MANAGEMENT DISCUSSION & ANALYSIS

REVENUE CONTRIBUTORS

Environment sector:
RM1,292.3 million
(FY2022: RM1,173.7 million)
10.1% increased

Energy sector:
RM414.3 million
(FY2022: RM263.9 million)
57.0% increased

Engineering Services Sector:
RM573.2 million
(FY2022: RM288.7 million)
98.5% increased

FINANCIAL PERFORMANCE

GROUP FINANCIAL PERFORMANCE

	FY2021	FY2022	FY2023	2023 VS 2022
Financial Indicators				
Revenue (RM' Million)	1,530.9	1,726.3	2,279.8	32.1%
Profit Before Tax ("PBT") (RM' Million)	93.3	203.4	147.8	(27.3%)
Profit After Tax ("PAT") (RM' Million)	66.1	142.2	97.6	(31.4%)
Profit Attributable to Owners of the Parent (RM' Million)	30.6	95.3	52.8	(44.6%)
EBITDA (includes amortisation of services concession assets)	490.6	602.3	570.6	(5.3%)
Earnings Before Interest and Tax	111.6	216.3	160.2	(25.9%)
Net Dividend Payout / Proposed (sen)	0.99	2.5	1.5	(40.0%)
Earnings Per Share (sen) Attributable to Owners of the Parent (sen)	2.62	7.39	4.10	(44.6%)

CASH FLOW

	FY2021	FY2022	FY2023
Cash at Banks and on Hand (RM' Million)	197.9	314.7	138.1
Short-Term Deposits with Licensed Banks (RM' Million)	141.9	74.3	123.2
Total Deposits, Cash and Bank Balances (RM' Million)	339.8	389.0	261.3
Net Cash from Operating Activities (RM' Million)	230.8	124.9	215.1
Net Cash from Investing Activities (RM' Million)	2.6	(50.7)	(66.6)
Net Cash from Financing Activities (RM' Million)	(155.9)	(32.1)	(292.4)
Net Increase / (Decrease) in Cash Balance (RM' Million)	77.5	42.1	(143.9)

ASSETS AND LIABILITIES

	FY2021	FY2022	FY2023	2023 VS 2022
Non-Current Asset (RM' Million)	2,251.5	1,958.9	1,808.0	(7.7%)
Current Asset (RM' Million)	1,029.7	1,302.8	1,150.6	(11.7%)
Total Asset Held for Sale (RM' Million)	-	-	2.5	-
Total Assets (RM' Million)	3,281.2	3,261.7	2,961.2	(9.2%)

MANAGEMENT DISCUSSION & ANALYSIS

GROUP EARNINGS PERFORMANCE

Profit from Group operations:

RM142.5 million

(FY2022: RM200.6 million)

DIVIDENDS DECLARED

1.5 sen per share with total dividend payout of RM19.3 million

(FY2022: 2.5 sen per share with total dividend payout of RM32.2 million)

ASSETS AND LIABILITIES

	FY2021	FY2022	FY2023	2023 VS 2022
Share Capital (RM' Million)	1,439.0	1,439.0	1,439.6	-
Total Equity Attributable to Owners of the Company (RM' Million)	680.8	763.8	776.1	1.6%
Non-Current Liabilities (RM' Million)	1,567.2	1,293.9	1,208.8	(6.6%)
Current Liabilities (RM' Million)	854.1	1,012.7	747.8	(26.2%)
Total Liabilities (RM' Million)	2,421.3	2,306.6	1,956.6	(15.2%)
Total Equity and Liabilities (RM' Million)	3,281.2	3,261.7	2,961.2	(9.2%)

SECTORAL FINANCIAL PERFORMANCE

	FY2022			FY2023		
	REVENUE (RM' MILLION)	PBT (RM' MILLION)	PAT (RM' MILLION)	REVENUE (RM' MILLION)	PBT (RM' MILLION)	PAT (RM' MILLION)
Environment	1,173.7	261.6	217.9	1,292.3	153.3	118.7
Energy	263.9	(0.7)	(8.2)	414.3	(0.4)	(4.5)
Engineering Services	288.7	35.6	26.7	573.2	81.5	69.5

SUBSIDIARIES' PERFORMANCE

	FY2022			FY2023		
	REVENUE (RM' MILLION)	PBT (RM' MILLION)	PAT (RM' MILLION)	REVENUE (RM' MILLION)	PBT (RM' MILLION)	PAT (RM' MILLION)
Ranhill SAJ	1,154.9	244.5	201.0	1,292.3	153.3	118.7
RWS*	102.0	1.7	1.2	-	-	-
RWT*	19.6	(1.7)	(3.1)	-	-	-
Ranhill Technologies	-	-	-	200.9	10.8	7.1
RP I	127.0	-	(0.4)	-	-	-
RP II	120.1	1.8	(5.4)	-	-	-
RSE I**	-	-	-	148.7	(3.0)	(3.5)
RSE II**	-	-	-	122.4	(2.1)	(5.8)
RBSB	53.3	13.2	11.8	189.5	6.3	4.2
RW	209.7	16.4	12.5	456.5	52.5	48.3

* *On 3 December 2023, RWT and RWS completed their merger forming Ranhill Technologies Sdn Bhd ("Ranhill Technologies"). This merger marks a significant milestone in company's growth and expansion.*

** *Effective August 2023, both power plants (RP I and RP II) reflect Ranhill and Sabah Energy Corporation in their name; Ranhill Sabah Energy I Sdn Bhd ("RSE I"), Ranhill Sabah Energy II Sdn Bhd ("RSE II").*

MANAGEMENT DISCUSSION & ANALYSIS

BUSINESS AND OPERATIONAL REVIEW

AT THE GLOBAL LEVEL, GDP GROWTH STOOD AT 3.1%, IMPACTED BY PREVAILING GEOPOLITICAL AND SOCIO-ECONOMIC TRENDS. THESE INCLUDED THE PROTRACTED RUSSIA-UKRAINE CONFLICT, TRADE TENSIONS BETWEEN THE US AND CHINA, A SIGNIFICANTLY STRONGER US DOLLAR AND A HIGH-INTEREST RATE ENVIRONMENT. THE LATTER PART OF 2023 ALSO SAW HEIGHTENED TENSIONS IN THE MIDDLE EAST. CUMULATIVELY, THESE AND OTHER FACTORS SUCH AS A SLOWER-THAN-EXPECTED RECOVERY OF CHINA'S ECONOMY HAD LED TO BELOW FORECASTED PACE FOR GLOBAL ECONOMIC GROWTH.

Consistent with global trends, Malaysia's GDP growth was also lower than predicted at just 3.7%. Domestic growth moderated (2022: 8.7%) amid a challenging external environment, attributed to reduced global trade, a significant global tech downcycle, geopolitical tensions and tighter monetary policies.

Amidst a challenging operating backdrop, Ranhill Utilities Berhad ("Ranhill" or "the Group") continued to pursue its business and operational objectives. The Group's Environment, Energy and Engineering Services sectors have continued to focus on precise execution of strategies while continuing to navigate a challenging and dynamic macro-operating environment.

The Group's approach has yielded positive results, reflected in its improved revenue performance for FY2023 as well as the many project wins and other positive achievements realised during the financial year. The positive performance is attributed to the increased competitive ability in bidding for and securing contracts, expanding beyond Malaysia, meeting key performance indicators ("KPIs") set by industry regulators and continuously enhancing operational performance and pursuing further cost efficiencies across the value chain.

FINANCIAL PERFORMANCE

In FY2023, Group revenue registered a 32.1% improvement year-on-year to RM2,279.8 million (FY2022: RM1,726.3 million). Group turnover was higher on the back of stronger topline contribution from all business divisions.

In FY2023, Environment sector revenues were higher by 10.1% year-on-year on the back of higher topline performance of RM1,292.3 million (FY2022: RM1,173.7 million), notably attributed to higher contributions from Ranhill SAJ Sdn Bhd ("Ranhill SAJ"). On the back of increased water sold, revenue for Ranhill SAJ improved by 10.2%, year-on-year to RM1,273.2 million (FY2022: RM1,154.9 million).

The Energy sector, which contributed close to 18.2% of Group revenue, also recorded higher turnover. On the back of increased energy despatched to the Sabah electricity grid, revenues were 17.0% (RSE I) / 1.9% (RSE II) higher, year-on-year at RM148.7 million (RSE I) / RM122.4 million (RSE II) (FY2022: RM127.0 million (RSE I) / RM120.1 million (RSE II)).

The Engineering Services sector provided the balance of Group revenues at RM573.2 million, 98.5% higher year-on-year (FY2022: RM288.7 million). Revenue growth was underpinned by higher revenue recognition achieved during the year including stronger contribution from RW's oil and gas projects.

However, while revenues had improved, rising energy and labour costs as well as other factors, including the absence of one-off earnings had led to a year-on-year reduction in pre and post-tax earnings.

In FY2023, profit before tax ("PBT") stood at RM147.8 million (FY2022: RM203.4 million), while profit after tax ("PAT") stood at RM97.6 million (FY2022: RM142.2 million). PBT and PAT had decreased by 27.3%.

MANAGEMENT DISCUSSION & ANALYSIS

In terms of earnings, the Environment sector saw its PBT and PAT reduced by 41.4% and 45.5% respectively to stand at RM153.3 million (FY2022: RM261.6 million), and RM118.7 million (FY2022: RM217.9 million). The Energy sector saw its loss before tax ("LBT") and loss after tax ("LAT") improve to RM0.4 million (FY2022: RM0.7 million) and RM4.5 million (FY2022: RM8.2 million), a 42.9% and 45.1% rise respectively vis-à-vis FY2022. The Engineering Services sector contributed RM81.5 million (FY2022: RM35.6 million) and RM69.5 million (FY2022: RM26.7 million), in PBT and PAT respectively. Both PBT and PAT had improved by 128.9% and 160.3% respectively, year-on-year.

ENVIRONMENT SECTOR

Ranhill's Environment sector comprises the Group's water operations in Malaysia, Thailand and China. The operations primarily consist of the abstraction, treatment and distribution of potable water as well as treatment of wastewater and conversion of wastewater into reclaimed water. The operating companies under the Environment sector are as follows:

Ranhill SAJ Sdn Bhd ("Ranhill SAJ")	Ranhill Water (Hong Kong) Ltd. ("RWHK")	Ranhill Water Technologies (THAI) Ltd. ("RWTT")	AnuRAK Water Treatment Facilities Co. Ltd. ("AnuRAK")

RANHILL SAJ

Total Pipelines: **24,150 KM**

Distribution: 3,623 KM
Reticulation: 20,527 KM

Reservoirs: **724**

WTPs: **46**

NRW Rating: **25.0%**

1.3% NRW reduction equivalent to 16.3 MLD of water saved

Treatment Capacity: **2,171 MLD**

INTERNATIONAL OPERATIONS

Thailand Operation: **100 MLD** total treatment capacity for water and wastewater treatment plant

