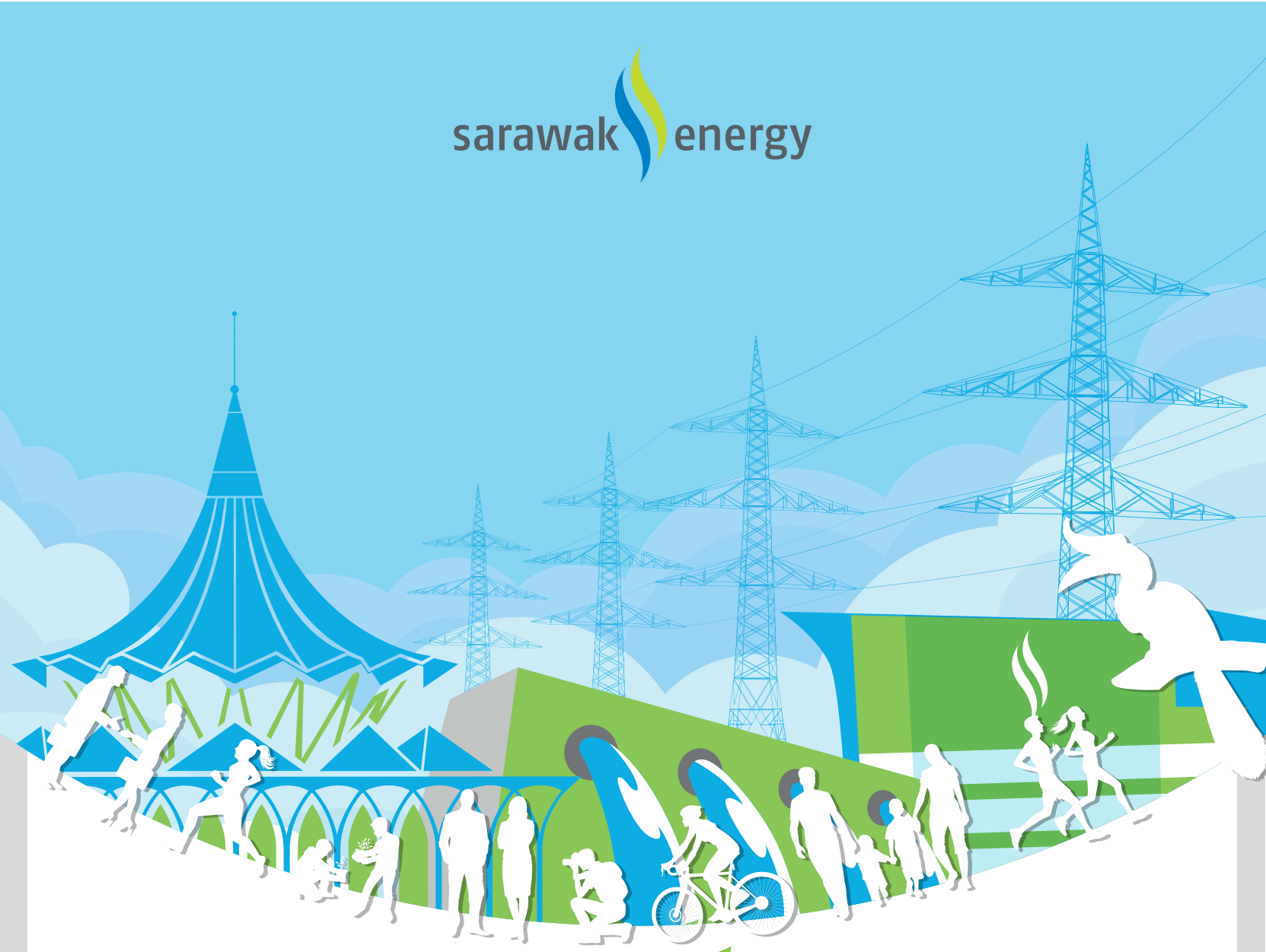
sarawak energy



CHARTING A SUSTAINABLE PATHWAY FOR A

RESILIENT FUTURE

Sustainability Report 2023

Our Performance Overview

204-1, 305-4, EU29

At Sarawak Energy, we are committed to reaching our goal of state-wide electrification by 2025 through reliable and renewable energy supply. This includes our contributions towards national and global sustainability agenda. While we are focused on financial growth to enrich our stakeholders and the region, we are also balancing our business with greater environmental and social impacts by prioritising sustainability. From engaging our communities to preserving Sarawak's natural resources, we endeavour to contribute to Sarawak's prosperity and fulfil the region's energy need. We evaluate our performance and map our actions against our key sustainability pillars of Economic, Environmental and Social.

2023 HIGHLIGHTS

Total Electricity Sales *(GWh)*

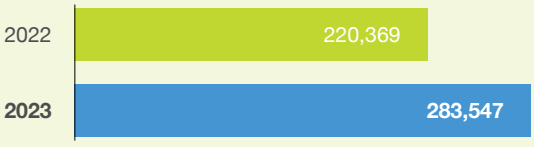
+5.54%

Operating Costs Ratio *(%)*

-2.50%

Total Hours of Training *(Hours)*

+28.67%

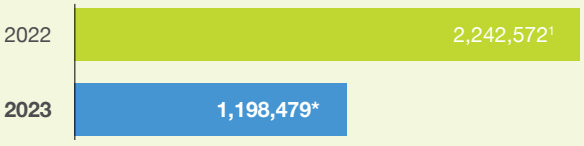


Renewable Energy Generated - Main Grid *(GWh)*

+3.68%

Tenders Awarded to Local Sarawakian Companies *(RM'000)*

-46.54%



Emissions Intensity - Main Grid *(tCO_2eq/MWh)*

+3.52%

SAIDI - Distribution *(Min/customer)*

+1.33%

Our Performance Overview

Sarawak Energy's science-based greenhouse gas emissions reduction targets

conform with SBTi Criteria and Recommendation (Version 5.0) and have been validated and approved by Science Based Targets initiative

The first large corporation in Malaysia

to receive the validation and approval from SBTi

Signed the Memorandum of Collaboration (MOC) with Bursa Malaysia, HSA and IREC

during the 28th United Nations Climate Change Conference of Parties (COP28) in Dubai to launch a REC trading platform on Bursa Carbon Exchange by Q3 2024

Supported various industries in obtaining the Renewable Energy Certificate (REC) with 2023 witnessing a record-breaking year with approximately

5 million RECs signed, reaching to a total of 6.8 million RECs committed since 2019

Placing Priority and Value - Materiality Topics

2-26, 2-29, 3-1

Sarawak Energy's approach to sustainability is centred on key material issues that are most significant to our business and stakeholders. Identifying our sustainability issues enable us to anticipate risks and capture opportunities that will allow us to continue creating sustainable value. We determine our material matters through various sources including stakeholder feedback, surveys, thought leadership perspectives and social media coverage.

