



OUR WATER STORY OUR WATER FUTURE

Annual Report 2022/2023

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SINGAPORE'S NATIONAL WATER AGENCY

PUB is a statutory board under the Ministry of Sustainability and the Environment (MSE). We are responsible for the management of Singapore's water supply, water catchment, used water and coastal protection in an integrated way.

PUB MISSION AND VISION

Our Mission

Supply Good Water.
Reclaim Used Water.
Tame Storm Water.
Resist Rising Seas.

Our Vision

Water for Every One.
Everyone for Water.

CHAIRMAN'S MESSAGE



Chiang Chie Foo

Chairman, PUB

When PUB was formed in 1963, Singapore was experiencing a dry spell and in the midst of a nation-wide water rationing exercise. Being a small island meant that we had limited land to store and capture our rainwater. This is a permanent constraint. Our challenge has been and will continue to be securing our most basic necessity – clean water for drinking and our industries – from a diversity of reliable sources.

Today, we simply need to turn on our taps to access clean drinking water. Our rivers and waterways are clean, and most have been transformed into beautiful landscapes. With an effective drainage network and implementation of flood mitigation measures, Singapore's flood-prone area has been reduced to less than one percent of what it used to be. We also have a comprehensive used water network and treatment facilities to regenerate clean water for our various needs. The completed Deep Tunnel Sewerage System will enhance the effectiveness of the system and reduce land-take for this purpose.

Our journey towards water security did not come about by chance. It was made possible only through the foresight of our pioneer leaders, together with the innovativeness and sheer tenacity of all PUB officers, past and present.

While our water story is one which we can be immensely proud of, we must not be complacent and rest on our laurels. Climate change can negate all the good work we have done if we do not mitigate its adverse effects, as has been observed in other parts of the world. Singapore will experience more frequent and intense bouts

of rain, while rising sea levels will threaten our coastlines and flood resilience. Prolonged dry spells will put significant stress on our water supply. At the same time, water demand is projected to almost double by 2065. PUB will have to take bold measures. Work has already started to address this challenge, and PUB should be in a position to look back years later on the good work put in to protect our precious island state.

Amidst these challenges, PUB must continue to be future-ready. The global environment is changing at a relentless pace. Technology will drive the future. We have therefore started our transformation journey to harness the power of data, network, technology and our people to transform our processes and operations for a more efficient and effective customer-centric system.

Central to PUB's mission success is our people. We have to ensure that we have a future-ready workforce. We will need to continue to recruit good people into the PUB family, create the environment to retain them, and provide relevant training and exposure so that they can carry PUB into the future with confidence. The introduction of the new Engineering and Science scheme, together with the philosophy and training system we have put in place, is the anchor. Our officers' skill sets will be sharpened and their potential will be enhanced to better meet their career aspirations. We will also continue to engage and support our staff to make PUB an employer of choice.

This is an ongoing process with many waypoints. The conferment of distinguished international awards on PUB is a manifestation of the little successes PUB has chalked up in the course of the journey. In 2022, we won the International Water Association's (IWA) Gold Award for Market-changing Water Technology and Infrastructure for the Choa Chu Kang Waterworks' upgraded ceramic membrane system. This year, PUB was awarded the Distinction Award in Smart Water Project at the Global Water Awards for the Intelligent Network Renewal Programme.

As we move forward to the next chapter of our water story, I am confident that PUB will continue to harness the same "can-do" spirit of our predecessors, and work with the community and industry to achieve a sustainable water future for Singapore with distinction and excellence.

CE'S MESSAGE



Goh Si Hou

Chief Executive, PUB

This year, PUB celebrates our 60th anniversary. It is timely for us to reflect on Our Water Story and chart Our Water Future.

In PUB, we can be very proud of Our Water Story. From water scarcity and dependence on imported water, we have leveraged innovation and strengthened resilience through our Four National Taps. From polluted rivers and poor sanitation, we now have a ground-breaking Deep Tunnel Sewerage System (DTSS) and beautiful waterways for all to enjoy. From frequent floods being a way of life, we have reduced flood risks and disruption to life in Singapore. Today, we stand on the shoulders of our pioneers and generations of staff in PUB who have dedicated themselves to this mission and brought boldness of vision and a can-do spirit to these endeavours.

As we write the next chapter of Our Water Story, we will face new challenges. Climate change can bring prolonged droughts and threaten our water resources; on the other hand, extreme rainfall and rising sea levels can overwhelm our flood resilience. Water demand will continue to rise with the needs of our population and economy; yet to expand our water resources, we face constraints on land, manpower, as well as energy and carbon emissions. As we look to the future, we can draw strength and confidence from Our Water Story – turning adversity to strength for Singapore over the past 60 years. Over the past year, we have taken concrete steps to meet these long-term challenges and ensure mission success for PUB in the next lap.

Our first mission focus remains enduring – to ensure water security for Singapore, now and into the future. In the past year, we charted our long-term strategies and infrastructure plans

under the Water Masterplan 2022. An important thrust is to grow our weather-resilient sources of water by expanding our water reclamation and NEWater capacity as a sustainable source of water for Singapore. On the ground, we also made significant progress in our major projects, such as the opening of the Jurong Island Desalination Plant, the completion of tunnelling works for DTSS Phase 2, the construction of the new Tuas Water Reclamation Plant, and the redevelopment of Choa Chu Kang Waterworks and Kranji Water Reclamation Plant.

Our future water system will inherently be more energy-intensive – this has given clear impetus for our sustainability efforts in energy use and decarbonisation. This year, we continue to make progress in key research and development efforts to drive down energy use in NEWater, desalination and used water treatment, and implemented a pilot plant for seawater carbon capture. To secure a sustainable water future, we also need to manage long-term growth in water demand. In the past year, we have sharpened our focus and advanced water conservation in the non-domestic sector, through new measures such as mandatory water recycling for water-intensive industries and enhanced water efficiency funding.

Our second mission focus is to keep Singapore resilient against the forces of climate change. As a small, low-lying island, our flood risks stem inherently from the confluence of rising sea levels and more intense rainfall. In the past year, we have advanced our new mandate as the national coastal protection agency, setting out foundational policies and plans to guide long-term coastal protection work. Internally, PUB has brought together coastal protection and flood management as an integrated mission, building

on the synergy in policy and planning, flood-risk modelling and implementation. Notably, we established the new Coastal Protection and Flood Management Research Programme to build up local capabilities and talent as we develop innovative solutions for Singapore. Our goal is not only to ensure resilience against long-term climate change, but to redesign our coastlines and our waterways to bring multi-functional benefits to the community.

To achieve mission success, PUB must continue to build on our core strengths. First, we must remain anchored on a culture of operational excellence and build on the spirit of innovation to transform and continually enhance our operations. Second, we will continue to nurture the right workforce in PUB, with competent and committed people. In the past year, we implemented the new Engineering and Science scheme to enhance our career proposition, and the Specialist Career Track to anchor and grow deep expertise within PUB. Post-pandemic, I am heartened that our PUB60 celebrations have allowed us to bring our people together, reaffirm our commitment to our mission, and foster stronger identity, cohesion and family spirit as we embark on our next lap together.

I am confident that PUB will continue to rise to the challenge, to strengthen our resilience against climate change and secure a sustainable water future for Singapore. I would like to take this opportunity to thank our MSE leadership and PUB Board for your guidance in the past year, and all my PUB colleagues for our collective efforts and progress in this shared journey. I also wish to express our appreciation to all our partners and stakeholders, for your support and contributions to Our Water Story and in charting Our Water Future together.

BOARD OF DIRECTORS



Chiang Chie Foo

Chairman, PUB



Goh Si Hou

Chief Executive, PUB



Abu Bakar Bin Mohd Nor

Group Chairman,
M Kapital Holdings
Pte Ltd



John Ng

Chief Executive Officer,
YTL PowerSeraya Pte
Limited



Ang Yiting

Assistant Editor,
SPH Media Trust -
Lianhe Zaobao



Jonathan Yap

Chief Executive Officer,
Capitaland Development



Aurill Kam

Director,
Legal Clinic LLC



Low Teck Seng

Senior Vice President,
Sustainability &
Resilience, National
University of Singapore



Eugene Leong

Deputy Secretary (Policy),
Ministry of Education



Ngiam Le Na

Deputy Chief Executive
(Operations), DSO
National Laboratories



**Sanjeev Kumar Tiwari
S/O Danand Tiwari**

General Secretary,
Amalgamated Union of
Public Employees



Susan Hwee

Managing Director
& Head of Group
Technology and
Operations, United
Overseas Bank Limited



Wee Ai Ning

Former Chief Investment
Officer, AIA Investment
Management Pte Ltd



Yong Kwet Yew

Professor of Civil
and Environmental
Engineering, National
University of Singapore



Tan Siong Leng

Deputy Chief Executive,
URA (Retired)
(Board Member until 31 March 2023)



Tan Wah Yeow

Non-Resident Ambassador
(Norway), Ministry of Foreign
Affairs, Singapore
(Board Member until 31 March 2023)



**Thiagarajan S/O
Subramaniam**

Director, Administration,
NTUC
(Board Member until 31 March 2023)

ORGANISATIONAL STRUCTURE



OUR WATER

STORY



Completed in 1867, the MacRitchie Reservoir is Singapore's first reservoir. In 1922, it was named after Municipal Engineer, James MacRitchie, who designed and built the reservoir.

COMMEMORATING PUB60

PUB was established on 1 May 1963. Over the past 60 years, we have come a long way in our journey to ensure clean, safe and sustainable water for Singapore.

THE QUEST FOR WATER SECURITY

At the cusp of independence, Singapore had just experienced widespread water rationing, and was dependent on imported water to support its population and economy. We were a small island nation without natural water bodies or enough land for rainwater collection and storage. Singapore was also fraught with environmental challenges like flooding, sanitation and pollution of its waterways.

Our founding leaders recognised that water was an existential issue for Singapore. In fact, the need to secure our water supply was so vital that the two Water Agreements with Malaysia were included in the Separation Agreement that established Singapore as an independent and sovereign state in 1965.

Even then, water was key to our survival as an independent nation. Our early leaders had a bold vision to build up our water security – by prioritising robust water infrastructure and sound water policies. This underscored Singapore's relentless quest for water security over the past 60 years.

FROM VULNERABILITY TO STRENGTH

To maximise water collected from local rainfall, we sought ways to expand our water catchment and storage. We expanded Seletar and Peirce Reservoirs in 1969 and 1975, and began collecting runoff from unprotected catchments, or urban areas, starting with the completion of the Kranji-Pandan Water Scheme in 1975. Over the years, we have successfully expanded our water catchment area to two-thirds of the island and have 17 reservoirs today. Notably, Marina Reservoir, commissioned in 2010, is Singapore's first freshwater reservoir in the city centre.

Beyond capturing rainfall, it was equally pertinent to ensure that potable water could reach households and industries. PUB has commissioned waterworks across the

island, with six water treatment plants serving Singapore today. In order to reduce the amount of potable water lost to leaks, we launched a pipe replacement programme in 1983 to replace old pipes with pipes that are made of more durable and corrosion-resistant materials. Together with a robust inspection system, this has enabled us to have one of the lowest distribution losses around the world.

Besides the water supply infrastructure, we also invested heavily in drainage infrastructure, building an extensive drainage network system over the years and carrying out drainage improvement works to cater for higher rainfall intensity. These efforts have resulted in the substantial reduction of our flood-prone areas from more than 3000 ha in the 1970s to less than 30 ha today.

From the 1970s to 1990s, we cleaned up our water catchments and rivers, ensuring that run-off collected was clean. At the same time, the night soil bucket collection system was phased out and replaced by a modern sanitation system island-wide, with a fully segregated used water system.

This used water system subsequently became a critical component of our water resilience as it enabled us to carry out large-scale water recycling to produce NEWater – our third National Tap. NEWater is indeed a powerful innovation story for PUB and represents a key pillar in Singapore's sustainability since its launch in 2002. With NEWater, we successfully closed the water loop and are able to reuse water endlessly.

As an island surrounded by sea, it is no surprise that Singapore would eventually harness seawater for some of our water supply, especially once membrane technology became cost-effective and reliable. It was in 2005 that Prime Minister Lee Hsien Loong opened Singapore's first desalination plant, effectively "turning on" Singapore's fourth National Tap of desalinated water.

Our Four National Taps Strategy has kept our water flowing over the years. Today, we have five NEWater plants and five desalination plants. This boost in water security from unconventional sources has strengthened the resiliency and sustainability of our water system, putting us in good stead to weather the challenges ahead.

NEW CHALLENGES

Despite our successes so far, climate change will bring new challenges. Extreme weather patterns will put significant stress on our conventional water sources. Beyond its impact on our water resources, Singapore will experience more intense rainfall, as well as rising sea levels. These pose a severe threat to Singapore as a densely-populated, low-lying island. As Singapore's national coastal protection agency, we will work with our stakeholders to co-develop measures to safeguard our coastlines against the threat of rising seas. We are adopting an integrated approach that combines flood resilience and coastal protection to protect Singapore from flood risks.

We are also transiting to a low-carbon future and working towards our goal of a green and sustainable water system for Singapore. This year, we have started piloting the capture of carbon dioxide in seawater as part of the desalination process. We have also established a Green Financing Framework, with S\$800 million raised in our inaugural green bond issuance in August 2022 to finance our capital investments in green infrastructure. These underscore our commitment to contribute to a sustainable future for Singapore.

OUR WATER STORY, OUR WATER FUTURE

Our Water Story has been one of overcoming significant challenges and adversity, to ensure Singapore's survival. Looking back on Singapore's water story, Mr Lee Kuan Yew, Singapore's founding Prime Minister, recalled how "Water dominated every other policy. Every other policy [had] to bend at the knees for our water survival". It was this determination that turned our existential vulnerability into a source of strength and national pride.

Going forward, all of us in PUB remain steadfast in our mission to ensure water security for Singapore, even as we face challenges of rising water demand, heightened resource constraints and the impact of climate change on our water resources. PUB will build on our strengths, continue to plan ahead and build up our water infrastructure, and innovate to bolster water security. With this same strong sense of mission and can-do spirit, we will also embark on the journey to enhance coastal protection and flood resilience in the long-term. Just as our pioneers had done, we will forge ahead to build a sustainable water system and strengthen climate resilience for Singapore and future generations.



We must continue to plan ahead, build up our infrastructure, and invest in new technologies to build a green and sustainable water supply.

The entire team at PUB is focused on this important work. They have been strengthening our water system for 60 years now – this year happens to be PUB's 60th Anniversary. Over these 6 decades, generations of officers in PUB – from our pioneers to the engineers serving today, have played a critical role in our security and prosperity. I thank everyone in PUB – past and present – for your important contributions, and I am confident that PUB will continue to do your good work for many more decades to come.

Deputy Prime Minister Lawrence Wong delivered opening remarks at the Singapore World Water Day celebration event at Marina Barrage on 18 March 2023.

1. Laying of water pipes by Public Works Department. (Source: Ministry of Information and the Arts Collection, courtesy of National Archives of Singapore)

2. Spectators doing a toast to NEWater during the 2002 National Day Parade. (Source: Ministry of Information, Communications and the Arts Collection, courtesy of National Archives of Singapore)

1960s

- 1961
Singapore's 1st Water Agreement with Malaysia
- 1962
Singapore's 2nd Water Agreement with Malaysia

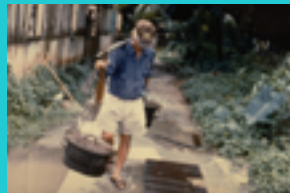
Signing of the 1962 Water Agreement. (Source: Ministry of Information and the Arts Collection, courtesy of National Archives of Singapore)
- 1963
Formation of Public Utilities Board (PUB)
- 1968
Completion of Seletar Reservoir expansion to boost raw water collection from protected catchments
- Late 1960s
Completion of the Sewerage Master Plan

1970s

- 1971
Launch of first national water conservation campaign with the slogan "Water is Precious"
- 1972
Singapore's 1st Drainage Masterplan
Singapore's 1st Water Masterplan
Completion of Bukit Timah Flood Alleviation Phase I, alleviating flooding in upper section of catchment
- 1974
Set up of pilot plant to explore recycling of waste water
- 1975
Commencement of Water Pollution Control and Drainage Act

1980s

- 1983
Launch of pipe replacement programme to replace old pipes with less-corrosive mains
- 1987
Completion of Singapore River and Kallang Basin clean-up (1977-1987)

Clean-up of Kallang River at Kallang Place. (Courtesy of National Archives of Singapore)
Phasing out of night soil collection and conversion to modern sanitation system

Night soil carrier. (Photo courtesy of National Archives of Singapore)

1990s

- 1990
Completion of Bukit Timah Flood Alleviation Scheme 2A, largest civil engineering project implemented at the time
- 1993
Completion of Linggiu Reservoir, a regulatory reservoir that enables reliable abstraction of raw water from Johor River
Completion of integrated development of Sungei Api Api, the first project to incorporate aesthetic design considerations
- 1995
Corporatisation of PUB's electrical and piped gas undertakings to Singapore Power Ltd
Commencement of Public Utilities Act (PUA)

2000s

- 2001
Reconstitution of PUB as Singapore's national water agency, overseeing the entire water loop
Completion of Opera Estate Drainage Scheme, the first detention tank solution to prevent flooding
- 2002
Introduction of NEWater at National Day Parade 2002
- 2003
Commissioning of first 2 NEWater Plants (Bedok and Kranji)
- 2005
Commissioning of 1st Desalination Plant (SingSpring)
Introduction of PUB's water conservation mascot, Water Wally

Water Wally.

- 2006
Launch of Active, Beautiful, Clean Waters Programme

Marina Barrage and Marina Reservoir.
Launch of 1st Singapore International Water Week, a global platform to share and co-create innovative water solutions
Completion of Deep Tunnel Sewerage System (DTSS) Phase 1 which conveys used water by gravity to centralised water reclamation plants

2010s

- 2010
Commissioning of Marina Reservoir, Singapore's first freshwater reservoir in the city centre
- 2011
Expiry of 1961 Water Agreement
Commissioning of Punggol and Serangoon Reservoirs, expanding Singapore's catchment area to two-thirds of our land area

Serangoon Reservoir.
- 2018
Opening of Stamford Diversion Canal and Stamford Detention Tank, Singapore's largest detention tank

Stamford Detention Tank.

2020s

- 2020
Appointment of PUB as Singapore's coastal protection agency
Commissioning of Keppel Marina East Desalination Plant, Singapore's first large-scale, dual-mode desalination plant

Keppel Marina East Desalination Plant. (Photo courtesy of Keppel)
Introduction of PUB's water conservation mascot, Water Sally

Water Sally.
- 2021
Opening of one of world's largest floating solar farms at Tengeh Reservoir
- 2022
Issuance of inaugural PUB green bonds
- 2023
Completion of tunnelling works for DTSS Phase 2

YEARS AT A GLANCE

NOTABLE AWARDS

Awards for Water Innovations and Engineering Excellence

- Singapore Innovation Award (2006)
- Stockholm Industry Water Award (2007)
- Presidential Award by International Desalination Association (2013)
- International Desalination Association (IDA) Most Innovative Utility (2022)

ACTIVE, BEAUTIFUL AND CLEAN WATERS (ABC WATERS) PROGRAMME

- Global Water Awards Utility Performance Initiative of the Year (2013)

CHANGI WATER RECLAMATION PLANT DIGITAL TWIN

- International Water Association (IWA) Gold Award in Performance Improvement and Operational Solutions (2022)

CHOA CHU KANG WATERWORKS MEMBRANE EXPANSION

- Global Water Awards Water Project of the Year (2020)
- IWA Gold Award in Market-changing Water Technology and Infrastructure (2022)

CO-DIGESTION TECHNOLOGY OF FOOD WASTE AND USED WATER SLUDGE TO ENHANCE BIOGAS PRODUCTION

- Institution of Engineers, Singapore (IES) Prestigious Engineering Award (2020)

DEEP TUNNEL SEWERAGE SYSTEM

- ASEAN Outstanding Engineering Achievement Award (2005)
- IES Prestigious Engineering Award (2005)
- IWA Regional Project Innovation Award (2008)
- Global Water Awards Water Project of the Year (2009)

FISH ACTIVITY MONITORING SYSTEM (FAMS)

- IES Prestigious Engineering Award (2008)

INTELLIGENT NETWORK RENEWAL PROGRAMME

- Global Water Awards Distinction in Smart Water Project (2023)

INTELLIGENT WATER MANAGEMENT SYSTEM (IWMS)

- Business Analytics Innovation Award by SAS Institute Inc (2008)

KALLANG RIVER @ BISHAN-ANG MO KIO PARK

- Gold Award at Singapore Good Design Mark Awards (2014)



Kallang River @ Bishan-Ang Mo Kio Park.

