected based on their experience and capabilities. The Company has also introduced 90-day maternity leave, children’s education loan benefits, healthcare insurance and preferred parking for pregnant employees at selected locations to attract more women to the workforce and retain existing female employees.

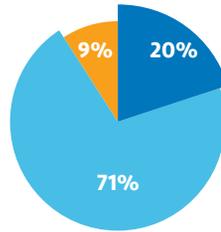
However, in the water industry, the proportion of male to female employees is generally higher, especially among non-executive staff, due to more labour-intensive and challenging work. This is also observed in Air Selangor where male employees make up 87% of non-executives. The Company recognise that efforts to improve diversity will require more long-term investments to materialise results which will be further explored.

Percentage of Employees by Gender



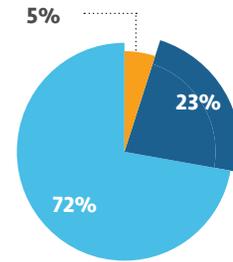
● Male ● Female

Percentage of Employees by Age Group



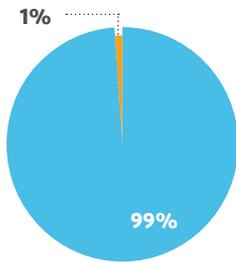
● <30 ● 30-49 ● 50 and above

Percentage of Employees by Employment Category



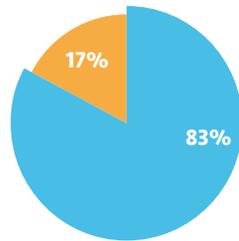
● Management ● Executive ● Non-Executive

Percentage of Employees by Employment Type



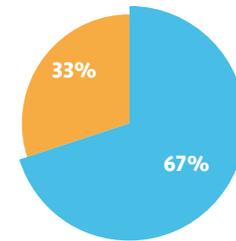
● Permanent ● Contract

Board Composition by Gender



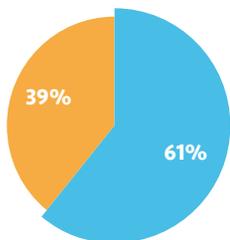
● Male ● Female

Management Composition by Gender



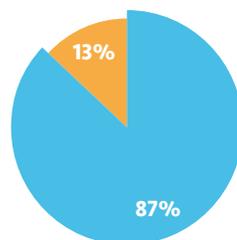
● Male ● Female

Executive Composition by Gender



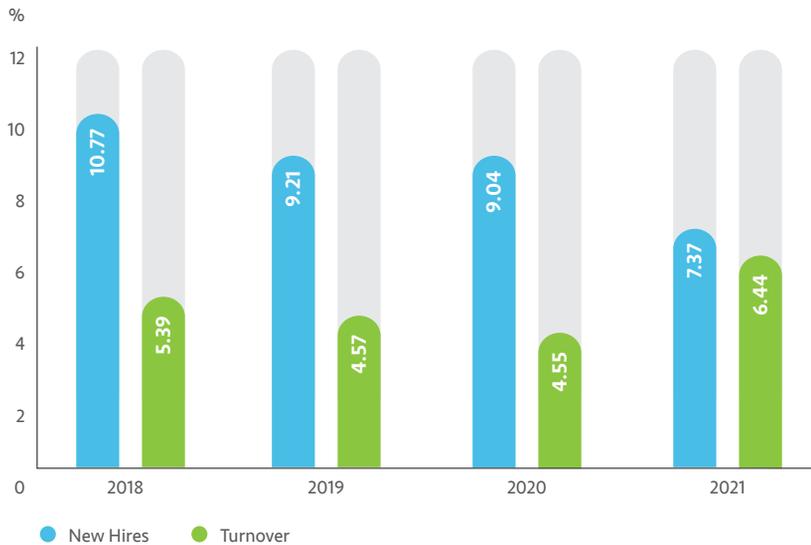
● Male ● Female

Non-Executive Composition by Gender



● Male ● Female

New Employee Hires Rates and Employee Turnover Rates



The hiring processes at Air Selangor are fair, where employees are selected based on their experience and capabilities. The Company has also introduced 90-day maternity leave, children’s education loan benefits, healthcare insurance and preferred parking for pregnant employees at selected locations to attract more women to the workforce and retain existing female employees.

Training and Development

At Air Selangor, employee knowledge and skills are continuously developed via various internal or external training programmes to ensure they are well-equipped and competent to perform their duties. The Air Selangor Learning Centre crafts annual training plans based on employees’ job scope requirements and inputs from all Heads of Departments. In 2021, Air Selangor spent RM3.3 million on employee training and development.

The training programmes comprised of competency-based training to upgrade employees’ skills, training on policies and procedures, and specific training on various health, safety, and environmental topics. In 2021, there was training held for employees who were nearing retirement to prepare them with knowledge on managing their impending retirement.

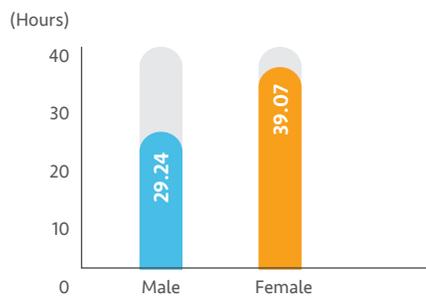


In addition, as part of efforts towards digitalisation and to ensure the continuity of learning despite the COVID-19 pandemic, e-Learning was introduced to all employees on a variety of topics. With e-Learning, physical contact could be minimised to ensure adherence to the government’s necessary standard operating procedures (“SOPs”) to curb the spread of COVID-19. More details on the implementation of these e-Learning modules can be found in the next section.