In 2023, we reviewed our material matters and found that they were still relevant with the current sustainability landscape. Our last full materiality assessment was conducted in 2018 according to the GRI Standards. A total of 32 material matters were identified based on our Economic, Environmental and Social impacts, as shown in the materiality matrix below. Going forward, we plan to conduct a double materiality assessment next year to determine issues that are most material to us from a financial perspective and to the environment and our stakeholders from an impact perspective.

REVIEW OF MATERIAL ISSUES

Reviewing and updating material issues that are in line with any development in:

- Business landscape
- Internal policies
- Key Performance Indicators (KPIs)
- Local and global trends
- Regulatory requirements
- Stakeholder feedback

STAKEHOLDER ENGAGEMENT

Prioritising and engaging with stakeholders through continuous dialogue to gain valuable insights to meet the needs of stakeholders and develop strategies and initiatives

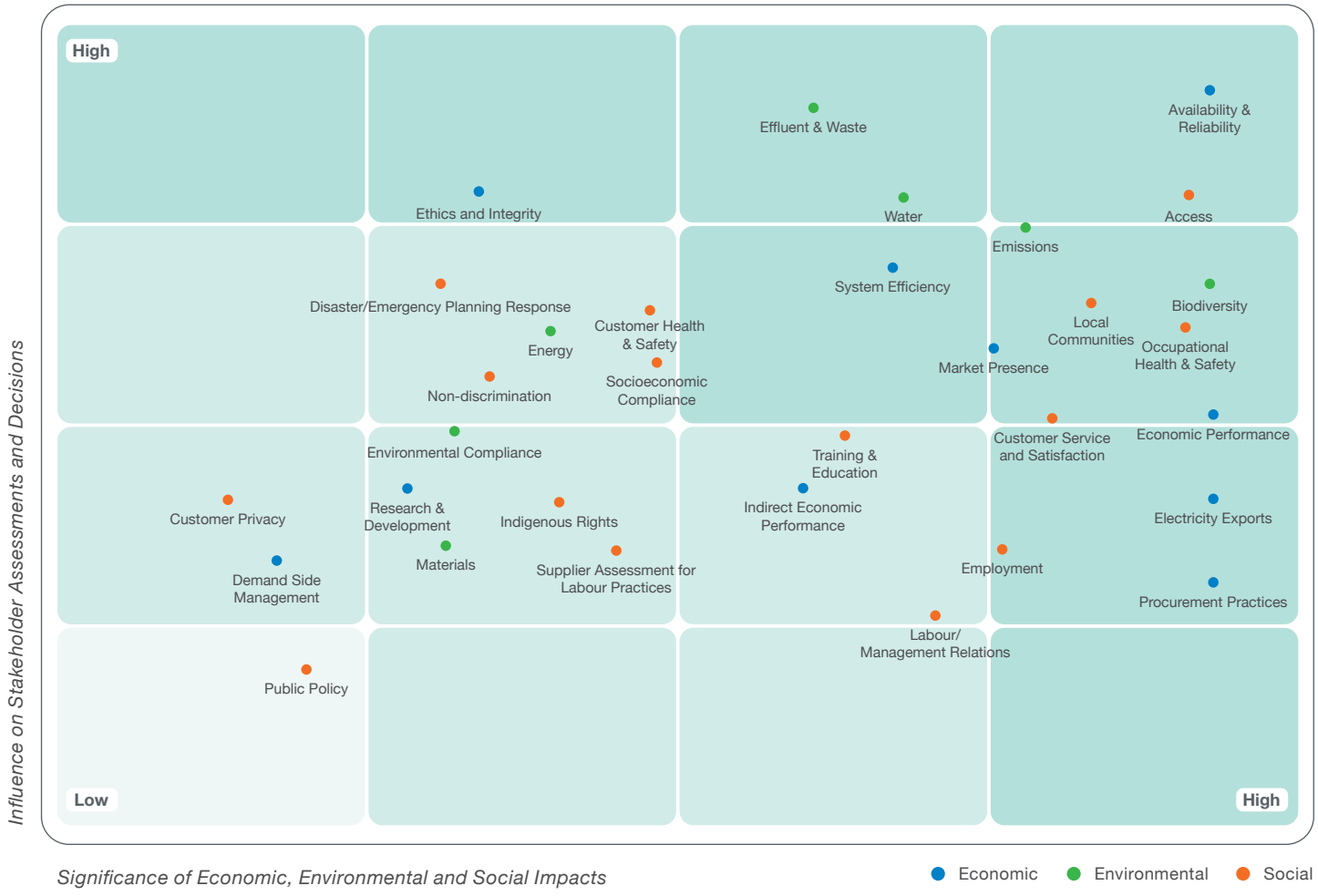
PRIORITISING MATERIAL ISSUES

Identifying material issues before prioritising the issues that are in line with the Company's business needs

Placing Priority and Value - Materiality Topics

3-2

Our materiality matrix is shown below:



Deepening our Commitment to Sustainability

Reporting on our significant impacts on the economy, environment and people has enabled us to further deepen our commitment to addressing the issue of human rights across our supply chain. This is testament in our signing of the Letter of Commitment of The Ten Principles of the United Nations Global Compact (UNGC)[a] as part of the outcome of our Sustainability Strategy and Roadmap roll-out in 2022.

In addition, we are among the global companies that have pledged to support the UNGC's Business Ambition for 1.5°C. Our main grid CO_2eq emission intensity is within the 2°C and 1.5°C targets in accordance with Paris Agreement. Read more about our commitment to the SBTi in Embarking on 1.5°C Pathway Journey on page 141.

Note:

[a] *For more information on The Ten Principles of the UNGC, refer to https://unglobalcompact.org/what-is-gc/mission/principles*

Creating Sustainable Value

2-6, 2-7, 301-1, EU2, 3-3

Sarawak Energy delivers returns throughout its value chain by producing renewable energy using local resources. The Company further upholds stakeholders' interests and climate action to ensure sustainability of not only its businesses, but also of its communities and the planet.