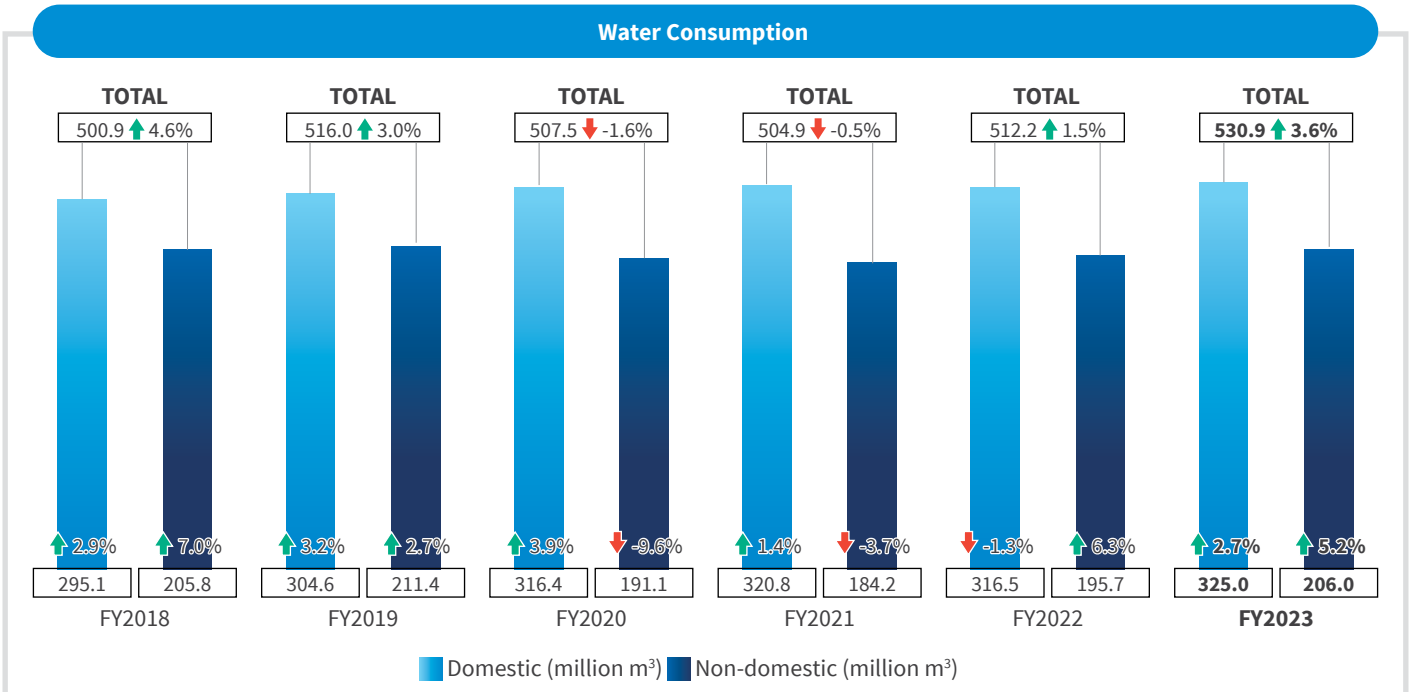
2 reclaimed water treatment plants with **17 MLD** for total treatment capacity

China Operation: Together with local partner, SIIC, RWHK operates **12 wastewater** treatment plants on BOT and TOT basis.

Total Capacity: **227 MLD**

Achieved **344 MLD**, or **86%** of Ranhill's targeted **400 MLD** for international water, wastewater and reclaimed water operations

MANAGEMENT DISCUSSION & ANALYSIS



FY2023 ALSO SAW THE IMPLEMENTATION OF THE REVISED WATER TARIFFS, NOTABLY FOR THE NON-DOMESTIC SEGMENTS. INCREASING WATER SALES TOGETHER WITH HIGHER TARIFFS CONTRIBUTED TO AN IMPROVED REVENUE PERFORMANCE FOR RANHILL SAJ IN FY2023.

Revenue for the financial year stood at RM1,273.2 million, 10.2% higher year-on-year (FY2022: RM1,154.9 million).

In FY2023, Ranhill has continued to meet its obligations to PAAB for lease rental payments. Negotiations continue to proceed between Ranhill SAJ and PAAB towards converting the federal loan provided into a grant.

A notable factor was the increased energy costs, electricity costs post the implementation of the revised Imbalance Cost Past-Through ("ICPT") tariff effective 1 January 2023. The new ICPT rate was 20 sen per kWh, a increase which led to higher operational costs. The rate was revised downwards on 1 June 2023 to 0.037 sen per kWH, still higher than when compared to 2022. The Group's largest consumption of electricity is Ranhill SAJ's water treatment plants - located statewide.

Continuous efforts to address rising energy costs were pursued in 2023. Other cost control measures continued to be implemented including controlling labour and payroll costs and expanding the existing chemical substitution programme to more WTPs.

Ranhill SAJ continued to undertake necessary CAPEX for various projects towards ensuring the integrity and sustainability of the water supply system and infrastructure in Johor. This included NRW-related projects such as pipe rehabilitation and replacement works and water treatment plant upgrades and construction of new WTPs.

OPERATIONAL HIGHLIGHTS

NRW

In FY2023, Johor's NRW rate declined to 25.0% (FY2022: 26.3%). The 1.3% NRW reduction is equivalent to 16.3 MLD of water saved. The performance achieved surpasses the FY2023 target of 25.5% stipulated in SPAN's OP5 and with that, Ranhill SAJ has qualified for SPAN's Matching Grant for a 50% reimbursement from the overall NRW Reduction Program.

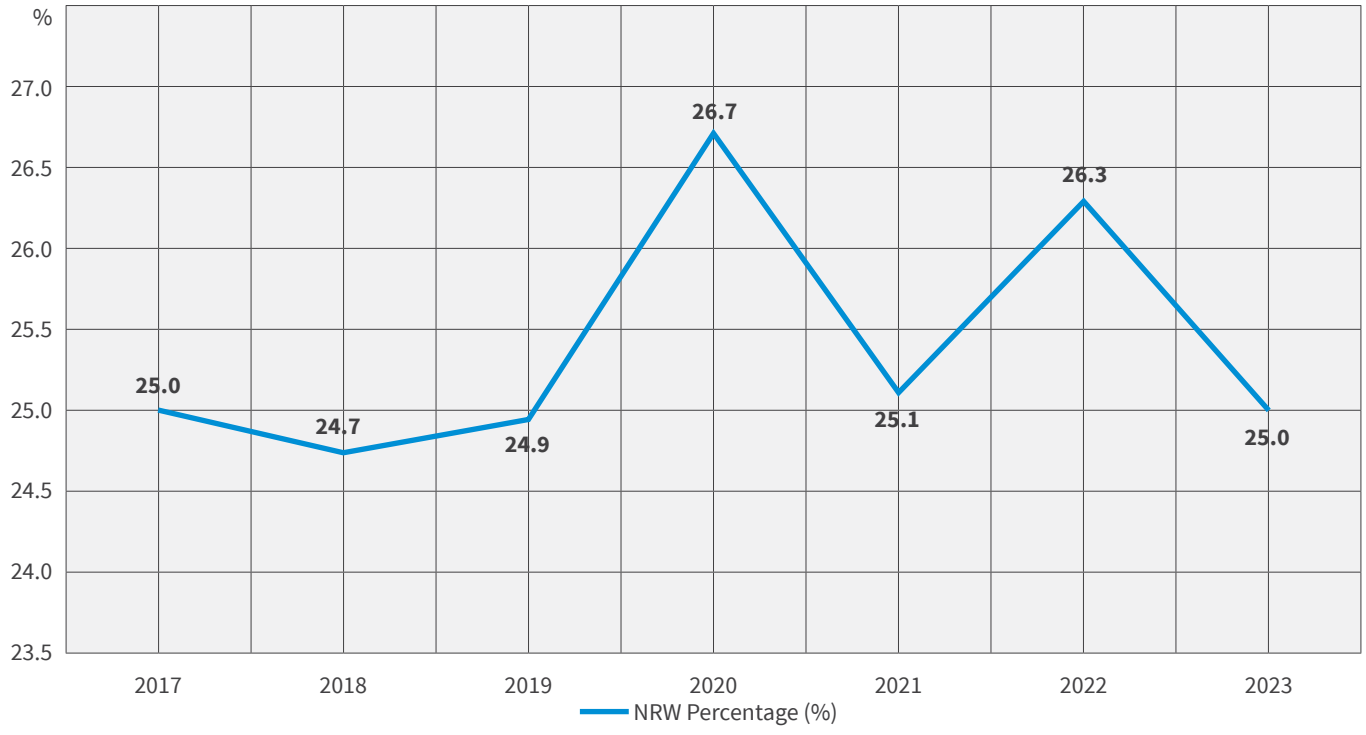
Ranhill SAJ was successful in meeting all NRW targets in FY2023 with the exception of Kluang, Pontian and Segamat. In addition, to the SPAN NRW target, Ranhill SAJ also met SPAN's KPIs for physical and commercial losses and for ILI. In FY2023, ILI decreased from 9.0 in Year 2022 to 8.6 in Year 2023.

MANAGEMENT DISCUSSION & ANALYSIS

NRW KPI OP5 for Year 2023

NRW KPI - Business Plan OP5 for Year 2023	Target	Achievement	Difference
a) NRW Level Percentage (%)			
Johor State	25.5%	25.0%	0.5%
Johor Bahru	23.5%	20.5%	3.0%
Batu Pahat	37.0%	34.5%	2.5%
Muar	29.8%	29.4%	0.4%
Kluang	28.2%	29.9%	-1.7%
Kota Tinggi	27.8%	24.0%	3.8%
Segamat	33.2%	37.0%	-3.8%
Pontian	25.5%	28.6%	-3.1%
Mersing	22.5%	22.5%	0.0%
b) Physical Losses (litre / connection / day)	303	303	0
c) Commercial Losses (number of faulty meter)	0.2%	0.2%	0.0%
d) Infrastructure Leakage Index (“ILI”)	8.7	8.6	0.1

NRW Percentage Trending 2017-2023



NRW reduction was effective in FY2023 due to the timely undertaking of necessary pipe rehabilitation and replacement works (“Pipe Rehab plans”) under Operating Plan 5 (“OP5”) as set out by SPAN. Previous pipe rehab programmes that were delayed or saw slow progress due to lack of regulatory approvals and qualified contractors and other factors were expedited swiftly in FY2023. This enabled an effective arrest of ILI and ultimately, contributed to a significant NRW reduction.

MANAGEMENT DISCUSSION & ANALYSIS

Beyond reducing water losses, NRW reduction contributes to reduced operational stress on WTPs (as less production is required to ensure sufficient water supply), as well as supports reduced maintenance and lower energy consumption as there is less requirement for WTPs to abstract and treat water. NRW reduction also contributes towards ensuring sufficient water reserve margin, notably at high-consumption demand locations. In terms of regulatory compliance, Ranhill SAJ has registered a high compliance level – meeting almost all of SPAN's KPIs in FY2023.

No.	Performance Measure	Key Performance Indicator ("KPI")	SPAN KPI Target	Achievement
1	**Water Services Performance**			
1.1	Water Supply Coverage	a) Urban Areas (%)	100	100
		b) Rural Areas (%)	99.5	99.8
1.2	Treated Water Quality Compliance Rate	Water quality tests that meet the National Drinking Water Quality ("NDWQ") Standards (%)		
		a) Residual Chlorine	99.00	99.99
		b) E.Coli	99.90	100
		c) Res.Chlorine & E.Coli	99.95	100
		d) Turbidity	99.70	99.88
		e) Aluminium	95.00	97.06
1.3	Continuity of Water Supply	a) Communication pipe failures to be repaired within 24 hours (for cases where services are affected) (%)	95.00	100
		b) Pipe repair and restoration of supply for pipe below 200 MM diameter to be within 24 hours (%)	95.00	100
		c) Pipe repair and restoration of supply for pipe size 200 MM up to 600 MM diameter to be within 36 hours (%)	95.00	100
		d) Pipe repair and restoration of supply for mains exceeding 600 MM diameter to be within 48 hours (%)	95.00	100
1.4	Water Pressure Compliance	Minimum pressure of 10 meter at meter point to be maintained for all premise types (%)	99.00	99.82
2	**Customer Services**			
2.1	Water Supply Complaints	Response time to complaint (%)		
		a) Responded within 24 hours	99.50	99.01
		b) Response and resolution of complaints	99.30	99.95
		c) Telephone (responded within 10 seconds) - Excluding at event crisis (beyond control)	92.00	94.30
3	**Operational and Economic Performance**			
3.1	Non-Revenue Water ("NRW")	NRW Level for Johor State (%)	25.5	25.0
		a) Physical losses volume: Litre / Connection / Day (l / con / day)	303	303.48
		b) Commercial loss: Number of meters not functioning or stop (%)	0.2	0.19
		c) Infrastructure Leakage Index ("ILI")	8.7	8.6
3.2	Operating Cost	a) Operating cost per 1000 accounts	639,354	639,818
		b) Operating cost per cubic meter produced: RM/m^3	1.10	1.16

MANAGEMENT DISCUSSION & ANALYSIS

PIPE REHABILITATION AND REPLACEMENT WORKS

In FY2023, outstanding pipe replacement works under SPAN's Pipe Rehab 2018 / 2019 were completed. The total length of pipelines rehabilitated and replaced under Rehab 2018 / 2019 stood at 180.2 KM.