MARINA BARRAGE

- ASEAN Outstanding Engineering Achievement Award (2007)
- IES Prestigious Engineering Award (2007)
- Universal Design Award (Silver) at BCA Construction Excellence Awards (2011)
- Platinum Award at Singapore Good Design Mark Awards (2014)

MICROBIAL ELECTROCHEMICAL SENSOR FOR USED WATER NETWORK

- Honour Award (Applied Research category) at IWA Asia Pacific Regional Project Innovation Awards (2014)

NANOSTRUCTURED PHOTOCATALYST FOR IMPROVED MEMBRANE FILTRATION PROCESSES

- IES Prestigious Engineering Award (2008)

SMART WATER GRID FOR WATER SUPPLY NETWORK

- Honour Award (Applied Research category) at IWA Asia Pacific Regional Project Innovation Awards (2014)

TUAS DESALINATION PLANT

- Global Water Awards Desalination Plant of the Year (2019)



Tuas Desalination Plant.

TUAS NEXUS/TUAS WATER RECLAMATION PLANT

- Water Award at iChemE Global Awards by the Institution of Chemical Engineers (2019)
- Most Innovative Water-Energy Nexus Project Award by International Desalination Association (2019)
- Bentley's Going Digital Awards in Infrastructure (2022)

ULU PANDAN WASTEWATER TREATMENT DEMONSTRATION PLANT

- Global Water Awards Water/Wastewater Project of the Year Award (2018)

Awards for People and Service Excellence

- Best Sightseeing/Leisure/Educational Programme at 20th Tourism Award 2005 for NEWater Visitor Centre (2005)
- Best Promoted Water Protection Activity/Programme for Water Wally (2006)
- AARP International Innovative Employer Award for Managing Older Workers (2010)
- Global Performance Excellence Award (World Class Award) (2011)
- Global Water Awards Utility Performance Initiative of the Year (2013)
- Golden World Awards Programme by International Public Relations Association (Britain) for Water Conservation Awareness Programme (2013)
- Honour Award (Marketing and Communications category) at IWA Asia Pacific Regional Project Innovation Awards for Water Conservation Awareness Programme (2014)

- Workplace Partnership Award (Gold) by Ong Teng Cheong Labour Leadership Institute (2014)
- Global Water Awards Resilient Water Agency of the Year (2021)
- MARKies Awards: Most Creative – Government Sector/Non-Profit Marketing (Gold) and Most Creative – Out-of-Home category (Bronze) (2022)
- Trade Show of the Year at the Singapore MICE Award for Singapore International Water Week (SIWW) 2022 (2023)



The SIWW team receiving the award for Trade Show of the Year.



OUR WATER FUTURE

The 60 MWp floating solar farm on Tengeh Reservoir is one of the world's largest inland floating solar farms, comprising 122,000 solar panels over 38 hectares.

(Photo courtesy of Sembcorp Industries)

OPERATIONAL EXCELLENCE

PUB is committed to our mission to supply good water, reclaim used water, tame stormwater and resist rising seas. We continue to enhance our water supply, improve used water and drainage infrastructure and advance our mission to protect our coastlines. To further our operational readiness, we are also leveraging digital technologies to enhance our capabilities.

Resilient Water Supply and Used Water Management



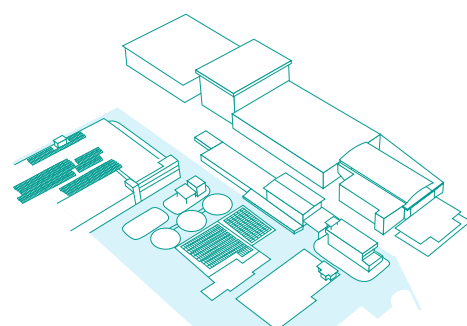
Jurong Island Desalination Plant.

Expanding water supply infrastructure

To further supplement the nation's water supply, Singapore's fifth desalination plant, Jurong Island Desalination Plant, was opened in April 2022.

In December 2022, we also completed the construction of a potable water (PW) pipeline from Murnane Service Reservoir to the city to meet the city's future water needs.

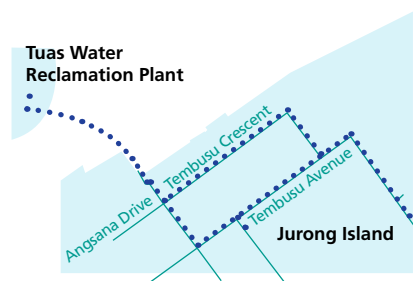
As water demand grows, PUB will continue to renew and upgrade our water treatment infrastructure and expand the water supply network.



The Choa Chu Kang Waterworks will be reconstructed by 2028 into a fully integrated and automated plant, adopting advanced water treatment technologies and smart plant capabilities.



The Tengah Service Reservoir will be constructed by 2025 to serve the upcoming Tengah New Town and its vicinity.

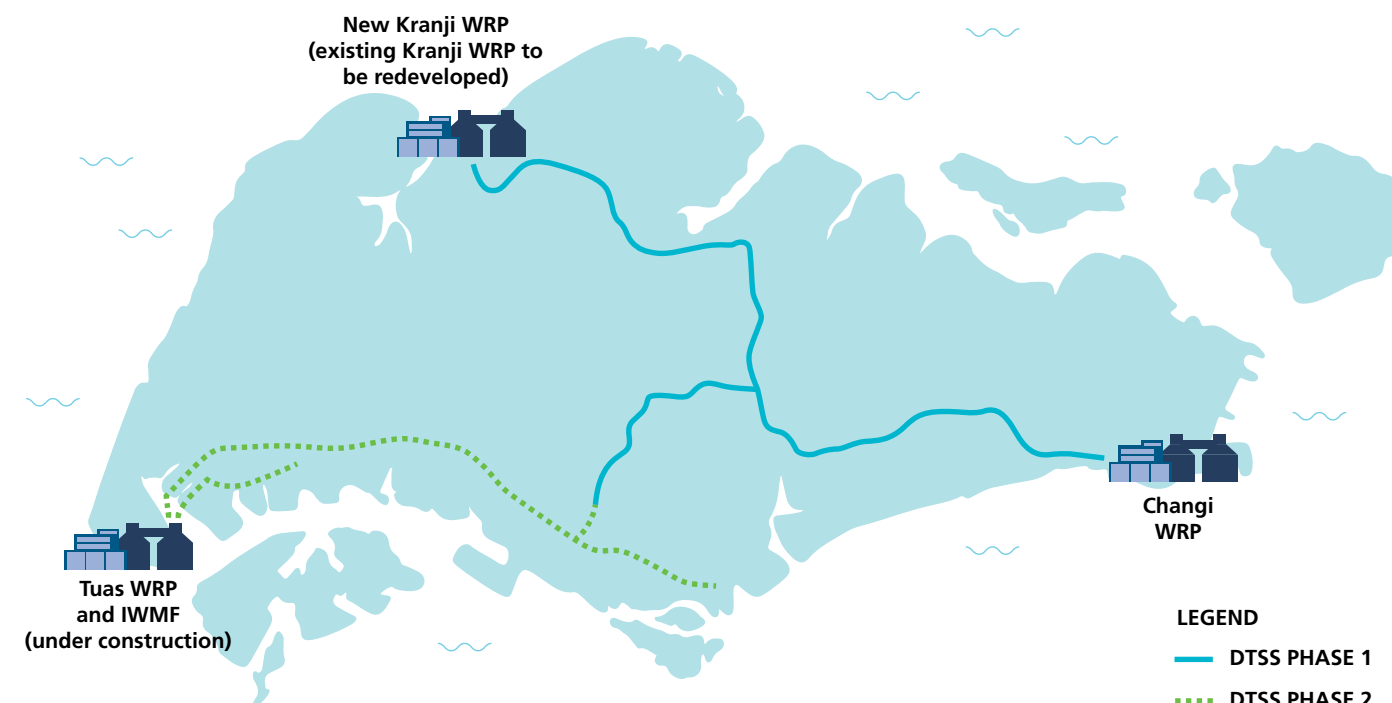


To support long-term water demand at Jurong Island, as well as the Jurong and Tuas industrial estates, new NEWater pipes will be laid from the new Tuas Water Reclamation Plant (WRP) to Jurong Island via a subsea tunnel. Construction is projected to be completed by 2024.

Closing the water loop islandwide

Used water collected across the island is a precious resource that can be recycled endlessly to fortify our water resilience.

We are enhancing our used water network to serve upcoming developments in North Woodlands, Punggol, Sengkang, Changi East and Loyang.



The 3-node used water system will be supported by several upcoming infrastructure developments.

- When completed in 2026, the Deep Tunnel Sewerage System Phase 2 (DTSS2) will boost our capacity to produce NEWater and free up land for higher-value use, enhancing Singapore's long-term water sustainability.
- Plans for the expansion of our used water capacity have commenced. Changi WRP's treatment capacity has been increased by about 10% with the completion of the first 22 million gallons a day (mgd) under the new Phase 2 expansion in 2023.
- The redevelopment and expansion of the existing Kranji WRP would allow PUB to meet the projected growth in demand for used water treatment in the northern part of Singapore. It will also enable the expansion of our NEWater capacity.
- Changi NEWater Factory 3 (CNF3) is slated to be completed by 2026 and will replace the Bedok NEWater Factory. It will bolster Singapore's NEWater production and enhance our overall water resilience. CNF3 will also incorporate flow reversal technology that will increase NEWater recovery and further reduce production losses.
- Tuas WRP, part of Tuas Nexus and the DTSS2 project, will be an advanced WRP that adopts innovative processes and smart technologies to reclaim every drop of water efficiently and reliably. When completed in 2026, it will further boost Singapore's NEWater supply to meet long-term needs.



TUAS NEXUS

Set to be completed in phases from 2025 onwards, Tuas Nexus will be the world's first integrated waste and water treatment facility designed from the ground up. Taking used water from DTSS2, Tuas WRP will be able to reclaim 320 Olympic-sized swimming pools of used water daily. With annual carbon savings equivalent to the off-roading of 42,500 cars, Tuas Nexus will help forge a more sustainable Singapore by optimising land use and maximising energy and resource recovery.

Artist's impression of Tuas Nexus.

Safeguarding used water quality

Every drop of water collected through PUB's used water network must meet specified standards to be fit for recycling and NEWater production. To deter illegal discharges, PUB leverages sensor technologies and collaborates with the industry on research and development (R&D) projects to develop sensors to enhance our monitoring capabilities for used water quality in the sewer network.

The wastewater laboratory at PUB's Waterhub expands our testing capabilities for wastewater samples and improves the turnaround time for investigations related to illegal discharges and abnormalities in used water quality.

High Operational Standards and Readiness

PUB continues to be anchored by operational excellence to deliver our mission. This requires us to overcome long-term manpower constraints as we scale operations, as well as increase effectiveness and efficiency in achieving our mission outcomes. Since 2019, PUB has made significant progress in our transformation journey to build a SMART PUB with a future-ready workforce.

Smart Operations

The twin thrusts of digitalisation and re-engineering of systems and processes have enabled PUB to increase adoption of smart operations. Digitalisation enables us to improve cost efficiency and productivity while integrating

functions and systems across departments, thereby facilitating data exchange and streamlining work processes.

Digitalisation can also create a safer working environment and improve productivity for officers. Launched in 2023, the PUB Enterprise Wearable System issues officers with smart wearable devices that are equipped with various features. For example, it can detect falls and alert supervisors or first responders to locate and communicate with officers in distress. This ensures that assistance can be rendered in a timely manner. The efficiency of operations can also be improved using features such as video capture, live-streaming and multi-way communication using the convenient push-to-talk (PTT) mode.



PEWS PUB ENTERPRISE WEARABLE SYSTEM

SAFETY BENEFITS

Reduce Risks



Prevent staff from entering unsafe zones



Detect and locate staff (fall/distress) for immediate assistance

PRODUCTIVITY BENEFITS

Do More with Less



Multi-way communications from anywhere



Remote support via live stream - 1 supervisor monitors multiple sites at once



On-the-go hands-free recording

A PUB officer at Ulu Pandan Water Reclamation Plant using the PEWS for hands-free video communications with staff while working at the plant.

Deployment of Beyond Visual Line of Sight (BVLOS) drones for water activities and water quality monitoring has enabled better site coverage and resolution within a shorter time, saving 4,000 man-hours in physical patrolling that has been re-channelled to more critical work.



The BVLOS drone takes off from DroPort for surveillance at Marina Reservoir.



Automated Preservative Dispensing System.

Since mid-2022, PUB has automated the process of adding preservatives to sample bottles. This has eliminated the need to manually measure and fill hundreds of sampling bottles with preservatives daily. Automation also increases the traceability of sample preservation.

The Smart Water Meter Programme outlines PUB's vision to digitalise Singapore's entire water system. We have started implementing smart water meters, with the first phase covering about 300,000 premises across Singapore. With access to near real-time monitoring and data transfer across the water network, we can transform and enhance our supply network operations and planning.

Using the MySmartWaterMeter portal that was launched in March 2022, customers with smart water meters installed can access their hourly water consumption data. They are also automatically alerted to suspected leaks in their premises. This empowers them to become smarter users of water, saving water and money in the process.



Smart Water Meter.

MySmartWaterMeter portal.

SUSTAINABLE WATER SYSTEM

With rising water demand and increasing reliance on climate-resilient sources of water such as desalinated water and NEWater, PUB's energy consumption and emissions footprint could quadruple by 2065. PUB's operations also generate significant amounts of waste such as treatment sludge, which is a concern as there is limited land for waste disposal in Singapore. To build a sustainable water system, we need to close the water, carbon and waste loops.

Managing Water Demand

Singapore's water demand is expected to more than double by 2065 and the non-domestic sector is projected to be a key driver of demand growth. On the domestic front, PUB's Make Every Drop Count campaign aims to drive behavioural change among households to ensure a sustainable and resilient water supply for the future. Through Water Efficiency Management Practices, PUB has also been working closely with the non-domestic sector to manage their industrial water demand, including the implementation of water-recycling projects.

To moderate the increase in water demand from water-intensive sectors, PUB recently introduced mandatory recycling requirements for large water users in the wafer fabrication, electronics and biomedical sectors. These requirements apply to new projects from January 2024 onwards and can help businesses reduce water bills and improve their long-term competitiveness.

PUB has also revamped our award framework to recognise water-efficient organisations for their outstanding efforts in water sustainability. The Water Efficiency Awards and Singapore Watermark Awards will further recognise outstanding role models in water conservation. The new Water Efficiency Awards (Projects Category) was introduced in August 2023 to recognise water efficiency projects that demonstrate remarkable improvements in their water efficiency performance.

PUB enhanced the Water Efficiency Fund (WEF) framework in July 2023 to further support businesses in water sustainability efforts.

PROJECT CATEGORIES

WATER RECYCLING PROJECT

(Full-scale implementation of water recycling systems)

- Increased grant support from \$1 million to \$5 million per project

INDUSTRIAL WATER SOLUTIONS DEMONSTRATION FUND (IWSDF)

(Adoption of innovative solutions or emerging water recycling technologies)

- Increased grant support from \$4 million to \$5 million per project

WATER EFFICIENCY ASSESSMENT

(Identification of water saving opportunities)

- Increased co-funding from 50% to 70% of project costs capped at \$30,000

PILOT STUDY

(Implementation of small-scale pilot water recycling systems)

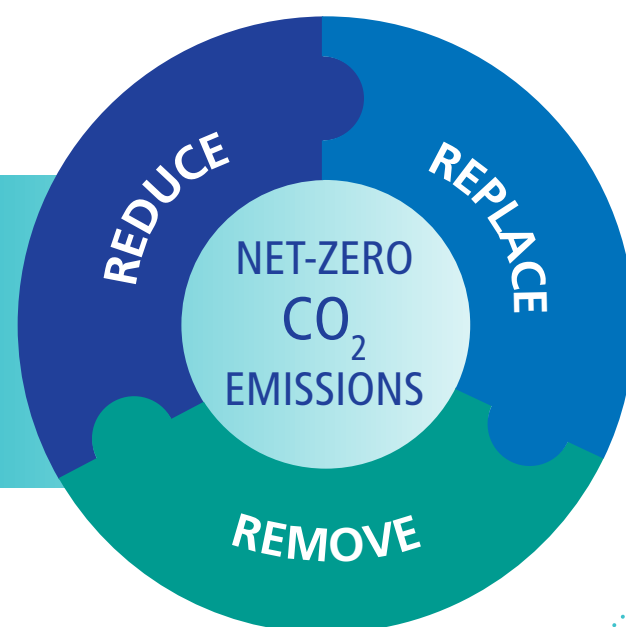
- Increased co-funding from 50% to 70% of project costs
- Increased grant support from \$50,000 to \$150,000

Enhancements for different categories of projects under the enhanced WEF framework.

Achieving Sustainable Operations

Closing the carbon loop

To achieve net-zero carbon emissions around 2045, PUB has embarked on our 3R Decarbonisation Strategy:



REDUCE

carbon emissions by enhancing energy efficiencies

- Seawater desalination is an energy-intensive process. PUB is piloting the use of low-energy technologies to reduce energy use and carbon emissions from this process.

REPLACE

fossil-fuel based energy with renewable sources

- Large-scale floating solar photovoltaic (PV) systems will enable us to replace carbon-based energy with solar energy for our operations. To date, we have cumulatively deployed 64 megawatt peak (MWp) of floating solar systems, such as the 60 MWp solar farm at Tengeh Reservoir.
- PUB will be calling the tender for the 44 MWp deployment at Pandan Reservoir in the later part of 2023. Concurrently, an environmental impact assessment for the 100 MWp deployment at Lower Seletar Reservoir commenced in 2023.

REMOVE

carbon through carbon capture and utilisation solutions (CCUS)

- The PUB Carbon Zero Grand Challenge was launched to crowdsource innovative CCUS that can be integrated with PUB's operations. Two awarded projects for proof-of-concept were completed in August 2023. One project involved using a revolving algal biofilm growth system to capture carbon dioxide while simultaneously treating anaerobic digester effluent. The other project involved the capture of carbon dioxide from biogas via a combined solvent absorption and membrane separation process. A catalytic carbon mineralisation process then converted the captured carbon dioxide to solid carbonates.
- PUB is currently piloting the use of an ocean CCUS based on electrochemical technology. It will be able to capture carbon dioxide in seawater as part of the desalination process, while producing hydrogen and softening seawater.

Closing the waste loop

With limited landfill options, PUB is working towards zero operational waste. To do that, PUB is looking for solutions to reduce and re-use our waste products. For example, under the Competitive Funding for Water Research (CWR) programme, PUB is funding three proposals from Nanyang Technological University (NTU), the Agency for Science, Technology and Research (A*STAR) and Sunstar Investment Holding. The funded projects will study the recovery of lithium, calcium and magnesium carbonates from seawater reverse osmosis brine, and the re-use of sludge from used water treatment to produce slag which can be used for non-structural construction like road works.

PUB is also working towards harnessing the water-energy-waste nexus at Tuas Nexus. The co-digestion of treated food waste from NEA's IWMF and used water sludge from PUB's Tuas WRP could produce up to 40% more biogas. This biogas is then channelled back to IWMF and combusted in superheaters to enhance the overall plant thermal efficiency and power generation. Through the co-location of these facilities, we can leverage the synergies between water, energy and waste processes to turn waste into energy.



Water-energy-waste synergies at Tuas Nexus.

Expanding Green Infrastructure through Green Financing

As PUB advances our sustainability agenda, we have established a PUB Green Financing Framework as a guide for raising green financing to meet capital needs for identified green projects.

We issued \$800 million in 30-year fixed rate green bonds in August 2022 to support investment in green infrastructure.

RESILIENCE

Rising sea levels and extreme rainfall brought on by climate change pose an existential threat to Singapore. Singapore needs to start planning today to ensure our coasts are protected and our inland areas are not flooded. PUB will adopt an innovative, integrated and multi-functional approach to transform our waters and coastline to achieve resilience for Singapore.

Coastal Protection and Flood Resilience

Protecting our coasts

PUB is progressively conducting Site Specific Studies (SSS) to assess flood risk and develop coastal adaptation measures for Singapore's coastlines. Following the SSS for City-East Coast and North-west Coast (Coastal Reservoirs), the study for North-west Coast (covering Sungei Kadut and Lim Chu Kang) commenced in September 2023.

The Coastal Barrier Feasibility Study, which aims to assess the feasibility of implementing coastal barriers as a coastal protection measure for the South-west Coast of Singapore, commenced in January 2023.

PUB is formulating coastal protection policies to regulate coastal protection measures and activities. A code of practice is also being developed to guide the design, construction, operation and maintenance of coastal protection infrastructure.

PUB is developing the Coastal-Inland Flood Model to assess the combined flood impact from intense rainfall and extreme coastal events.

Ensuring adequacy of drainage infrastructure

As climate change brings about higher rainfall intensity and rising sea levels, PUB continues to review and enhance our drains and waterways to ensure their adequacy. Where possible, ABC Waters features are integrated with the upgraded drains and waterways.

Drains that will be undergoing improvement works to manage flood risk include Siglap Canal, Opera Estate outlet drain and Sungei Serangoon East and West subsidiary drains.

To further manage the risk of inland flooding, PUB is enhancing reservoir monitoring and operations by using the Catchment and Waterways Operation Systems (CWOS). The CWOS can forecast rainfall inflows and recommend tidal gate operations at our estuarine reservoirs.