I INPUT

POWERING LOW-CARBON ECONOMY

Electricity Generated & Fuel Consumption by Type:

Hydro
25,058.75 GWh*

Hydro
Total Annual Water Volume for Energy Generation
57,017.86 Million m³*

Natural Gas
5,429.38 GWh*

Coal
3,201,032.55 Tonnes*

Diesel
29,023,942.56 Litres*

Coal
3,952.76 GWh*

Natural Gas
47,502,815.02 MMBtu*

Thermal – Water Utilisation
1,147 Million m³*
(Cooling process)

EMPOWERING OUR PEOPLE

Total Workforce *(people)*

2022: 5,537
2023: 5,809

II VALUE TO OUR STAKEHOLDER

SUSTAINABLE DEVELOPMENT GOALS

We put local resources and the production of clean energy first to unlock returns throughout our value chain

Creating Sustainable Value

2-6, 201-1, 203-2, 204-1, 305-4, 401-1, EU26

VALUE CREATION PROCESS

1. Empowering Our People
2. Powering The Economy
3. Preserving The Environment
4. Value Created

Investors

Employees

Society at Large

OUTPUT

Powering The Economy

- Operating Costs Ratio - **35.94%**
- Economic Value Retained (RM Million) - **2,585.00***
- Payments to the Government (RM Million) - **358.20**
- Employee Remuneration (RM Million) - **778.20**
- Electricity Sales - **33,011 GWh**

Empowering Our People & Society

Human Capital Development

- Total workforce - **5,809 people**
- Total Training Hours - **283,547 hours**
- Employee New Hires - **437**

Adding Value to Our Business

- Total Assets (RM Million) - **44,051**
- Operating Costs (RM Million) - **2,632.70**
- Tenders Awarded to Local Sarawakian Companies (RM Million) - **1,198***
- Sarawak's Rural Electrification Coverage (%) - **98.38%***
- Return on Assets - **3.0 %**
- Benefitted at least **142,996 Rural Households Since 2019**

Preserving The Environment

- Grid Emissions Intensity (Main Grid) - **0.206 tCO_2eq/MWh* (3.52% increased from 2022)**

Sarawak Energy's Sustainability Strategy & Roadmap

2-24, 2-25, 305-4, 3-3

Our Sustainability Strategy and Roadmap is focused on five key themes which are:

Grid Emissions Intensity (Main Grid)

0.206

tCO_2eq/MWh*

Note: *Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.*

5 Key Themes	Strategies	Action Plans
Sustainability Leadership	1 Sustainability Governance 2 Sustainable Business Model 3 Sustainable Business 4 Sustainability Performance	1 GEC Sustainability Council Capability building (Board, & GEC Members) Sustainability Board Committee
Sustainable Growth	1 Energy Transition 2 Sustainable Hydropower 3 Low-Carbon Technology 4 Performance & Evaluation	1 Corporate Business Ambition 1.5°C, SBTi & Net Zero – Governance & Progress Explore other variable renewable energy sources Exploring new low-carbon technology Future generation and electrification Support climate action beyond Sarawak Energy – towards a low-carbon and circular economy
Business Resilience	1 ESG Data Analysis 2 Sustainable Financing 3 SEB Infrastructure (G,T & D) 4 Environment, Social and Governance	1 Robust ESG data collection and monitoring Single source/centralised data for ESG Third-party assurance & assessment
Climate Action	1 Climate Mitigations & Adaptations 2 Reporting Standards 3 Climate Change Impacts 4 Progress Updates	1 Climate change requirements as part of business decision making (Corporate and project level) Climate action beyond Sarawak Energy aligns the energy sector towards a low-carbon and circular economy Integrated Catchment Management and Policy
Workforce and Supply Chain	1 Engagement and Awareness 2 Capacity Development 3 Supply Chain 4 Sustainability Culture	1 Engagement with working-level Executives/ Non-Executives Staff for awareness and buy-in across the company's working-level training

Sarawak Energy's Sustainability Strategy & Roadmap

2-24, 2-25, 3-3

Grid Emissions Intensity (Northern Grid)
0.691
tCO_2eq/MWh*

Total CO_2 Emissions (Main Grid)
7.08
million tCO_2eq

Total CO_2 Reduction from Clean Development Mechanism Projects
226,330
tCO_2eq

Status: *Completed* *On-going* *Yet To Start*

			Timeline
2 Board Agenda - Sustainability Topics Embedding Sustainability elements into the business model	**3** Setting Sustainability direction Embed sustainability requirements' business process High-Level Commitment toward Sustainability	**4** Overall Sustainability Performance & Monitoring Sustainable performance targets in corporate KPI	Q3 2022 – Q2 2024
2 Strong Governance and dedicated team to ensure compliance with HSS & San José Declaration Hydropower Sustainability Standard Certification by 2030	**3** Develop data scientists to enable decision making Disruptive technology to enhance the adoption of low-carbon technologies (Demand & Supply Side)	**4** Holistic and integrated performance evaluation Value creation assessment	Q3 2022 – Q4 2025
2 Competitive Financing ESG Credentials - premium market (e.g. ESG Rating) Incorporate ESG in investment decisions	**3** Improve the resilience of the power generation and power delivery infrastructure	**4** Sound environment and social sustainability management, and reporting structure Strong and robust data governance Integration of sustainability requirements and integrated management system	Q1 2023 – Q4 2024
2 Adopt international standards in reporting climate action	**3** Robust assessment and management of climate transition and physical risks	**4** Progress monitoring and review	Q3 2022 – Q4 2025
2 Introduce sustainability-related competencies	**3** Advocating suppliers toward embracing sustainability practices Integrated Sustainability elements into Supplier evaluation & selection Sustainability readiness & performance	**4** Overarching policy on Sustainability Embedding sustainability elements into staff job descriptions	Q3 2023 – Q4 2025

Sarawak Energy's Sustainability Strategy & Roadmap

2-9, 2-13, 2-16, 3-3

Sustainability Leadership

SUSTAINABILITY GOVERNANCE

As part of our commitment to lead with sustainability, we review and enhance our governance periodically to ensure that sustainability is governed with a tone from the top.

In 2023, we strengthened the governance and oversight of our sustainability by establishing a Group Sustainability Committee (GSC), which succeeds the CSR Steering Committee. We are currently in the midst of developing a Board Sustainability Committee, which is targeted to be fully established by Q4 2024. Read more about our Sustainability Governance in The International Financial Reporting Standards (IFRS) S2 Climate-Related Disclosures on page 148.