Works under Rehab 2020 were hampered due to late permit approval from local authorities and insufficient qualified contractors to undertake works. However, these issues have been addressed and all projects under Rehab 2020 remain on track for scheduled completion by the end of 2024. With this, an additional 153.2 KM of pipelines will be refurbished by the end of 2024.

REHAB 2018 / 2019

No.	Package	Status	KM
1.	Program Penggantian Paip Lama Di Negeri Johor Pakej 1 – Daerah Johor Bahru	Completed on 31 August 2023.	47.9
2.	Program Penggantian Paip Lama Di Negeri Johor Pakej 2 – Daerah Johor Bahru, Pontian, Kulai, Kota Tinggi Dan Muar	Completed on 25 August 2023.	132.3

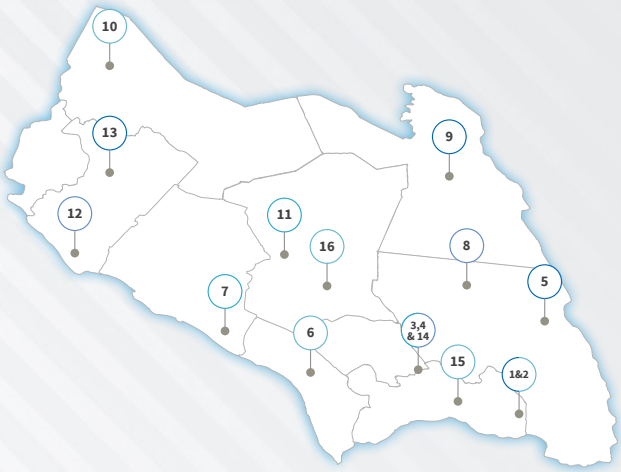
REHAB 2020

No.	Package	Status	KM
1	Program Penggantian Paip Lama Di Negeri Johor Pakej 1 – Daerah Johor Bahru	Progress level as of 31 December 2023: 35.1%. Completion expected by end of December 2024.	18.4 KM (December 2023) / 44 KM (Overall)
2	Program Penggantian Paip Lama Tahun 2018 / 2019 Di Negeri Johor Pakej 2 – Daerah Johor Bahru, Pontian, Kulai, Kota Tinggi Dan Muar	Progress level as of 31 December 2023: 11.1%. Completion expected by end of December 2024.	39.1 KM (December 2023) / 85 KM (Overall)
3	Program Penggantian Paip Lama Di Negeri Johor Pakej 3 – Daerah Batu Pahat, Muar, Segamat Dan Kluang	Progress level as of 31 December 2023: 35.1%. Completion expected by end of December 2024.	72.3 KM (December 2023) / 154 KM (Overall)

In FY2024, Ranhill SAJ will rehabilitate and replace up to 276.8 KM of pipeline funded by SPAN's allocation of RM302.5 million under Rehab 2020 and Rehab 2021. Among the key projects earmarked for FY2024 include the construction and relaying of the 1,400 MM MS x 23 KM pipeline, which is being funded by PAAB. The project is currently at the design stage and entails rezoning of the Johor Bahru water supply system ("WSS"). Another major pipeline project which has been planned is the construction of 1,200 MM x 23 KM pipeline from Semangar WTP to Bukit Kulai. The project will deliver water to support the ongoing development of the Sedenak Tech Park.

MANAGEMENT DISCUSSION & ANALYSIS

DEVELOPMENT OF NEW WTPS AND UPGRADING WORKS IN JOHOR



1. LAYANG 2 WTP PROJECT, PASIR GUDANG (PHASE ONE)
- CAPACITY: Additional 160 MLD
- SUPPLY AREA: Pasir Gudang and parts of Johor Bahru
- ESTIMATED COMPLETION: April 2024

2. LAYANG 2 WTP PROJECT, PASIR GUDANG (PHASE TWO)
- CAPACITY: Additional 160 MLD
- SUPPLY AREA: Johor Bahru
- ESTIMATED COMPLETION: 4th Quarter 2026

3. SEMANGAR WTP PROJECT, KOTA TINGGI (PACKAGE PLANT)
- CAPACITY: Additional 50 MLD
- SUPPLY AREA: Johor Bahru and Kulai
- ESTIMATED COMPLETION: First Half 2025

4. SEMANGAR 3 WTP PROJECT, KOTA TINGGI
- CAPACITY: Additional 200 MLD
- SUPPLY AREA: Johor Bahru and Kulai
- ESTIMATED COMPLETION: 2030

5. SG SEDILI BESAR WTP PROJECT, KOTA TINGGI
- CAPACITY: 600 MLD
- SUPPLY AREA: Johor Bahru and Kota Tinggi
- ESTIMATED COMPLETION: 2030

6. KAYU ARA PASONG PROJECT, PONTIAN (PHASE ONE)
- CAPACITY: 30 MLD
- SUPPLY AREA: 30 MLD
- ESTIMATED COMPLETION: 2030

7. YONG PENG WTP UPGRADE, BATU PAHAT
- CAPACITY: Additional 28 MLD
- ESTIMATED COMPLETION: 2028

8. GEMBUT WTP UPGRADE PROJECT, KOTA TINGGI
- CAPACITY: Additional 10 MLD
- SUPPLY AREA: Kota Tinggi (Gembut, Tanjung Sedili, FELDA Bukit Aping)
- ESTIMATED COMPLETION: 2027

9. TENGLU WTP UPGRADE PROJECT, MERSING
- CAPACITY: Additional 10 MLD
- SUPPLY AREA: Mersing (Bandar Mersing, Tenglu)
- ESTIMATED COMPLETION: 2028

10. KG TENGAH WTP UPGRADE PROJECT, SEGAMAT
- CAPACITY: Additional 12 MLD
- SUPPLY AREA: Segamat (Bandar Segamat)
- ESTIMATED COMPLETION: 2028

11. KAHANG BARU WTP UPGRADE PROJECT, KLUANG
- CAPACITY: Additional 3 MLD
- SUPPLY AREA: Kluang (Kahang 22nd and 24th miles)
- ESTIMATED COMPLETION: 2028

12. GOMBANG UPGRADE PROJECT, MUAR
- CAPACITY: Additional 3 MLD
- SUPPLY AREA: Muar
- ESTIMATED COMPLETION: 2028

13. PAGOH WTP UPGRADE PROJECT, MUAR
- CAPACITY: Additional 40 MLD
- SUPPLY AREA: Muar, (Pagoh, Bandar Muar, Parit Jawa, Parit Bakar)
- ESTIMATED COMPLETION: 2028

14. SEMANGAR WTP PROJECT
- CAPACITY: 300 MLD
- ESTIMATED COMPLETION: 2030

15. SG JOHOR WTP PROJECT
- CAPACITY: 300 MLD
- ESTIMATED COMPLETION: 2030

16. NEW KAHANG WTP PROJECT
- CAPACITY: 40 MLD
- ESTIMATED COMPLETION: Works completed. Presently undergoing testing and commissioning. Estimated to commence operations in June 2024.

MANAGEMENT DISCUSSION & ANALYSIS

Aside from NRW-related works, Ranhill SAJ continues to expand the capacity of WTPs as well as construct new WTPs towards ensuring sufficient water supply statewide and reserve margins.

Specifically, WTP-related works are undertaken in areas where water consumption demand is the highest. These are typically developed, urban locations as well as industrial and commercial areas.

The 160 MLD Sultan Iskandar 2 WTP (Phase One) WTP continues to near its COD with 97% of work completed during the financial year. Full project completion and COD is expected by the first quarter of FY2024. The completion of the Sultan Iskandar 2 WTP (Phase One) will boost the Johor Bahru reserve margin from 5% to 17%. Tendering of Phase Two will commence, post completion of Phase One.

The Semangar WTP has reached the design stage and the Semangar package plant has been approved for tendering of construction works. Likewise, tendering is to commence in FY2024 on the Sg Sedili raw water transfer project.

The 15 MLD Air Panas C WTP was completed in August 2023 and with the plant's operations commencing, reserve margins at the Segamat area have been shored up to a healthier 20% from the previous 8%. Other locations benefitting from the increased capacity of Air Panas C WTP are Pekan Tenang, Felda Moakil, Pekan Bekok, Pancha Jaya, Pekan Chaah, Sg. Berlian and surrounding areas.

Works for the 50 MLD package plant comprise the installation of a new 800 MM raw water pipeline and treated water pipeline, all related civil, mechanical and engineering (M&E) works, interconnection works and project management and pre-development costs including land acquisition costs.

Works for the 30 MLD Kayu Ara Pasong WTP entails the development of the 30 MLD raw water intake, 30 MLD WTP structure, a new 7 MLD balancing tank dan pump house, development of the auxiliary system (M&E and piping works), laying of 700 MM pipelines for raw water and treated water pipelines.

The Semangar and Sg Johor WTPs, both with a 300 MLD capacity will address the increasing consumption demand from the Johor Bahru district and surrounding areas.

The 40 MLD New Kahang WTP is presently at the testing and commissioning phase and is expected to commence operations by June 2024. The plant will provide additional potable water supply to Kluang.

The 18 MLD Sg Sedili raw water transfer project will provide the necessary raw water to cater to the increased capacity of the Sg. Gembut WTP, towards ensuring sufficient water supply and reserve margins for the location. The completion of the 160 MLD Layang 2 Phase Two WTP will reduce dependence on the treated water supply provided by the Public Utilities Board of Singapore ("PUB") as it would double treatment capacity to 320 MLD (cumulative treatment capacity from Layang Phase One and Phase Two).

Shortage of raw water yield in Sg. Johor poses challenges as this limits the development of new WTPs. In addressing this issue, plans for 260 MLD of raw water transfer from Sg. Sedili Besar to Seluyut Dam and from Seluyut Dam to Upper Layang Dam would ensure sufficient capacity to shore up reserve margins and meet daily consumption demand.

The construction of the Sg. Pontian Besar barrage and ORS has been approved by the government under the RMK-12 RP4.

WATER TREATMENT PLANT AND INFRASTRUCTURE WORKS APPROVED BY PAAB IN JOHOR

WTP	Capacity (MLD)	Status	Purpose of Plant
Sultan Iskandar 2 WTP (Phase One)	160	97% of works completed in 2023, with full completion and COD expected in the first quarter of 2024.	Boost the Johor water reserve margin to 17%.
Sultan Iskandar 2 WTP (Phase Two)	160	PAAB to commence with the tender process post completion of Phase One.	Ensure continuity of supply in Johor Bahru, including Iskandar Puteri, Kulai and Pasir Gudang areas as well as providing sufficient reserve margin for supply security. Besides that, the completion of Phase Two will assist in Ranhill SAJ's Zero-D program.
Semangar WTP	200	At design stage with consultant to undertake design and concept development concurrently with the Sg. Lebak ORS project by the Ministry of Natural Resources, Environment and Climate Change ("NRECC").	Ensure continuity of supply in Johor Bahru, including Iskandar Puteri, Kulai and Pasir Gudang area as well as providing sufficient reserve margin for supply security.