SUNGEI TAMPINES

After four years of construction, Sungei Tampines was officially reopened in July 2022, following works to expand it to enhance flood protection in the Tampines North area. Under the ABC Waters programme, the concrete canal was transformed into a partially naturalised river and new communal spaces were provided to enhance the overall liveability of the surroundings.



Sungei Tampines before transformation.



Sungei Tampines after transformation.

Funding Our Infrastructure

The Coastal and Flood Protection Fund (CFPF) was set up in 2020 with an initial injection of \$5 billion to fund the capital and non-recurrent coastal protection and drainage-related expenditures by PUB. The allowable purposes are prescribed under the Public Utilities Act. PUB has developed a governance framework to guide the use of these funds. Some examples of projects that the CFPF has funded include the SSS for Singapore's North-west Coast, as well as drainage improvement works to deal with increasing rainfall intensity due to climate change.

Deepening our expertise

Given the long-term endeavour to achieve flood resilience in Singapore, PUB needs to build capability. In March 2023, PUB launched the \$125 million Coastal Protection and Flood Management Research Programme (CFRP). CFRP is a dedicated programme aimed at galvanising R&D efforts in developing innovative and smart coastal protection solutions among the local industry and research institutes, while spurring the growth of a vibrant R&D ecosystem for coastal and flood resilience.

A new Centre of Excellence (CoE), named Coastal Protection and Flood Resilience Institute Singapore (CFI Sg) was launched in September 2023. Hosted by the National University of Singapore (NUS), the CoE cultivates talents by bringing together the academia and collaborating closely with the industry. Under CFI Sg, research and test-bedding of new solutions would be conducted in collaboration with other research institutes and the industry. This will accelerate the translation of technologies for application, while cultivating domestic capabilities in coastal and flood protection solutions.

Innovation has always been central to PUB's efforts. Under the Global Innovation Challenge (GIC) 2021 proposal for innovative coastal protection solutions, Delta Marine Consultants (DMC) carried out a proof-of-concept for a customised modular block for application in Singapore. Its adaptable and scalable design minimises land-take and integrates with other land uses, which is advantageous given Singapore's land constraints and coastal conditions. The proof-of-concept study was completed in 1Q 2023 and demonstrated the feasibility of XblocPlus armour units as a coastal protection solution for Singapore. PUB is now exploring a pilot testbed in field conditions for the next phase.



Minister for Sustainability and the Environment Grace Fu participated in a dialogue on nurturing talent in coastal protection and flood resilience at the launch of the CFI Sg.



Artist's impression of possible XblocPlus application along Singapore's coastline. (Photo courtesy of Delta Marine Consultants)

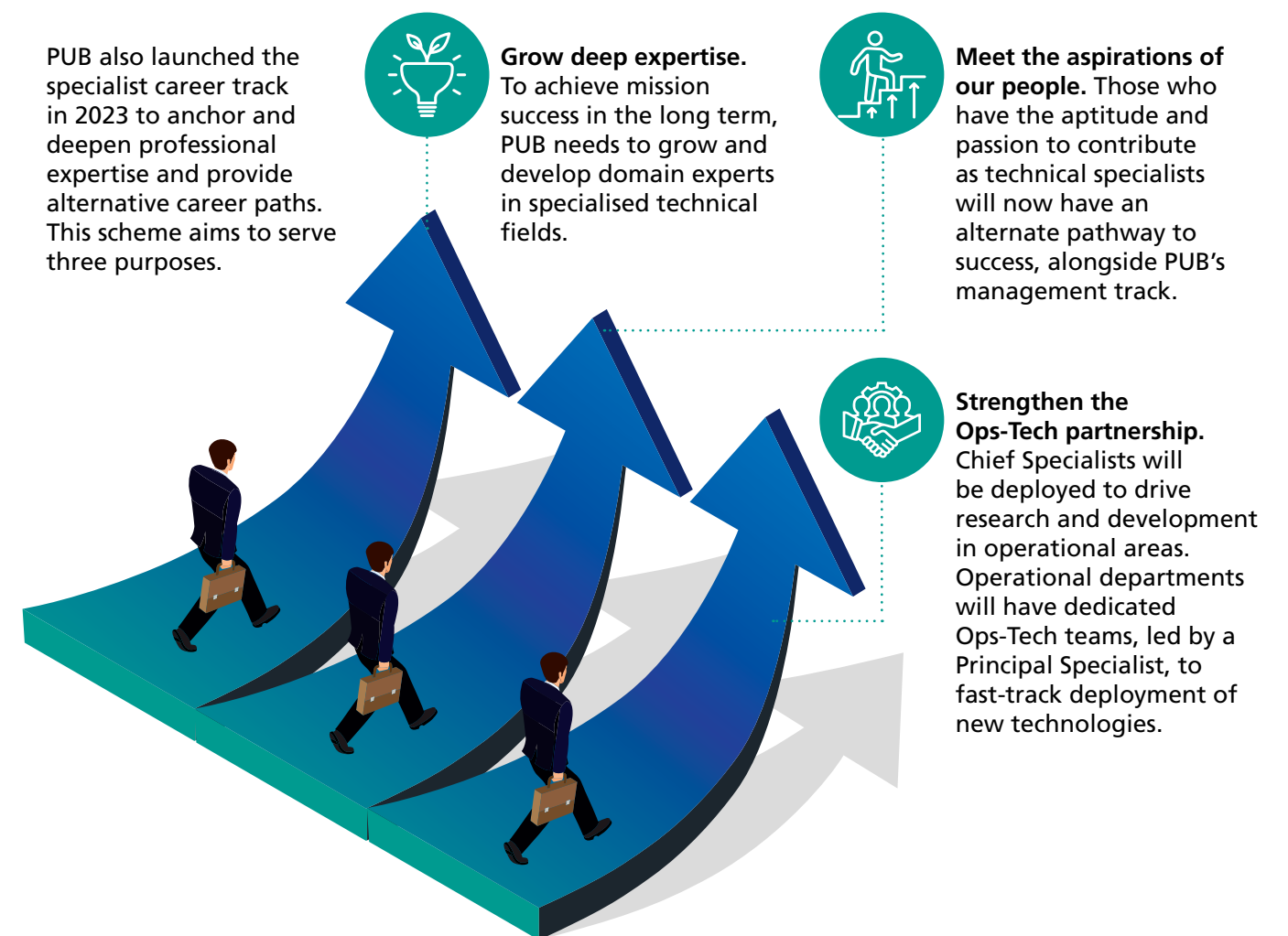
OUR PEOPLE

At PUB, our people are our greatest assets. To achieve mission success into the future, PUB will need to nurture the right workforce, with people who are both competent and committed.

Competent and Committed Workforce

Competence

To attract and retain talents, PUB launched a new Engineering and Science scheme in 2022. The scheme creates a stronger sense of progression to meet our officers' aspirations, enhancing PUB's competitiveness with the market.



Tan Tien Ser is one of PUB's pioneer Chief Specialists. He specialises in Hydroinformatics, Hydraulics and Hydrology, and has led our drainage modelling and planning for over 20 years. He is also a National Hydrological Adviser to the Singapore Permanent Representative of the World Meteorological Organisation.

On the introduction of the Specialist Career Pathway, Tien Ser shared, "It is important for PUB to have a core team of specialists in mission-critical areas who can use their in-depth technical knowledge and skills to come up with innovative technical solutions. One of our jobs as Chief Specialist is to equip our team with specialised knowledge and skills needed for their work."



Commitment

PUB recognises the importance of strengthening the commitment of our workforce and ownership of our mission. To nurture a committed team, we must build a positive work environment and team culture.

This starts with leadership. Supervisors at all levels in PUB play a key role in fostering a positive work environment, building teams and caring for staff.

From 2023, PUB will institute 360 leadership feedback as a key leadership development tool. This provides us with staff feedback from the ground, which can help leaders uncover blind spots and equip them to better perform their roles. In the long run, 360 leadership feedback aims to shape the right leadership attributes within PUB, while strengthening commitment and engagement in the workplace.



To enhance staff engagement and culture-building, PUB introduced a new Telegram channel in 2022 to push out bite-sized content on PUB-related announcements, staff features, sports and games, interactive contests and polls. By leveraging the digital platform, internal communications have become more accessible and engaging for staff.



Internal roadshow to launch PUB's internal Telegram channel to staff.

PUB60: OUR WATER STORY, OUR WATER FUTURE

2023 is a special year for PUB as it marks 60 years of water excellence. Over these 60 years, PUB has advanced Singapore's water security by turning challenges into strengths. To commemorate this significant milestone, PUB launched a series of activities throughout the year to rally our staff to not only celebrate the accomplishments of our past, but to also fortify our confidence to chart our future.

Themed "Our Water Story, Our Water Future", PUB60 activities centred around showing appreciation for four key aspects of our water journey: *Our Waters*, *Our Family*, *Our People* and *Our Stories*. Accordingly, we invited our staff to walk, cycle or run along trails around *Our Waters* – reservoirs and waterways. For *Our Family*, we had open houses for staff to bring their family members to visit our installations and learn about what our staff do at work through interactive and hands-on activities. There were also initiatives to feature *Our People* and share *Our Stories*, as well as staff engagement on our social media platforms. Through these activities, we sought to strengthen the bonds between fellow officers and instil a greater sense of belonging to our PUB family.

PUB staff, alongside their colleagues and family members, participated enthusiastically in the various activities. Staff also organised departmental walks along the water trails to build camaraderie and create fond memories.

Our PUB60 celebrations will culminate with an anniversary dinner in October 2023.



Staff took part in an organised walking trail along *Our Waters* at Springleaf Nature Park on 28 July 2023.



PUB staff brought their family to the open house at Waterhub held on 1 June 2023.



Kayaking event at Marina Barrage on 26 June 2023.

VIBRANT WATER ECOSYSTEM

PUB cannot achieve our mission and overcome future challenges on our own. Our partnerships with stakeholders are crucial to fostering shared water ownership and values while building a vibrant water industry and enhancing our living environment.

Every March, PUB celebrates Singapore World Water Day, which is PUB's key platform to engage partners and stakeholders on water conservation and to remind the public to make every drop count.



Building Shared Water Ownership and Values

PUB regularly engages the public to share water sustainability messages through campaigns and stakeholder engagements. By doing so, Singaporeans can understand the need to build a collective ownership in valuing every drop of water.

We launched the annual “Make Every Drop Count” water conservation campaign in March this year, in conjunction with Singapore World Water Day (SWWD) celebrations. This year’s campaign reinforces the centrality of responsible water use and management in the nation’s sustainability efforts, encouraging individuals and businesses to play their part to contribute to building a sustainable water future for Singapore.

With the theme “Simple Actions, Sustainable Future”, PUB’s water conservation campaign reminds everyone – individuals, the community and businesses – to rethink their water use and incorporate good water habits as part of sustainability.



Posters from PUB’s water conservation campaign this year.



Senior Minister of State for Sustainability and the Environment Dr Koh Poh Koon listening in to participants who shared about their aspirations for the coastal areas at Our Coastal Conversation session held on 28 October 2022.

With sea level rise an imperative challenge for Singapore, PUB has started engaging diverse groups of stakeholders through “Our Coastal Conversation” sessions. These sessions help foster shared values while seeking views from multiple stakeholders on how to shape the future of Singapore’s shores and protect our coastal areas. Two sessions for the City-East Coast area were conducted in October 2022 and we will continue to gather views as we develop adaptation measures for our coastlines.

Outreach and Engagement with the Water Industry, Utilities and Cities

A vibrant water industry is essential to keep PUB and Singapore at the forefront of water treatment technology. PUB works closely with our economic agencies to develop the industry and capture value from investments in R&D. Promising new water technologies are also commercialised to enable PUB and other countries to benefit from cutting-edge research.



PUB’s Chief Executive, Goh Si Hou, spoke at the inaugural Utilities CEO Roundtable at Singapore International Water Week Spotlight 2023.

PUB organised the Singapore International Water Week Spotlight 2023 from 4 to 6 June 2023. With the theme of “Urgent Climate Action for a Sustainable Water Future”, the event gathered leaders from the utilities sector, other cities and industry to share their experiences and solutions in tackling climate change and water sustainability challenges.

In his welcome address at the inaugural Utilities CEO Roundtable, PUB’s Chief Executive, Goh Si Hou, shared the importance of collaboration among utilities to work towards a sustainable water future. Utilities should also leverage technology and innovation to deal with the challenges ahead.

The Singapore Water Exchange (SgWX) was established in 2018 to develop a global marketplace for innovative water companies. SgWX’s current ecosystem includes 38 consultants, technology suppliers, engineering contractors, associations and incubators/accelerators from 16 countries, an increase of 37% from the previous year. SgWX also hosts 70 visits from senior leaders and foreign delegations every year as part of our efforts to connect tenants with business opportunities and promote partnership in research, innovation and enterprise.

FINANCIAL REPORT



The Sengkang Floating Wetland is Singapore's largest man-made floating wetland, measuring half the size of a football field.

**FINANCIAL HIGHLIGHTS
FOR THE FINANCIAL YEAR ENDED 31 MARCH 2023**

		Group	
		FY2022	FY2021
		\$	\$
		million	million
OPERATING RESULTS	Note		
Operating Income		1,440.6	1,447.8
Net Non-Operating Income	(a)	69.6	85.0
Operating Expenses		(1,704.2)	(1,557.1)
Finance Expenses		(46.2)	(33.2)
Net (Loss)/Income before Government Grants		(240.2)	(57.5)
Operating Grants from Government	(b)	437.3	402.3
Net Income after Government Grants and before Contribution to Consolidated Fund and Taxation		197.1	344.8
Contribution to Consolidated Fund		(33.6)	(58.9)
Taxation		-	-
Net Income after Government Grants and after Contribution to Consolidated Fund and Taxation	(e)	163.5	285.9

FINANCIAL POSITION

Property, Plant and Equipment	(c)	9,726.3	9,066.9
Cash and Cash Equivalents		634.3	331.3
Other Assets	(d)	305.5	274.2
Total Assets		10,666.1¹	9,672.4

Capital Account	(e)	7,024.2	6,860.3
Accumulated Losses		(0.5)	(0.2)
Water Efficiency Fund		6.0	6.0
Share Capital		1.3	1.3
Borrowings	(f)	1,700.0	1,000.0
Other Liabilities	(g)	1,935.1	1,805.0
Total Equity and Liabilities		10,666.1¹	9,672.4

Average Total Assets (\$ billion)	10.2	9.5
Return on Total Assets ² %	2.0	3.3
Gearing Ratio ³ %	25.2	18.1

¹ The figure differs from financial statements due to rounding differences.

² Return on Total Assets = Return before Interest and after Contribution to Consolidated Fund and Tax / Average Total Assets

³ Gearing Ratio = (Borrowings + Lease Liabilities) / Average Total Assets

PERFORMANCE OVERVIEW

For the financial year 2022, the Group recorded a loss of \$240.2 mil (prior year loss: \$57.5 mil) before operating grants from Government. The Group's net income after Government Grants and Contribution to Consolidated Fund and Taxation was \$163.5 million (prior year: \$285.9 million). Net income was \$122.4 million lower compared to the previous year, which is largely attributed to an increase in operating expenses. PUB's retained earnings were appropriated to the capital account to reflect PUB's investments in Property, Plant and Equipment (PPE).

INCOME

The Group's operating income of \$1,440.6 million (prior year: \$1,447.8 million) was largely from its water supply and used water operations. The Group's other major source of income of \$437.3 million (prior year: \$402.3 million) is from Government operating grants.

OPERATING EXPENSES

The Group's operating expenses⁴ totalled \$1,704.2 million in FY2022 (prior year: \$1,557.1 million). Operating expenses of the Group comprise largely depreciation of PPE, manpower, maintenance, electricity, and other expenses incurred relating to the collection, production, distribution and reclamation of water in Singapore.

The Group's operating expenses for the financial year was \$147.1 million or 9.4% higher than the previous financial year. Higher energy tariffs had resulted in a significant increase in energy costs, accounting for 45.4% of the cost increase. Other major contributors included higher cost of materials, maintenance and manpower.

FINANCIAL POSITION

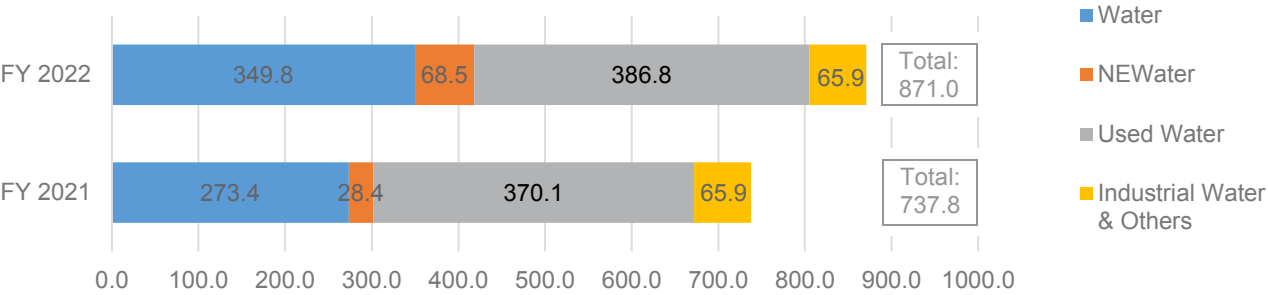
As at 31 March 2023, the Group's total assets stood at \$10,666.1 million (prior year: \$9,672.4 million). 91.2% of the Group's total assets or \$9,726.3 million (prior year: 93.7%, \$9,066.9 million) are accounted for by PPE. The increase of PPE by \$659.4 mil was largely due to investments made by PUB in capital assets offset by the depreciation of PUB's assets during the year. The capital investments were funded with cash from operations and borrowings from bond issues.

⁴ The Group's operating expenses do not include depreciation expenses for the drainage, ABC Waters Programme and used water reticulation network assets belonging to the Government.

CAPITAL EXPENDITURE

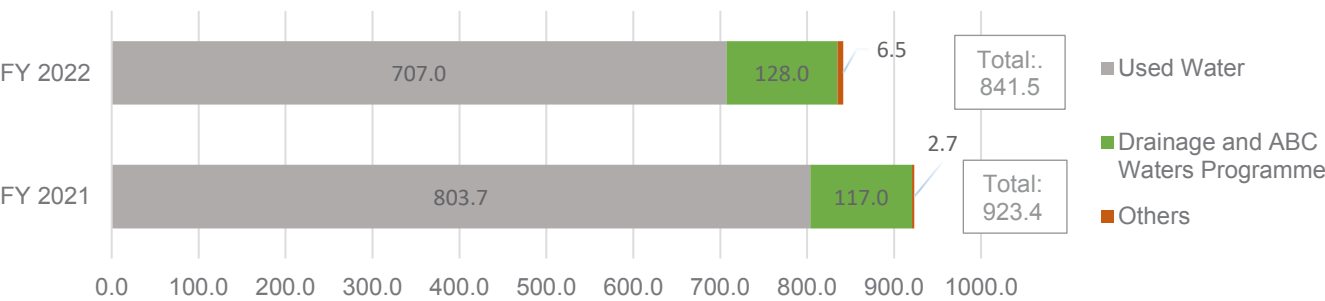
During the year, the capital expenditure of the Group was \$1,712.5 million (prior year: \$1,661.2 million). This comprised PUB-funded capital expenditure of \$871.0 million and government-funded capital expenditure of \$841.5 million as shown in the following charts:

PUB-Funded (\$ million)



PUB incurred \$871.0 million (prior year: \$737.8 million) in capital expenditure as part of its continual efforts to replace, improve and expand water and used water infrastructure to cater for Singapore’s future water needs. These infrastructures are funded by cash generated from revenue collected (net of expenses) and borrowings.

Government-Funded (\$ million)



Government-funded capital expenditure of \$841.5 million (prior year: \$923.4 million) were mainly for drainage network, used water reticulation network and the ABC Waters Programme projects. These assets belong to the Government.

Notes to Financial Highlights:

- (a) Net Non-Operating Income:** Net non-operating income largely consists of project management fees, recognition of prior year deferred income, interest income from fixed deposits and short-term bills, and rental income.
- (b) Operating Grants from Government:** Operating grants from Government are received for the operations and maintenance of drainage systems, the Active, Beautiful, Clean Waters Programme, coastal management and other government-funded activities.
- (c) Property, Plant and Equipment:** PPE includes land, pipelines, plant, equipment and buildings (to house the plant and equipment) and is reported at current Net Book Values in the financial statements.
- (d) Other Assets:** Trade and other receivables along with inventories, constituted the bulk of the Group’s Other Assets. Trade receivables are receivables due from customers with respect to water supply and used water services. Inventories include consumables and spares held for PUB’s operations, used primarily for the treatment of water and used water, and maintenance of plant and equipment.
- (e) Capital Account:** PUB’s retained earnings for the financial year were appropriated to the capital account to reflect the capital commitment for the development of PUB’s PPE. PUB continues to channel surpluses to ensure timely investments in water and used water infrastructure to support economic and population growth.
- (f) Borrowings:** The Group’s borrowings comprise unsecured fixed-rate bonds, including \$800 million in green bonds issued in Aug 2022, and are used for general corporate purposes including financing the capital expenditure requirements and PUB’s general working capital needs.
- (g) Other Liabilities:** Other liabilities mainly consist of lease liabilities arising from leases of office premises, lands, buildings and plants under the Design-Build-Own-Operate projects for Group’s operations, deferred capital grants, and trade and other payables.