Notes:

[1] *Effective Sept 2023.*

[2] *Board Sustainability Committee targeted to be established in Q4 2024.*

Sarawak Energy's Sustainability Strategy & Roadmap

2-22, EU4, EU12, EU26, EU29, EU30

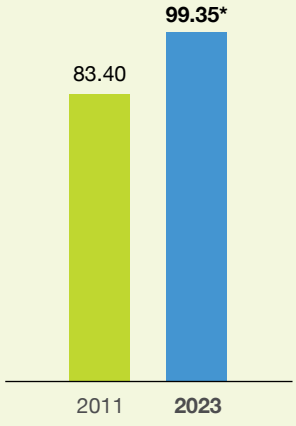
Embracing the SDGs from Within

The 17 United Nations Sustainable Development Goals (UN SDGs) are an urgent call for all countries to form a global partnership and act to end critical issues that affect people and the environment. This call to action recognises the necessity of aligning our strategies with efforts to improve quality of life, reduce inequality and stimulate economic growth while addressing climate change. In support of the UN SDGs, we have identified six SDGs where our business can make a positive impact:

7 - AFFORDABLE AND CLEAN ENERGY

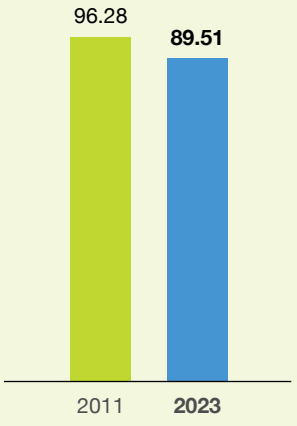
Sarawak Electricity Coverage *(%)*

+19.12%



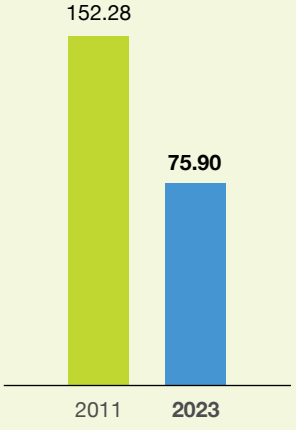
Hydropower Average Availability Factor *(%)*

-7.03%



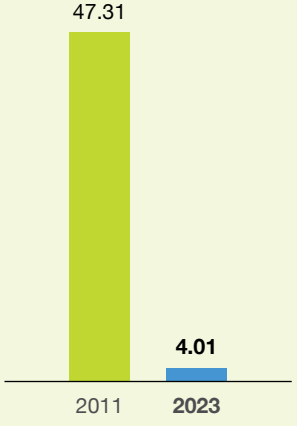
SAIDI for Distribution *(Min/customer)*

-50.16%



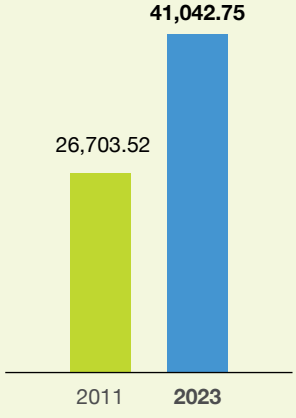
SAIDI for Transmission *(Min/customer)*

-91.52%



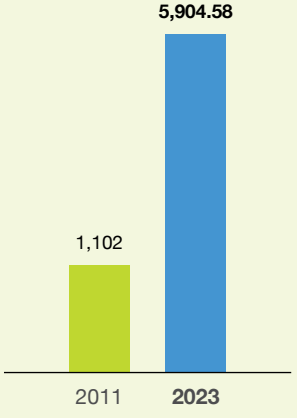
Total Length - Distribution *(km)*

+53.70%



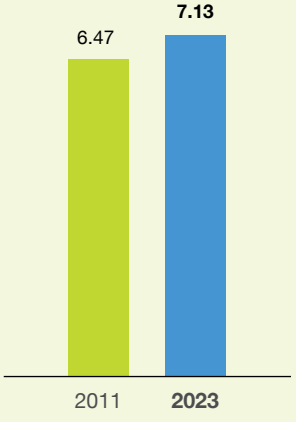
Total Length - Transmission *(km)*

+435.81



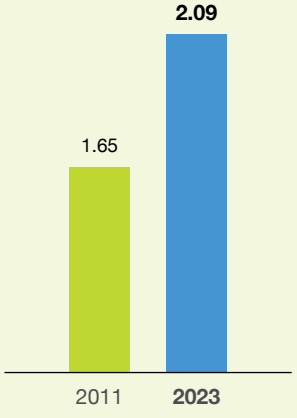
Distribution Losses (Technical) *(%)*

+10.20%



Transmission Losses *(%)*

+26.67%



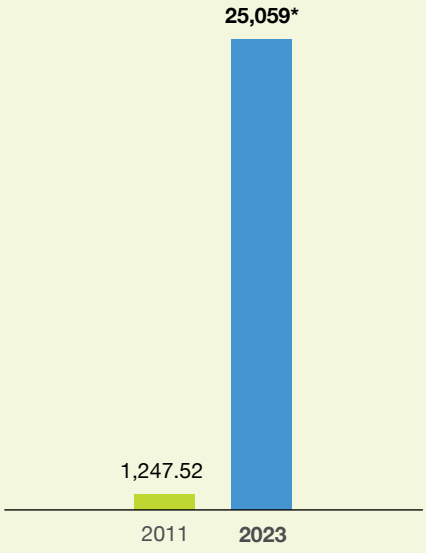
Sarawak Energy's Sustainability Strategy & Roadmap

305-4, 305-5

13 - CLIMATE ACTION

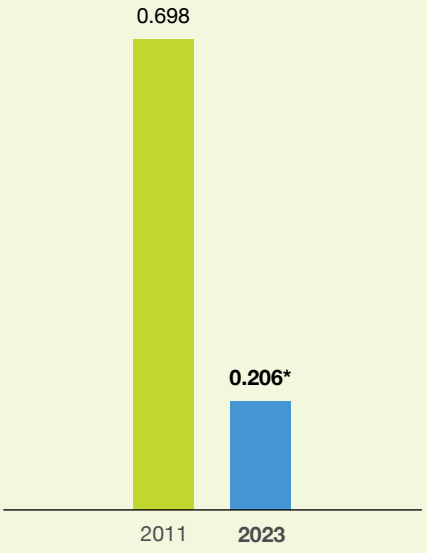
Renewable Energy Generated *(GWh)*

+1,908.71%



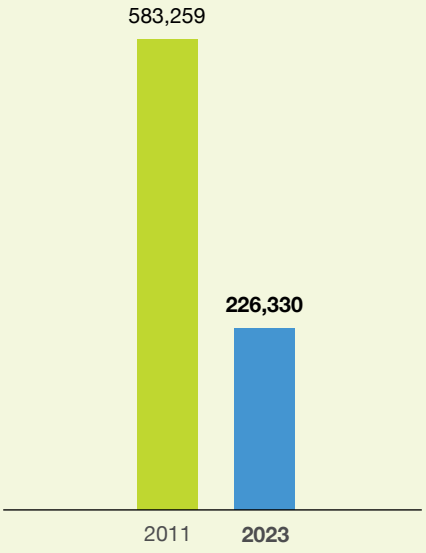
Main Grid Emissions Intensity *(tCO_2eq/MWh)*