WTP	Capacity (MLD)	Status	Purpose of Plant
Semangar Package Plant	50	Approved by NRECC with PAAB to commence the tender process.	Ensure continuity of supply in Johor Bahru, including Iskandar Puteri, Kulai and Pasir Gudang area as well as providing sufficient reserve margin for supply security.
Sg Ulu Sedili Besar raw water transfer project	600	Tendering stage expected to commence in the first quarter of 2024. Tender process managed by NRECC.	Construction of 500 MM MS pipe x 22 KM length of pipeline to supply 18 MLD of raw water from Sg Sedli to the Sg. Gembut Intake.
Kayu Ara Pasong WTP	30	In progress for design by consultant concurrent with the implementation of water resource works (Barrage and ORS) by Ministry as approved in RMK-14 RP-4.	Ensure continuity of supply in Pontian area as well as providing sufficient reserve margin for supply security.
Yong Peng WTP Upgrade, Batu Pahat	Additional 28 MLD capacity increase to achieve a total of 28 MLD	In preliminary engineering design stage.	Increase Batu Pahat reserve margin supply area: Parit Raja & surrounding.
Tenglu WTP Upgrade Project	Additional 10 MLD capacity increase to achieve a total of 15 MLD to 25 MLD	In concept design stage.	Supply Area: Mersing (Bandar Mersing, Tenglu) Estimated Completion: 2028
Kg Tengah WTP Upgrade Project	Additional 12 MLD capacity increase to achieve a total of 13 MLD to 25 MLD	Approved by SPAN in OP6. To proceed with proposal forn PAAB's approval.	Supply Area: Segamat (Bandar Segamat) Estimated Completion: 2028
Kahang Baru WTP Upgrade Project	Additional 3 MLD capacity increase to achieve a total of 3.18 MLD to 6 MLD	Approved by SPAN in OP6. To proceed with proposal for PAAB's approval.	Supply Area: Kluang (Kahang 22nd and 24th miles) Estimated Completion: 2028
Gombang WTP Upgrade Project	Additional 3 MLD capacity increase to achieve a total of 3.18 MLD to 6 MLD	Approved by SPAN in OP6. To proceed with proposal for PAAB's approval.	Supply Area: Muar
Pagoh WTP Upgrade Project	Additional 40 MLD capacity increase to achieve a total of 40 MLD to 80 MLD	Approved by SPAN in OP6. To proceed with proposal for PAAB's approval.	Supply Area: Muar, (Pagoh, Bandar Muar, Parit Jawa, Parit Bakar) Estimated Completion: 2028

Another highlight is the 2 MLD Desalination plant project at Forest City, Gelang Patah. This is Malaysia's first desalination plant by a private water operator and further exemplifies the strong internal expertise and technical capabilities of the Ranhill Group. Further details of Forest City, Gelang Patah project are provided under the RWT disclosures of this Management Discussion & Analysis on page 60.

MANAGEMENT DISCUSSION & ANALYSIS

ADDRESSING ENVIRONMENTAL AND OTHER CHALLENGES

While Ranhill SAJ continues to upgrade and expand the state's water infrastructure to meet existing and future requirements, the challenge remains in ensuring sufficient water resources (to meet growing consumption demand) even as existing water resources continue to be affected by pollution, climate change and other existing or emerging issues.

In particular, changing weather patterns, brought on or exacerbated by climate change and global warming, have affected rainfall levels at various locations across Johor. This in turn affects the overall level of water available in rivers and dams.

Notably, the Sembrong dam was considerably affected by drought for several weeks, leading to dam water levels falling to critical levels.

Mitigation action taken included rezoning activities to replenish dam water levels. Other longer-term measures are also being considered towards developing longer-term solutions in addressing future occurrences of drought which could affect Sembrong dam and / or other dams in Johor.

Nevertheless, the need for a multi-strategic approach that not only focuses on water abstraction and supply is necessary to meet future requirements. Calls for continued preservation of water resources, and further progress in eliminating wastages (through continuous NRW reduction) while also utilising existing resources with efficiency, which includes being able to divert additional water capacity in specific catchment areas to locations that have low reserve margins.

Another strategy is WSS rezoning. Rezoning activities were implemented in FY2023 to include WSS with excess reserve margin into areas with lower quantities. Rezoning has been effective in ensuring an uninterrupted supply of potable water even when WTPs break down as other interconnected WTPs can supply water to address any interruption or shortage in supply, especially during periods of high demand or low supply.

Water contamination and pollution incidents were on a downtrend in FY2023, largely due to strong vigilance and monitoring by Ranhill SAJ and stringent enforcement by relevant authorities such as Badan Kawalselia Air Johor ("BAKAJ") and the Department of Environment ("DOE").

The collaboration between all parties has enabled stronger, more comprehensive oversight and timely action in apprehending polluters. In 2023, the number of WTP production hours affected by pollution reduced significantly by 71.7% year-on-year, from 197.08 hrs in 2022 to 55.83 hrs in 2023.

A total of nine cases were recorded in 2023, mostly due to excessive amounts of ammonia, causing affected WTPs to shutdown or operate at reduced treatment capacity for limited periods of time. Beyond dumping of effluents or channeling of untreated (or inadequately tread) chemicals and waste, sand mining is also a notable cause of pollution. The latter, in particular increases the turbidity of river water.

Apart from working closely with enforcement authorities, Ranhill SAJ continues to undertake close surveillance of potential polluters, especially in areas where pollution incidents are known to occur. Measures introduced include using drone technology, installing remote monitoring systems for quicker detection of pollutants in river water (in close proximity to WTPs) and other measures.

Ranhill SAJ has also initiated legal action against polluters. In 2023, Ranhill SAJ secured a favourable judgment for its legal case against a company for pollution. The courts awarded Ranhill SAJ, as the plaintiff RM100,000 in damages and another RM100,000 in cost.

The utilisation of technology has enabled more effective oversight of water catchment areas and upstream rivers. Among technologies deployed in FY2023 include Unmanned Aerial Vehicles ("UAV") and various others.

Beyond enforcement, Ranhill SAJ continues to undertake regular awareness-based engagement with premises as prevention through education is a more cost and time-effective approach as opposed to enforcement. Inculcating an environmentally conscious mindset among factory operators and other business and commercial operations near rivers would contribute to self-regulation and ultimately support the reduction or prevention of pollution incidents. In FY2023, several engagement sessions were held with state, federal and local authorities, trade associations, government agencies and individual premises.

Internationally, a key highlight for Ranhill's Environment sector was the Group's involvement in the USD860 million Ir. H. Djuanda project. FY2023 saw a notable development with the MoU signing between China Energy International Group Co. Ltd. ("CEIG") and Ranhill. The MoU paves the way for both parties to collaborate and jointly pursue the proposed public-private partnership project for the development of the source-to-tap drinking water supply project for Sistem Penyediaan Air Minum ("SPAM") Ir. H. Djuanda Water Supply (Jatiluhur II) Project and to co-develop and cooperate on other potential projects in the Southeast Asia region.

CEIG is a unit of China Energy Engineering Corp Ltd, a company jointly listed on the Hong Kong Stock Exchange and Shanghai Stock Exchange. The Ir. H. Djuanda / Jatiluhur II project comprises the construction of the intake, transmission pipeline, water

MANAGEMENT DISCUSSION & ANALYSIS

In FY2023, Ranhill saw a notable development with the MoU signing between China Energy International Group Co. Ltd. ("CEIG") to pursue the proposed public-private partnership project for the development of the source-to-tap drinking water supply project

treatment plant and main development network. The project is to be 30% funded by equity and 70% debt. It carries a concession period of 30 years.

Ranhill SAJ remains cognisant of its environmental footprint, notably in terms of energy consumption, where a significant amount of electricity is required to power WTPs.

Presently, subscription to the Green Energy Tariff ("GET") mechanism at both the Semangar & Sg. Johor WTPs has enabled a notable RM1.43 million savings in electricity costs while reducing Scope 2 carbon emissions by 8,375.11 tonnes. Ranhill SAJ's efforts were also acknowledged when it was named the winner of the Renewable Energy (off-grid) category at the NEA 2023 and the first runner-up at the ASEAN Energy Awards 2023.

OUTLOOK AND PROSPECTS

Water consumption demand is expected to continue increasing in tandem with a robust economic growth outlook for Johor. The state is expected to enter a high growth phase going forward, spurred by robust growth in the state's manufacturing, services, tourism, construction and infrastructure sectors.

Several catalytic projects have been announced that are expected to have significant multiplier effects on the local economy while attracting domestic and foreign investments. These include the highly anticipated Johor-Singapore Special Economic Zone ("JS-SEZ") and Special Financial Zone ("SFZ"). Infrastructure game-changers include the high-speed rail ("HSR"), the Light Rail Transit ("LRT") network and the Johor Bahru-Singapore Rapid Transit System ("RTS").

These and other notable developments will provide further economic stimuli, accelerating the injection of investments and spurring business activities.

The expected robust economic growth will translate into increase in water demand going into FY2024 and beyond. The expected rise in demand coupled with higher tariffs that will come into effect in FY2024 augur well for revenues going forward.

However, challenges persist. Johor is the second most populous state in terms of population and given present socio-economic development scenarios, water consumption demand is expected to increase in annual compounded rate of 3%. This would place further pressure on finite resources while necessitating increased abstraction of water and increased operational demand on WTPs and the entire existing water infrastructure.

Hence, the focus going forward, remains on pursuing operational and cost efficiencies, while continuing to focus on preserving water resources and promoting sustainable practices, within existing operations as well as in promoting more sustainable water consumption among customers.

The injection of investments and economic growth is a positive development for Johor and the expected increase in consumption demand augurs well from a commercial perspective. At the same time, it is imperative that existing and new measures be expedited and implemented to meet the requirements of water intensive sectors.

The emergence of Johor as a preferred destination for data centres is one example. Data centres are typically heavy consumers of water. Several mid to large scale data centres are under construction and are expected to commence operations within the year. This is in addition to existing data centres within the state. Ranhill SAJ is undertaking an additional 600 MLD WTP upgrade project along Sungai Johor to meet growth in expected consumption demand.

Again, this is a positive challenge faced by all stakeholders. It can provide the impetus for increased use of recycled water for instance, but at the same, it is essential that the infrastructure investments needed to expand existing treated water capacity is given increased priority. Other

MANAGEMENT DISCUSSION & ANALYSIS

One of the wastewater and reclaimed water treatment plant facilities at the Amata Industrial Estate in Thailand

considerations include introducing more competitive commercial rates for water intensive sectors.

Efforts will continue to be focussed on reducing NRW through necessary pipe rehabilitation and replacement works as well as WTP construction and upgrading works.

Ranhill SAJ will also continue to engage authorities on key strategic priorities such as the conversion of the existing loan to a grant which will enable reduced asset rental costs, to focus on RE usage to off-lay rising electricity costs, and to continue pursuing relevant projects such as Off-River Storage ("ORS") development and raw water transfer projects. Where feasible, alternative water sources such as groundwater will also be tapped.

Specifically on NRW, the Malaysian government has allocated RM535 million for Approach One of the National NRW Program and another RM1,370 million for Approach Two (Matching Grant Programme) under the 12th Malaysia Plan. This will assist water operators including Ranhill SAJ to strive towards meeting SPAN's NRW KPI as doing so would automatically qualify the company to be reimbursed under the Matching Grant annually.

RANHILL WATER TECHNOLOGIES (THAI) LTD. ("RWTT") and AnuRAK WATER TREATMENT FACILITIES CO. LTD. ("AnuRAK")

Ranhill Water Technologies (Thai) Ltd. ("RWTT") and AnuRAK operate 9 water, wastewater and reclaimed water treatment plant facilities at the Amata Industrial Estate ("Amata") in Amata City, Chonburi and Rayong, Thailand.

The total capacity of these plants is 117 MLD, 100 MLD is for water and wastewater and 17 MLD is for reclaimed water. The latter is derived from the 10 MLD capacity at the Amata City Chonburi Industrial Estate and the remaining 7 MLD from the Amata City Rayong Concession Industrial Estate.

In FY2023, total incoming wastewater recorded an 8.5% year-on-year growth on the back of increased industrial activities, notably at the Amata City Rayong Industrial Estate WWTP. The increase is attributed to growing awareness of environmental sustainability, regulatory compliance and water conservation practices among industrial players. In terms of water sales, both RWTT and AnuRAK registered increases resulting in a 15.2% year-on-year, cumulative increase to THB217.46 million.