TEN - YEAR SUMMARY OF OPERATING RESULTS AND FINANCIAL POSITION

GROUP	FY2022 \$'000	FY2021 \$'000	FY2020 \$'000	FY2019 \$'000	FY2018 \$'000	FY2017 \$'000	FY2016 \$'000	FY2015 \$'000	FY2014 ⁴ \$'000	FY 2013 \$'000
OPERATING RESULTS										
Operating Income	1,440,551	1,447,819	1,418,973	1,447,273	1,404,797	1,286,167	1,222,432	1,201,313	1,182,495	1,143,538
Operating Expenses	(1,704,175)	(1,557,127)	(1,408,864)	(1,417,507)	(1,405,514)	(1,323,969)	(1,270,242)	(1,239,334)	(1,193,636)	(1,138,645)
Net Operating (Loss)/Income	(263,624)	(109,308)	10,109	29,766	(717)	(37,802)	(47,810)	(38,021)	(11,141)	4,893
Net Non-Operating Income	69,609	85,009	59,813	91,342	74,338	71,411	73,459	56,345	49,842	47,686
Finance Expenses	(46,254)	(33,167)	(37,964)	(35,480)	(74,838)	(84,014)	(84,844)	(87,660)	(95,926)	(97,407)
Net (Loss)/Income before Government Grants	(240,269)	(57,466)	31,958	85,628	(1,217)	(50,405)	(59,195)	(69,336)	(57,225)	(44,828)
Government Operating Grants	437,341	402,322	381,712	355,138	354,849	332,868	298,826	270,431	276,992	296,378
Net Income after Government Grants and before Consolidated Fund and Tax	197,072	344,856	413,670	440,766	353,632	282,463	239,631	201,095	219,767	251,550
Contribution to Consolidated Fund and Tax	(33,576)	(58,862)	(70,456)	(75,046)	(60,112)	(48,392)	(40,691)	(34,258)	(37,378)	(42,530)
Net Income after Government Grants and after Contribution to Consolidated Fund and Tax	163,496	285,994	343,214	365,720	293,520	234,071	198,940	166,837	182,389	209,020
FINANCIAL POSITION										
Property, Plant and Equipment	9,726,275	9,066,900	8,709,201	8,241,303	8,121,274	7,854,348	7,147,445	6,793,808	6,778,733	6,855,671
Investment in Bonds	-	-	-	-	-	-	-	90,945	98,745	-
Cash and Cash Equivalents	634,274	331,326	397,829	615,420	450,282	513,438	683,301	830,546	780,255	1,088,925
Other Current Assets	285,284	247,907	246,416	244,640	242,841	270,042	236,746	220,954	215,554	203,059
Other Non-Current Assets	20,197	26,266	5,128	10,395	9,417	8,778	6,572	5,743	9,012	195
Total Assets	10,666,030	9,672,399	9,358,574	9,111,758	8,823,814	8,646,606	8,074,064	7,941,996	7,882,299	8,147,850
Borrowings ¹	1,700,000	1,000,000	1,000,000	1,300,000	1,300,000	1,400,000	1,400,000	1,650,000	1,750,000	2,100,000
Deferred Income ¹	564,264	562,343	502,656	505,515	528,773	549,467	225,831	243,117	246,641	248,161
Lease Liabilities ¹	860,079	723,808	751,438	426,420	598,059	629,320	658,882	512,793	535,317	556,558
Provision for Asset Restoration Obligations	14,558	12,903	13,393	14,562	12,424	12,345	12,613	13,829	14,577	27,047
Other Current Liabilities	496,197	505,909	510,097	628,987	512,518	476,915	432,163	376,767	355,537	418,246
Total Liabilities	3,635,098	2,804,963	2,777,584	2,875,484	2,951,774	3,068,047	2,729,489	2,796,506	2,902,072	3,350,012
Share Capital	1,256	1,255	1,057	1	1	1	1	1	1	1
Capital Account	7,024,199	6,860,331	6,572,705	6,228,274	5,863,311	5,571,307	5,335,175	5,138,057	4,972,795	4,790,787
Water Efficiency Fund	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
(Accumulated Losses)/Retained Earnings ²	(523)	(150)	1,228	1,999	2,728	1,251	3,399	1,432	1,431	1,050
Total Equity	7,030,932	6,867,436	6,580,990	6,236,274	5,872,040	5,578,559	5,344,575	5,145,490	4,980,227	4,797,838
Total Liabilities and Equity	10,666,030	9,672,399	9,358,574	9,111,758	8,823,814	8,646,606	8,074,064	7,941,996	7,882,299	8,147,850
Net Assets/(Liabilities) of Trust Funds ³	4,775,558	4,868,737	4,923,289	(49,985)	(51,071)	(59,179)	(52,403)	(36,939)	(38,115)	634

Notes:

¹ Borrowings, Deferred Income, Lease Liabilities comprise current and non-current portion.

² Retained earnings was after setting aside amounts to meet the Board's capital commitments in accordance with Section 14 of the Public Utilities Act (Chapter 261).

³ Assets and liabilities belonging to Trust Funds are excluded and presented separately from the Group's assets and liabilities.

⁴ With effect from FY2014, PUB took over the industrial water operations from the Government.

TEN - YEAR SUMMARY OF STATISTICAL DATA

	FY2022	FY2021	FY2020	FY2019	FY2018	FY2017	FY2016	FY2015	FY2014	FY2013
EMPLOYEES										
Number of employees										
- PUB	3,229	3,242	3,282	3,342	3,351	3,425	3,442	3,421	3,382	3,229
- PUBC	-	-	6	25	1	-	-	-	-	-
Group	3,229	3,242	3,288	3,367	3,352	3,425	3,442	3,421	3,382	3,229
CUSTOMERS										
Number of accounts ('000)	1,687	1,670	1,639	1,622	1,599	1,567	1,527	1,463	1,424	1,363
PERFORMANCE INDICATORS										
As at end of financial year										
- Number of accounts served per PUB employee	522	515	499	485	477	458	444	428	421	422
- Net Operating Income after grant per employee (S\$'000)	54	90	119	114	106	86	73	68	79	93
For period January - December										
- Flood Prone Areas (hectare) ¹	27	28	28	29	29	30	31	32	34	36
- Number of Disruptions per month per 1,000 km of Sewers	10	10	10	10	10	10	11	11	11	12
- Per capita Household Water Consumption (litres/day) ²	149	158	154	141	141	143	148	149	149	-
- Per capita Domestic Water Consumption (litres/day) ²	-	-	-	-	-	-	-	151	150	151
- % of Unaccounted for Water ³	-	-	-	5.5	5.6	5.1	5.0	5.0	5.2	5.2
- % of Distribution Losses ³	7.5	8.2	8.0	8.2	-	-	-	-	-	-
- % of tests meeting WHO Guidelines for Drinking-Water Quality and EPH (Quality of Piped Drinking Water) Regulations	100	100	100	100	100	100	100	100	100	100
CAPITAL EXPENDITURE										
	\$ million	\$ million	\$ million	\$ million	\$ million	\$ million	\$ million	\$ million	\$ million	\$ million
FUNDED BY AND BELONGING TO PUB										
Water	349.8	273.4	228.5	337.7	413.3	404.6	363.6	157.6	102.0	135.5
NEWater	68.5	28.4	11.2	14.2	8.6	13.9	20.9	50.6	65.1	81.8
Used Water	386.8	370.1	188.9	195.4	187.0	294.6	104.5	94.7	51.0	64.2
Industrial Water & Others ⁴	65.9	65.9	58.2	50.9	42.6	19.9	11.8	17.0	4.2	0.1
Total	871.0	737.8	486.8	598.2	651.5	733.0	500.8	319.9	222.3	281.6
FUNDED BY AND BELONGING TO GOVERNMENT										
Used Water	707.0	803.7	573.4	789.0	450.6	254.5	193.3	193.7	140.3	142.6
Drainage and ABC Waters Programme	128.0	117.0	77.3	209.4	270.7	307.0	357.5	300.7	215.2	161.7
Others	6.5	2.7	0.3	-	-	-	-	-	-	-
	841.5	923.4	651.0	998.4	721.3	561.5	550.8	494.4	355.5	304.3
Total	1,712.5	1,661.2	1,137.8	1,596.6	1,372.8	1,294.5	1,051.6	814.3	577.8	585.9

Notes:

¹ From FY2013 onwards, flood prone area (hectare) was reported based on calendar year. It was reported based on financial year previously.

² From FY2016 onwards, the indicator was revised from "Per capita Domestic Water Consumption" to "Per capita Household Water Consumption", which refers to water consumption within household premises only (i.e. usage in purpose built dormitories and common areas excluded).

³ "Distribution Losses" has replaced the "Unaccounted for Water" indicator from 2019 onwards as "Distribution Losses" accounts for all possible leaks and is therefore, a more holistic indicator of water loss.

⁴ With effect from FY2014, PUB took over the industrial water operations from the Government.

Public Utilities Board and its Subsidiaries

Annual Financial Statements
For the financial year ended 31 March 2023

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Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of Public Utilities Board (the “Board”) and its subsidiaries (collectively, the “Group”), which comprise the statements of financial position of the Group and the Board as at 31 March 2023, statements of comprehensive income and statements of changes in equity of the Group and the Board and the statement of cash flows of the Group for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements of the Group and the statement of financial position, statement of comprehensive income and statement of changes in equity of the Board are properly drawn up in accordance with the provisions of the Public Sector (Governance) Act 2018 (“PSG Act”), the Public Utilities Act 2001 (the “Act”) and Singapore Statutory Board Financial Reporting Standards (“SB-FRSs”) so as to present fairly, in all material aspects, the state of affairs of the Group and the Board as at 31 March 2023 and the results and changes in equity of the Group and the Board and cash flows of the Group for the year ended on that date.

Basis for Opinion

We conducted our audit in accordance with Singapore Standards on Auditing (“SSAs”). Our responsibilities under those standards are further described in the *Auditor’s Responsibilities for the Audit of the Financial Statements* section of our report. We are independent of the Group in accordance with the Accounting and Corporate Regulatory Authority (“ACRA”) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (“ACRA Code”) together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. For each matter below, our description of how our audit addressed the matter is provided in that context.

We have fulfilled our responsibilities described in the *Auditor’s Responsibilities for the Audit of the Financial Statements* section of our report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of material misstatement of the financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying financial statements.

Appropriateness of useful life to determine the carrying value of property, plant and equipment (PPE)

As of 31 March 2023, the carrying values of PPE of the Group amounted to \$9,726 million, forming approximately 91% of the total assets of the Group.

Management exercised significant judgements in determining the estimated useful lives of the PPE, which are reviewed and adjusted prospectively as appropriate at each reporting date. In determining the useful lives of the PPE, management considered factors such as asset utilisation rate, internal technical evaluation and operational plans. Given the significance of PPE to the Group’s financial statements, errors in estimating the useful lives of the PPE could result in a material misstatement to the financial statements. Accordingly, we considered this to be a key audit matter. The estimated useful lives of PPE is disclosed in Note 2.11(b) to the financial statements.

As part of our audit, we obtained an understanding and tested the key controls over the Group’s processes relating to additions of PPE and determination of the useful life of the PPE acquired. We also obtained an understanding and tested the key controls over the Group’s processes for the evaluation of useful lives of PPE which is performed on an annual basis. We corroborated the key assumptions used by management, published information on Singapore’s water strategies and plans in the future years, physical conditions assessed by engineers, and historical and current utilisation of PPE. We also assessed the Group’s disclosure in Notes 2.11(b), 3 and 13 to the financial statements.

Other matter

The financial statements of Public Utilities Board for the year ended 31 March 2022, were audited by another auditor who expressed an unmodified opinion on those statements on 25 July 2022.

Other Information

Management is responsible for the other information. The other information comprises the information included in the annual report, but does not include the financial statements and our auditor's report thereon. The other information which comprise the annual report is expected to be made available to us after the date of this auditor's report.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation of the financial statements that give a true and fair view in accordance with the provisions of the PSG Act, the Act and SB-FRSs, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

A statutory board is constituted based on its constitutional act and its dissolution requires Parliament's approval. In preparing the financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with SSAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with SSAs, we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

Auditor's Responsibilities for the Audit of the Financial Statements (cont'd)

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Public Utilities Board and its Subsidiaries

**Independent Auditor's Report
For the financial year ended 31 March 2023**

Independent Auditor's Report to the Members of Public Utilities Board and its Subsidiaries

Report on Other Legal and Regulatory Requirements

Opinion

In our opinion:

- (a) the receipts, expenditure, investment of moneys and the acquisition and disposal of assets by the Board during the year are, in all material aspects, in accordance with the provisions of the PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Board; and
- (b) proper accounting and other records have been kept, including records of all assets of the Board whether purchased, donated or otherwise.

Basis for Opinion

We conducted our audit in accordance with "SSAs". Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Compliance Audit* section of our report. We are independent of the Group in accordance with the ACRA Code together with the ethical requirements that are relevant to our audit of the financial statements in Singapore, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the ACRA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on management's compliance.

Responsibilities of Management for Compliance with Legal and Regulatory Requirements

Management is responsible for ensuring that the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Board. This responsibility includes monitoring related compliance requirements relevant to the Board, and implementing internal controls as management determines are necessary to enable compliance with the requirements.

Auditor's Responsibilities for the Compliance Audit

Our responsibility is to express an opinion on management's compliance based on our audit of the financial statements. We planned and performed the compliance audit to obtain reasonable assurance about whether the receipts, expenditure, investment of moneys and the acquisition and disposal of assets, are in accordance with the provisions of the PSG Act, the Act and the requirements of any other written law applicable to moneys of or managed by the Board.

Our compliance audit includes obtaining an understanding of the internal control relevant to the receipts, expenditure, investment of moneys and the acquisition and disposal of assets; and assessing the risks of material misstatement of the financial statements from non-compliance, if any, but not for the purpose of expressing an opinion on the effectiveness of the Board's internal control. Because of the inherent limitations in any internal control system, non-compliances may nevertheless occur and not be detected.

Public Utilities Board and its Subsidiaries

**Independent Auditor's Report
For the financial year ended 31 March 2023**

Independent Auditor's Report to the Members of Public Utilities Board and its Subsidiaries

Auditor's Responsibilities for the Compliance Audit (cont'd)

The engagement partner on the audit resulting in this independent auditor's report is Alvin Phua Chun Yen.



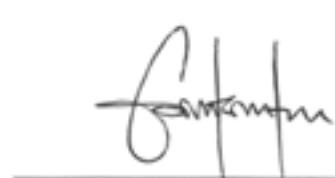
Ernst & Young LLP
Public Accountants and
Chartered Accountants
Singapore
4 August 2023

Public Utilities Board and its Subsidiaries

Statements of Comprehensive Income
For the financial year ended 31 March 2023

	Note	Group		Board	
		31 March 2023 \$'000	31 March 2022 \$'000	31 March 2023 \$'000	31 March 2022 \$'000
Operating income	4	1,440,551	1,447,819	1,434,303	1,446,891
Operating expenses	5	(1,704,175)	(1,557,127)	(1,697,414)	(1,554,818)
Net operating loss		(263,624)	(109,308)	(263,111)	(107,927)
Net non-operating income	6	69,609	85,009	69,596	85,006
Net loss before finance expenses and operating grants		(194,015)	(24,299)	(193,515)	(22,921)
Finance expenses	7	(46,254)	(33,167)	(46,254)	(33,167)
Net loss before operating grants		(240,269)	(57,466)	(239,769)	(56,088)
Operating grants from government		437,341	402,322	437,214	402,322
Net income after government grants and before contribution to Consolidated Fund and taxation for the year		197,072	344,856	197,445	346,234
Contribution to Consolidated Fund	8(a)	(33,576)	(58,862)	(33,576)	(58,862)
Taxation	8(b)	—	—	—	—
Net income after government grants and after contribution to Consolidated Fund and taxation for the year		163,496	285,994	163,869	287,372
Other comprehensive income					
Items that will not be reclassified to profit or loss					
Net re-measurement (loss)/gain on pension obligation	16	(1)	254	(1)	254
Total comprehensive income for the year		163,495	286,248	163,868	287,626
Attributable to:					
Shareholder of the Board		163,495	286,248	163,868	287,626


Chiang Chie-Foo
Chairman


Goh Si Hou
Chief Executive

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Public Utilities Board and its Subsidiaries

Statements of Financial Position
As at 31 March 2023

	Note	Group		Board	
		31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
ASSETS					
Current assets					
Cash and cash equivalents	9	634,274	331,326	630,244	327,757
Inventories	10	104,035	102,836	104,019	102,836
Trade and other receivables	11	166,531	140,086	160,858	139,936
Prepaid and deferred expenses	12	14,718	4,985	14,701	4,930
		919,558	579,233	909,822	575,459
Non-current assets					
Property, plant and equipment	13	9,726,275	9,066,900	9,726,275	9,066,900
Investments in subsidiaries	14	—	—	2,100	2,100
Trade and other receivables	11	20,196	21,370	20,196	21,370
Prepaid and deferred expenses	12	1	4,896	—	4,895
		9,746,472	9,093,166	9,748,571	9,095,265
Total assets		10,666,030	9,672,399	10,658,393	9,670,724
LIABILITIES					
Current liabilities					
Trade and other payables	15	457,814	442,121	450,426	440,810
Provision for pension	16	4,807	4,926	4,807	4,926
Provision for contribution to Consolidated Fund and taxation		33,576	58,862	33,576	58,862
Lease liabilities	17	59,868	54,567	59,868	54,567
Deferred income	18	18,302	17,434	18,178	16,920
Borrowings	19	—	400,000	—	400,000
		574,367	977,910	566,855	976,085
Non-current liabilities					
Lease liabilities	17	800,211	669,241	800,211	669,241
Deferred income	18	545,962	544,909	545,314	544,909
Borrowings	19	1,700,000	600,000	1,700,000	600,000
Provision for asset restoration obligations	20	14,558	12,903	14,558	12,903
		3,060,731	1,827,053	3,060,083	1,827,053
Total liabilities		3,635,098	2,804,963	3,626,938	2,803,138
NET ASSETS		7,030,932	6,867,436	7,031,455	6,867,586
Capital and reserves					
Share capital	21	1,256	1,255	1,256	1,255
Accumulated losses		(523)	(150)	—	—
Capital account	22	7,024,199	6,860,331	7,024,199	6,860,331
Water Efficiency Fund	23	6,000	6,000	6,000	6,000
		7,030,932	6,867,436	7,031,455	6,867,586
Supplementary information					
Net assets/(liabilities) of trust funds	24	4,775,558	4,868,737	4,775,558	4,868,737

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Public Utilities Board and its Subsidiaries
Consolidated Statement of Changes in Equity
For the financial year ended 31 March 2023

	Note	Group			
		Share capital S\$'000	Accumulated losses S\$'000	Capital S\$'000	Total S\$'000
31 March 2023					
Beginning of financial year		1,255	(150)	6,860,331	6,867,436
Net income after government grants and after contribution to Consolidated Fund and taxation for the year		–	163,496	–	163,496
Other comprehensive loss for the year		–	(1)	–	(1)
Total comprehensive income for the financial year		–	163,495	–	163,495
Issue of Shares	21	1	–	–	1
Transfer to retained earnings upon utilisation	23	–	1,782	–	–
Transfer to top up Water Efficiency Fund	23	–	(1,782)	–	–
Transfer to capital account	22	–	(163,868)	163,868	–
Total transactions with owners, recognised directly in equity		1	(163,868)	163,868	–
End of financial year		1,256	(523)	7,024,199	7,030,932
31 March 2022					
Beginning of financial year		1,057	1,228	6,572,705	6,580,990
Net income after government grants and after contribution to Consolidated Fund and taxation for the year		–	285,994	–	285,994
Other comprehensive gain for the year		–	254	–	254
Total comprehensive income for the financial year		–	286,248	–	286,248
Issue of Shares	21	198	–	–	198
Transfer to retained earnings upon utilisation	23	–	1,085	–	–
Transfer to top up Water Efficiency Fund	23	–	(1,085)	–	–
Transfer to capital account	22	–	(287,626)	287,626	–
Total transactions with owners, recognised directly in equity		198	(287,626)	287,626	–
End of financial year		1,255	(150)	6,860,331	6,867,436

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.
Public Utilities Board and its Subsidiaries
Statement of Changes in Equity
For the financial year ended 31 March 2023