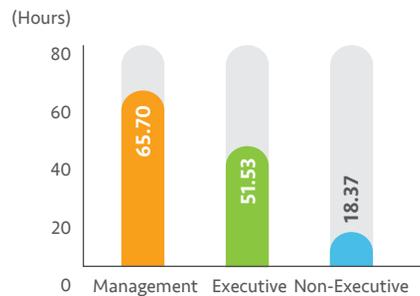
In 2021, a total of 202 training programmes were conducted with 121,723 total hours of learning recorded.



Average Training Hours per Employee by Gender



Average Training Hours per Employee by Employment Category





Launching of e-Learning

In 2021, e-Learning for employees was launched to offer opportunities for remote learning anytime, anywhere via any device connected to the internet. It also serves as an alternative to physical learning to encourage a continuous and inclusive learning culture among Air Selangor employees.

Some of the courses offered included anti-bribery and anti-corruption, improving communication skills, people management and others. In addition, a rewards scheme was introduced to encourage employee enrolment by recognising employees who achieved the most learning hours.

Air Selangor Learning Day was also introduced in October 2021. The objective is to empower each Department to initiate their learning activity within the team and enhance bonding and engagement, apart from fostering leadership among employees. Cash incentives were provided to motivate consistent participation for the initial period of six months with the goal of this activity becoming part of Air Selangor's culture.



Leadership Development Programme

Air Selangor's Leadership Development Programme continued in 2021 to develop the talent pool as part of efforts to manage the company's critical roles. The programme's second roll-out in 2021, also known as the Talent 2.0 Programme, continued to focus on enhancing the skills and knowledge of the identified talents through necessary training and development programmes.

Under the Talent 2.0 Programme, Air Selangor had earlier identified 53 potential employees who were then required to undergo assessments to qualify for the programme. Upon completion of the assessments, the Talent Council ("TC") identified 25 candidates for the Talent 2.0 Programme comprising three employees under the Senior Management Development Programme ("SMDP"), six under the Middle Management Development Programme ("MMDP"), 12 under the Line Management Development Programme ("LMDP"), and four under the Talent Associate Programme ("TAP").

In 2021, the talents had completed a pre-development assessment and two learning modules. A specific module for each development programme level was crafted from the pre-development assessment to close the identified competency gaps and ensure all talents receive a holistic learning experience. The Talent 2.0 Programme is ongoing and is expected to be completed in December 2022.

Water Expert Development Programme

Air Selangor's in-house team of subject-matter experts partnered with Universiti Kebangsaan Malaysia to develop a comprehensive Water Expert Development Programme ("WEDP") training module for its technical workforce.

The aim of this programme is to have a structured and comprehensive learning module that can meet the needs of work, specifically in technical fields and subsequently can be applied as a benchmark for technical training in the water supply industry in Malaysia.

The WEDP learning journey will take six months for participants to complete, involving approximately 140 employees from operations. Seventeen internal trainers have been identified to facilitate the learning. The programme will start in 2022.



Employee Certification and Competencies

Air Selangor is committed to producing skilled and competent employees in line with the requirements set by SPAN. In 2017, Air Selangor took the initiative to recognise existing competencies and skills of employees that received training previously. Although these employees received prior training, the level of competency and skills were different according to their respective field of work.

In an effort to drive the implementation and achievement of competency requirements in the water services industry in Malaysia, Air Selangor conducted a series of *Sijil Kemahiran Malaysia* ("SKM") certification programmes through the following methods:

- *Sistem Latihan Dual Nasional* ("SLDN") and
- *Pengiktirafan Pencapaian Terdahulu* ("PPT").

As of 31 December 2021, a total of 892 employees in Air Selangor were recognised as competent under this programme.

Additionally, 30 employees received full certification under the Certified Environmental Professional for four categories of competencies.

Feature Story:

Air Selangor’s Efforts in Assisting Employee Flood Victims

In December 2021, several states in Malaysia were affected by severe floods where Selangor was the most impacted state, with five districts namely, Gombak, Hulu Selangor, Petaling, Hulu Langat and Sepang recording unusually high water levels. The flooding displaced tens of thousands of families and caused water disruptions that lasted for a few days due to the shutdown of seven WTPs.

Apart from assisting the general population, Air Selangor needed to assist its employees, with hundreds suffering varying degrees of damage to their personal property due to the flood. This led to the initiation of the Air Selangor Prihatin Programme, which saw financial assistance provided by the Company to all 373 affected employees, where each received an initial contribution of RM500 for clean-up works and additional financial assistance up to RM2,000 for each of the 355 employees with damaged personal assets. The total contribution made amounted to RM802,800.

Assistance Provided to Air Selangor Employees

Type	Total Affected Employees			Total Assistance (RM)
	Head-quarters	Regional Offices	Total	
Special Assistance (RM500) (<i>Ops Cuci</i>) for employees affected by flood	84	289	373	186,500.00
Assistance for Damaged Assets (up to RM2,000) for employees suffering damaged assets	75	280	355	616,300.00
Grand Total (RM)				802,800.00

Assistance for the public who were affected by the flooding was also initiated through the *Bantuan Selangor Bangkit* programme, as announced by the Selangor State Government. As a result, Air Selangor waived the January 2022 water bill for all domestic account holders affected by the flood. The waiver was automatically given to eligible customers without requiring them to apply.

Ops Cuci
RM185,500

for

373 affected employees

Assistance for Damaged Assets
RM616,300

for

355 affected employees

Employee Engagement Programme

In Air Selangor, frequent communication and engagement are encouraged to ensure employee concerns are well addressed and resolved. Air Selangor provided various platforms between employees and Management over the year to further strengthen relationships and demonstrate appreciation. In 2021, the following employee engagement programmes were held:

1 Majlis Jasamu Dikenang for Retirees



2 Festive Cookies



3 Movie Day with CEO for Promoted Staff



4 AIR Care Prolonged Illness Staff Visit



5 Digital Devices for Children of B40 Staff



Air Selangor Fitness Centre

In November 2021, Air Selangor officially launched its Fitness Centre at Headquarters to encourage healthier lifestyles among employees. The Air Selangor Fitness Centre is equipped with gym equipment such as treadmills, exercise bikes, cross trainers, and weights among others.