Total Incoming Wastewater	Year			
Plant	2020 Volume (m^3'000)	2021 Volume (m^3'000)	2022 Volume (m^3'000)	2023 Volume (m^3'000)
WWTP, Amata City Chonburi Industrial Estate **24 MLD**	3,605	3,724	3,893	3,484
WWTP, Amata City Rayong Industrial Estate **9.6 MLD**	2,588	2,881	3,139	2,686
WWTP, Amata City Rayong Industrial Estate **15 MLD (FY2022) 20 MLD (FY2023)**	3,549	3,773	3,942	5,776
AIT **1.5 MLD**	0.4	0.5	156	133
Total Wastewater (Incoming)	**9,743**	**10,339**	**11,130**	**12,079**

MANAGEMENT DISCUSSION & ANALYSIS

Water Sales	Year			
Plant	2020 (THB million)	2021 (THB million)	2022 (THB million)	2023 (THB million)
RWTT	27.62	30.99	31.46	36.44
AnuRAK	150.89	161.45	157.39	181.02
Total	178.51	192.44	188.85	217.46

Only two of the nine plants have concession periods that would expire in the next five years and given the exemplary track record for operational performance, the concession period for both the 10.5 MLD Amata City Chonburi Industrial Estate WTP2-CB Stage 2 and the 24 MLD Amata City Chonburi Industrial Estate WWTP1-CB, 24 MLD stand in good stead for renewal. The other seven plants have varying concession periods stretching to 2032 till 2043.

Negotiations for renewal of the O&M contract for another 5-year concession period are presently underway.

No.	Description	Company	Capacity (MLD)	Concession Type	Expiration of Concession / License
1	Amata City Chonburi Industrial Estate WTP2-CB Stage 2, 10.5 MLD	AnuRAK	10.5	Potable Water / BOT	2028
2	Amata City Chonburi Industrial Estate WWTP1-CB, 24 MLD	AnuRAK	24	Wastewater / BOT	2028
3	Amata City Chonburi Industrial Estate WRTP1-CB, 10 MLD	AnuRAK	10	Reclaim Water / BOT	2033
4	Amata City Rayong Industrial Estate WTP1/2-RY, 15 MLD	AnuRAK	15	Potable Water / BOT	2032
5	Amata City Rayong Concession (Industrial Estate) WWTP4-RY, 20 MLD	AnuRAK	20	Wastewater / BOT	2043
6	Amata City Rayong Concession Industrial Estate WRTP2-RY, 7 MLD	AnuRAK	7	Reclaim Water / BOT	2039
7	Amata City Rayong Industrial Estate WTP2-RY, 10.5 MLD	RWTT	10.5	Potable Water / BOT	2039
8	Amata City Rayong Industrial Estate WWTP2-RY, 9.6 MLD	RWTT	9.6	Wastewater / BOT	2039
9	Amata City Chonburi Industrial Estate WTP2-CB Stage 1, 10.5 MLD	RWTT	10.5	Potable Water / BOT	2041
TOTAL MLD:			**117.1**		

MANAGEMENT DISCUSSION & ANALYSIS

In China, through Ranhill's 40% interest in Ranhill Water Hong Kong Limited, Ranhill operates 12 waste water treatment plants, with an aggregate capacity of 226.5 MLD.

No.	Description	Capacity (MLD)	Concession Type	Expiration of Concession / License
1	Xiaolan Wastewater Treatment Plant (Phase I)	25.0	Wastewater / BOT	2038
2	Xiaolan Wastewater Treatment Plant (Phase II)	50.0	Wastewater / BOT	2040
3	Yingkou Wastewater Treatment Plant	30.0	Wastewater / BOT	2046
4	Hefei Wastewater Treatment Plant	30.0	Wastewater / BOT	2036
5	Yihuang Wastewater Treatment Plant (Phase I)	5.0	Wastewater / BOT	2050
6	Yihuang Wastewater Treatment Plant (Phase II)	10.0	Wastewater / BOT	2050
7	Wanzai Wastewater Treatment Plant (Phase I)	5.0	Wastewater / BOT	2047
8	Wanzai Wastewater Treatment Plant (Phase II)	7.5	Wastewater / BOT	2047
9	Chongren Wastewater Treatment Plant	10.0	Wastewater / BOT	2047
10	Yongxin Wastewater Treatment Plant	10.0	Wastewater / BOT	2048
11	Yongfeng Wastewater Treatment Plant	10.0	Wastewater / BOT	2048
12	Fengxin Wastewater Treatment Plant	34.0	Wastewater / TOT & BOT	2048
TOTAL MLD:		**226.5**		

Ranhill's strategic partner in China is Shanghai Industrial Investment Corporation ("SIIC"), a state owned enterprise of the Shanghai Municipal Government. SIIC is listed on the Shanghai and Singapore stock exchanges. All 12 WTPs in China have comparatively longer concessions periods of 25-30 years. In 2023, all WTPs continued to operate at high standards in compliance with regulatory standards.

OUTLOOK AND PROSPECTS

With incoming wastewater expected to be on an uptrend, the outlook appears positive for RWTT and AnuRAK. However, the focus is not to solely rely on industry trends to drive revenues, but to actively pursue commercial opportunities to offer wastewater treatment services to other industrial estates in Thailand and also in other countries.

Beyond wastewater treatment, the goal is to create greater awareness and interest among industrial players to transition to using reclaimed water for non-potable industrial and commercial applications. While environmental considerations such as preservation of existing water resources can play a role in persuading management of companies, it is imperative that sustainability perspectives are combined with compelling cost-benefits analysis scenarios. Hence, the focus is on continuing to demonstrate the prospect of rising commercial and industrial tariffs for potable water and the potential cost savings from shifting to reclaimed water, notably over the medium and long-term.

Growing the top line will be supported by continued measures to shore up earnings margins through cost-efficiency strategies and improving overall productivity. Both RWTT and AnuRAK continue to engage with a wide range of stakeholders such as technology providers, academia and others to derive potential cost savings as well as new breakthroughs and innovations that will enable a more cost-competitive and efficient operation going forward.

As RWTT continues to evaluate potentials for growth in Thailand and Indochina, the company remains committed to operate its existing 12 plants in China. Opportunities for expansion will continue to be assessed, with considerations of risks as well as financial opportunities.

MANAGEMENT DISCUSSION & ANALYSIS

ENERGY SECTOR

Ranhill Sabah Energy I Sdn Bhd ("RSE I")

Ranhill Sabah Energy II Sdn Bhd ("RSE II")

380 MW power generating capacity from two CCGT fired power plants

Largest IPP in Sabah, producing **40%** among IPPs of the state's energy capacity

Provides electricity to **1.2 million population** in Sabah

Ranhill Solar I

50 MW clean energy generating capacity via solar

Ranhill's Energy sector comprises Ranhill Sabah Energy I Sdn Bhd (formerly known as Ranhill Powertron Sdn Bhd) and Ranhill Sabah Energy II Sdn Bhd (formerly known as Ranhill Powertron II Sdn Bhd)*. RSE I and RSE II manage the operations of the Group's 190 MW Teluk Salut and 190 MW Rugading combined cycle gas turbine ("CCGT") power plants respectively located in Kota Kinabalu, Sabah.

In FY2023, both power plants in Sabah continued to meet all performance KPIs set by Sabah Electricity Sdn Bhd ("SESB") as stipulated in their respective Power Purchase Agreements ("PPA"). This attests to the operational efficiency and professional management of both power plants. Both plants maintained a high availability of the Combined Cycle operation; exceeding 90% and 94%, respectively. A cumulative 2,617 GWh was despatched to the grid to meet Sabah's energy consumption demand.

RSE I	FY2021	FY2022	FY2023	SESB's KPI
Equivalent Availability Factor rolling ("EAFr") (%)	92.54	90.25	93.25	87
Forced Outage Rate ("FOR") (%)	1.65	4.08	1.02	4

RSE II	FY2021	FY2022	FY2023	SESB's KPI
Average Available Target average ("ATav") (%)	97.59	90.64	92.47	94
Contract Year Block AT (%)	94.56	94.69	94.35	94
Unplanned Outage Rate ("UOR") (%)	1.77	2.67	1.70	4

At Rugading, ATav was at 92.47%, slightly lower than SESB's KPI due to the need to undertake scheduled maintenance to ensure optimum operating conditions and plant capabilities. However, the Contract Year Block AT of 94.35% and the UOR of 1.70% met SESB's KPIs and hence, performance was on par for FY2023. The Contract Year Block is calculated using a three-year average while Average AT is calculated based on a single year.

The ATav KPI is calculated and assessed on a 3-year basis (also known as 3-year blocks). The ATav in 2023 was lower than the 94% KPI as the main maintenance works for the entire 3-year block of 2023-2025 were scheduled during the year. However, the expected ATav on a 3-year basis for 2023-2025 is expected to exceed the 94% KPI.

A cumulative 2,617 GWh was despatched to the grid to meet Sabah's energy consumption demand (1,338 GWh from RSE I / Teluk Salut and 1,351 GWh from RSE II / Rugading).

* *Both companies' name change effective date 30 August 2023.*

MANAGEMENT DISCUSSION & ANALYSIS

The lack of installed energy capacity in Sabah often necessitates that Ranhill's power plants are required by SESB to operate for extended periods of time. This can affect the operational capability of plants. Hence, scheduled maintenance is necessary to be undertaken.

A notable development is the renaming of both CCGT power plants to reflect the long and close relationship between Ranhill and the state entity Sabah Energy Corporation Sdn Bhd ("SEC").

Effective August 2023, both power plants reflect Ranhill and SEC in their name; Ranhill Sabah Energy I Sdn Bhd ("RSE I"), Ranhill Sabah Energy II Sdn Bhd ("RSE II"), Ranhill Sabah Energy O&M I Sdn Bhd ("RSE O&M I") and Sabah Energy O&M II Sdn Bhd ("RSE O&M II").

As in previous years, management focussed on optimising plant output and cost and operational efficiencies. These included refurbishment of the turbine blades, upgrading of obsolete / ageing systems and equipment for the gas turbines and asset prolonging activities such as implementing a Rotor Life Extension refurbishment programme and also undertaking various other asset enhancement initiatives. The latter included upgrading the Gas Turbine Generator Excitation Systems and Power System Stabilizers. Total CAPEX invested into RSE I and RSE II were RM10.34 million and RM5.19 million respectively.

On 4 April 2023, Ranhill's bid through a consortium comprising Ranhill Capital Sdn Bhd and SEC was selected as the winning bid for the development of a 100 MW CCGT power plant on the west coast of Sabah (Kimanis). The project involves the design, construction, ownership, operation and maintenance of a 100 MW CCGT power plant on a Build-Operate-Transfer ("BOT") basis.

Ranhill holds 60% interest in the project while SEC holds the remaining 40%. The new CCGT plant will expand Ranhill's generation capacity in Sabah to 480 MW, sealing its position as the largest IPP in the state with nearly 40% of the state generation capacity.

The PPA is for a 21-year period, to commence from the project COD, estimated to be in 2026. Given the importance of the plant in meeting Sabah's growing need for sufficient installed capacity and reserve margin, the Group looks forward to the project seeing progress in FY2024.

FY2023 also saw the commencement of operations at the newly developed 50 MW LSS in Bidor, Perak. The plant achieved completion and COD on 7 February 2024, thus increasing the total installed energy capacity of Ranhill Energy to 430 MW. The EPCC works of the plant were undertaken by RBSB. The plant further strengthens Ranhill's credentials in the design and development of RE projects. This augurs well for the Group in tendering for similar projects, both locally and abroad.

Ranhill's Energy Sector has continued to pursue regional opportunities, both for conventional and RE projects.

Ranhill Energy continues to ensure its excellent operation adopting quality management systems and practice

MANAGEMENT DISCUSSION & ANALYSIS

With regard to the deferred tax appeal for RSE II, engagement with the Ministry of Energy and Natural Resources ("NRECC") – now the Ministry of Energy Transition and Water Transformation ("PETRA") – continues. Several meetings have been held and the matter remains under discussion. RSE II is resolute in pursuing the matter and is confident of a positive outcome going forward.

OUTLOOK AND PROSPECTS

The National Energy Transition Roadmap ("NETR") offers optimism for Malaysia's renewable energy sector. Beyond providing clear direction on the country's journey for decarbonisation the NETR also provides visibility on the future of the industry, including upcoming opportunities for energy-related infrastructure development.