	Note	Board			
		Share capital S\$'000	Accumulated losses S\$'000	Capital S\$'000	Total S\$'000
31 March 2023					
Beginning of financial year		1,255	–	6,860,331	6,867,586
Net income after government grants and after contribution to Consolidated Fund and taxation for the year		–	163,869	–	163,869
Other comprehensive loss for the year		–	(1)	–	(1)
Total comprehensive income for the financial year		–	163,868	–	163,868
Issue of Shares	21	1	–	–	1
Transfer to retained earnings upon utilisation	23	–	1,782	–	–
Transfer to top up Water Efficiency Fund	23	–	(1,782)	–	–
Transfer to capital account	22	–	(163,868)	163,868	–
Total transactions with owners, recognised directly in equity		1	(163,868)	163,868	–
End of financial year		1,256	–	7,024,199	7,031,455
31 March 2022					
Beginning of financial year		1,057	–	6,572,705	6,579,762
Net income after government grants and after contribution to Consolidated Fund and taxation for the year		–	287,372	–	287,372
Other comprehensive gain for the year		–	254	–	254
Total comprehensive income for the financial year		–	287,626	–	287,626
Issue of Shares	21	198	–	–	198
Transfer to retained earnings upon utilisation	23	–	1,085	–	–
Transfer to top up Water Efficiency Fund	23	–	(1,085)	–	–
Transfer to capital account	22	–	(287,626)	287,626	–
Total transactions with owners, recognised directly in equity		198	(287,626)	287,626	–
End of financial year		1,255	–	6,860,331	6,867,586

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Public Utilities Board and its Subsidiaries
Consolidated Statement of Cash Flows
For the financial year ended 31 March 2023

		Group	
	Note	31 March 2023 S\$'000	31 March 2022 S\$'000
Cash flows from operating activities			
Net loss before operating grants		(240,269)	(57,466)
Adjustments for:			
- Provision for property, plant and equipment write-off	5(c)	3,005	1,495
- Allowance for doubtful receivables, net	5(c)	617	1,962
- Allowance for inventory obsolescence	5(c)	901	28
- Reversal of write-down of inventory	5(c)	–	(1)
- Depreciation of property, plant and equipment	5(c)	412,570	398,604
- Loss on disposal of property, plant and equipment, net	6	3,492	3,023
- Amortisation of deferred income	6	(16,606)	(16,144)
- Interest income from fixed deposits and short-term bills	6	(13,052)	(1,342)
- Finance expenses	7	46,254	33,167
Cash flows from operating activities before working capital changes		196,912	363,326
Change in working capital:			
- Trade and other receivables		(19,332)	(33,503)
- Prepaid and deferred expenses		(9,734)	9,057
- Trade and other payables, and provisions		(16,651)	47,194
- Deferred income		1,600	75,831
- Inventories		(2,100)	(13,441)
		150,695	448,464
Payment for Consolidated Fund and tax		(58,862)	(70,462)
Net cash provided by operating activities		91,833	378,002
Cash flow from investing activities			
Additions to property, plant and equipment		(806,059)	(705,954)
Proceeds from disposal of property, plant and equipment		684	373
Interest income received		6,496	1,828
Net cash used in investing activities		(798,879)	(703,753)
Cash flows from financing activities			
Grants received from government		438,948	376,868
Proceeds from borrowings		1,100,000	–
Repayment of borrowings		(400,000)	–
Payment of lease liabilities		(85,998)	(85,850)
Interest expense on fixed rate bonds		(42,956)	(31,938)
Proceeds from issuance of ordinary shares		–	168
Net cash provided by financing activities		1,009,994	259,248
Net increase/(decrease) in cash and cash equivalents		302,948	(66,503)
Cash and cash equivalents			
Beginning of financial year	9	331,326	397,829
End of financial year	9	634,274	331,326

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

Public Utilities Board and its Subsidiaries
Consolidated Statement of Cash Flows
For the financial year ended 31 March 2023

Reconciliation of liabilities arising from financing activities

		Cash changes \$'000					Non-cash changes \$'000			
	1 April 2022 \$'000	Principal repayments	Interest payments	Addition during the year	Grants received from Gov't	Gov't grant utilised	Interest expense	Addition during the year	Lease modification	31 March 2023 \$'000
Advances received for government grants (Note 15)	29,879	–	–	–	438,948	(439,088)	–	–	–	29,739
Borrowings (Note 19)	1,000,000	(400,000)	–	1,100,000	–	–	–	–	–	1,700,000
Interest payable	9,501	–	(42,956)	–	–	–	46,429	–	–	12,974
Lease liabilities (Note 17)	723,808	(55,281)	(30,717)	–	–	–	30,717	191,552	–	860,079

		Cash changes \$'000					Non-cash changes \$'000			
	1 April 2021 \$'000	Principal repayments	Interest payments	Addition during the year	Grants received from Gov't	Gov't grant utilised	Interest expense	Addition during the year	Lease modification	31 March 2022 \$'000
Advances received for government grants (Note 15)	69,618	–	–	–	376,868	(416,607)	–	–	–	29,879
Borrowings (Note 19)	1,000,000	–	–	–	–	–	–	–	–	1,000,000
Interest payable	9,501	–	(31,938)	–	–	–	31,938	–	–	9,501
Lease liabilities (Note 17)	751,438	(53,006)	(32,844)	–	–	–	32,844	27,027	(1,651)	723,808

The accompanying accounting policies and explanatory notes form an integral part of the financial statements.

1. Corporate information

Public Utilities Board (the "Board") is a statutory board continued under the Public Utilities Act 2001, which came under the purview of the Ministry of Sustainability and the Environment ("MSE") on 1 April 2001.

The address of its registered office is 40 Scotts Road, Environment Building, #22-01, Singapore 228231.

The principal activities of the Board established under the Public Utilities Act 2001 (the "Act") are to supply water, provide used water services to the public, and act as agent to the Singapore Government (the "Government") in the construction, management and maintenance of the following belonging to the Government: public sewerage systems, public sewers, storm water drainage systems, and structures to safeguard against both inland flooding and coastal inundation risks. The principal activities of its subsidiaries are set out in Note 14 to the financial statements.

2. Summary of significant accounting policies

2.1 Basis of preparation

The consolidated financial statements of the Group and the financial statements of the Board have been prepared in accordance with the historical cost basis, except as disclosed in the accounting policies below and are drawn up in accordance with the provision of the Public Sector (Governance) Act 2018 (the "Public Sector (Governance) Act"), the "Act" and Statutory Board Financial Reporting Standards ("SB-FRSs").

SB-FRSs include Statutory Board Financial Reporting Standards, Interpretations of SB-FRSs and SB-FRS Guidance Notes as promulgated by the Accountant-General. The Accountant-General is appointed as the legal authority to prescribe accounting standards for statutory boards under the Accounting Standards Act 2007 which came into effect on 1 November 2007.

The financial statements are presented in Singapore dollars (S\$) and all values are rounded to the nearest thousand (S\$'000) unless otherwise indicated.

On 1 April 2022, the Group adopted the new or amended SB-FRSs and Interpretations to SB-FRS ("INT SB-FRS") that are mandatory for application for the financial year. Changes to the Group's accounting policies have been made as required, in accordance with the transitional provisions in the respective SB-FRSs and INT SB-FRS.

The adoption of these new or amended SB-FRSs and INT SB-FRS did not result in substantial changes to the Group's accounting policies and had no material effect on the amounts reported for the current or prior financial years.

2. Summary of significant accounting policies (cont'd)

2.2 Standards issued but not yet effective

The Group has not adopted the following standards and interpretations that have been issued but not yet effective:

Description	Effective for annual periods beginning on or after
Amendments to SB-FRS 1 and SB-FRS Practice Statement 2: <i>Disclosure of Accounting policies</i>	1 January 2023
Amendments to SB-FRS 8: <i>Definition of Accounting Estimates</i>	1 January 2023
Amendments to SB-FRS 12: <i>Deferred Tax related to Assets and Liabilities arising from a Single Transaction</i>	1 January 2023
Revised SB-FRS 1002: <i>Impairment of Non-Cash Generating Assets</i>	1 January 2023
Revised SB-FRS 1002: <i>Implementation Guidance</i>	1 January 2023
Amendments to SB-FRS 1: <i>Classification of liabilities as Current or Non-current</i>	1 January 2024
Amendments to SB-FRS 110 and SB-FRS 28: <i>Sale or Contribution of Assets between an Investor and its Associate or Joint Venture</i>	To be determined

The standards and interpretations above are expected to have no material impact on the financial statements in the period of initial application.

2.3 Revenue recognition

Revenue is measured based on the consideration to which the Group expects to be entitled in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties.

Revenue is recognised when the Group satisfies a performance obligation by transferring a promised good or service to the customer. A performance obligation may be satisfied over time or at a point in time. The amount of revenue recognised is the amount allocated to the satisfied performance obligation. The main revenue streams are as follows:

(a) Revenue from water sales and used water services

Revenue from water sales and used water services are recognised at a point in time when the Group satisfies its performance obligations based on customers' consumption of water and used water services.

Revenue from used water services comprises waterborne fee and trade effluent fee.

(b) Rental income

Rental income is recognised on a straight-line basis over the period of the lease.

2. Summary of significant accounting policies (cont'd)**2.3 Revenue recognition (cont'd)***(c) Interest income*

Interest income is recognised on an accrual basis using the effective interest method.

(d) Dividend income

Dividend income is recognised when the shareholder's right to receive payment is established.

(e) Project management fee

Project management fee is recognised over time when the services are rendered.

2.4 Government grants

Grants are received for the operations and maintenance of drainage systems, the Active, Beautiful, Clean Waters Programme, coastal management and other government-funded activities.

Grants from the government are recognised as a receivable at their fair values when there is reasonable assurance that the grants will be received and the Group will comply with all the conditions attached to them.

Government grants receivable are recognised as income over the periods necessary to match them with the related costs which they are intended to compensate, on a systematic basis.

Government grants whose primary condition is that the Group should purchase, construct or otherwise acquire non-current assets are recognised as deferred income in the statement of financial position, and are amortised and charged to profit or loss over the period necessary to match the annual depreciation charge of these assets or when the assets are disposed or written off.

2.5 Basis of consolidation

The consolidated financial statements comprise the financial statements of the Board and its subsidiaries as at the end of the reporting period. Control is achieved when the Group has power over the investee (i.e. existing rights that give it the current ability to direct the relevant activities of the investee), is exposed to, or has rights to, variable returns from its involvement with the investee and has the ability to affect those returns through its power to direct the activities of the investee.

2. Summary of significant accounting policies (cont'd)**2.5 Basis of consolidation (cont'd)**

The Group re-assesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control. Consolidation of a subsidiary begins when the Group obtains control over the subsidiary and ceases when the Group loses control of the subsidiary. Assets, liabilities, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated financial statements from the date the Group gains control until the date the Group ceases to control the subsidiary.

In preparing the consolidated financial statements, transactions and balances and unrealised gains on transactions between group entities are eliminated. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment indicator of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

2.6 Contribution to Consolidated Fund and income taxes*(a) Contribution to Consolidated Fund*

In lieu of income tax, the Board is required to make contribution to the Consolidated Fund in accordance with the Statutory Corporations (Contributions to Consolidated Fund) Act 1989.

(b) Income taxes

The Group's income tax expense comprises current and deferred tax of the subsidiaries. Current income tax liabilities for current and prior periods are recognised at the amounts expected to be paid to the tax authorities, using the tax rates (and tax laws) that have been enacted or substantially enacted by the reporting date.

Deferred income tax assets/liabilities are recognised for all deductible/taxable temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements except when the deferred income tax assets/liabilities arise from the initial recognition of an asset or liability in a transaction that is not a business combination and at the time of the transaction, affects neither accounting nor taxable profit or loss.

Deferred income tax asset is recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

2. Summary of significant accounting policies (cont'd)**2.6 Contribution to Consolidated Fund and income taxes (cont'd)****(c) Income taxes**

Deferred income tax assets and liabilities are measured at:

- (i) the tax rates that are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled, based on tax rates (and tax laws) that have been enacted or substantially enacted by the reporting date; and
- (ii) the tax consequence that would follow from the manner in which the Board's subsidiaries expect, at the reporting date, to recover or settle the carrying amounts of its assets and liabilities.

Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but they intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realised simultaneously.

Current and deferred income taxes are recognised as income or expenses in profit or loss for the period, except to the extent that the tax arises from a transaction which is recognised directly in statement of changes in equity.

2.7 Cash and cash equivalents

Cash and cash equivalents comprise cash at bank and demand deposits and short-term, investment instruments that are readily convertible to known amount of cash and which are subject to an insignificant risk of change in value. These include cash with the Accountant-General's Department ("AGD"), that is managed by the AGD under the Centralised Liquidity Management as set out in the Accountant-General's Circular No. 4/2009 Centralised Liquidity Management for Statutory Boards and Ministries.

2.8 Inventories

The Group's inventories are consumables and spares used primarily for the treatment of water and used water, and maintenance of plant and equipment but not held for trading.

Inventories are stated at the lower of cost and net realisable value. Cost is determined on the weighted average method, and includes expenditure incurred in acquiring the inventories and other costs incurred in bringing them to their existing location and condition.

Inventories which are considered obsolete, deteriorated or damaged are recorded in the allowance for inventories obsolescence before the inventories are authorised to be written off.

2. Summary of significant accounting policies (cont'd)**2.9 Financial instruments****(a) Financial assets**Initial recognition and measurement

Financial assets are recognised when, and only when, the Group becomes a party to the contractual provisions of the financial instruments. The Group determines the classification of its financial assets at initial recognition.

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, directly attributable transaction costs. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Trade receivables are measured at the amount of consideration to which the Group expects to be entitled in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third party, if the trade receivables do not contain a significant financing component at initial recognition.

Subsequent measurement

Amortised cost

Financial assets measured at amortised cost of the Group mainly comprise cash and cash equivalents and trade and other receivables.

Financial assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortised cost. Financial assets are measured at amortised cost using the effective interest method, less impairment. Gains or losses are recognised in profit or loss when the asset is derecognised or impaired, and through the amortization process.

Derecognition

The Group derecognises a financial asset only when the contractual rights to the cash flows from the asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the asset to another party. If the Group neither transfers nor retains substantially all the risks and rewards of ownership and continues to control the transferred asset, the Group recognises its retained interest in the asset and an associated liability for amounts it may have to pay. If the Group retains substantially all the risks and rewards of ownership of a transferred financial asset, the Group continues to recognize the financial asset and also recognizes a collateralised borrowing for the proceeds received.

On derecognition of a financial asset in its entirety, the difference between the carrying amount and the sum of the consideration received and any cumulative gain or loss that had been recognised in other comprehensive income for debt instrument is recognised in profit or loss.

2. Summary of significant accounting policies (cont'd)**2.9 Financial instruments (cont'd)****(b) Financial liabilities**Initial recognition and measurement

Financial liabilities are recognised when, and only when, the Group becomes a party to the contractual provisions of the financial instrument. The Group determines the classification of its financial liabilities at initial recognition.

All financial liabilities are recognised initially at fair value plus, in the case of a financial asset not at fair value through profit or loss, directly attributable transaction costs.

Subsequent measurement

Financial liabilities of the Group mainly comprise trade and other payables and borrowings. Trade and other payables represent liabilities for goods and services provided to the Group prior to the end of the financial year which are unpaid and are classified as current liabilities if payment is due within one year or less. Otherwise, they are presented as non-current liabilities. Borrowings are presented as current liabilities unless the Group has an unconditional right to defer settlement for at least 12 months after the balance sheet date, in which case they are presented as non-current liabilities.

After initial recognition, financial liabilities that are not carried at fair value through profit or loss are subsequently measured at amortised cost using the effective interest method. Gains or losses are recognised in profit or loss when the liabilities are derecognised, and through the amortization process.

A financial liability is derecognised when the obligation under the liability is discharged, cancelled or expired. When an existing financial liability is replaced by another, from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts is recognised in profit or loss.

2.10 Impairment of financial assets

The Group assesses on a forward-looking basis the expected credit losses associated with its debt financial assets carried at amortised cost. The impairment methodology applied is disclosed in Note 27.

For trade receivables, the Group applies the simplified approach permitted by the SB-FRS 109, which requires expected lifetime losses to be recognised from initial recognition of the receivables.

2. Summary of significant accounting policies (cont'd)**2.11 Property, plant and equipment****(a) Measurement****(i) Owned assets**

On 1 May 1963, with the establishment of the Board, property, plant and equipment of the former City Council were vested in the Board at net book value. Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. The cost of an item of property, plant and equipment includes its purchase price, cost of replacing part of the property, plant and equipment and any cost that is directly attributable to the acquisition, construction, production or bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management.

When significant parts of property, plant and equipment are required to be replaced in intervals, such parts are capitalised and depreciated over their useful lives. The parts that are being replaced are written off. All other repair and maintenance costs are recognised in profit or loss as incurred.

The projected cost of dismantlement, removal or restoration is also included as part of the cost of property, plant and equipment if the obligation for dismantlement, removal or restoration is incurred as a consequence of acquiring or using the asset.

(ii) Right-of-use assets

Property, plant and equipment under lease is capitalised at an amount equal to the lower of its fair value and the present value of the minimum lease payments at the inception of the lease, less subsequent accumulated depreciation and impairment losses. The accounting policy for right-of-use assets is set out in Note 2.17.

(b) Depreciation

Depreciation of property, plant and equipment is charged from the month of acquisition of the asset or available for use as intended by management and is calculated on the straight-line method to allocate the depreciable amounts over their estimated useful lives.

2. Summary of significant accounting policies (cont'd)

2.11 Property, plant and equipment (cont'd)

(b) Depreciation (cont'd)

The estimated useful lives of depreciable property, plant and equipment are as follows:

	<u>Useful lives</u>
Leasehold land	18 to 99 years, or the remaining lease period
Land development and buildings ⁽¹⁾	30 to 100 years
Plant and equipment	5 to 50 years
Pipelines	50 to 70 years
Others (mainly meters, vehicles and computer systems)	4 to 15 years

⁽¹⁾ Buildings comprise mainly civil structure to house plant and equipment.

No depreciation is charged on freehold land.

Assets that are developed in conjunction with the Right-of-use assets are depreciated over the shorter of the estimated useful life of the assets and the lease term.

Assets under construction included in property, plant and equipment are not depreciated as these assets are not yet available for use.

Depreciation method, useful lives and residual values are reviewed and adjusted prospectively as appropriate, at each reporting date. The Group regularly reviews the useful lives of its property, plant and equipment. Arising from such reviews, property, plant and equipment which are obsolete, unserviceable or unidentifiable are written off.

(c) Disposal of assets

An item of property, plant and equipment is derecognised when no future economic benefits are expected from its use or disposal. Gains and losses on disposal of an item of property, plant and equipment are determined by comparing the proceeds from disposal with its carrying amount, and are recognised net in profit or loss.

(d) Subsequent expenditure

Subsequent expenditure relating to property, plant and equipment that has already been recognised is added to the carrying amount of the asset only when it is probable that future economic benefits associated with the item will flow to the entity and the cost of the item can be measured reliably. All other repair and maintenance expenses are recognised in profit or loss when incurred.

2. Summary of significant accounting policies (cont'd)

2.12 Investments in subsidiaries

Investments in subsidiaries are carried at cost less accumulated impairment losses in the Board's statement of financial position. On disposal of an investment in subsidiary, the difference between disposal proceeds and the carrying amounts of the investment is recognised in profit or loss.

2.13 Impairment of non-financial assets

Property, plant and equipment
Right-of-use assets
Investments in subsidiaries

Property, plant and equipment, right-of-use assets and investments in subsidiaries are tested for impairment whenever there is any objective evidence or indication that these assets may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Group estimates the asset's recoverable amount.

For the purpose of impairment testing, the recoverable amount (i.e. the higher of the fair value less cost to sell and the value-in-use) is determined on an individual asset basis unless the asset does not generate cash inflows that are largely independent of those from other assets. If this is the case, the recoverable amount is determined for the cash-generating-unit ("CGU") to which the asset belongs.

If the recoverable amount of the asset (or CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or CGU) is reduced to its recoverable amount.

The difference between the carrying amount and recoverable amount is recognised as an impairment loss in profit or loss.

An assessment is made annually as to whether there is an indication that previously recognised losses and impairment for an asset may no longer exist or may have decreased. An impairment loss for an asset (or CGU) is reversed if, and only if, there has been a change in the estimates used to determine the asset's (or CGU's) recoverable amount since the last impairment loss was recognised. The carrying amount of an asset (or CGU) is increased to its revised recoverable amount, provided that this amount does not exceed the carrying amount that would have been determined (net of any accumulated amortisation or depreciation) had no impairment loss been recognised for the asset (or CGU) in prior years.

A reversal of impairment loss for an asset (or CGU) is recognised in profit or loss.

2. Summary of significant accounting policies (cont'd)**2.14 Provisions**

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is more likely than not that an outflow of resources will be required to settle the obligation and the amount has been reliably estimated.

Changes in the estimated timing or amount of the expenditure or discount rate are recognised in profit or loss when the changes arise.

2.15 Employee benefits

Employee benefits are recognised as an expense, unless the cost qualifies to be capitalised as an asset.

(a) Defined contribution plans - Central Provident Fund ("CPF") contributions

Contributions to the Group's employees' salaries are made to the CPF as required by law. The CPF contributions are recognised as expenses in the period when the employees rendered their services.