The Fitness Centre is open to all employees during weekdays with three available slots. However, in ensuring adherence to social distancing requirements, only eight employees are allowed inside the Fitness Centre at any given time, and each employee can use the facility for a maximum of 45 minutes.



Malaysia Book of Records for ‘Largest Participation for a Virtual Patriotic Song Performance’ for the 64th National Day Celebration

In conjunction with Malaysia’s 64th National Day celebration, a total of 3,126 employees of Air Selangor participated in the virtual patriotic song performance where they sang ‘Tanggal 31 Ogos’ by the late Sudirman Haji Arshad.

As part of National Day Celebrations, Air Selangor also launched a video featuring 64 Malaysians reciting a poem by National Laureate, Dato’ Usman Awang, also known as Tongkat Warrant entitled ‘Tanah Air’ (Menjelang Kemerdekaan). The video included special appearances by the Selangor Menteri Besar, YAB Dato’ Seri Amirudin Shari; literary figure, Prof. Dr Lim Swee Tin; renowned director and actor, Sabri Yunus; national athletes, Shalin Zulkifli, Datuk Minarwan Nawawi, and Khalid Jamlus.

Participation by

3,126 employees

for record-breaking feat in conjunction with Malaysia’s 64th National Day Celebration.

Employee Benefits

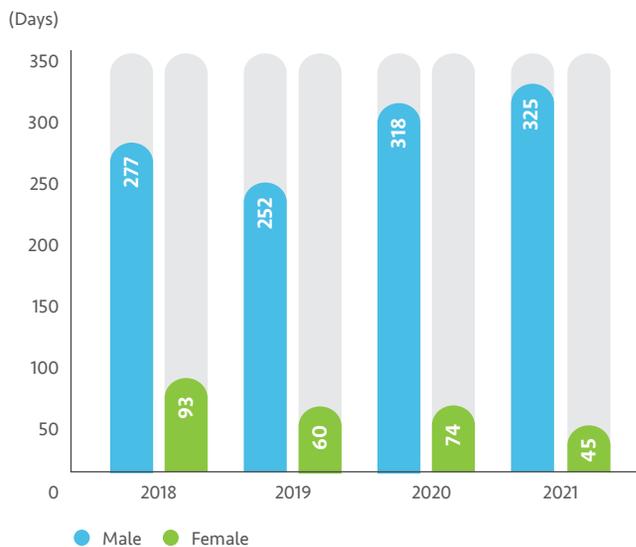
Air Selangor provides attractive perks and benefits beyond what has been stipulated in the Employment Act 1955, to ensure employee welfare and well-being are taken care of. The Company believes that an attractive benefits package will attract more talent to Air Selangor and serve to retain existing employees. In addition, a good working environment enables employees to unleash their full potential at work and boost their motivation and morale.

A list of benefits offered to Air Selangor employees includes:



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. As a result, Air Selangor successfully achieved a 100% retention rate among employees who took parental leave for the year.

Employee Counselling and *Rakan Prihatin*

The COVID-19 pandemic led to many conversations about the importance of mental health due to the various lockdowns imposed during the period. As such, Air Selangor appointed two certified counsellors and identified 20 employees to serve as *Rakan Prihatin* for the benefit of employees. These *Rakan Prihatin* consist of representatives from Headquarters and Human Resources business partners in the regions. This initiative aimed to provide support on mental well-being and counselling for Air Selangor staff who may require it.

Creating a Safe Workplace

At Air Selangor, a great emphasis is placed on employee health and safety especially due to the nature of the business where most employees work in operations. Hence a robust occupational health and safety management system is critical. HSE matters are governed by the HSE Corporate Committee, whose chairperson is the CEO. The HSE Section under HRAD oversees the daily management of HSE.

Air Selangor is committed to formulating and implementing policies and procedures that comply with all applicable health, safety and environmental laws and related requirements that meet national and international standards. It has

published its HSE Policy which reflects its commitment to ensuring its employees and contractors uphold the best HSE standards. All employees and third parties who perform work for or on behalf of Air Selangor are also required to adhere to the HSE policy.

In addition, Air Selangor has been certified with the ISO 45001:2018 Occupational Health and Safety Management System (“OHSMS”) for the Headquarters, WTPs, and distribution operations. The system guides the management of workplace health and safety and promotes a safe workplace for all.

Apart from the OHSMS certification, Hazard Identification, Risk Assessment and Determining Controls (“HIRADC”) processes are continuously being implemented for ongoing hazard identification, risk assessment, and determination of necessary controls for all activities at all Air Selangor facilities.

The establishment of HIRADC is an essential requirement for practising good occupational safety and health. This is enforced through relevant authorities and standards requirements such as the ISO 45001:2018 and OHSAS 18001:2007.

In 2021, the focus remained on reducing workplace incidents and mitigating risks associated with the COVID-19 pandemic.



HSE Corporate Committee

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

In terms of roles and responsibilities, the Committee was formed as part of the requirements stated in the Occupational Safety and Health Act 1994 to assist in establishing health and safety SOPs, reviewing the effectiveness of safety and health programme, assessing incident trends, near misses, dangerous occurrences, occupational poisoning or disease in the workplace, and review company's health and safety policies.

In addition, Air Selangor established the Environmental Regulatory Compliance Monitoring Committee ("ERCMC") in line with the GSR requirement. This Committee has been integrated with the HSE Corporate Committee.