Moving the nation's installed energy capacity from being fossil fuel dependent is a long-term plan that would require a significant increase in RE-based energy supply. Hence, a ramp-up of RE projects i.e. solar, mini-hydro, wind and geothermal is vital towards realising the aspirations of the NETR towards Net Zero Carbon Emission by 2050.

Ranhill's Energy Sector is well-placed to pursue suitable opportunities. The division has proven its capabilities with the successful, long-standing operations of its CCGT power plants and the successful delivery of its maiden LSS solar plant. This strengthens the Group's credentials in to participate in any upcoming LSS projects announced by the government.

The Kimanis and LSS solar plants will bring Ranhill closer to its goal of producing 1,000 MW of energy.

Given the Energy Sector's established presence in Sabah, Ranhill will continue to focus on further expanding its presence in the state. Sabah's energy sector offers promising growth prospects given the unique energy conundrum that the state faces.

Ranhill Energy will continue to maintain its focus on RE projects in Malaysia

Sabah presently has a low reserve margin, due to a lack of installed capacity, resulting in a higher number of outages, notably in the eastern part of the state. In addition, Sabah is dependent on diesel or coal-based power plants which produce higher emissions compared to gas or geothermal-powered plants or RE alternatives.

Hence, there is an urgent need for plant-ups and the Kimanis plant would be a welcome addition in enabling Sabah to progressively achieve the required installed energy capacity in the state, as well as drive the transition towards cleaner energy generation in line with the national decarbonisation agenda.

The Kimanis plant, together with Ranhill's existing two CCGT power plants, can despatch energy to the eastern parts of Sabah with the upgraded West-East transmission line. The transmission line enables up to 400 MW of electricity to be channelled from Sabah's west coast to the east. This would facilitate additional electricity to be despatched and thus support increasing revenues.

Aside from the Kimanis project, Ranhill will also consider other potentials such as peaking power plants in Sabah as well as the untapped potential of wind and geothermal energy in the state.

The Energy sector, leveraging the internal expertise and capabilities of the Ranhill Group is also exploring the development of solar power plants to supply clean energy exclusively for the operations of Ranhill SAJ's WTPs. The goal is to enable the decarbonisation of the latter's WTP operations by designing and developing solar power plants for self consumption, including the infrastructure for supply and distribution of produced power.

MANAGEMENT DISCUSSION & ANALYSIS

ENGINEERING SERVICES SECTOR

Ranhill's Engineering Services sector comprises the following companies: Ranhill Water Services Sdn Bhd ("RWS"), Ranhill Water Technologies Sdn Bhd ("RWT"), Ranhill Bersekutu Sdn Bhd ("RBSB"), Ranhill Worley Sdn Bhd ("RW") and Ranhill Sabah Energy O&M I Sdn Bhd ("RSE O&M I") & Ranhill Sabah Energy O&M II Sdn Bhd ("RSE O&M II").

Ranhill Water Services Sdn Bhd | **Ranhill Water Technologies Sdn Bhd** | **Ranhill Bersekutu Sdn Bhd** | **Ranhill Worley Sdn Bhd** | **Ranhill Sabah Energy O&M I Sdn Bhd** | **Ranhill Sabah Energy O&M II Sdn Bhd**

RM553 million
Total Value New Projects

RM862 million
Order Book

RM1,523 million
Tender Book

ENGINEERING SECTOR ORDER BOOK (RM' MILLION)

	FY2022	FY2023
RW	265.0	248.0
RBSB	367.0	241.1
RWS	192.0	344.0
RWT	38.0	10.3

RANHILL WORLEY ("RW")

World class organisational culture, global operating standards and global operations hub for offshore related oil and gas works for the Worley Group

Over **30 years** track record for engineering, design, management and consultancy services to the energy, chemicals, and resource sectors

International project portfolio including projects in **Malaysia** and globally in the **Middle East**, **North Sea UK, Myanmar**, **Vietnam**, **Africa**, **China**, **India** and **Brazil**

In 2023, RW continued to record phenomenal growth. RW also has seen its workforce progressively expand to 1,200 strong while seeing foreign derived income rise to 50% of total revenues in 2023. RW has also emerged as one of the most technically proficient Worley offshore centres globally, with a low operating cost base. This attests to the competitive capability of RW and its ability to undertake complex and challenging domestic and international contracts, including several that are pioneering or breakthrough projects at the global level.

In FY2023, international projects secured were the Qatar North Field Production Sustainability ("NFPS") Offshore Compression Complexes Project and the ISDN China contract. This is in addition to the notable projects secured in the previous financial year such as the Brazil P-82 Floating Production Storage and Offloading ("FPSO") project and the Kasawari Carbon Capture Storage ("CCS") project.

MANAGEMENT DISCUSSION & ANALYSIS

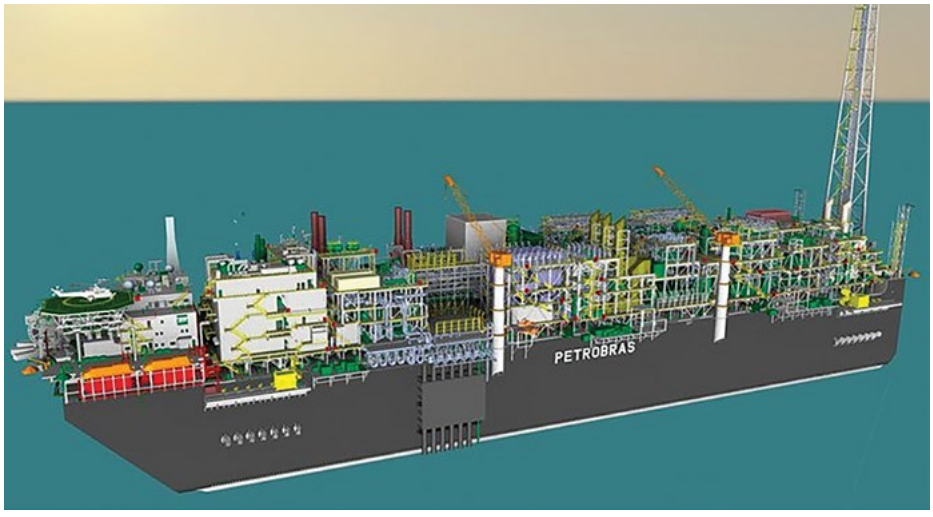
All projects have achieved varying stages of progress as provided in the following table:

Project	Status	RM' Million
Brazil P-82 Floating Production Storage and Offloading ("FPSO")	70% progress achieved. Completion by June 2024.	190.0 inclusive of variation order
Petronas Kasawari	Completed engineering design and fabrication works have commenced. RW continue to provide support consultancy for fabrication portion of project to client.	50.0
Lang Lebah	FEED design completed. Progressing to bidding stage for detailed design phase of the project.	50.0
Rosmary	Completed Detailed Design with MMHE.	40.0
Majoram	Completed Detailed Design with MMHE.	15.0
Qatar North Field Production Sustainability ("NFPS")	75% completed. Completion by July 2024.	200.0
ISND China	45% progress achieved. Completion by October 2024.	120.0

RW's scope of works for the Brazil P-82 Floating Production Storage and Offloading ("FPSO") consists of topside process and utility modules design. The contract was awarded by Sembcorp Marine Integrated Yard Pte Ltd. The P-82 FPSO vessel is for Brazilian state-owned oil and gas producer, Petroleo Brasileiro S.A and is expected to be one of the largest offshore vessels deployed in the ultra-deepwater Buzios oil and gas field, spanning more than 853 KM^2. P-82 will be equipped with CCUS and geological storage of CO_2.

P-82 is part of Petrobras' new generation of production facilities, characterised by high production capacity and by state-of-the-art technologies to reduce CO_2 emissions. The unit will also be equipped with a water injection capacity of 250,000 barrels per day and a storage capacity of two million barrels of oil.

The Kasawari project, once completed, will capture up to 3 million tonnes of carbon dioxide ("CO_2") per annum. RW's scope of work includes the CO_2 technology specification, evaluation and selection, along with the design and engineering development of the platform, jacket, bridge and pipeline.



Model of the Brazil P-82 FPSO

Business development aside, RW has maintained efforts to trim costs and improve operational efficiency and existing capabilities. Technologies such as artificial intelligence ("AI"), the Internet of Things ("IoT"), and automation were leveraged to harness operational efficiency and expedite project works while improving overall quality. This supported the deployment of a more strategic and focused approach to projects towards addressing specific focus areas or challenges with greater precision and improved outcomes.

RW has continued to invest in talent development and retention given the importance of the capabilities of its workforce to drive the business model. Hence, the provision of training opportunities and upskilling was a key feature of RW's activities in FY2023.

A noteworthy hallmark was RW charting up to 20 million manhours without a loss time incident ("LTI") as of the end of FY2023. RW's last LTI was recorded on 30 June 2022.

MANAGEMENT DISCUSSION & ANALYSIS

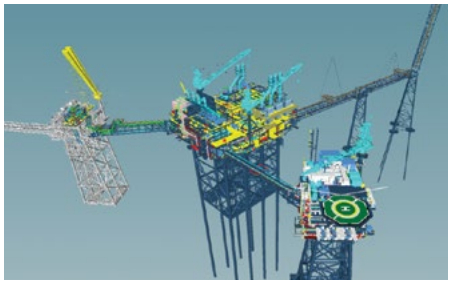


Illustration of the Qatar NFPS project

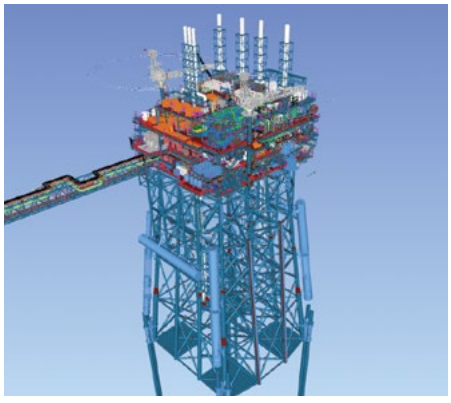


Illustration of the Kasawari CCS project

RW project of ISND, China

OUTLOOK AND PROSPECTS

The outlook for the oil and gas sector remains positive fuelled by continued economic growth and recovery. In Malaysia, the outlook is also positive as provided in the PETRONAS Activity Outlook ("PAO") report for 2024-2026.

The PAO highlights opportunities in the niche sectors of identified engineering concepts and FEED works for four greenfield projects and ten brownfield projects. Demand for facilities improvement projects remains robust, with over 300 projects identified.

RW will continue to pursue suitable opportunities both locally and abroad. In Malaysia, the objective is to concentrate on facilities improvement projects that will enable the expansion of RW's satellite offices in Kerteh, Miri, and Kota Kinabalu. In terms of overseas expansion, the focus is to further diversify investments and to redouble business development efforts in Brazil, the Middle East, China, and Korea.

Another area of high-potential is CCUS. The requirements for CCUS solutions continue to expand from traditional sectors such as the oil and gas sector to other energy-intensive and high-emissions sectors such as manufacturing and power. This also bodes positively for RW, given its experience in the Petronas Kasawari and P-82 Floating projects, both of which involve CCUS design and build components.

Medium-term prospects involve investments in technology, further embedding ESG considerations into the business model and strategically positioning the company and its capabilities through aggressive brand and book-building activities, particularly in evolving markets for heightened competitiveness and growth. Long-term strategic focus will revolve around strategic investments in innovation, technology, and market diversification to equip RW with the ability to seamlessly navigate industry shifts and evolving market demands, thus ensuring sustained relevance and continued competitive capability.

Even as the ongoing journey to decarbonise gains momentum at both national and global levels, the world remains at a transitionary stage between hydrocarbon dependence and renewable energy alternatives (in fuelling continued economic growth). However, the use of new technologies such as CCUS and more spur a more sustainable approach where the impacts of oil and gas production can be reduced. This present period of transition presents significant opportunities for companies, given especially the significant underinvestment in technologies that would enable a reduced carbon footprint. RW will aim to capitalise on the opportunities within this transitionary period while looking at alternative energy solutions such as hydrogen, offshore, wind and others.