(b) Short-term employee benefits

Short-term employee benefit obligations are measured on an undiscounted basis and are expensed in the period when the employees rendered their services. A liability is recognised for the amount expected to be paid if the Group has present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

Employee entitlements to annual leave and performance bonus are recognised when they accrue to employees. A provision is made for the estimated liability for non-vesting annual leave and performance bonus as a result of services rendered by employees up to the reporting date.

2. Summary of significant accounting policies (cont'd)**2.15 Employee benefits (cont'd)****(c) Pension benefits**

The Group's net obligation in respect of long-term employee benefits is the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value, and the fair value of any related assets is deducted. The discount rate is the yield at the reporting date on Singapore Government Securities that have maturity dates approximating the terms of the Group's obligations and that are denominated in the same currency in which the benefits are expected to be paid. The calculation is performed using the projected unit credit method.

The Board, apart from the legally required contribution plans such as the Central Provident Fund, operates pension plans for pensionable employees transferred from the former Ministry of Environment. The Board's obligation is from 1 April 2001 to the earlier of the day of retirement and death of these employees. The provision for pension is recognised based on the hypothetical gratuity for each pensionable employee accrued from 1 April 2001 up to the reporting date. The hypothetical gratuity for each pensionable officer and Board's share of the gratuity is computed based on existing guidelines found in the Pensions Act 1956 and circulars issued by the Public Service Division.

2.16 Borrowings costs

Borrowing costs consist of interest that the Group incurs in connection with its borrowings. Borrowing costs are expensed in the period they occur except for those costs that are attributable to the construction or development of the qualifying assets. Borrowing costs on general borrowings are capitalised by applying a capitalisation rate to qualifying assets that are financed by general borrowings.

Capitalisation of borrowing costs commences when the activities to prepare the asset for its intended use and the expenditures and borrowing costs are incurred. Borrowing costs are capitalised until the assets are substantially completed for their intended use.

2. Summary of significant accounting policies (cont'd)**2.17 Leases****(a) When the Group is the lessee:**

At the inception of the contract, the Group assesses if the contract is, or contains, a lease. A contract contains a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. Reassessment is only required when the terms and conditions of the contract are changed.

The Group applies a single recognition and measurement approach for all leases, except for short-term leases and leases of low-value assets. The Group recognises lease liabilities representing the obligations to make lease payments and right-of-use ("ROU") assets representing the right to use the underlying lease assets.

Right-of-use assets

The Group recognised a right-of-use asset and lease liability at the date which the underlying asset is available for use. Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any re-measurement of lease liabilities. The cost of right-of-use assets includes the initial measurement of lease liabilities adjusted for initial direct costs incurred, any lease payments made at or before the commencement date and lease incentive received. The cost of a right-of-use asset also includes an estimate of the costs to be incurred by the Group in dismantling and removing the underlying asset, restoring the site on which the asset is located or restoring the underlying asset to the condition required by the terms and conditions of the lease.

These right-of-use assets is subsequently depreciated using the straight-line method from the commencement date to the earlier of the end of the estimated useful life of the right-of-use asset or the end of the lease term.

The accounting policy for impairment is set out in Note 2.13.

Right-of-use assets are presented within "Property, plant and equipment".

2. Summary of significant accounting policies (cont'd)**2.17 Leases (cont'd)****(a) When the Group is the lessee: (cont'd)**Lease liabilities

The initial measurement of lease liability is measured at the present value of the lease payments discounted using the implicit rate in the lease, if the rate can be readily determined. If that rate cannot be readily determined, the Group shall use its incremental borrowing rate or a proxy which estimates the incremental borrowing rate.

Lease payments include the following:

- Fixed payment (including in-substance fixed payments), less any lease incentives receivables;
- Variable lease payment that are based on an index or rate, initially measured using the index or rate as at the commencement date;
- Amount expected to be payable under residual value guarantees;
- The exercise price of a purchase option if is reasonably certain to exercise the option; and
- Payment of penalties for terminating the lease, if the lease term reflects the Group exercising that option.

For contract that contain both lease and non-lease components, the Group allocates the consideration to each lease component on the basis of the relative stand-alone price of the lease and non-lease component.

Lease liability is measured at amortised cost using the effective interest method. Lease liability shall be re-measured when:

- There is a change in future lease payments arising from changes in an index or rate;
- There is a change in the Group's assessment of whether it will exercise an extension option; or
- There are modification in the scope or the consideration of the lease that was not part of the original term.

Lease liability is re-measured with a corresponding adjustment to the right-of-use asset, or is recorded in profit or loss if the carrying amount of the right-of-use asset has been reduced to zero.

Short term and low value leases

The Group has elected to not recognise right-of-use assets and lease liabilities for short-term leases that have lease terms of 12 months or less and leases of low value, except for sublease arrangements. Lease payments relating to these leases are expensed to profit or loss on a straight-line basis over the lease term.

2. Summary of significant accounting policies (cont'd)**2.17 Leases (cont'd)***(a) When the Group is the lessee: (cont'd)*Variable lease payments

Variable lease payments that are not based on an index or a rate are not included as part of the measurement and initial recognition of the lease liability. The Group shall recognise those lease payments in profit or loss in the periods that triggered those lease payments.

(b) When the Group is the lessor:

The Group leases land under operating leases to non-related parties.

Lessor - Operating leases

Leases where the Group retains substantially all risks and rewards incidental to ownership are classified as operating leases. Rental income from operating leases (net of any incentives given to the lessees) is recognised in profit or loss on a straight-line basis over the lease term.

Initial direct costs incurred by the Group in negotiating and arranging operating leases are added to the carrying amount of the leased assets and recognised as an expense in profit or loss over the lease term on the same basis as the lease income.

Contingent rents are recognised as income in profit or loss when earned.

2.18 Currency translation*(a) Functional and presentation currency*

Items included in the financial statements of each entity in the Group are measured using the currency of the primary economic environment in which the entity operates ("functional currency"). The financial statements are presented in Singapore Dollars ("SGD" or "\$"), which is the functional currency of the Board.

(b) Transactions and balances

Transactions in a currency other than the functional currency ("foreign currency") are translated into the functional currency using the exchange rates at the dates of the transactions. Currency exchange differences resulting from the translation of monetary assets and liabilities denominated in foreign currencies at the closing rates at the reporting date are recognised in profit or loss.

Non-monetary items measured at fair values in foreign currencies are translated using the exchange rates at the date when the fair values are determined.

2. Summary of significant accounting policies (cont'd)**2.19 Water efficiency fund**

The Water Efficiency Fund was launched by the Board to encourage implementation of water conservation initiatives. The fund belongs to the Board and is reviewed periodically by the Board for adequacy. Additional contributions or refunds will be made to or from the fund as appropriate. Receipts and expenditure relating to the fund are accounted for directly in this fund on an accrual basis. Any utilisation of the fund during the financial year will be matched by transfers from the Board's retained earnings. Assets and liabilities of these funds are pooled with those of the Board in the statement of financial position.

2.20 Trust funds

The Board is an agent of the Government for the sewerage, drainage and coastal protection functions. The Board has been receiving funds from the Ministry of Sustainability and the Environment ("MSE") to defray the development costs of Government-owned used water reticulation networks and drainage network.

The Government injected a lump sum into the Coastal and Flood Protection Fund ("CFPF") which can be used to fund the development costs of Government-owned drainage networks and coastal protection infrastructure. However, utilisation of CFPF is only allowed for expenditures prescribed under Section 18A of the Public Utilities Act 2001.

MSE and Singapore Totalisator Board also provide funding to the Board for the construction projects under the Active, Beautiful, Clean Waters Programme, also owned by the Government.

In addition, the Board also receives funds from the National Research Foundation ("NRF") for the disbursement of grants to grantees who are performing the water research and development ("R&D") activities. These funds are held in trust by the Board.

All transactions pertaining to activities supported by the funds are accounted for directly in the respective trust funds as set out in Note 24. Annual excess or shortfall in the funds after disbursing all development expenditure for MSE will be refunded to or recovered from MSE accordingly. The surplus funds received from Singapore Totalisator Board are returned when the construction of assets is completed. The surplus funds received from NRF will be returned upon completion of the water R&D activities. Upon the dissolution of the Coastal and Flood Protection Fund, the balance then remaining in the Fund will be transferred to the Consolidated Fund.

The net assets or liabilities of the funds do not form part of the Board's assets and liabilities but are shown separately in the Group's Statement of financial position. The funds are accounted for on an accrual basis.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

3. Critical accounting estimates, assumptions and judgements

The preparation of the Group's financial statements in conformity with SB-FRS requires management to make judgements, estimates and assumptions that affect the application of accounting policies, the reported amounts of assets, liabilities, income and expenses.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimates are revised and in any future periods affected. In particular, information about significant areas of critical judgements and estimation uncertainty in applying accounting policies that have the most significant effect on the amounts recognised in the financial statements are described below:

Depreciation of property, plant and equipment

Property, plant and equipment are depreciated on a straight-line basis over their estimated useful lives. The Group reviews annually the estimated economic useful lives and residual values of property, plant and equipment based on factors that include asset utilisation rate, internal technical evaluation and operational plans.

4. Operating income

	Group		Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Water sales	814,986	820,898	814,986	820,898
Used water services	619,317	625,993	619,317	625,993
Other operating income	6,248	928	—	—
	1,440,551	1,447,819	1,434,303	1,446,891

Operating income from water sales and used water services are recognised at a point in time.

Trade receivables from contracts with customers

	31 March 2023 S\$'000	Group 31 March 2022 S\$'000	1 April 2021 S\$'000	31 March 2023 S\$'000	Board 31 March 2022 S\$'000	1 April 2021 S\$'000
<u>Current assets</u>						
Trade receivables from contracts with customers (Note 11)	102,522	104,201	98,408	96,376	103,750	97,871
Loss allowance (Note 11)	(8,904)	(9,898)	(9,491)	(8,904)	(9,898)	(9,491)
	93,618	94,303	88,917	87,472	93,852	88,380

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

5. Operating expenses

		Group		Board	
	Note	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Direct operating expenses:					
- electricity		205,416	138,835	205,416	138,835
- manpower		299,690	283,553	299,217	283,173
- depreciation		388,941	378,915	388,941	378,915
- provision for property, plant and equipment write-off		3,005	1,495	3,005	1,495
- property tax		7,201	17,484	7,201	17,484
- maintenance and others	5(a)	588,028	539,630	581,740	537,701
		1,492,281	1,359,912	1,485,520	1,357,603

Indirect operating expenses:

- service departments' costs	5(b)	211,894	197,215	211,894	197,215
	5(c)	1,704,175	1,557,127	1,697,414	1,554,818

- (a) Included in maintenance and others are expenses related to the purchase of raw water from the Government of the State of Johor. Prices for the purchase of raw water from and treated water sold to the Government of the State of Johor in accordance with the 1962 Water Agreement are based on the rate of 3 sen and 50 sen per thousand gallons respectively. The Malaysian Government had sought a review of the price of raw water. The Singapore Government's position is that Malaysia has lost the right of review.
- (b) Service departments' costs comprise manpower, depreciation, maintenance, administrative and other expenses.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

5. Operating expenses (cont'd)

(c) Included in direct and indirect operating expenses are:

Note	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Board members' allowance	228	244	211	227
Salaries and overtime allowances	342,983	319,154	342,537	318,799
Central/Employee Provident Fund	40,961	39,346	40,951	39,337
Other employee benefits	7,092	8,014	7,092	8,014
Electricity	205,864	139,125	205,864	139,125
Maintenance expenses	337,072	312,824	337,072	312,883
Research and development expenses	13,346	14,495	13,346	14,495
Allowance for inventory obsolescence	10(a) 901	28	901	28
Reversal of write-down of inventories	10(a) –	(1)	–	(1)
Allowance for doubtful receivables	27(b) 617	1,962	617	1,962
Depreciation of property, plant and equipment	13 412,570	398,604	412,570	398,604
Provision for property, plant and equipment write-off	13 3,005	1,495	3,005	1,495

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

6. Net non-operating income

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Rental income	11,080	11,012	11,080	11,012
Amortisation of deferred income	16,606	16,144	16,606	16,144
Interest income from fixed deposits and short-term bills	13,052	1,342	13,052	1,342
Project management fees	18,328	15,703	18,328	15,703
Disbursement from recoverable jobs	1,627	1,620	1,627	1,620
Other sundry income	12,942	42,194	12,932	42,191
Net foreign exchange (loss)/gain	(534)	17	(537)	17
Loss on disposal of property, plant and equipment – net	(3,492)	(3,023)	(3,492)	(3,023)
	69,609	85,009	69,596	85,006

7. Finance expenses

Note	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Pension interest expense	16 116	99	116	99
Interest expense on lease liabilities	17(c) 30,717	32,844	30,717	32,844
Interest expense on borrowings	46,429	31,938	46,429	31,938
Accretion expense on asset restoration obligations	312	224	312	224
	77,574	65,105	77,574	65,105
Less: Amount capitalised in property, plant and equipment	(31,320)	(31,938)	(31,320)	(31,938)
	46,254	33,167	46,254	33,167

Finance expenses on general financing were capitalised at 2.97% to 3.43% per annum (2022: 3.19% per annum).

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

8. Contribution to government consolidated fund and taxation

(a) Contribution to Consolidated Fund

The contribution to the Consolidated Fund is made in accordance with Section 3(a) of the Statutory Corporations (Contributions to Consolidated Fund) Act 1989.

	Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Net income after government grants and before contribution to Consolidated Fund and taxation	197,445	346,234
Contribution to Consolidated Fund calculated at rate of 17% (2022:17%)	33,566	58,860
Effects of:		
- Non-deductible donations	10	3
- Over provision in prior year	-	(1)
	33,576	58,862

(b) Income tax

Subsidiaries of the Board are subject to tax under the Singapore Income Tax Act 1947.

	Group	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Tax expense attributable to profit is made up of:		
- Current income tax	-	-

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

8. Contribution to government consolidated fund and taxation (cont'd)

(b) Income tax (cont'd)

The tax on the Group's net income after government grants and before tax differs from the theoretical amount that would arise using the Singapore standard rate of income tax as follows:

	Group	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Net loss before tax of subsidiaries Excluding intra group transaction	(373)	(1,378)
	(373)	(1,378)
Tax calculated at tax rate of 17% (2022: 17%)	(63)	(234)
Effects of:		
- expenses not deductible for tax purposes	5	-
- deferred tax assets not recognised	58	234
	-	-

(c) Deferred tax assets have not been recognised in respect of the following items:

	Group	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Unutilised tax losses and capital allowances	3,583	3,240

Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profit will be available against which the subsidiaries of the Group could utilise the benefits there from.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

9. Cash and cash equivalents

Note	Group		Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Cash with AGD	9(a)			
- Singapore Dollar	153,289	318,201	153,289	318,201
Fixed and ACU deposits	9(b)			
- Malaysia Ringgit	11,090	1,394	11,090	1,394
- United States Dollar	256	459	256	459
Cash at bank	9(c)			
- Singapore Dollar	6,134	4,849	2,121	1,297
- Malaysia Ringgit	3,488	6,406	3,488	6,406
- United States Dollar	17	17	—	—
Short-term bills	9(d)			
- Singapore Dollar	460,000	—	460,000	—
	634,274	331,326	630,244	327,757

- (a) Cash with AGD refers to cash that is managed by the Accountant-General's Department ("AGD") under the Government's Centralised Liquidity Management Framework for Statutory Boards and Ministries. The annualised interest rate for cash with AGD for the financial year ended 31 March 2023 for the Group is 1.56% (2022: 0.30%) per annum.
- (b) The weighted average interest rate relating to fixed and Asian Currency Unit ("ACU") deposits for the financial year ended 31 March 2023 for the Group are 2.44% for Malaysian Ringgit and 4.24% for United States Dollar (2022: 1.63% for Malaysian Ringgit and 0.09% for United States Dollar) per annum.
- (c) Cash at bank earns interest at floating rates based on daily bank rates.
- (d) Short-term bills refer to short-term investment instruments that are readily convertible to cash. The annualized interest rate for short-term bills for the financial year ended 31 March 2023 for the group is 4.00% (2022: nil) per annum.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

10. Inventories

Note	Group		Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
At cost				
Pipes and fittings	998	1,241	998	1,241
Chemicals	9,542	10,898	9,542	10,898
Spare parts and accessories	91,169	87,677	91,169	87,677
Fuel and lubricants	3,016	2,925	3,016	2,925
Sundries and others	262	276	246	276
	104,987	103,017	104,971	103,017
Less: Allowance for inventory obsolescence	10(a) (952)	(181)	(952)	(181)
	104,035	102,836	104,019	102,836

(a) Allowance for inventory obsolescence

Note	Group and Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Beginning of financial year	181	227
Allowance made	5(c) 901	28
Reversal of write-down of inventories	5(c) —	(1)
	901	27
Allowance utilised	(130)	(73)
End of the financial year	952	181

The cost of inventories recognised in operating expenses for the financial year ended 31 March 2023 was \$41.3 million (2022: \$33.0 million).

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

11. Trade and other receivables

		<u>Group</u>		<u>Board</u>	
	Note	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
<i>Current</i>					
Trade receivables	11(a)	102,522	104,201	96,376	103,750
Less: Allowance for impairment of trade receivables	27(b)	(8,904)	(9,898)	(8,904)	(9,898)
Trade receivables - net		93,618	94,303	87,472	93,852
Sundry receivables	11(b)	54,368	45,073	54,368	45,073
Less: Allowance for impairment of sundry receivables	27(b)	(5)	(10)	(5)	(10)
Sundry receivables - net		54,363	45,063	54,363	45,063
Other receivables		–	9	–	9
Deposits		17,970	145	17,970	145
Amounts due from government		580	566	580	566
Amounts due from subsidiaries		–	–	473	301
		166,531	140,086	160,858	139,936
<i>Non-current</i>					
Sundry receivables	11(b)	20,196	21,370	20,196	21,370
Total trade and other receivables		186,727	161,456	181,054	161,306
<u>Reconciliation to financial assets, at amortised cost</u>					
Total trade and other receivables		186,727	161,456	181,054	161,306
Add: Cash and cash equivalents	9	634,274	331,326	630,244	327,757
Total financial assets, at amortised cost	27(f)	821,001	492,782	811,298	489,063

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

11. Trade and other receivables (cont'd)

- (a) Trade receivables mainly represent receivables from customers with respect to water supply and used water services. These amounts are unsecured and are generally on credit terms of 14 days. They are recognised at the billed amounts which represent their fair values on initial recognition.
- (b) Sundry receivables comprise the revenue and customer deposits collected by the Board's billing and collection agent, SP Services Limited, which have not been remitted to the Board, miscellaneous billings and other receivables for disbursement recoverable jobs billed and collected by the Board.

12. Prepaid and deferred expenses

Current prepaid expenses are payments made in advance for operating expenditure.

Non-current prepaid expenses comprise mainly payments made for property, plant and equipment where risk and title have not yet been transferred to the Group as at the reporting date.