Occupational Health and Safety Performance

Air Selangor is pleased to report that as of 31 December 2021, it recorded a LTIFR of 0.53, compared to 1.27 reported in 2020. For commuting accidents, the recorded number of cases was 55 which is similar to accidents recorded in 2020. Meanwhile, the Company recorded 18 road accidents, compared to 17 in 2020. Hence, the necessary control measures have been implemented. These initiatives are elaborated in the following sections. The goal is to continuously reduce incidences to create a safe working environment for all employees.

In November 2021, one fatality was recorded where an employee was involved in a road accident when travelling to Kuala Selangor Regional Office from a worksite. This recorded workplace fatality is based on Air Selangor's internal incident classification. The HSE Section has taken necessary steps to strengthen employee road safety awareness, especially for those who use motorcycles for commuting.

Air Selangor's OSH performance is internally audited to ensure the processes and policies are effective and to identify other areas for improvement. Also, the incident reporting flow and process is audited yearly by an appointed certification body to ensure adherence to 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 timeframe given. Additionally, the HSE Section conducted incident investigation, implemented necessary corrective action, and tracked progress of the implemented measures, to ensure incidents are continuously monitored and preventive measures can be identified and implemented. Incident investigation reports are submitted to and reviewed by DOSH.



Air Selangor's OSH performance is internally audited to ensure the processes and policies are effective and to identify other areas for improvement. Also, the incident reporting flow and process is audited yearly by an appointed certification body to ensure adherence to procedures and local regulations.



**Lost Time injury
Frequency Rate
(LTIFR)**

0.53
(2020: 1.27)

Health and Safety Training Programmes

In 2021, Air Selangor held various health and safety training programmes to further enhance employees' competency and awareness. These programmes include:



HSE Improve & Continue Programme

The HSE Improve & Continue ("ICON") programme, which was formerly known as the define, measure, analyse, improve, and control ("DMAIC") practitioner course is a continuous improvement initiative focused on operations and workplace improvement that helps promote creative thinking and innovation related to HSE.

Under this programme, we organised a competition involving all departments and regions that serves as a platform for employees to share ideas and for Air Selangor to identify initiatives that will result in high impact once implemented.

There were 25 groups of participants consisting of 97 employees from 15 departments and 12 regions. A total of 14 groups were

selected for the finale of the ICON Conference 2021. At the end of the competition, the five best proposals were selected and rewarded as winning entries. These proposals will be implemented and tracked in 2022. The next programme is expected to be continued in 2023.

HSE Initiatives

In Air Selangor, regular HSE initiatives were held to instil awareness of the importance of health, safety, and environment among employees. Some of these programmes also served as refresher sessions for employees. Apart from employees, Air Selangor also organised HSE programmes specially catered for vendors and contractors.

Reducing the Risk of Road Accidents

Operational employees are at a greater risk of road accidents as they are required to commute daily to various worksites to carry out tasks such as meter reading, pipe inspections, repairs, and water sampling works. These employees usually travel using motorcycles which are quicker and more convenient, but this inadvertently exposes them to a higher risk of road accidents. As such, several initiatives were organised for employees, particularly employees who are on the road frequently.

Defensive Riding Training

A defensive riding training programme was structured in 2021 for employees who frequently use motorbikes for work with the following objectives:

- i. To increase awareness of safety for riders and motorcyclists.
- ii. To share methods and techniques for identifying danger while riding a motorcycle.
- iii. To share about motorcycle safety inspection.

The total programme consists of four sessions and the first defensive riding training programme saw the participation of 100 employees. In addition, Air Selangor also distributed high visibility motorbike vests to its employees. As only one session was held in 2021, the remaining three will take place in 2022.

HSE Week

HSE Week is an annual event conducted at both headquarters and Regional levels to raise awareness of health, safety, and the environment among Air Selangor employees. HSE Week in 2021 was themed "HSE Transformation: Bridging the Digital Gap". Various activities were organised from 11 November 2021 to 16 December 2021.

The list of activities and programmes held during the HSE Week was as follows:

Activities / Programmes	
Recycling day	Virtual Trash Tag
Step Count Challenge @ Zoo Negara	7 Days Zero Waste Challenge
Spot Hazard	Air Selangor River Care at Sg Kuang
See & Snap Hazard	HSE Explorace
Word Scramble LOR	Quizizz HSE On the Go
Tik Tok HSE #SafetyStartsWithMe	Peraduan Teka Penutup Botol
Health Talk	Wellness Talk





Contractor Engagement

In 2021, the HSE Section conducted four engagement sessions with 127 contractors where three sessions were conducted online, while the last session was conducted physically.

The objective of the engagement session was to provide greater HSE awareness among Air Selangor’s contractors. The session also introduced the HSE requirements set by Air Selangor which were put in place to prevent any untoward incidents or accidents at various work sites. In 2022, HSE assurance audit of 20 selected contractors will be performed to assess their compliance with HSE requirements.



Emergency Tabletop Drill Exercise

In October 2021, due to the pandemic, a tabletop drill exercise was organised for Air Selangor Headquarters. The participants were taught basic occupational first aid, firefighting, and knowledge about emergency response equipment. The programme aimed to prepare the ERT to better respond to any emergency case that may arise.



Indoor Air Quality

Air Selangor is implementing Indoor Air Quality (“IAQ”) walkthrough inspections for all premises in stages to ensure employee health, well-being, and comfort. The IAQ inspection is based on the Indoor Air Quality Checklist obtained from the Industry Code of Practice on Indoor Air Quality 2010 and the Ministry of Human Resources Guidance Note on Ventilation and Indoor Air Quality during the COVID-19 Pandemic. The full IAQ assessment is expected to be completed for Headquarters and selected regional offices which are Gombak, Petaling Jaya, and Sepang, in 2022.