MANAGEMENT DISCUSSION & ANALYSIS

RANHILL BERSEKUTU SDN BHD ("RBSB")

Multi-disciplinary engineering firm with a proven **50-year track record**

Projects in more than **21 countries** throughout Asia, the Middle East and Africa

ISO 9001:2015
(Quality Management System)
ISO 14001:2015
(Environment Management System)
ISO 45001:2018
(Occupational Health and Safety Management System)
ISO 37001:2016
(Anti-Bribery Management System)

In FY2023, despite initially encountering delays in piling and installation works, RBSB successfully expedited works to achieve completion of its LSS plant with COD achieved on 7 February 2024.

Other notable project highlights include the completion of the National Sewerage Master Plan for the Integrated River Basin Management Catchment project. Also completed was the Sarawak Metro KUTS design project (tender document provided to the project owner). All other major projects continued to register a steady pace of progress throughout FY2023.

Among the notable projects secured by RBSB in FY2023 were distribution improvement works for water supply from Semangar WTP to the Bukit Kulai reservoir, detail design for remaining infrastructure works for the Elmina East project, AVISENA Cyberjaya Specialist Hospital, Technical Audit for PETRONAS KLCC Twin Towers and Independent Checking Engineer for SILK Phase Two project.

A notable project was RBSB being awarded by KLCC Holdings to perform a full audit of the Petronas Twin Towers, including an audit of mechanical and electrical, civil and structural aspects of the building as well as the external facade.

Ranhill Bersekutu had designed the Petronas Twin Towers. Three decades later, RBSB provides its expertise once again towards ensuring the posterity of an iconic Malaysian building project. RBSB's involvement on the KLCC project further attests to the technical capabilities of RBSB as well as the confidence of the project owners in entrusting the audit to Ranhill.

Project	Client / Project Owner	RBSB's Work Scope	Value (RM' Million)	Status
National Sewerage Master Plan on the Integrated River Basin Management Catchment	SPAN	Sewerage Catchment Masterplan Study	1.08	Completed.
Elmina West Phase 3 (6444)	Sime Darby	Earthwork, infrastructure Civil and structure works and MET Planning, Detailed Design & Construction	4.715 Phase One & Two	40% completed. Full completion expected in Year 2028.
Principal Consultant to Carry out Detailed Design and Supervision for Tok Bali Industrial Park (6446)	ECERDC	Earthwork & Infrastructure C&S and MET Master Planning, Detailed Design & Construction	7.27 Phase One & Two	Detailed design stage almost completed. Phase 1A construction started in January 2024.
AVISENA Cyberjaya Specialist Hospital	AVISENA East Sdn Bhd	M&E consultancy	1.86	Under design stage and Development Order (DO) submitted.

MANAGEMENT DISCUSSION & ANALYSIS

Project	Client / Project Owner	RBSB's Work Scope	Value (RM' Million)	Status
AVISENA Shah Alam Hospital Building Expansion	AVISENA Healthcare Sdn Bhd	M&E consultancy	1.68	Has reach tender stage.
KPJ's Puteri hospital expansion	KPJ Puteri Specialist Sdn Bhd	M&E consultancy	0.56	Under construction stage.
KLIA Baggage Handling System (BHS) replacement	T7 Global Sdn Bhd	M&E consultancy	3	Phase One under construction stage. Phase Two and Three design in progress.
BIM and Interface Management for BHS KLIA project	T7 Global Sdn Bhd	BIM and Interface Management	3.28	Phase One under construction stage. Phase Two and Three design in progress.
Genting Highland Midhill water resources development	Aliran Tunas Sdn Bhd	Detailed design for water supply system including intake, WTP, pipeline and reservoir	1.7	Under design stage.
PETRONAS KLCC Twin Tower Technical Audit	KLCC Holdings Sdn Bhd	Full technical audit including architectural, structural, mechanical and electrical services	0.5	Final draft report submitted.
Semanggar WTP to Bukit Kulai	Ranhill SAJ	Detailed design for water distribution improvement works for supply to Kulai and Sedenak areas	7.22	Preliminary engineering design.
SILK Phase Two project	Turnpike Synergy Sdn Bhd	Independent Consulting Engineer (ICE)	1.73	Construction stage.
Sedusun Tech Valley	Arkitek Urbanisma	M&E consultancy	0.4	Preliminary design stage.
Elmina East	Sime Darby Property	Earthwork, infrastructure Civil and structure works and MET Detailed Design & Construction	4.05	Recently awarded project. Under planning and preliminary design stage.
Gleneagles Hospital Sabah	Gleneagles Hospital, Kota Kinabalu	Technical Due Diligence	0.22	Completed.
Bangladesh sanitation design project	Department Public Health Engineering, Bangladesh	Sewerage Design Consultancy	2.7	90% overall project completion.

In Sabah and Sarawak, RBSB's team continues to undertake road safety audits for both states. On a separate note, all three packages of the Lingkaran Tengah Highway in Gua Musang, Kelantan totalling 60 KM in highway length awarded by JKR to RBSB have been contracted for construction. Similarly, the Tok Bali project awarded by the East Coast Economic Region Development Council ("ECERDC") to RBSB has been contracted out with works commencing in December 2023.

MANAGEMENT DISCUSSION & ANALYSIS

Through the adoption of BIM, RBSB continues to improve operational productivity through the development of more collaborative workflows and increased multi-disciplinary team contribution in real time. BIM implementation has yielded a 20% reduction in project delivery time, while enabling greater integration of multiple software solutions for design and model collaboration, including the creation of a Common Data Environment ("CDE") and improved clash detection and elimination of design conflicts. This has resulted in improved project efficiency, reduced human errors and streamlined workflows.

The implementation of BIM and centralised drawing production has culminated in the establishment of a dedicated Digital Delivery Unit ("DDU") unit within RBSB. The establishment of the DDU comprising 27 members, has significantly eased the sharing of drawings and model deliveries across RBSB and with other parties. DDU collaboration via Cloud enables seamless work processes and multi-party real-time engagement and collaboration across diverse disciplines, amplifying collective efforts within the team.

The availability of BIM capabilities and the establishment of the DDU unit has enabled RBSB to secure several contracts such as the KLIA BIM contract and 3D modelling contract. BIM and DDU ultimately further solidify RBSB's market positioning as an industry leader, with cutting-edge technological capabilities and the expertise to undertake complex of technically demanding infrastructure projects. Importantly, it clearly distinguishes RBSB as being ready for IR4.0.

RBSB's Klang Gate Dam Break Analysis Study for Air Selangor received the 'Best Dam Safety Towards Community Award' during the 2nd International Conference on Dam Safety Management and Engineering 2023 by Malaysia Committee on Large Dam (MYCOLD). The award was given due to the strong stakeholder engagement workshops conducted with the use of state-of-the-art 1D / 2D and 3D modelling and visualization. RCSB has also won the Best Paper for SCOPUS and UTM Journal Award for the paper "Application of Industrial Revolution 4.0 Technologies for Flood, Water, and Sewerage Management, Planning and Design in Malaysia" in the National Water Innovation Conference and Exhibition 2022 (NWICE) by NAHRIM, KASA, JPP. Another accolade achieved in FY2023 was from client Sime Darby Property for RBSB's mechanical and electrical engineering work on the former's mixed developments.

FY2023 saw several MoUs signed with local firms in both Indonesia and Bangladesh. This paves the way for future joint ventures or strategic partnerships towards exploring potentials and securing additional projects in Bangladesh and Indonesia. Beyond MOUs, RBSB has submitted several projects bids for infrastructure projects in Bangladesh, with the results of the bids to be announced in the second quarter of FY2024.

RBSB continued with its certification of ISO 9001 with 18 years of zero non-compliance record ("NCR") and has also implemented an Anti-Bribery Management System ("ABMS") complying with ISO 37001: 2016.

OUTLOOK AND PROSPECTS

The Malaysian construction market is projected to average an annual growth rate ("AAGR") of more than 5% during 2024-2027. The growth is attributed to large-scale investments in transport, industrial and RE projects. This is in addition to the government's aim of establishing the Public Private Partnership ("PPP") 3.0 model, which is a specialised mechanism to fund infrastructure projects under the 12th Malaysia plan between 2021 and 2025.

Budget 2024 alludes to the revival of key infrastructure projects under the 12th Malaysia Plan. These include the 5G rollout, the East Coast Highway 3, flood mitigation projects, the West Coast Expressway, the East Coast Rail Link, the Central Spine Road, Mass Rapid Transit 3 ("MRT3"), Bayan Lepas Light Rail Rapid Transit ("BLLRT") in Penang, the remaining Pan Borneo Highway and the Johor-Singapore Rapid Transit System.

The push for increased RE installed capacity in line with the objectives of the NETR, also provides a conducive environment for the development of solar, mini-hydro, wind and other RE plant-ups. Ranhill, through RBSB's expertise, will continue to actively bid for suitable tenders announced by the government.

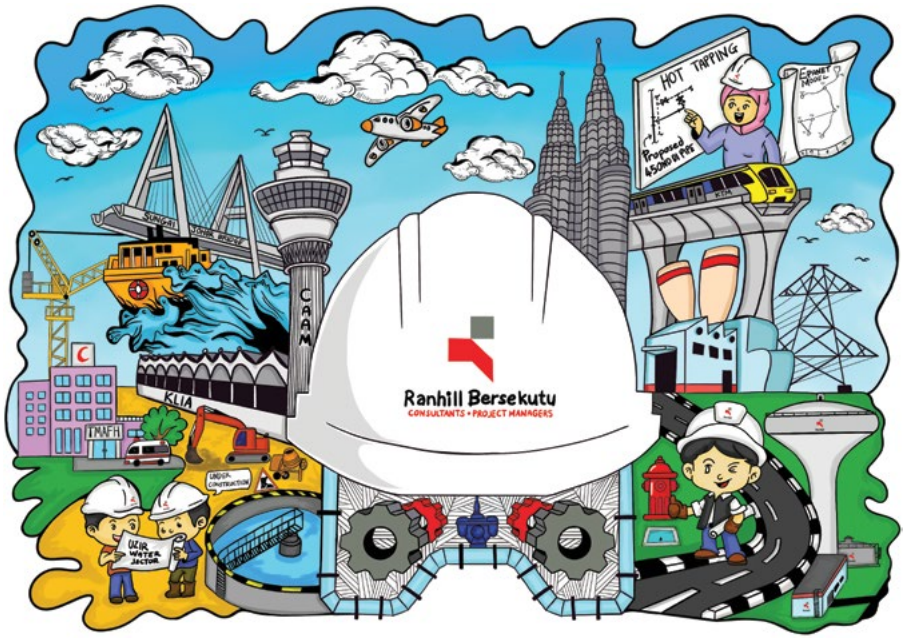
Alternatively, proposals can also be submitted to RE-related projects in the peninsular or East Malaysia.

On the whole, the outlook appears positive though not without risks and challenges. These rising material costs labour shortages as well as embedding sustainability practices and new technology which entails upskilling and knowledge transfer.

In terms of overseas markets, RBSB will continue to explore Indonesia and Bangladesh. Indonesia is a key focus for expansion. The country's large population size and underdeveloped water infrastructure situation provide ample opportunities going forward. Focus areas include water supply, drainage, wastewater treatment and management, roads and rail infrastructure, conventional and RE power plant-ups and more. Another prospect is the TRSS Phase II (Trans South – South Java Project), Project Management Supervision.

RBSB is working towards adopting full digitalisation solutions. Specifically, the unique digital capabilities in relation to flood mitigation and water resources management hold RBSB in good stead going forward. Integration of digital capabilities has been earmarked as a requisite by the Malaysian government with regard to flood alleviation and management of water resources.

MANAGEMENT DISCUSSION & ANALYSIS



Showcasing RBSB Team's creative flair to design wall graphics that adorned their new workspace

In identifying gaps in terms of technical capabilities and resources, RBSB is looking to leverage further within the group as well as consider potential acquisitions.

RBSB continues to be aware of the competitive nature of engineering services with ever-present demands for more competitive fees and high-quality services. Finding and maintaining a capable technical team along with continued emphasis on QMS is critical while optimising OPEX.