Deferred expenses relate mainly to expenses incurred in the preparation and organisation of the annual Singapore International Water Week event which was held in June 2023.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

13. Property, plant and equipment

Group 31 March 2023	Properties - Land S\$'000	Properties - development and buildings⁽²⁾ S\$'000	Properties - Leasehold land S\$'000	Plant and equipment S\$'000	Pipelines S\$'000	Others S\$'000	Assets under construction S\$'000	Total S\$'000
<i>Cost</i>								
Beginning of financial year	981	3,234,544	872,640	4,660,524	3,425,616	231,327	1,403,442	13,829,074
Additions	–	30	4,245	187,224	16,926	4,451	864,907	1,077,783
Adjustments	–	1,343	–	–	–	–	–	1,343
Transfers	–	14,807	(978)	138,605	307,923	29,836	(490,193)	–
Disposals	–	(1,960)	(1,493)	(81,759)	(25,373)	(9,439)	–	(120,024)
End of financial year	981	3,248,764	874,414	4,904,594	3,725,092	256,175	1,778,156	14,788,176
<i>Accumulated depreciation and provision for write-off</i>								
Beginning of financial year	–	1,279,452	136,369	2,324,044	885,974	136,335	–	4,762,174
Depreciation charge	–	82,298	12,745	236,957	52,771	27,799	–	412,570
Adjustments	–	–	–	–	–	–	–	–
Transfers	–	(10)	–	155	–	(145)	–	–
Disposals	–	(1,609)	(1,479)	(78,498)	(25,328)	(8,934)	–	(115,848)
Provision for write-off	–	73	–	372	2,560	–	–	3,005
End of financial year	–	1,360,204	147,635	2,483,030	915,977	155,055	–	5,061,901
<i>Net book value</i>								
End of financial year	981	1,888,560	726,779	2,421,564	2,809,115	101,120	1,778,156	9,726,275

⁽²⁾ Buildings comprise mainly civil structure to house plant and equipment.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

13. Property, plant and equipment (cont'd)

Board 31 March 2023	Properties - Land S\$'000	Properties - development and buildings⁽²⁾ S\$'000	Properties - Leasehold land S\$'000	Plant and equipment S\$'000	Pipelines S\$'000	Others S\$'000	Assets under construction S\$'000	Total S\$'000
<i>Cost</i>								
Beginning of financial year	981	3,234,544	872,640	4,660,524	3,425,616	231,327	1,403,442	13,829,074
Additions	–	30	4,245	187,224	16,926	4,451	864,907	1,077,783
Adjustments	–	1,343	–	–	–	–	–	1,343
Transfers	–	14,807	(978)	138,605	307,923	29,836	(490,193)	–
Disposals	–	(1,960)	(1,493)	(81,759)	(25,373)	(9,439)	–	(120,024)
End of financial year	981	3,248,764	874,414	4,904,594	3,725,092	256,175	1,778,156	14,788,176
<i>Accumulated depreciation and provision for write-off</i>								
Beginning of financial year	–	1,279,452	136,369	2,324,044	885,974	136,335	–	4,762,174
Depreciation charge	–	82,298	12,745	236,957	52,771	27,799	–	412,570
Adjustments	–	–	–	–	–	–	–	–
Transfers	–	(10)	–	155	–	(145)	–	–
Disposals	–	(1,609)	(1,479)	(78,498)	(25,328)	(8,934)	–	(115,848)
Provision for write-off	–	73	–	372	2,560	–	–	3,005
End of financial year	–	1,360,204	147,635	2,483,030	915,977	155,055	–	5,061,901
<i>Net book value</i>								
End of financial year	981	1,888,560	726,779	2,421,564	2,809,115	101,120	1,778,156	9,726,275

⁽²⁾ Buildings comprise mainly civil structure to house plant and equipment.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

13. Property, plant and equipment (cont'd)

Group 31 March 2022	Properties - Land S\$'000	Properties - development and buildings ⁽²⁾ S\$'000	Properties - Leasehold land S\$'000	Plant and equipment S\$'000	Pipelines S\$'000	Others S\$'000	Assets under construction S\$'000	Total S\$'000
Cost								
Beginning of financial year	981	3,226,473	847,868	4,571,401	3,148,047	204,824	1,177,798	13,177,392
Additions	–	23,912	3,039	23	99	6,876	729,319	763,268
Adjustments	–	(715)	–	(1,599)	–	–	–	(2,314)
Transfers	–	5,716	21,733	170,847	277,773	27,606	(503,675)	–
Disposals	–	(20,842)	–	(80,148)	(303)	(7,979)	–	(109,272)
End of financial year	981	3,234,544	872,640	4,660,524	3,425,616	231,327	1,403,442	13,829,074
Accumulated depreciation and provision for write-off								
Beginning of financial year	–	1,219,718	123,729	2,169,971	834,374	120,399	–	4,468,191
Depreciation charge	–	80,634	12,640	229,489	51,322	24,519	–	398,604
Adjustments	–	(293)	–	53	–	–	–	(240)
Transfers	–	58	–	1,089	(498)	(649)	–	–
Disposals	–	(20,807)	–	(76,936)	(199)	(7,934)	–	(105,876)
Provision for write-off	–	142	–	378	975	–	–	1,495
End of financial year	–	1,279,452	136,369	2,324,044	885,974	136,335	–	4,762,174
Net book value								
End of financial year	981	1,955,092	736,271	2,336,480	2,539,642	94,992	1,403,442	9,066,900

⁽²⁾ Buildings comprise mainly civil structure to house plant and equipment.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

13. Property, plant and equipment (cont'd)

Board 31 March 2022	Properties - Land S\$'000	Properties - development and buildings ⁽²⁾ S\$'000	Properties - Leasehold land S\$'000	Plant and equipment S\$'000	Pipelines S\$'000	Others S\$'000	Assets under construction S\$'000	Total S\$'000
Cost								
Beginning of financial year	981	3,226,413	847,868	4,571,401	3,148,047	204,824	1,177,798	13,177,332
Additions	–	23,912	3,039	23	99	6,876	729,319	763,268
Adjustments	–	(715)	–	(1,599)	–	–	–	(2,314)
Transfers	–	5,716	21,733	170,847	277,773	27,606	(503,675)	–
Disposals	–	(20,782)	–	(80,148)	(303)	(7,979)	–	(109,212)
End of financial year	981	3,234,544	872,640	4,660,524	3,425,616	231,327	1,403,442	13,829,074
Accumulated depreciation and provision for write-off								
Beginning of financial year	–	1,219,658	123,729	2,169,971	834,374	120,399	–	4,468,131
Depreciation charge	–	80,634	12,640	229,489	51,322	24,519	–	398,604
Adjustments	–	(293)	–	53	–	–	–	(240)
Transfers	–	58	–	1,089	(498)	(649)	–	–
Disposals	–	(20,747)	–	(76,936)	(199)	(7,934)	–	(105,816)
Provision for write-off	–	142	–	378	975	–	–	1,495
End of financial year	–	1,279,452	136,369	2,324,044	885,974	136,335	–	4,762,174
Net book value								
End of financial year	981	1,955,092	736,271	2,336,480	2,539,642	94,992	1,403,442	9,066,900

⁽²⁾ Buildings comprise mainly civil structure to house plant and equipment.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

13. Property, plant and equipment (cont'd)

Right-of-use of assets acquired under leasing arrangements are presented together with the owned assets of the same class. Details of such leased assets are disclosed in Note 17.

The cash outflow for acquisition of property, plant and equipment amounts to \$806.1 million (2022: \$706.0 million).

The carrying amount of plant and equipment held under leases at the reporting date was \$768.1 million (2022: \$625.5 million). These relate to the water purchase agreements with private entities for the supply of desalinated water and NEWater to the Group under the Design-Build-Own-Operate arrangements. The Group has recognised these Design-Build-Own-Operate projects as leases and at initial recognition, recorded these as plant and equipment with a corresponding lease liabilities as set out in Note 17.

14. Investments in subsidiaries

	Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Equity investments at cost		
Beginning of financial year	2,100	100
Addition	–	2,000
End of financial year	2,100	2,100

The Group has the following subsidiaries as at 31 March 2023 and 2022:

<u>Name</u>	<u>Principal activities</u>	<u>Country of business/ incorporation</u>	<u>Proportion of ordinary shares directly held by parent</u>		<u>Proportion of ordinary shares directly held by the Group</u>	
			31 March 2023	31 March 2022	31 March 2023	31 March 2022
<i>Held by the Board</i>						
PUB Consultants Private Limited (“PUBC”) ⁽³⁾	Note 14(a)	Singapore	100%	100%	100%	100%
<i>Held by PUBC</i>						
Singapore International Water Week Pte. Ltd. (“SIPL”) ⁽³⁾	Note 14(b)	Singapore	100%	100%	100%	100%

⁽³⁾ Audited by Ernst & Young LLP, Singapore

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

14. Investments in subsidiaries (cont'd)

- (a) PUBC was incorporated on 2 August 1991. Its principal activity is to serve as the commercial arm of the Board. PUBC harnesses the Board's experience and resources to support activities that grow and promote technologies that are key to the Board's operational needs, in collaboration with Singapore-based companies and other stakeholders.
- (b) SIPL was incorporated on 24 September 2007. Its principal activity is to organise the Singapore International Water Week ("SIWW"), a water event that serves as a global platform to share and co-create innovative water solutions. Stakeholders from the global water industry gather at SIWW to share business opportunities and showcase the latest water technologies. SIWW is part of the strategic programme of the Singapore Government to grow the water industry in Singapore and develop water technologies and solutions.

15. Trade and other payables

	Group		Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
<i>Current</i>				
Trade and other payables due to:				
- non-related parties	101,167	112,377	93,844	111,415
- government ⁽⁴⁾	33,982	31,925	33,982	31,925
	135,149	144,302	127,826	143,340
Accruals	229,342	201,397	229,277	201,047
Customer deposits	93,323	96,422	93,323	96,422
Amounts due to subsidiaries	–	–	–	1
Total trade and other payables	457,814	442,121	450,426	440,810

Notes to the Financial Statements

For the financial year ended 31 March 2023

15. Trade and other payables (cont'd)

Reconciliation to financial liabilities at amortised cost

Note	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Total trade and other payables	457,814	442,121	450,426	440,810
Less: Net Goods and Services Tax payables	(588)	(6,849)	(554)	(6,848)
	457,226	435,272	449,872	433,962
<i>Current</i>				
Borrowings	19	–	–	400,000
Lease liabilities	17	59,868	59,868	54,567
		517,094	509,740	888,529
<i>Non-current</i>				
Borrowings	19	1,700,000	1,700,000	600,000
Lease liabilities	17	800,211	800,211	669,241
Total financial liabilities at amortised cost	27(f)	3,017,305	3,009,951	2,157,770

⁽⁴⁾ Included in the Group's trade and other payables to government is advances received for government grants which amounted to \$29.7 million (2022: \$29.9 million).

Trade and other payables and accruals are unsecured and are short-term in nature. Trade payables are normally settled on credit terms of 21-30 days (2022: 21-30 days).

Notes to the Financial Statements

For the financial year ended 31 March 2023

16. Provision for pension

The Group's pension obligation is a defined benefit plan, which relates to pensionable employees transferred from the former Ministry of Environment. The Board and the government jointly finance the pension payments to pensionable employees upon their retirement.

The proportion of pension benefits payable to pensionable employees prior to their transfer to the Board on 1 April 2001, which is to be borne by the government, is excluded from the amount stated above.

The movement in the defined benefit obligation is as follows:

Note	<u>Group and Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Beginning of financial year	4,926	5,318
Interest expense	116	99
Re-measurement loss/(gain)	1	(254)
Liability extinguished on settlement	(236)	(237)
End of the financial year	4,807	4,926

The last actuarial valuation was conducted in the previous financial year ended 31 March 2022. Management has performed an assessment in the current financial year and determined there are no significant changes to the actuarial assumptions for the financial year ended 31 March 2023. The significant actuarial assumptions used were as follows:

- (i) All pensionable employees will retire at age of 62 years (2022: 62 years).
- (ii) Pensionable employees are entitled to select one of the following state-managed pension schemes upon retirement:
 - (a) Monthly pension payments;
 - (b) Reduced monthly pension payments together with gratuity payment upon retirement; or
 - (c) Lump sum gratuity payment upon retirement.
- (iii) The discount rate for the pension obligation is 2.40% (2022: 2.40%) per annum, which is based on the market yields on the Government bonds.
- (iv) The Board's average share of pension obligation is estimated at a factor of 0.70 (2022: 0.70).

Notes to the Financial Statements

For the financial year ended 31 March 2023

16. Provision for pension (cont'd)

The sensitivity of the defined benefit obligation to changes to each of above significant assumptions at the reporting date, assuming all other assumptions were held constant is:

	Change in assumption	<u>Impact on defined benefit obligation</u>	
		31 March 2023 S\$'000	31 March 2022 S\$'000
Discount rate	0.5% p.a. (0.5)% p.a.	(251) 273	(268) 292

As at 31 March 2023, the average duration of the pension obligation is 10 years (2022: 11 years).

17. Lease liabilities

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
<i>Current</i> Lease liabilities	59,868	54,567	59,868	54,567
<i>Non-current</i> Lease liabilities	800,211	669,241	800,211	669,241

Notes to the Financial Statements

For the financial year ended 31 March 2023

17. Lease liabilities (cont'd)

Nature of the leasing activities

The Group and Board leases office premises, lands, buildings and plants for the purpose of its operations.

(a) Carrying amounts

Right-of-use assets classified within property, plant and equipment

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Design-Build-Own-Operate Projects	768,066	625,530	768,066	625,530
Properties – Land, Land development and buildings	16,318	23,691	16,318	23,691
Others	457	982	457	982
	784,841	650,203	784,841	650,203

(b) Depreciation charge during the year

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Design-Build-Own-Operate Projects	(44,688)	(44,009)	(44,688)	(44,009)
Properties – Land, Land development and buildings	(9,892)	(9,884)	(9,892)	(9,884)
Others	(577)	(675)	(577)	(675)
	(55,157)	(54,568)	(55,157)	(54,568)

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

17. Lease liabilities (cont'd)

(c) Interest expense

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Interest expense on lease liabilities	30,717	32,844	30,717	32,844

(d) Lease expense not capitalised in lease liabilities

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Lease expense – short-term leases	519	544	519	544
Lease expenses – low-value leases	2,859	2,504	2,859	2,504
	3,378	3,048	3,378	3,048

(e) Total cash outflows for all the leases during the financial year ended 31 March 2023 for the Group and Board were \$89.4 million (2022: \$88.9 million) and \$89.4 million (2022: \$88.9 million) respectively.

(f) Additions of right-of-use assets during the financial year ended 31 March 2023 for the Group and Board were \$189.8 million (2022: \$25.5 million) and \$189.8 million (2022: \$25.5 million) respectively.

(g) Future cash outflow which are not capitalised in lease liabilities.

Extension options

The leases for certain office premises, lands, buildings and plants contain extension periods, for which the related lease payments had not been included in lease liabilities as the Group is not reasonably certain to exercise these extension options. The Group negotiates extension options to optimise operational flexibility in terms of managing the assets used in the Group's operations. The majority of the extension options are exercisable by the Group and not by the lessor.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

18. Deferred income

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
<i>Current</i>				
Deferred capital grants	8,797	8,873	8,797	8,873
Other deferred income	9,505	8,561	9,381	8,047
	18,302	17,434	18,178	16,920
<i>Non-current</i>				
Deferred capital grants	445,251	437,241	445,251	437,241
Other deferred income	100,711	107,668	100,063	107,668
	545,962	544,909	545,314	544,909
Total deferred income	564,264	562,343	563,492	561,829

Deferred capital grants comprise:

- (i) Amounts received from government bodies and private developers towards the capital outlay for the provision of water facilities that were completed in and after 1998; and
- (ii) Amounts received from government relating to the acquisition of fixed assets.

Other deferred income comprise:

- (i) Operating lease income received in advance in respect of 9 land leases with periods ranging from 9 to 29 years (2022: 10 land leases with periods ranging from 9 to 30);
- (ii) Interest income received in advance in respect of sundry receivables; and
- (iii) Billings made in advance mainly for the Singapore International Water Week ("SIWW") event which will be held in 2024.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

19. Borrowings

	<u>Group and Board</u>	
	31 March 2023	31 March 2022
	S\$'000	S\$'000
<i>Current</i>		
Bonds	–	400,000
<i>Non-current</i>		
Bonds	1,700,000	600,000
Total borrowings	1,700,000	1,000,000

Total borrowings comprise unsecured fixed-rate bonds and the details are as follows:

<u>Currency</u>	<u>Tenure (years)</u>	<u>Interest rate (% per annum)</u>	<u>Issue date</u>	<u>Maturity date</u>	<u>Group and Board</u>	
					31 March 2023	31 March 2022
					\$'000	\$'000
Singapore Dollar	12	3.012	12.7.2010	12.7.2022	–	400,000
Singapore Dollar	3	3.663	30.11.2022	28.11.2025	300,000	–
Singapore Dollar	20	3.620	12.10.2007	12.10.2027	300,000	300,000
Singapore Dollar	15	3.010	18.7.2018	18.7.2033	300,000	300,000
Singapore Dollar	30	3.433	31.08.2022	30.08.2052	800,000	–
					1,700,000	1,000,000

Fair value of non-current borrowings

	<u>Group and Board</u>	
	31 March 2023	31 March 2022
	S\$'000	S\$'000
Bonds	1,632,667	628,788

As at 31 March 2023, there is no PUB bonds holding by PUB Board Members and Key Management Personnel (2022: nil).

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

20. Provision for asset restoration obligations

A provision of \$14.6 million (2022: \$12.9 million) was made to recognise the Board's asset restoration obligations. The provision was estimated based on the latest available demolition costs of comparable assets and discounted at the market government bond yield rate ranging from 2.50% to 3.11% (2022: 1.86% to 2.62%) which commensurate with the estimated number of years to restoration.

21. Share capital

	<u>No. of ordinary shares</u>	<u>Amount \$'000</u>
<u>Group and Board</u>		
31 March 2023		
Beginning of financial year	1,254,542	1,255
Shares issued	1,660	1
End of financial year	1,256,202	1,256
31 March 2022		
Beginning of financial year	1,056,946	1,057
Shares issued	197,596	198
End of financial year	1,254,542	1,255

All issued ordinary shares are fully paid. There is no par value for these ordinary shares.

The shares are held by the Minister for Finance, a body corporate incorporated by the Minister for Finance (Incorporation Act) 1959 and who is a shareholder of the Board. The shares do not carry any voting rights.

The holder of ordinary shares is entitled to receive dividends as and when declared annually, in accordance with Finance Circular Minute No. M26/2008 issued by Ministry of Finance. No dividends were declared for the financial years ended 31 March 2023 and 31 March 2022 as the net income after government grants and after contribution to Consolidated Fund and taxation has been utilised for capital expenditure.

During the financial year, the Board issued 1,660 ordinary shares for a total consideration of \$1,660 (2022: \$197,596) for cash. The newly issued shares rank pari passu in all aspects with the previously issued shares.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

22. Capital account

The capital account comprises the accumulated transfers from retained earnings which had been appropriated for the Board's property, plant and equipment such as plants and pipelines. It also includes the amounts paid by government bodies and private developers towards the capital outlay for the provision of utility facilities completed before 1998. The movement of the capital account represents the retained earnings set aside for the year to meet the Board's capital commitments in accordance with Section 14 of the Public Utilities Act 2001.

23. Water Efficiency Fund

	Group and Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Beginning and end of financial year	6,000	6,000

During the financial year ended 31 March 2023, \$1.8 million (2022: \$1.1 million) of co-funding was incurred. The co-funding amount incurred was drawn from the Water Efficiency Fund during the financial year. The same amount was transferred from retained earnings to the Water Efficiency Fund to maintain the fund at \$6.0 million (2022: \$6.0 million) as at the reporting date.

24. Net assets/(liabilities) of trust funds

Funds held and managed on behalf by the Board includes:

	Group and Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Coastal and Flood Protection Fund [Note 24(a)]	4,826,122	4,921,097
Development Expenditure Fund [Note 24(b)]		
- Ministry of Sustainability and the Environment	(58,978)	(57,793)
- Singapore Totalisator Board	2,132	1,571
National Research Fund [Note 24(c)]	6,282	3,862
	4,775,558	4,868,737

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

24. Net assets/(liabilities) of trust funds (cont'd)

The assets and liabilities of the trust funds are excluded from the assets and liabilities of the Group and the Board.

(a) Coastal and Flood Protection Fund

From 1 April 2020, PUB has assumed an additional role as the nation's Coastal Protection Agency, to safeguard Singapore's coastline against the threat of rising sea levels due to climate change. A new Coastal and Flood Protection Fund ("CFPF") has been set up under PUB, with an initial funding of \$5 billion from the Government. The CFPF will fund capital and non-recurrent coastal protection and drainage expenditures, with allowable purposes prescribed under Section 18A of the Public Utilities Act 2001 as set out in Note 2.20.

The fund is accounted for as follows:

	Group and Board	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Beginning of financial year	4,921,097	5,002,408
Receipts:		
- interest income	29,679	28,456
- liquidated damages	4	12
- recovery of development expenditure	45	—
	29,728	28,468
	4,950,825	5,030,876
Expenditure:		
- development expenditure	(116,358)	(102,607)
- Good and Services Tax	(8,345)	(7,172)
	(124,703)	(109,779)
End of financial year	4,826,122	4,921,097

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

24. Net assets/(liabilities) of trust funds (cont'd)

(a) Coastal and Flood Protection Fund (cont'd)

	<u>Group and Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Represented by:		
Assets:		
- cash at bank	446,655	48,568
- financial asset at amortised cost*	4,375,736	4,870,057
- sundry receivables	3,847	2,527
	4,826,238	4,921,152
Liabilities:		
- sundry creditors and others	(116)	(55)
	(116)	(55)
Net assets of trust fund	4,826,122	4,921,097

* Financial assets at amortised cost relates to Investment in Special Singapore Government Securities.

(b) Development Expenditure Fund

The trust funds comprise funds received from Ministry of Sustainability and the Environment ("MSE") and Singapore Totalisator Board for the construction of assets owned by the Government as set out in Note 2.20.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

24. Net assets/(liabilities) of trust funds (cont'd)

(b) Development Expenditure Fund (cont'd)

The funds are accounted for as follows:

	<u>Group and Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Beginning of financial year	(56,222)	(87,797)
Receipts:		
- funds received	775,507	878,339
- interest income	1,483	284
- liquidated damages	77	106
- recovery of development expenditure	185	289
	777,252	879,018
	721,030	791,221
Expenditure:		
- development expenditure	(725,066)	(788,438)
- Good and Services Tax	(52,810)	(59,005)
	(777,876)	(847,443)
End of financial year	(56,846)	(56,222)

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

24. Net assets/(liabilities) of trust funds (cont'd)

(b) Development Expenditure Fund (cont'd)

Represented by:

Assets:

- cash at bank
- sundry receivables
- prepayments

<u>Group and Board</u>	
31 March 2023 S\$'000	31 March 2022 S\$'000

	3,136	2,646
	1,280	188
	15	455
	4,431	3,289

Liabilities:

- sundry creditors and others
- tender deposits

	(60,982)	(58,642)
	(295)	(869)
	(61,277)	(59,511)

Net liabilities of trust fund

	(56,846)	(56,222)
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Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

24. Net assets/(liabilities) of trust funds (cont'd)

(c) National Research Fund

The Board receives funds from National Research Foundation ("NRF") for disbursement of grants to grantees who are performing the water R&D activities as set out in Note 2.20.