Feature Story:

Air Selangor Employee Vaccination Drive



Given the COVID-19 pandemic, Air Selangor has been actively encouraging its employees to be vaccinated to create a safe and healthy workplace for all. Being an essential services provider, Air Selangor must be able to continue daily operations in delivering clean water to its customers despite the various Movement Control Orders (“MCOs”) imposed on the public. As such, the Company worked with the Selangor State Government to obtain early vaccination appointments for its employees through the State’s vaccination programme.

This is to minimise the severity of COVID-19 infections among employees and to reduce the risk of business disruption.

As of 31 December 2021, 99.90% of Air Selangor’s employees were fully vaccinated and the remaining 0.10% are either partially vaccinated or unvaccinated due to medical and personal reasons. Air Selangor also took approaches to counsel non-vaccinated employees to ensure the Company achieves high vaccination rates.

Updated COVID-19 Standard Operating Procedures

Air Selangor updated the COVID-19 SOPs in line with government directives. For example, employees are encouraged to conduct a self-test using the RTK-Antigen test before attending any physical group events. Air Selangor ensures all internal COVID-19 SOPs comply with government directives and will be updated to reflect any changes where necessary.

Carbon Dioxide Meter at Headquarters

Apart from the vaccination drive, Air Selangor also conducted indoor air quality assessments from September 2021, as part of efforts to mitigate risks associated with COVID-19. The assessment started at the Headquarters building and this programme will be further expanded to regional offices. Following the assessment, Air Selangor placed 47 air quality sensors at Headquarters to gauge carbon dioxide (“CO₂”) levels as part of the indoor air quality assessment. In addition, guidelines were also in place to inform employees to take necessary actions should CO₂ reach a high level, such as reducing the number of participants in the meeting room or opening the meeting room door to allow for better air ventilation.

Corporate Social Responsibility ‘Sesama Mara’ Programme

Sesama Mara, which means ‘Together We Move Forward’, is the overarching theme for Air Selangor’s Corporate Social Responsibility (“CSR”) programmes. In 2021, programmes consisting of grassroots initiatives that aim to give back to surrounding communities and strengthen ties with local communities, residential associations, local authorities, and non-governmental organisations, continued to be held.



Box of Hope

The Box of Hope by Air Selangor was launched to assist underprivileged households with basic essential items to ease their financial burden. Collection boxes for the Box of Hope programme have been placed at five Village Grocer outlets in MyTown, 1Mont Kiara, Melawati Mall, i-City Mall and Tamarind Square. The public can donate food and other essential items through these collection boxes which will be distributed by Yayasan Food Bank Malaysia together with our partner NGOs across the Klang Valley and Selangor.

As of December 2021, 1,334 boxes of goods worth RM105,720 were distributed to selected welfare homes and B40 households. Additionally, in conjunction with the celebration of Chinese New Year, Hari Raya, and Deepavali, essential items were delivered to 12 selected charity houses with a total contribution of RM82,180.



Plumbing Apprenticeship Programme

The Air Selangor Plumbing Apprenticeship Programme is a plumbing course aimed at helping those who have lost their jobs due to the COVID-19 pandemic. Participants will learn new income-generating skills via the course which will allow them to explore opportunities and jobs in the plumbing sector.

Air Selangor partnered with Akademi Binaan Malaysia (“ABM”) which conducted the plumbing courses for qualified participants. The course modules include basic application of plumbing skills, installation, maintenance, and repairing of pipes.

As of 2021, 45 participants graduated from the programme with an investment of RM79,650 from Air Selangor.



Plumbing Assistance Services

Air Selangor launched the plumbing assistance service initiative in 2020 to help those in need of financial aid to repair leaking pipes in their homes, especially those living in low-cost housing or *Projek Perumahan Rakyat* (“PPR”) and rural areas.

This initiative is open to all Malaysian citizens residing in Selangor, Kuala Lumpur and Putrajaya. Eligible applicants who meet the requirements can submit their applications which will be reviewed by Air Selangor.

As of December 2021, 35 families benefitted from this programme and Air Selangor spent RM49,132 toward this.



Empowering B40 Women: Air Selangor Face Mask

In 2021, Air Selangor continued its collaboration with the Komuniti Tukang Jahit (“KTJ”), a social enterprise to help women in the B40 income group affected by the COVID-19 pandemic to generate income. KL Sketch Nation, another social enterprise was also invited to be part of this programme.

Air Selangor ordered an additional 1,000 pieces of reusable face masks from KTJ and KL Sketch Nation for the use of its employees. Air Selangor contributed RM14,590 towards this project.



Empowering Online Learning: For Children of Air Selangor Employees

Amidst the COVID-19 pandemic, Air Selangor provided further support to the children of B40 employees through the Empowering Online Learning programme which is aimed at alleviating the financial burden faced by some employees who needed to purchase laptops or tablets for their children.

All eligible Air Selangor employees received one device, data plan subscription and a complete set of school supplies (e.g., school uniforms and bags) per household. A total of 215 employees’ children received assistance estimated at RM119,432.30.

Skim Air Darul Ehsan

The Skim Air Darul Ehsan (“SADE”) was introduced by the Selangor State Government to ensure underprivileged communities were provided with access to clean water. Low-income households are eligible to receive the first 20m³ of water supply monthly for free, worth RM11.40. However, usage above the first 20m³ allocation is charged accordingly.

To qualify for the scheme, applicants are required to submit the application and 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 RM 4,000 and below (husband and wife 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 SADE applications over several phases and in 2021, we received a total of 258,896 applications.