RANHILL WATER SERVICES ("RWS")

RWS is a leader in NRW management, having undertaken a wide range of NRW-related projects in Malaysia and abroad. RWS integrated capabilities encompass in-depth technical consultation, tailored NRW management activities and NRW-related civil works including pipe rehabilitation works. In essence, RWS provides a complete solution to effectively arresting NRW. Its competencies and capabilities are augmented by the company's internally developed NRW management systems such as AquaSMART, which was developed in-house by RWS.

In FY2023, RWS completed the PR1JB (Pipe Rehab) contract with the certificate of Practical completion ("CPC") received from Ranhill SAJ on 31 August 2023. Over 46 KM of pipeline in the state was successfully rehabilitated. The pipe rehabilitation works, together with the NRW Reduction contract for the Johor state were pivotal in reducing NRW to 25% in 2023, below the SPAN target of 25.5%. As of the end FY2023, total NRW saved by RWS now stands at 774 MLD with the addition of another 23 MLD compared to FY2022.

Other than Johor, RWS had also successfully replaced 15 KM of pipelines in TLDM Naval Base, Lumut, Perak and 72.5 KM of pipelines in Kelantan, respectively. This was achieved through two different contracts by JKR (TLDM) and PAAB (Kelantan).

Under the National NRW Program Approach One, RWS achieved 100% physical completion of projects undertaken in both Pahang and Perlis. Both locations faced significant challenges. Among these were obtaining client's confirmation on the output of the system and specifically in Perlis, the difficulties posed by the ageing and complex water supply network and system. However, these issues are being effectively addressed through constant engagement with stakeholders.

RWS has started work on design and building of a new water supply system at TLDM naval base. The scope of work includes the rehabilitation and repair of existing reservoirs, as well as the construction of new infrastructure such as a pump house, guard house, and TLDM substation. The most significant work is laying approximately 52 kilometers of new mild steel distribution pipelines through out the base to enhance water distribution capabilities.

RWS had also involved in developing Ranhill SAJ Command Centre Dashboard. It is a state-of-the-art system that enables comprehensive coverage of Johor's entire water system and related infrastructure.

The Command Centre Dashboard for Phase One has been successfully completed, and Phase Two implementation is targeted for completion within the second half of 2024. The expansion will provide better insights into the entire water supply system, from the raw water extraction to the customer (source-to-tap).

Pertaining to AquaSMART, in FY2023 the system was further upgraded in stages with the major works being the comprehensive overhaul of the entire system. This included adding enhanced security features as part of the re-engineering process.

As of the end of FY2023, 1,196 district metered areas ("DMAs") were established in Johor (FY2022: 1,184 DMAs) with a connection coverage of 95%. The DMA network or system enables more effective coverage and oversight of water losses within the water supply system, where losses can be localised and water supply improvement prioritised.

In FY2023, RWS was awarded the NRW reduction contract for the state of Johor valued at RM284 million. This is a 3-year

MANAGEMENT DISCUSSION & ANALYSIS

contract that will keep RWS busy whilst providing revenue and earnings visibility going forward. The contract will also pave the way for further NRW reduction for Johor going forward.

OUTLOOK AND PROSPECTS

Both Approach One and Approach Two of the Matching Grant Scheme continue to provide opportunities for NRW specialists such as RWS to approach water operators with comprehensive NRW programmes. RWS, given its proven track record for successfully undertaking NRW projects (under Approaches One and Two) holds Ranhill in good stead to secure additional contracts.

Challenges remain arising primarily from various on-ground issues. However, RWS continues to develop strategies to address the issues.

Beyond water operators, RWS will also look at other NRW potentials such as government institutions, industrial centres and more. The experience with the TLDM Lumut base attests to RWS' capabilities in undertaking specific NRW or water infrastructure projects.

On a separate note, the ongoing collaboration with PETRONAS has yielded encouraging results with RWS assessing the viability of adopting ProAssure™ Aqua leak repair technology. ProAssure™ Aqua features composite repair technology, which enables online leak repair. This novel crossover of oil and gas technologies into the water sector further augments RWS's capabilities.

RANHILL WATER TECHNOLOGIES ("RWT")

In 2023, RWT secured a total of RM11.1 million in new contracts and successfully completed existing projects in hand. Key highlights include the resecuring of the Forest City, Gelang Patah desalination project.

Another project highlight was RWT's appointment as sub-consultant for the Condition Assessment of Water Treatment Plant for Johor State for WTPs in Kluang district. Awarded by RBSB for end-client Ranhill SAJ, this contract entails an assessment of the intake, raw water pipelines and the balancing reservoir. Stage one of the project comprises an assessment of existing conditions while stage two entails developing the preparation of needs statement and recommended scope of services. As of December 2023, 75% of work has been completed with the remaining portion of works to be concluded by July 2024.

OUTLOOK AND PROSPECTS

The financial year, saw the merger of RWS and RWT into a new combined entity Ranhill Technologies Sdn Bhd ("Ranhill Technologies"), which would provide integrated services that would enable a more strategic and competitive positioning in targetting new project potentials.

Ranhill Technologies enables synergistic capabilities to be leveraged tapping the inherent expertise and experience within to deliver innovative and market-oriented solutions with regard to water network management services, NRW management, the undertaking of civil works related to NRW and more. The creation of Ranhill Technologies is driven by market sentiments towards capitalising on the growing need for an integrated approach in the design, build and operation of water infrastructure and other related projects.

Ranhill Technologies' strategic priorities are to complete all projects on hand within the stipulated timeframes, while further building its order book via active tendering activities. This includes submitting proposals and participating in tenders called by state water operators nationwide and also working with the drainage and irrigation department of Malaysia on sewage treatment plant ("STP") development.

Ranhill Technologies also shall source for projects from non-traditional clients, notably in developing customised water and wastewater treatment systems and for NRW management.

MANAGEMENT DISCUSSION & ANALYSIS

RISKS AND MITIGATION

Ranhill has identified pertinent business, operational, financial as well as ESG risks (i.e. climate change, etc.) and has developed a comprehensive risk management approach including mitigation strategies to address all identified risks and related impacts.

Comprehensive information on the Group's risk management framework and its internal and processes and controls is provided in the Statement of Risk Management and Internal Controls on pages 134-136 of this report. The following is a concise disclosure of significant risks and the Group's devised and deployed mitigation strategies for each of its business divisions and principal operating companies.

ENVIRONMENT SECTOR

Risks	Mitigation Strategies
Shortage of raw water quantity	Continued focus on increasing extraction ability through undertaking of related infrastructure projects. This includes the ongoing raw water transfer project to supply 18 MLD of raw water from Sg. Sedili Besar to Sg. Gembut.
Inability to supply adequate treated water	A combination of arresting and reducing NRW over time towards the desired level of 20.9% by 2025. This is to be achieved by undertaking active pipe rehabilitation and replacement plans under the respective Operations. Key to the efforts is addressing ILI. Ranhill SAJ will also continue to focus on the construction of new WTPs such as the Sungai Layang 2 (Phase One) WTP. In addition, existing WTPs, where necessary continue to be upgraded towards increasing treatment capacity.
Raw water contamination and pollution	Continued efforts at monitoring pollution hotspots and working closely with enforcement authorities to take necessary action on polluters. Continuous efforts at education and awareness together with enforcement have been effective in reducing the number of pollution cases.
Change in policies with regard to wastewater management, especially reclaimed water (Thailand)	Growing interest and demand for reclaimed water use of non-potable applications (industrial / commercial use) remained positive in line with Thailand Water Resources Management Master Plan 2018-2037 to increase treatment efficiency and control of wastewater discharge into the environment. Ensuring wastewater discharge is treated in accordance with the applicable standards and regulations. Risks are mitigated to large extent by long concession periods, minimum offtake and provision of comprehensive clauses that allow for changes as stipulated in contract management from related parties.
Inability to run operation of WTP, WWTPs and WRTPs effectively due internal or external factors such as pandemic, business interruption, etc.	Continued talent development especially for specialised and niche skillsets in plant operation. Develop strategic partnerships with product manufacturers, and technical and services providers to strengthen the supply chain and drive cost efficiencies. Ensuring the operation of WTP, WWTP and WRTPs comply with applicable laws and regulations enforced by the Industrial Estate Authority of Thailand, Provincial Waterworks Authority etc. Good monitoring and evaluation mechanisms to track progress towards business objectives / policies, assess the effectiveness of implemented measures and identify areas for improvement.

MANAGEMENT DISCUSSION & ANALYSIS

Risks	Mitigation Strategies
Intensified competition due to many players and new market entrants	Leverage established presence to pursue potential in other industrial parks in Thailand. Robust stakeholder engagement through participation in water sustainability programs such as Thai Water Expo 2023 Thailand's International Exhibition and Conference on Water Resource Management and Wastewater Technology. Developed engagement with technical resources for identification of applicable and potential technology ideas to adapt to business operations.
Challenging incoming water and wastewater quality	Leverage internal technologies to offer customised solutions and specialised facilities that offer competitive value propositions and plant performance.

ENERGY SECTOR

Risks	Mitigation Strategies
Inability to complete Kimanis Project on time	Tight construction period of 24 months with liquidated damages payable for delays and a Longstop Date (Termination) at only six months after scheduled COD. The time for construction is effectively only 24 months with Liquidated Damages payable for delay and the Longstop Date (Termination) at only six months after the scheduled COD. Continued engagement with all parties, notably regulatory bodies to expedite necessary approvals.
FOREX risks	Continued hedging against a basket of currencies, use of locked-in rates for stipulated time periods, incorporation of cost past through mechanisms in contracts, where feasible.
Limitation of Investment Tax Allowance	Management has approached the Finance Ministry and NRECC on the Investment Tax Allowance and discussion remains ongoing. Maintain high plant availability to achieve high load factor and implement proper ERP for all necessary circumstances.

MANAGEMENT DISCUSSION & ANALYSIS

ENGINEERING SERVICES SECTOR

RW

Risks	Mitigation Strategies
Volatile oil prices and market demand fluctuations	Diversification of client base to include international clients and long-term service contracts for local clients.
Project risks	RW runs comprehensive risk-based models on all projects to ascertain risks and risk levels. These include identifying special risks and addressing risks of non-favourable contract terms, negative cash flow, client's reputation, country risk profiles, etc.
Delays in collections	The budget is estimated at early of the year for development, capex and OPEX. Development is identified using appraisal assessment and job requirements identified by each departmental head.

RBSB

Risks	Mitigation Strategies
Inability to replenish order book	Continued business development activities include active tendering for suitable projects locally and abroad. Hiring competent staff to ensure prime capacity and ability to develop competitive bids and compelling value propositions to secure jobs.
Potential design claims	Benchmarking with established quality standards and the establishment of a DDU unit will ensure that high-quality deliverables can be produced. Additionally, continuous training and development of staff are provided to maintain quality levels.
Loss of capable staff	Continued recruitment of staff based on the principle of merit in ensuring a competent talent pool of professionals. Recruitment strategies are supported by active professional development activities for staff, primarily the provision of training opportunities to ensure staff possess the necessary competencies and qualifications to execute jobs accordingly.

RANHILL TECHNOLOGIES*

Risks	Mitigation Strategies
Stiff market competition	Continued focus on cost efficiency, including collaboration with potential partners during tendering to develop stronger value propositions.
Competition from small players	Offered small packages instead of holistic approach.
Differing interpretations of contract terms & conditions and stringent targets imposed by clients	Clearly managing client expectations from the commencement of a project, ensuring the inclusion of variation clauses and caveats due to force majeure or any developments beyond Ranhill Technologies' control. Renegotiating terms where feasible or necessary.
Material price escalation	Implement provision for contingency in pricing. These include, where possible past through mechanisms or options to revise material costs based on agreed contract terms. Other strategies include diversifying the supplier base and increasing the inclusion of OEM manufacturers to reduce dependence on overseas sourced materials.

* *On 3 December 2023, RWT and RWS completed their merger forming Ranhill Technologies Sdn Bhd ("Ranhill Technologies").*