The fund is accounted for as follows:

<u>Group and Board</u>	
31 March 2023 S\$'000	31 March 2022 S\$'000

Beginning of financial year	3,862	8,678
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Receipts:

- funds received
- interest income

	16,578	8,098
	91	12
	16,669	8,110

	20,531	16,788
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Expenditure:

- development expenditure

	(14,249)	(12,926)
	(14,249)	(12,926)

End of financial year	6,282	3,862
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Represented by:

Assets:

- cash at bank
- sundry receivables

	6,204	3,856
	78	6
	6,282	3,862

Net assets of trust fund

	6,282	3,862
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Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

25. Related party transactions

(a) Nature and amount of individually significant transactions

Except as already disclosed elsewhere in the financial statements, there are no individually significant transactions with related parties.

The Board supplies water and provides used water services to all entities in Singapore which also includes its subsidiaries and Government agencies (comprising Ministries, Organs of State and other Statutory Boards). These transactions are conducted in the ordinary course of business.

(b) Key management personnel compensation

Key management personnel compensation is as follows:

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Wages, salaries and post-employment benefits	10,706	9,929	10,685	9,922
Employer's contribution to CPF	513	502	513	502
	11,219	10,431	11,198	10,424

(c) Board members' allowance and other benefits

Board members' allowance and other benefits are as follows:

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Board Members' allowance	226	242	209	225
Other benefits	2	2	2	2
	228	244	211	227

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

26. Commitments

Capital commitments

Capital expenditures contracted for as at the reporting date but not recognised in the financial statements are as follows:

	<u>Group and Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000
Development projects belonging to the Board	2,759,218	2,742,717
Development projects belonging to the Government (funded by trust funds)	2,249,434	2,879,287
	5,008,652	5,622,004

27. Financial risk management

Financial risk factors

The Group is exposed to market risk (including foreign currency risk and interest rate risk), credit risk and liquidity risk.

The board members have overall responsibility for the establishment and oversight of the Group's risk management framework.

The Group's overall financial risk management approach focuses on the state and the unpredictability of the financial and capital markets and seeks to minimise the potential adverse effects from the exposures to these risks on the financial performance of the Group.

There has been no change to the Group's exposure to these financial risks or the manner in which it manages and measures the risks.

(a) Market risk

(i) Foreign currency risk

The Group's exposure to foreign currency risk arises from its foreign currency contracts for purchase of goods and services and its operations in Malaysia. Foreign currency risk arises when transactions are denominated in foreign currencies other than functional currency such as the United States Dollar ("USD"), Malaysian Ringgit ("MYR"), Euro ("EUR") and Canadian Dollar ("CAD"), from financial assets and liabilities denominated in currencies other than the local functional currency.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(i) Foreign currency risk (cont'd)

The Group's exposures to foreign currencies at the reporting date are as follows:

<u>Group</u>	<u>USD</u> \$'000	<u>MYR</u> \$'000	<u>EUR</u> \$'000	<u>CAD</u> \$'000
31 March 2023				
Financial assets				
Cash and cash equivalents	273	14,578	–	–
Trade and other receivables	–	290	–	–
	<u>273</u>	<u>14,868</u>	<u>–</u>	<u>–</u>
Financial liabilities				
Trade and other payables	(729)	(345)	(120)	(49)
Currency exposure of financial (liabilities)/assets net of those denominated in the respective entities' functional currencies	<u>(456)</u>	<u>14,523</u>	<u>(120)</u>	<u>(49)</u>

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(i) Foreign currency risk (cont'd)

The Group's exposures to foreign currencies at the reporting date are as follows: (cont'd)

<u>Group</u>	<u>USD</u> \$'000	<u>MYR</u> \$'000	<u>EUR</u> \$'000	<u>CAD</u> \$'000
31 March 2022				
Financial assets				
Cash and cash equivalents	476	7,800	–	–
Trade and other receivables	–	190	–	–
	<u>476</u>	<u>7,990</u>	<u>–</u>	<u>–</u>
Financial liabilities				
Trade and other payables	(528)	(2,151)	(80)	(33)
Currency exposure of financial (liabilities)/assets net of those denominated in the respective entities' functional currencies	<u>(52)</u>	<u>5,839</u>	<u>(80)</u>	<u>(33)</u>

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(i) Foreign currency risk (cont'd)

The Board's exposures to foreign currencies at the reporting date are as follows:

	USD \$'000	MYR \$'000	EUR \$'000	CAD \$'000
Board				
31 March 2023				
Financial assets				
Cash and cash equivalents	256	14,578	–	–
Trade and other receivables	–	290	–	–
	256	14,868	–	–
Financial liabilities				
Trade and other payables	(729)	(345)	(120)	(49)
Currency exposure of financial (liabilities)/assets net of those denominated in the respective entities' functional currencies	(473)	14,523	(120)	(49)

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(i) Foreign currency risk (cont'd)

The Board's exposures to foreign currencies at the reporting date are as follows: (cont'd)

	USD \$'000	MYR \$'000	EUR \$'000	CAD \$'000
Board				
31 March 2022				
Financial assets				
Cash and cash equivalents	459	7,800	–	–
Trade and other receivables	–	190	–	–
	459	7,990	–	–
Financial liabilities				
Trade and other payables	(528)	(2,151)	(80)	(33)
Currency exposure of financial (liabilities)/assets net of those denominated in the respective entities' functional currencies	(69)	5,839	(80)	(33)

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(i) Foreign currency risk (cont'd)

Sensitivity analysis

If the USD, MYR, EUR and CAD strengthened/weakened against the SGD by 5% with all other variables including tax rate being held constant, the effects arising from the net financial liability/asset that are exposed to currency risk will be as follows:

	← Increase/(Decrease) →	
	31 March 2023	31 March 2022
	Net income after government grants before contribution to Consolidated Fund and taxation	Net income after government grants before contribution to Consolidated Fund and taxation
Group		
USD against SGD		
- Strengthened	(23)	(3)
- Weakened	23	3
MYR against SGD		
- Strengthened	726	292
- Weakened	(726)	(292)
EUR against SGD		
- Strengthened	(6)	(4)
- Weakened	6	4
CAD against SGD		
- Strengthened	(2)	(2)
- Weakened	2	2

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(i) Foreign currency risk (cont'd)

Sensitivity analysis (cont'd)

	← Increase/(Decrease) →	
	31 March 2023	31 March 2022
	Net income after government grants before contribution to Consolidated Fund and taxation	Net income after government grants before contribution to Consolidated Fund and taxation
Board		
USD against SGD		
- Strengthened	(24)	(4)
- Weakened	24	4
MYR against SGD		
- Strengthened	726	292
- Weakened	(726)	(292)
EUR against SGD		
- Strengthened	(6)	(4)
- Weakened	6	4
CAD against SGD		
- Strengthened	(3)	(2)
- Weakened	3	2

This analysis is based on foreign currency exchange rate variances that the Group considered to be reasonably possible at the end of the reporting period.

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(ii) Interest rate risk

Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

The Group's exposure to interest rate risk relates mainly to the cash with AGD which refers to cash managed by the Accountant-General's Department under the Centralised Liquidity Management as set out in the Accountant-General's Circular No. 4/2009 Centralised Liquidity Management for Statutory Boards and Ministries. The interest rates for cash with AGD are based on deposit rates determined by the financial institutions and/or Monetary Authority of Singapore with which the deposits are placed and are expected to move in tandem with market interest rate movements.

The Board's borrowings are limited to fixed rate bonds and accordingly, the Board is not exposed to fluctuations in interest rates. The carrying amounts and effective interest rates of investments in fixed deposits and short-term bills are as follows:

	Note	Weighted average interest rate per annum		Carrying amount	
		31 March 2023	31 March 2022	31 March 2023	31 March 2022
		%	%	S\$'000	S\$'000
Group					
Fixed-rate instruments					
- Malaysia Ringgit	9	2.44	1.63	11,090	1,394
- United States Dollar	9	4.24	0.09	256	459
- Singapore Dollar	9	4.00	—	460,000	—
Variable-rate instruments					
Cash (including cash with AGD)	9	1.56	0.30	162,928	329,473
				634,274	331,326

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(a) Market risk (cont'd)

(ii) Interest rate risk (cont'd)

	Note	Weighted average interest rate per annum		Carrying amount	
		31 March 2023	31 March 2022	31 March 2023	31 March 2022
		%	%	S\$'000	S\$'000
Board					
Fixed-rate instruments					
- Malaysia Ringgit	9	2.44	1.63	11,090	1,394
- United States Dollar	9	4.24	0.09	256	459
- Singapore Dollar	9	4.00	—	460,000	—
Variable-rate instruments					
Cash (including cash with AGD)	9	1.56	0.30	158,898	325,904
				630,244	327,757

27. Financial risk management (cont'd)

- (a) Market risk (cont'd)
- (ii) Interest rate risk (cont'd)

Sensitivity analysis

An increase/decrease of 50 basis points in the interest rates at the reporting date would have increased/decreased the net income (after government grants before contribution to Consolidated Fund and taxation) by the amounts shown below:

	← Increase/(decrease) →	
	31 March 2023	31 March 2022
	Net income after government grants before contribution to Consolidated Fund and taxation	Net income after government grants before contribution to Consolidated Fund and taxation
Group		
Variable-rate instruments		
Cash (including cash with AGD)		
- Increase	815	1,647
- Decrease	(815)	(1,647)
Board		
Variable-rate instruments		
Cash (including cash with AGD)		
- Increase	794	1,630
- Decrease	(794)	(1,630)

This analysis assumes that all other variables, in particular foreign currency rates, remain constant.

27. Financial risk management (cont'd)

- (b) Credit risk

Credit risk is the risk of financial loss if a customer or counterparty to a financial instrument defaults on its contractual obligations.

The Group's exposure to credit risk arises mainly from trade and other receivables. Cash which mainly comprised cash managed by Accountant-General's Department under the Centralised Liquidity Management are placed in Singapore dollar deposits with banks (and cash is made available to the Board upon request) while foreign currency deposits (these are denominated in Malaysian Ringgit and United States Dollar) are placed with licensed commercial banks in Malaysia and Singapore respectively. For trade receivables, the Group has policies in place to ensure that customers maintain deposits with the Group.

The Group establishes an allowance account that represents its estimate of incurred losses in respect of trade and other receivables. The main components of this allowance are a specific loss component that relates to individually significant exposures, and a collective loss component established for groups of similar financial assets in respect of losses that have been incurred but not yet identified. The collective loss allowance is determined based on historical data of payment statistics for similar financial assets. The allowance account in respect of trade and other receivables is used to record impairment losses unless the Group is satisfied that no recovery of the amount owing is possible. At that point, the financial asset is considered irrecoverable and the amount charged to the allowance account is written off against the carrying amount of the impaired financial asset.

Excessive risk concentration

There is no concentration of credit risk relating to trade receivables due to the large customer base.

Exposure to credit risk

The gross carrying amounts of these financial assets recorded in the financial statements represent the Group's maximum exposure to credit risk.

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(b) *Credit risk (cont'd)*

Impairment of financial assets

Cash and cash equivalents and other receivables are subject to immaterial credit loss. The Group's and Board's trade receivables and sundry receivables are subject to more than immaterial credit losses where the expected credit loss model has been applied.

Movement in credit loss allowance for financial assets are set out as follows:

	Trade receivables \$'000	Sundry receivables \$'000	Total \$'000
Group and Board			
Balances as at 1 April 2022	9,898	10	9,908
Loss allowance recognised in profit or loss during the year:			
- Allowance made during the year	614	3	617
Allowance utilised	(1,608)	(8)	(1,616)
Balances as at 31 March 2023	8,904	5	8,909
Balances as at 1 April 2021	9,491	1,421	10,912
Loss allowance recognised in profit or loss during the year:			
- Allowance made during the year	1,954	8	1,962
Allowance utilised	(1,547)	(1,419)	(2,966)
Balances as at 31 March 2022	9,898	10	9,908

The Group used historical loss ratios to determine the amount of provisions for credit losses for trade receivables after adjusting for forward-looking macroeconomic factors.

To measure the expected credit losses, these receivables have been grouped based on days past due.

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(b) *Credit risk (cont'd)*

Impairment of financial assets (cont'd)

Receivables are written off when there is no reasonable expectation of recovery. The Group makes a provision for write off of the receivable when a debtor fails to make payment within the agreed time frame. The amount of provision is based on historical collection trend. Where receivables have been written off, the Group continues with its debts-recovery process to recover the receivables due. Where recoveries are made, these are recognised in profit or loss.

The Group and Board's credit risk exposure in relation to trade receivables as at 31 March 2023 and 31 March 2022 are set out in the provision matrix as follows:

	Current \$'000	Within 30 days \$'000	31 to 90 days \$'000	Past due 91 to 180 days \$'000	More than 180 days \$'000	Total \$'000
Group						
31 March 2023						
Trade receivables	75,412	8,900	4,475	2,148	11,587	102,522
Less: Specific allowances	–	(113)	(188)	(303)	(5,433)	(6,037)
	75,412	8,787	4,287	1,845	6,154	96,485
Less: Trade receivables with no expected credit loss*	(6,662)	(188)	(77)	(54)	(5,235)	(12,216)
	68,750	8,599	4,210	1,791	919	84,269
Expected loss rates	0%	7%	14%	43%	100%	
Loss allowances	–	(607)	(570)	(771)	(919)	(2,867)
31 March 2022						
Trade receivables	79,305	9,685	5,150	2,987	7,074	104,201
Less: Specific allowances	–	(129)	(187)	(319)	(5,168)	(5,803)
	79,305	9,556	4,963	2,668	1,906	98,398
Less: Trade receivables with no expected credit loss*	(10,386)	(66)	–	–	(37)	(10,489)
	69,919	9,490	4,963	2,668	1,869	87,909
Expected loss rates	0%	6%	11%	42%	100%	
Loss allowances	–	(543)	(560)	(1,123)	(1,869)	(4,095)

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(b) *Credit risk (cont'd)*

Impairment of financial assets (cont'd)

	Current \$'000	Within 30 days \$'000	Past due 31 to 90 days \$'000	91 to 180 days \$'000	More than 180 days \$'000	Total \$'000
Board						
31 March 2023						
Trade receivables	74,664	8,790	4,476	2,094	6,352	96,376
Less: Specific allowances	–	(113)	(188)	(303)	(5,433)	(6,037)
	74,664	8,677	4,288	1,791	919	90,339
Less: Trade receivables with no expected credit loss*	(5,914)	(79)	(78)	–	–	(6,071)
	68,750	8,598	4,210	1,791	919	84,268
Expected loss rates	0%	7%	14%	43%	100%	
Loss allowances	–	(607)	(570)	(771)	(919)	(2,867)
31 March 2022						
Trade receivables	78,854	9,685	5,150	2,987	7,074	103,750
Less: Specific allowances	–	(129)	(187)	(319)	(5,168)	(5,803)
	78,854	9,556	4,963	2,668	1,906	97,947
Less: Trade receivables with no expected credit loss*	(9,935)	(66)	–	–	(37)	(10,038)
	68,919	9,490	4,963	2,668	1,869	87,909
Expected loss rates	0%	6%	11%	42%	100%	
Loss allowances	–	(543)	(560)	(1,123)	(1,869)	(4,095)

* Based on historical default rates, the Group believes that no expected loss allowance is necessary in respect of these trade receivables.

Notes to the Financial Statements
For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(b) *Credit risk (cont'd)*

Impairment of financial assets (cont'd)

The carrying amount of sundry receivables individually determined to be impaired are as follows:

	Current \$'000	Within 30 days \$'000	Past due 31 to 90 days \$'000	91 to 180 days \$'000	More than 180 days \$'000	Total \$'000
Group and Board						
31 March 2023						
Sundry receivables	74,542	12	3	1	6	74,564
Less: Specific allowances	–	–	–	–	(5)	(5)
	74,542	12	3	1	1	74,559
31 March 2022						
Sundry receivables	66,394	22	14	1	12	66,443
Less: Specific allowances	–	–	–	–	(10)	(10)
	66,394	22	14	1	2	66,433

Other than the above, the remaining sundry receivables is subjected to insignificant level of credit risk.

Financial assets that are neither past due nor impaired

Financial assets that are neither past due nor impaired are mainly deposits with banks with high credit-ratings assigned by international credit-rating agencies. Trade receivables that are neither past due nor impaired are substantially companies with a good collection track record with the Group and Board.

Other than the above, there are no credit loss allowance for other financial assets at amortised costs as at 31 March 2023 and 31 March 2022.

(c) *Liquidity risk*

Liquidity risk refers to the Group's ability to meet its financial obligations as and when they fall due.

The Group's exposure to liquidity risk is minimal as it adopts prudent liquidity risk management by regularly reviewing its cash flow needs, maintaining sufficient cash from its internally generated cash flow and putting in place adequate financing arrangements.

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(c) Liquidity risk (cont'd)

The cash flow needs in respect of operation, maintenance and construction of Government assets or projects approved and funded by the Government are based on forecasted payment schedule.

The amounts disclosed in the table are the contractual undiscounted cash flows.

	Less than 1 year \$'000	Between 1 and 5 years \$'000	Over 5 years \$'000
Group			
At 31 March 2023			
Trade and other payables	457,226	—	—
Lease liabilities	99,529	301,234	919,684
Borrowings	58,503	802,673	1,818,796
At 31 March 2022			
Trade and other payables	435,272	—	—
Lease liabilities	85,254	277,994	672,106
Borrowings	423,290	79,614	662,728
Board			
At 31 March 2023			
Trade and other payables	449,872	—	—
Lease liabilities	99,529	301,234	919,684
Borrowings	58,503	802,673	1,818,796
At 31 March 2022			
Trade and other payables	433,962	—	—
Lease liabilities	85,254	277,994	672,106
Borrowings	423,290	79,614	662,728

(d) Capital management

The Group's policy is to ensure that it maintains sufficient capital to carry out its statutory functions. To achieve this, the Group reviews its sufficiency of capital as appropriate, taking into consideration its capital expenditure needs, government policies, regulatory requirements and its ability to access capital markets. The Group defines capital as its share capital, retained earnings, capital account and borrowings.

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(d) Capital management (cont'd)

There were no changes in the Group's approach to capital management during the financial years ended 31 March 2023 and 31 March 2022. The Group is not subject to any externally imposed capital requirements.

(e) Fair value measurements

The Group categorises fair value measurements using a fair value hierarchy that is dependent on the valuation inputs used as follows:

- Level 1 - Quoted prices (unadjusted) in active market for identical assets or liabilities that the Group can access at the measurement date,
- Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly, and
- Level 3 - Unobservable inputs for the asset or liability.

Fair value measurements that use inputs of different hierarchy levels are categorised in its entirety in the same level of the fair value hierarchy at the lowest level input that is significant to the entire measurement.

Assets and liabilities not carried at fair value but for which fair value is disclosed

The following table shows an analysis of the Group's and Board's assets and liabilities not measured at fair value as at the reporting date but for which fair value is disclosed:

	Level 1 \$'000	Level 2 \$'000	Level 3 \$'000	Total \$'000
Group and Board				
31 March 2023				
<i>Liabilities</i>				
Borrowings	—	1,632,667	—	1,632,667
31 March 2022				
<i>Liabilities</i>				
Borrowings	—	1,028,788	—	1,028,788

Determination of fair value

The fair value of the liabilities, for disclosure purposes is by reference to stock exchange quoted market bid prices at the close of business at the end of the reporting period.

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

27. Financial risk management (cont'd)

(e) Fair value measurements (cont'd)

<u>Group and Board</u>			
	<u>Note</u>	<u>Carrying amount</u> \$'000	<u>Fair value</u> \$'000
31 March 2023			
<i>Liabilities</i>			
Borrowings	19	1,700,000	1,632,667
31 March 2022			
<i>Liabilities</i>			
Borrowings	19	1,000,000	1,028,788

(f) Financial instruments by category

	<u>Group</u>		<u>Board</u>	
	31 March 2023 S\$'000	31 March 2022 S\$'000	31 March 2023 S\$'000	31 March 2022 S\$'000
Financial assets, at amortised cost	821,001	492,782	811,298	489,063
Financial liabilities, at amortised cost	3,017,305	2,159,080	3,009,951	2,157,770

Public Utilities Board and its Subsidiaries

Notes to the Financial Statements

For the financial year ended 31 March 2023

28. Segment reporting

The Group's chief operating decision-maker comprises the senior management. The Group has only one reportable operating segment as it operates in the water industry as one business segment in the provision of water and related facilities for the public and majority of its activities are located in Singapore. The reportable segment is reviewed regularly by the chief operating decision-maker.

29. Comparative figures

The financial statements for the financial year ended 31 March 2022 were audited by another firm of Public and Chartered Accountant.

30. Authorisation of financial statements

The financial statements for the financial year ended 31 March 2023 were authorised for issue by the board members on 4 August 2023.