-70.49%



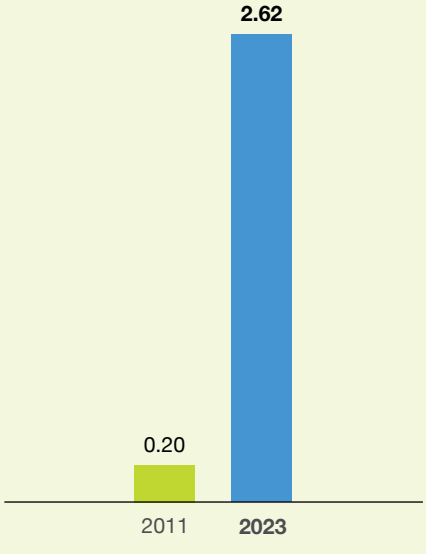
Total CO_2 Emissions Reduction *(tCO_2)*

-61.20%



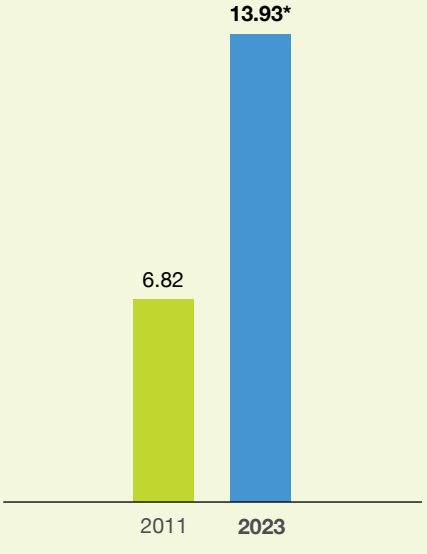
Renewable Energy to Non-Renewable Energy Generated Ratio

+1,210%



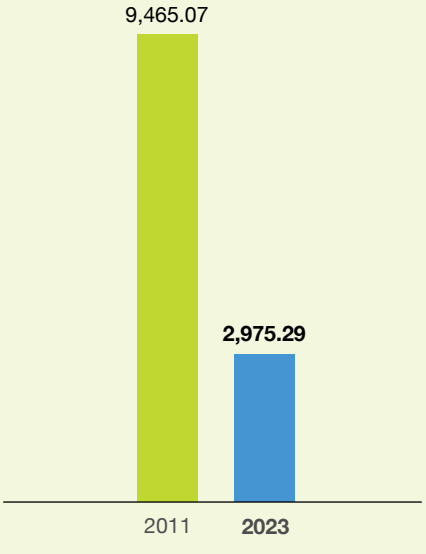
Total Scheduled Waste Generation Intensity *(t/GWh)*

+104.25%



Total Fuel Consumption Intensity *(MJ/MWh)*

-68.57%



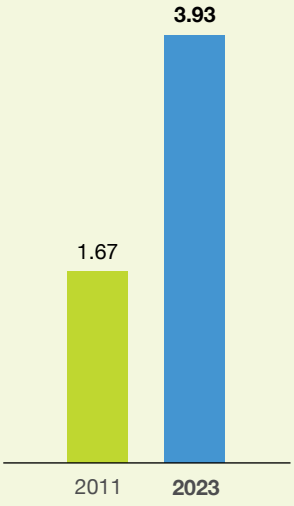
Sarawak Energy's Sustainability Strategy & Roadmap

2-7, 204-1

8 - DECENT WORK & ECONOMIC GROWTH

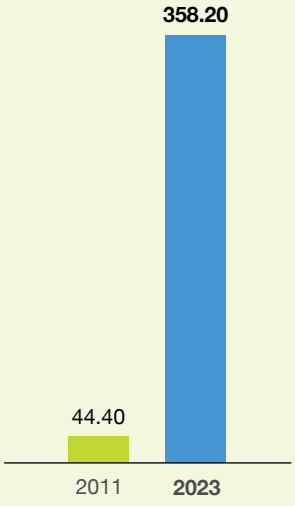
Electricity Sales/GDP[a] *(%)*

+135.33%



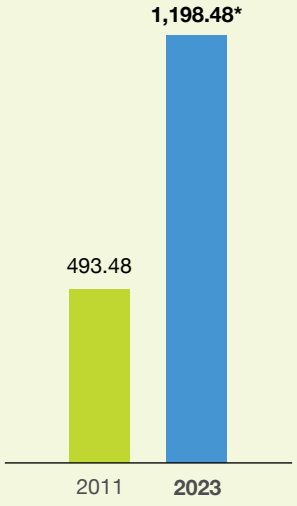
Tax Paid to Government *(RM Mil')*

+706.76%



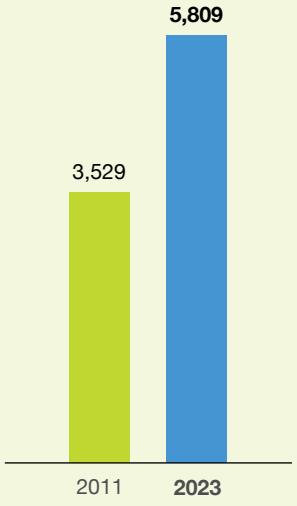
Tenders Awarded to Local Sarawakian Companies *(RM Mil')*

+142.86%



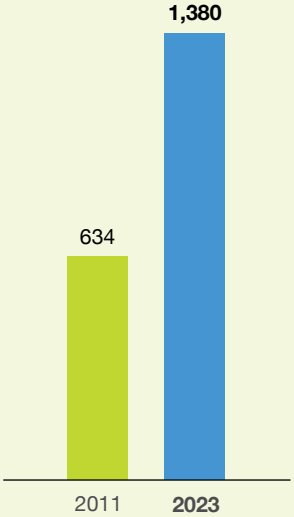
Total Number of Employees *(No.)*

+64.61%



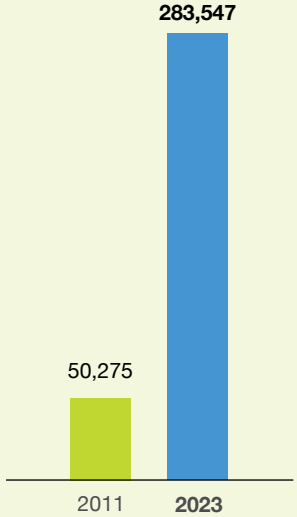
Total Number of Women in Workforce *(No.)*

+117.67%



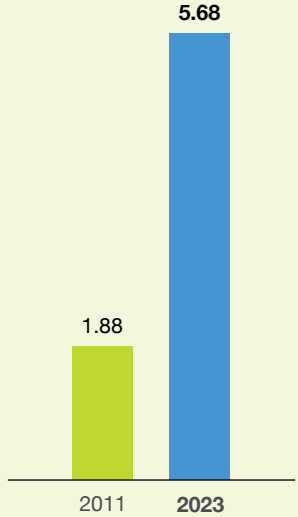
Total Training Hours Provided *(Hours)*

+463.99%



Electricity Sales/Number of Employees *(GWh/Staff)*

+202.13%



Note:

[a] *GDP for State of Sarawak in 2022 is based on current prices.*

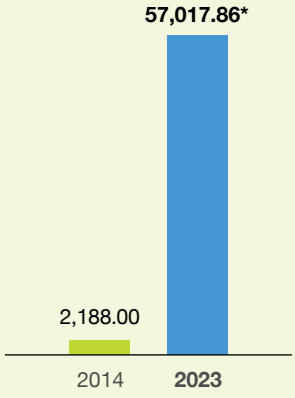
Sarawak Energy's Sustainability Strategy & Roadmap

2-28, 304-1, 3-3

6 - CLEAN WATER AND SANITATION

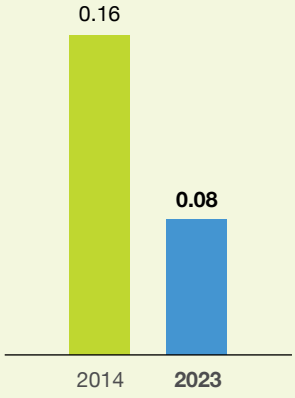
Water Volume Regulated by Hydropower Plants for Electricity Generation *(Million m³)*

+2,505.94%



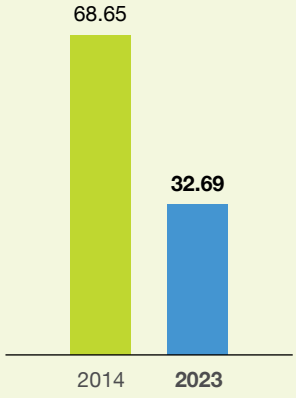
Water Intake Intensity by Thermal Plants by Source for Cooling Process - Municipal Water *(m³/MWh)*

-50.00%



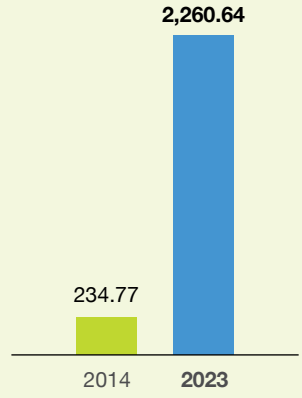
Water Intake Intensity by Thermal Plants by Source for Cooling Process - Sea Water or Other Natural Water Source *(m³/MWh)*

-52.38%



Water Volume Intensity Regulated by Hydropower Plants for Electricity Generation *(m³/MWh)*

+862.92%



We are a member of the state's Integrated Watershed Management Committee that supports and contributes to the development of the state policy, procedures and guidelines for Integrated Watershed Management.

15 - LIFE ON LAND

- Supported the Heart of Borneo (HoB) Initiative
- Gazetted the Baleh National Park
- Conducted various workshops on watershed management
- Nurtured the Flora Conservation Garden

17 - PARTNERSHIPS FOR THE GOALS

- Formed partnerships to conserve and protect HoB areas
- Collaborated with government agencies, NGOs such as WWF and universities in developing an Integrated Catchment Management Policy, Procedures, Guidelines and Plan
- Collaborated with local universities on our Environmental Sustainability Programme
- Partnered with the International Hydropower Association (IHA), UNGC Network Malaysia & Brunei, and the Global Reporting Initiative (GRI) to champion the global sustainability agenda within a local context

Sarawak Energy's Sustainability Strategy & Roadmap

2-25, 3-3

Fostering Business Resilience

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Human activities continue to be the main driver of climate change, causing long-term shifts in temperatures and weather patterns. Heat-trapping gases caused by the burning of fossil fuels such as coal, oil and gas have altered weather conditions and contributed to natural disasters, affecting the growth of a nation and economic activities.

This shift has driven Sarawak Energy to fortify our business through innovative solutions, enabling us to contribute to Sarawak's sustainability, financial growth and social development. We continue to focus on digitalisation and hydropower usage as renewable energy source to supply Sarawak with clean, dependable and affordable electricity.

In 2023, the renewable energy share in Sarawak's generation mix continued to grow to 25,059* GWh from 1,248 GWh in 2011. This has enabled Sarawak to reduce its main grid CO_2 emissions intensity by 70%, 54% lower than the global average of 450 gCO_2eq/kWh.

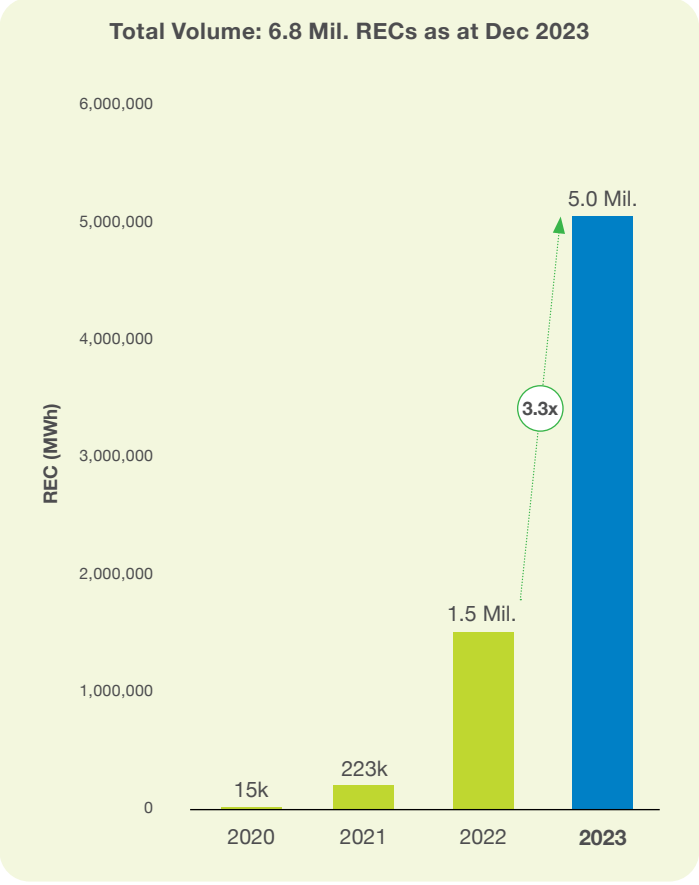
Other and Variable Renewable Energy

Renewable Energy Certificate (REC)

The REC mechanism was launched in 2019 to enable corporates in Sarawak to procure credible renewable energy. It serves as a vital tool in facilitating corporate participation in the global transition towards low-carbon economy. The REC mechanism has enabled Sarawak Energy to support various industries, including manufacturing industries, electronics, pharmaceuticals, and food and beverage in their sustainability efforts to reduce Scope 2 GHG emissions.

In 2022, Murum Hydroelectric Plant was officially registered with the International Renewable Energy Certificate (I-REC) registry. We aim to continuously collaborate with REC registries and corporate organisations across all sectors to further improve the development of the REC mechanism in Sarawak. Our efforts support our vision for the REC to catalyse the development of renewable energy through increasing sustainability awareness and advocating more renewable energy usage in the industries to advance Sarawak's transition to a low-carbon economy.