PERFORMANCE DATA

DESCRIPTION	2018	2019	2020	2021
SOCIAL				
EMPLOYEES				
Total number of employees	4,520	4,802	5,022	5,056
• By Gender				
- Male (%)	79.29	79.00	78.97	79.63
- Female (%)	20.71	21.00	21.03	20.37
• By Age Group				
- < 30 years old (%)	21.28	22.89	21.76	20.09
- 30 to 49 years old (%)	67.59	66.78	68.44	70.67
- ≥ 50 years old (%)	11.13	10.33	9.80	9.24
• By Employment Category				
- Management (%)	5.00	4.89	5.20	5.26
- By gender				
- Male (%)	69.03	68.51	67.17	66.54
- Female (%)	30.97	31.49	32.83	33.46
- By age group				
- < 30 years old (%)	0.00	0.00	0.00	0.00
- 30 to 49 years old (%)	70.35	69.78	72.51	72.56
- ≥ 50 years old (%)	29.65	30.22	27.49	27.44
- Executives (%)	21.39	21.57	22.34	23.14
- By gender				
- Male (%)	60.49	60.13	60.60	60.60
- Female (%)	39.51	39.87	39.40	39.40
- By age group				
- < 30 years old (%)	13.85	17.66	19.16	18.97
- 30 to 49 years old (%)	78.49	75.28	73.70	74.27
- ≥ 50 years old (%)	7.66	7.06	7.14	6.76

DESCRIPTION	2018	2019	2020	2021
- Non-Executives (%)	73.61	73.53	72.44	71.60
- By gender				
- Male (%)	85.45	85.24	85.48	86.74
- Female (%)	14.55	14.76	14.52	13.26
- By age group				
- < 30 years old (%)	24.88	25.94	24.10	21.93
- 30 to 49 years old (%)	64.23	64.08	66.52	69.36
- ≥ 50 years old (%)	10.89	9.98	9.38	8.71
• By Employment Type				
- Permanent by gender				
- Male (%)	3,531	3,726	3,897	3,965
- Female (%)	926	987	1,040	1,017
- Contract by gender				
- Male (%)	53	68	69	61
- Female (%)	10	21	16	13
- Permanent by location				
- Gombak	317	320	333	351
- Headquarters	1,110	1,194	1,302	1,263
- Hulu Langat	277	272	302	304
- Hulu Selangor	204	210	208	212
- Klang	360	372	379	395
- Kuala Langat	140	146	156	162
- Kuala Lumpur	268	270	276	281
- Kuala Selangor	143	143	149	147
- Northern Region	476	557	570	570
- Petaling	446	460	470	473
- Sabak Bernam	115	114	116	122
- Sepang	168	166	179	184
- Southern Region	435	489	497	518

DESCRIPTION	2018	2019	2020	2021
- Contract by location				
- Gombak	2	2	4	3
- Headquarters	30	53	50	50
- Hulu Langat	3	3	1	0
- Hulu Selangor	0	1	2	3
- Klang	1	0	1	0
- Kuala Langat	2	4	3	2
- Kuala Lumpur	2	1	2	1
- Kuala Selangor	1	0	0	0
- Northern Region	9	9	10	10
- Petaling	1	2	3	2
- Sabak Bernam	0	0	0	0
- Sepang	2	4	3	1
- Southern Region	10	10	6	2
Number of employee hires	478	431	436	373
• By Age Group				
- < 30 years old (%)	282	290	300	255
- 30 to 49 years old (%)	194	132	140	116
- ≥ 50 years old (%)	2	9	3	2
• By Gender				
- Male (%)	378	335	317	282
- Female (%)	100	96	126	91
• By Location				
- Gombak	32	20	25	36
- Headquarters	167	205	212	167
- Hulu Langat	24	14	20	11
- Hulu Selangor	19	10	12	9
- Klang	45	20	26	31
- Kuala Langat	11	8	8	4
- Kuala Lumpur	34	3	18	16
- Kuala Selangor	11	5	11	7
- Northern Region	36	20	33	24
- Petaling	40	31	20	20
- Sabak Bernam	8	5	2	4
- Sepang	14	7	17	5
- Southern Region	37	83	39	39

DESCRIPTION	2018	2019	2020	2021
Rate of new hires (%)	10.77	9.21	9.04	7.37
Number of employee turnover	238 ¹	213 ¹	224 ¹	326
• By Age Group				
- < 30 years old (%)	94	75	101	97
- 30 to 49 years old (%)	92	73	74	146
- ≥ 50 years old (%)	52	65	49	83
• By Gender				
- Male (%)	168	152	146	221
- Female (%)	70	61	78	105
• By Location				
- Gombak	19	10	10	18
- Headquarters	78	97	103	172
- Hulu Langat	13	11	6	12
- Hulu Selangor	9	3	10	8
- Klang	24	15	17	20
- Kuala Langat	6	3	3	5
- Kuala Lumpur	19	18	10	14
- Kuala Selangor	6	7	7	8
- Northern Region	9	16	24	20
- Petaling	20	12	8	20
- Sabak Bernam	3	3	0	3
- Sepang	10	4	6	10
- Southern Region	22	14	20	16
Average employee turnover rate (%)	5.39	4.57	4.55	6.44
Total training hours provided	75,032	129,193	79,721	121,723
• Average training hours by gender				
- Male (%)	16.10	25.40	14.60	29.24
- Female (%)	18.70	33.10	20.60	39.07
• Average training hours by employment category				
- Management	41.90	74.10	26.60	65.70
- Executives	28.00	53.30	24.10	51.53
- Non-Executives	11.60	16.10	13.00	18.37

¹ The employee turnover number was revised due to changes in the calculation methodology.