In 2023, the number of RECs issued rose significantly by about 232% to more than five million RECs (MWh) from previous year, a testament to higher sustainability awareness amongst corporates. This increased the total number of certificates issued to 6.8 million RECs since 2019.



Sarawak Energy's Sustainability Strategy & Roadmap

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We aim to continuously expand the offering of the RECs to support the acceleration of the transition to a low-carbon economy. In 2023, we signed a Memorandum of Collaboration (MOC) with Bursa Malaysia, Hydropower Sustainability Alliance and the I-REC Standard Foundation during the 28th United Nations Climate Change Conference of Parties (COP28) in Dubai, United Arab Emirates, on 4 December 2023.

The four-way MOC helped to expand the accessibility of Sarawak Hydro RECs to a broader market in Malaysia via Bursa Carbon Exchange. Additionally, this collaboration will further promote renewable energy awareness amongst Malaysian industry players, facilitate adoption of renewable energy, strengthen all parties' capabilities and emphasise on sustainable hydro labelling.

Disruptive Technologies/Digitalisation

Integrating Digital Technologies

As we operate in a dynamic environment, Sarawak Energy continues to cater to the demands of our stakeholders by adopting new technologies and innovations. Supported by strategies and tools, we are able to operate efficiently and contribute to a global digital economy while staying competitive at the same time.

Incorporating technology and digitalisation into our supply chain

EFFICIENCY IMPROVEMENT

RESOURCE ALLOCATION OPTIMISATION

LOWER OPERATIONAL COSTS

We have embarked on a digital transformation journey to achieve our Vision 2022 regional powerhouse ambitions, empowering us towards becoming a digital utility by 2025. To this end, we have invested in new technologies, processes and initiatives to form high performance, supporting our six Key Focus Areas. This will enhance system performance, driving the transformation of business operations and process automation across all our activities.

Sarawak Energy's digitalisation journey is anchored on five strategic pillars

STAYING AHEAD OF THE CURVE

SMART BUSINESS

DATA AS OUR STRATEGIC ASSETS

A MODERNISED, NEW WAY OF WORKING

A ROBUST AND FIT-FOR-PURPOSE DIGITAL FOUNDATION

Empowering for Transformation

We support the Sarawak Government's five-year Sarawak Digital Economy Strategy by driving a digital grid transformation to lead the utility industry's digital revolution. We are systematically digitising and modernising processes, technologies, skill sets, and competencies across our core and support functions. Consequently, we developed and implemented the Sarawak Energy Digitalisation Blueprint in 2018.

Sarawak Energy's Sustainability Strategy & Roadmap

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Sarawak Energy's Journey Towards Becoming a Digital Utility by 2050 Through World-Class Operational Excellence

DIGITAL UTILITY

- Ahead of the Curve
- Smart Business
- Data as Strategic Assets
- New Way of Working
- Robust & 'fit-for-purpose'

Smart Business

Smart Grid & Smart Retail
- Distribution Automation
- Advanced Metering Infrastructure & Smart Meters
- Smart Asset Performance Management
- Mobile Field Force Automation
- Virtual Assist/Counter (Carina)
- e-Billing

Digital Power Plants
- Remote Monitoring and Diagnostic Centre (RMAD)
- Generation Control Centre (GCC)
- Generation Transformation (GENX)
- Generation Digital Innovation

Data as Strategic Assets

MyPortal
- Sarawak Energy KFA Dashboard
- Digitalisation (e-Signature, Resource Central)
- Retail Fraud Analytics
- Revenue Intelligence
- Digital Customer Experience
- Generation Transformation (GENX)
- Dynamic Water Dispatch Management
- Online Vibration Monitoring
- Online Dissolved Gas

Unlock business insights, information at fingertips anytime on any device

Enterprise New Way of Working

Workplace Modernisation
- Microsoft 365, Teams, Video Conferencing, Virtual Events
- Digital People CELL (SEDAP)

Enterprise Applications Modernisation
- Pinnacle Programme (SEPS, CONCUR, etc.)
- FINX (SAP S/4 HANA Migration)
- GenesysX Programme
- Project Delivery Control Tower
- Corporate Service
- HSSE, SEACE, etc.

Optimised, automated and centralised processes, driving sustainability

Digital Foundation

Infrastructure Refresh
- PC Refresh
- Internet and Network Bandwidth Enhancement DC/DR expansion
- Core Backbone Communication Technology Upgrade

Standardisation/Simplification
- DC rationalisation
- Hardware, Wi-Fi System standardisation
- PC, mobile, printer standardisation
- Service improvement and automation

Strengthening Cybersecurity
- ThinkSecure
- OT network security (ICS, USB scanners)
- Enhance access control (Multifactor Authentication)
- Upgrade Security Monitoring system (SIEM)

To ensure reliability, stability, speed, security and cost-effectiveness

2018-2019	2020-2021	2022 AND BEYOND

Read more about Digital Foundation on page 36.

The five trends that are critical in Sarawak's grid transformation:

- Increased distribution of clean renewable energy in generating electricity
- Growing supply and demand, presenting additional opportunities for customers to participate in the electricity market
- Growing demand for a more resilient and reliable grid, protected against weather disruptions and cyber and physical attacks
- Rise of interconnected electricity information and control systems
- Ageing electricity infrastructure

Sarawak Energy's Sustainability Strategy & Roadmap

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Advancing Smart Business

Our business expansion is pivoted on our ability to operate sustainably and provide our customers with accessibility, reliability and affordability. To materialise these objectives, we are guided by Sarawak Energy's business digitalisation blueprints and roadmaps for each of our core businesses including:

DIGITAL POWER PLANT

SMART GRID

SMART RETAIL

DIGITAL POWER PLANT

- Our Generation Operation Excellence initiative, part of our Generation Transformation, enhances workforce and asset productivity by leveraging on innovative digital technologies, helping us navigate risks effectively.
- We continue to increase our efforts in enhancing operating hours by understanding and improving plant performance and health. Additionally, we prioritise operational safety through newly developed technologies.