Glossary and Indexes

Association Memberships

1. Malaysian Employers Federation
2. Meca Consulting Sdn Bhd
3. Senior Utility Advisory Group, Smart Water Network (SWAN) Forum, UK

GRI Content Index

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GRI 102-2	Activities, brands, products, and services	10
GRI 102-3	Location of headquarters	Back page
GRI 102-4	Location of operations	1
GRI 102-5	Ownership and legal form	10
GRI 102-6	Markets served	10, 15
GRI 102-7	Scale of the organisation	1, 5, 10, 30, 108
GRI 102-8	Information on employees and other workers	91, 109, 110
GRI 102-9	Supply chain	72
GRI 102-10	Significant changes to the organisation and its supply chain	Not applicable
GRI 102-11	Precautionary principle or approach	38 - 45
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GRI 102-42	Identifying and selecting stakeholders	32
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GRI 102-44	Key topics and concerns raised	32 -33
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GRI 102-54	Claims of reporting in accordance with the GRI Standards	1
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GRI 103-2	The management approach and its components	
GRI 103-3	Evaluation of the management approach	
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SASB Standards

Code	Description	Unit of Measure	Page	Remarks	
Sustainability Disclosure Topics & Accounting Metrics					
IF-WU-130a.1	Energy Management	(1) Total energy consumed (2) Percentage grid electricity (3) Percentage renewable	Gigajoules (GJ), Percentage (%)	82, 83, 88	-
IF-WU-140a.1	Distribution Network	Water main replacement rate	Rate	68, 74	Air Selangor reports this in kilometers per year.
IF-WU-140a.2	Efficiency	Volume of non-revenue real water losses	Thousand cubic meters (m ³)	7, 8, 16, 22, 74, 76	Air Selangor reports this in percentage.
IF-WU-140b.1	Effluent Quality Management	Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	Number	86	-
IF-WU-140b.2		Discussion of strategies to manage effluents of emerging concern	Not applicable	Not available	
IF-WU-240a.1		Average retail water rate for (1) residential, (2) commercial, and (3) industrial customers	Rate	https://www.airselangor.com/faq/	
IF-WU-240a.2	Water Affordability and Access	Typical monthly water bill for residential customers for 10 Ccf of water delivered per month	Reporting currency	https://www.airselangor.com/faq/	
IF-WU-240a.3		Number of residential customer water disconnections for non-payment, percentage reconnected within 30 days	Number, Percentage (%)	Not disclosed	
IF-WU-240a.4		Discussion of impact of external factors on customer affordability of water, including the economic conditions of the service territory	Not applicable	24	-
IF-WU-250a.1	Drinking Water Quality	Number of (1) acute health-based, (2) non-acute health-based, and (3) non-health-based drinking water violations	Number	63	-
IF-WU-250a.2		Discussion of strategies to manage drinking water contaminants of emerging concern	Not applicable	61	-
IF-WU-420a.1	End-Use Efficiency	Percentage of water utility revenues from rate structures that are designed to promote conservation and revenue resilience	Percentage (%)	Not disclosed	
IF-WU-420a.2		Customer water savings from efficiency measures, by market	Cubic meters (m ³)	Not available	

Code	Description	Unit of Measure	Page	Remarks	
IF-WU-440a.1	Water Supply Resilience	Total water sourced from regions with High or Extremely High Baseline Water Stress, percentage purchased from a third party	Thousand cubic meters (m ³), Percentage (%)	Not available	
IF-WU-440a.2		Volume of recycled water delivered to customers	Thousand cubic meters (m ³)	30, 65	
IF-WU-440a.3		Discussion of strategies to manage risks associated with the quality and availability of water resources	Not applicable	61 - 70	-
IF-WU-450a.1	Network Resiliency and Impacts of Climate Change	Wastewater treatment capacity located in 100-year flood zones	Cubic meters (m ³) per day	Not applicable	
IF-WU-450a.2		(1) Number and (2) volume of sanitary sewer overflows (SSO), (3) percentage of volume recovered	Number, Cubic meters (m ³), Percentage (%)	Not applicable	
IF-WU-450a.3		(1) Number of unplanned service disruptions, and (2) customers affected, each by duration category	Number	67	-
IF-WU-450a.4		Description of efforts to identify and manage risks and opportunities related to the impact of climate change on distribution and wastewater infrastructure.	Not applicable	86 - 87	-
Activity Metrics					
IF-WU-000.A	Number of: (1) residential, (2) commercial, and (3) industrial customers served, by service provided	Number	15, 74	-	
IF-WU-000.B	Total water sourced, percentage by source type	Cubic meters (m ³), Percentage (%)	Not disclosed		
IF-WU-000.C	Total water delivered to: (1) residential, (2) commercial, (3) industrial, and (4) all other customers	Thousand cubic meters (m ³)	Not disclosed		
IF-WU-000.D	Average volume of wastewater treated per day, by (1) sanitary sewer, (2) stormwater, and (3) combined sewer	Cubic meters (m ³) per day	Not applicable		
IF-WU-000.E	Length of (1) water mains and (2) sewer pipe	Kilometers (km)	12, 74	Length of water mains only	

Glossary

ABAC	Anti-Bribery and Anti-Corruption	CXD	Customer Experience Department
AC	Asbestos Cement	DAC	Data Analytics Centre
ACR	Asset Criticality Rating	DOE	Department of Environment
AED	Automated External Defibrillator	DMAIC	Define, Measure, Analyse, Improve and Control
AESP	Authorised Entrant and Standby Person	DMZ	District Metering Zone
AMI	Advanced Metering Infrastructure	DOSH	Department of Occupational Safety and Health
ANSP	Air Selangor National Institute of Occupational Safety and Health Safety Passport	DUN	<i>Dewan Undangan Negeri</i>
ASPIRE	Air Selangor Strategic Plans and Initiatives Realisation	DWQS	Drinking Water Quality Standards
BIA	Business Impact Analysis	ECM	Enterprise Content Management
BCM	Business Continuity Management	ECMS	Enterprise Content Management System
BCP	Business Continuity Plan	eDPLAS	Electronic Development Plan Approval System
BOFA	Basic Occupational First Aid	EIA	Environmental Impact Assessment
CAPEX	Capital Expenditure	ERCMC	Environmental Regulatory Compliance Monitoring Committee
CBS	Customer Billing Services	ERM	Enterprise Risk Management
CCTV	Closed Circuit Television	ERP	Emergency Response Plan
CEO	Chief Executive Officer	ERT	Emergency Response Team
CIDB	Construction Industry Development Board	FoRM	Friends of River Malaysia
CM	Corrective Maintenance	FRC	Free Residual Chlorine
CMS	Content Management System	FRIM	Forest Research Institute Malaysia
CPR	Cardiopulmonary Resuscitation	FSL	Field Service Lighting
CRM	Corruption Risk Management	GARIS	Governance and Risk Information System
CSAT	Customer Satisfaction	GEC	Global Environment Center
CSI	Customer Satisfaction Index	GCMS	Gas Chromatography-Mass Spectrometry
CSR	Corporate Social Responsibility	GHG	Greenhouse Gas
CX	Customer Experience		

GIS	Geographic Information System
GJ	Gigajoule
GPS	Global Positioning System
GRI	Global Reporting Initiative
GSR	Guided Self-Regulation
GWh	Gigawatt-hour
HIRADC	Hazard Identification and Determining Control
HOD	Head of Department
HOR	Head of Region
HORAS	Hybrid Off-river Augmentation System
HRAD	Human Resource and Administration Department
HSE	Health, Safety and Environment
HYDRA	Hybrid Distribution Water Quality Real-time Analyser
IAD	Internal Audit Department
IAM	Identity and Access Management
IAQ	Indoor Air Quality
ICC	Intelligent Command Centre
ICPMS	Inductively Coupled Plasma Mass Spectrometry
ILI	Infrastructure Leakage Index
IMS	Integrated Management System
IMSIRA	Integrated Management System Integrated Risk Assessment
IMTN	Islamic Medium-Term Notes
ISO	International Organization for Standardization
IT	Information Technology
ITD	Information Technology Department
IVR	Interactive Voice Response
IWK	Indah Water Konsortium

JAKIM	Jabatan Kemajuan Islam Malaysia
kgCO₂/m³	Kilogram of carbon dioxide per cubic metre
KRA	Key Result Areas
KTJ	<i>Komuniti Tukang Jahit</i>
kWh	kilowatt-hour
LCMS-QTOF	Liquid Chromatography Mass Spectrometry - Quadrupole Time of Flight
LCD	Litres per capita per day
LIMS	Laboratory Information Management System
LMDP	Line Management Development Programme
LTIFR	Lost Time Injury Frequency Rate
LUAS	Lembaga Urus Air Selangor
m³	Cubic metre
MACC	Malaysian Anti-Corruption Commission
MC	Management Committee
MCO	Movement Control Order
MJ/m³	Megajoule per cubic metre
MLD	Million litres per day
MMDP	Middle Management Development Programme
MOH	Ministry of Health
MoU	Memorandum of Understanding
MP	Members of Parliament
MT	Metric tonne
NGO	Non-governmental Organisation
NIOSH	National Institute of Occupational Safety and Health
NPS	Net Promoter Score
NRW	Non-revenue Water
OACIS	Off-plant Autonomous Chlorine Injection System
OBI-CLCM	Operations Business Intelligence for Closed-loop Customer Management

OCC	Operation Command Centre	SCADA	Supervisory Control and Data Acquisition
OHSMS	Occupational Health and Safety Management System	SDG	Sustainable Development Goal
OMA	Operations Mobile Application	SG	<i>Sungai</i>
OP	Operating Period	SMDP	Senior Management Development Programme
OPAK	<i>Operasi Pengepaman Air Kolam</i>	SeJAM	Skim Jaminan Air Mentah
OPEX	Operational Expenditure	SMS	Short Message Service
ORS	Off-river Storage	SOP	Standard Operating Procedure
OSH	Occupational Safety and Health	SPAN	Suruhanjaya Perkhidmatan Air Negara
PAKAR	Pasukan Khas Lembangan dan Alur Air	SPI	Strategic Plans and Initiatives
PBT	<i>Pihak Berkuasa Tempatan/ Local District Authority</i>	SRI	Sustainable and Responsible Investment
PDRM	<i>Polis Diraja Malaysia</i>	SSP1	Sg Selangor Phase 1
PKRC	<i>Pusat Kuarantin dan Rawatan COVID-19/ Quarantine and Treatment Centres</i>	SSP2	Sg Selangor Phase 2
PKS	<i>Pusat Khidmat Setempat</i>	STP	Sewerage Treatment Plant
PM	Preventive Maintenance	TAMS	Total Asset Management System
PPR	<i>Projek Perumahan Rakyat</i>	TAP	Talent Associate Programme
PPV	<i>Pusat Pemberian Vaksin/ Vaccination Centres</i>	TC	Talent Council
PVI	Pipe Vulnerability Index	tCO₂	Tonne of carbon dioxide
QAP	Quality Assurance Programme	TNB	Tenaga Nasional Berhad
RA	Risk Assessment	ToR	Terms of Reference
RF	Radio Frequency	TOC	Total Organic Carbon
RFID	Radio Frequency Identification	TSM	Tariff Setting Mechanism
RMC	Risk Management Committee	UARL	Unavoidable Annual Real Losses
RMD	Risk Management Department	UAV	Unmanned Aerial Vehicles
RMS	River Monitoring System	UKM	Universiti Kebangsaan Malaysia
RPA	Robotic Process Automation	VSD	Variable Speed Drive
RTF	Residuals Treatment Facility	WAIDI	Water Average Interruption Duration Index
SADE	Skim Air Darul Ehsan	WAIFI	Water Average Interruption Frequency Index
SAMS	Security Access Management System	WAMS	Work and Asset Management System
		WTP	Water Treatment Plant

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