A Remote Monitoring & Diagnostic Centre (RMAD)

- We have established a centralised centre that connects all power stations, leveraging advanced analytic tools and insights from Subject Matter Experts (SMEs). This setup enables our plants to achieve optimal performance with enhanced reliability, efficiency, productivity, and profitability

Generation Control Centre (GCC)

- Our control room operators can oversee multiple plants from a central location, enabling us to achieve workforce optimisation and enhancing operational agility

Enterprise Asset Management (EAM) System

- We enhance our existing business processes by developing our asset management strategy to align an asset's life cycle with the ISO 55001 Asset Management standards

Computerised Maintenance Management System (CMMS)

- Our decision-making processes are enhanced through accurate reporting and efficient dashboarding with the help of business intelligence tools

Sarawak Energy's Sustainability Strategy & Roadmap

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SMART GRID

- The demand for renewable energy has increased the level of complexity for grid operations, affecting the efficiency and cost of manual operation, monitoring, security of the network and other manual assets
- To remain competitive, we have invested our resources into modernising our grid and operations by digitalisation to ensure a secure and reliable smart power grid
- Smart grid technology allows us to:

Improve safety and efficiency in our operations

Protect our resources while striving for optimised performance

Meet customer needs

SMART GRID FOCUS

Monitoring & Control
SCADA, DMS/ADMS

Security
IT/OT Cybersecurity

Supply Reliability
SAIDI, SAIFI

Data Analytics
Smart Meter Coverage, Data Analytics Application

Customer Empowerment & Satisfaction
Real-Time Data to Customers, Customer Satisfaction Feedback

Key Smart Grid Initiatives For The Years Ahead

Advanced Metering Infrastructure & Smart Meters

Benefits
- Automatic meter reading
- Outage, tampering & energy theft detection
- Remote disconnection/ connection
- Power quality monitoring
- Enhanced digital experience for customers

Mobile Field Force Automation

Benefits
- Concise information flow between field crew (FC) and Customer Care Centre (CCC)
- Monitoring work order progress
- Tracking FC performance on response and restoration

Distribution Remote Monitoring System

Benefits
- Sensors for substation and pillar doors and loss of supply (transformer), remote sensing earth fault indicator, street lighting status
- Automated detection and alerts via SMS and email
- Faster restoration

Geographical Information System

Benefits
- Network assets visibility
- Availability of asset information linking to customer information

Substation Smart Surveillance System

Benefits
- Real-time monitoring of substations and assets with alert notifications
- Cases of theft and vandalism have reduced significantly after installation

Distribution Automation

Benefits
- Remote fault indication
- Safe remote operation
- Faster fault isolation and service restoration

Online Asset Monitoring

Benefits
- Real-time monitoring of asset condition
- Early detection of anomalies and alert notifications

Sarawak Energy's Sustainability Strategy & Roadmap

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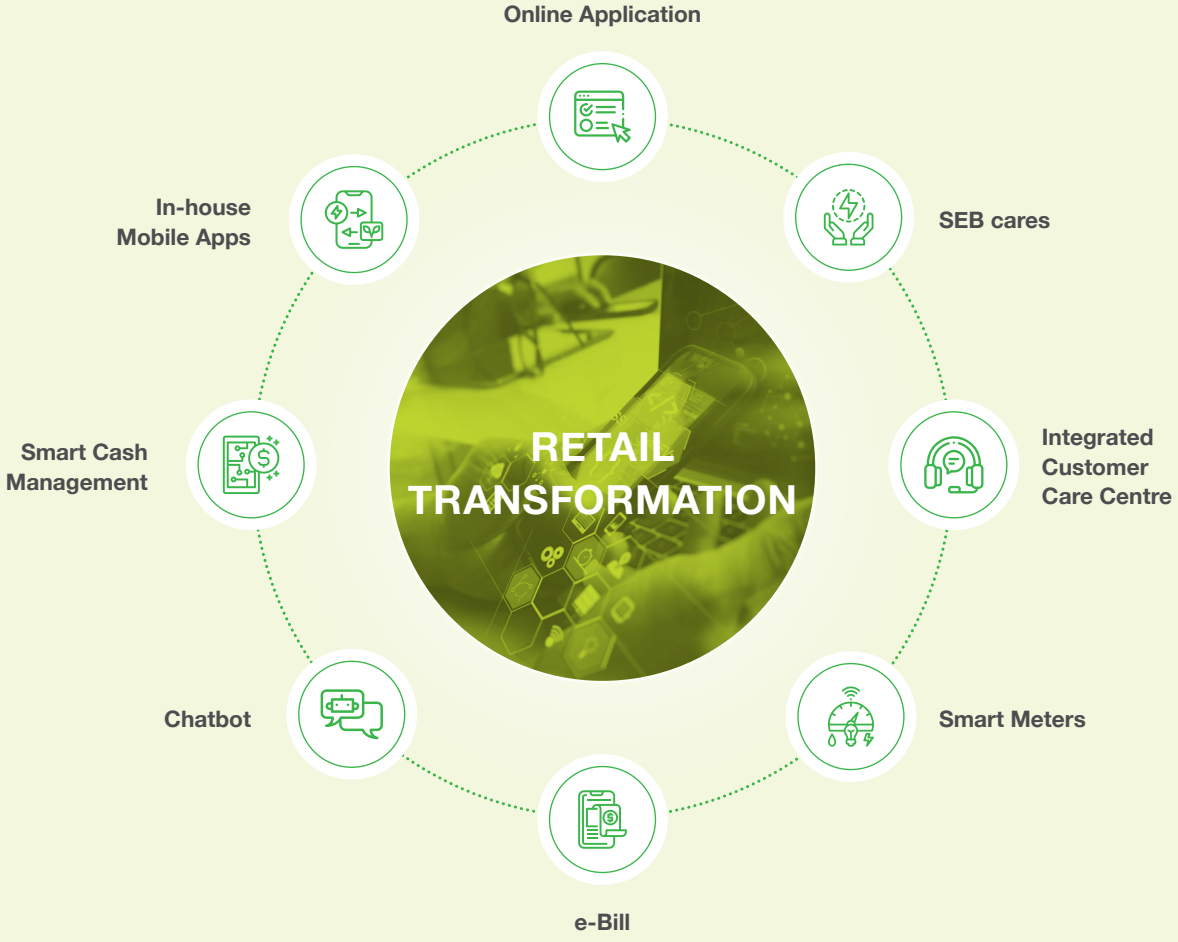
SMART RETAIL



- Embracing technological innovations has enabled our retail services to provide optimal customer experiences.
- By enhancing convenience, we continue to further implement automated customer service operations.

Smart Meters

- We aim to equip 70% of our customers in Kuching with Smart Meters by 2026, expanding to Miri, Sibu, Bintulu, Sri Aman, Betong, Sarikei, Mukah, Kapit, and Limbang by 2029.
- To date, 44,655 Smart Meters have been installed throughout Sarawak.

Sarawak Energy's Sustainability Strategy & Roadmap

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Supporting Sarawak's Digital Economy

In line with Sarawak's Digital Economy, we are advancing high-speed connectivity through our robust fibre optics infrastructure. This is testament in our collaborate with the Sarawak Multimedia Authority (SMA) and Sarawak Digital Economy Corporation (SDEC) to expand and optimise bandwidth and connectivity coverage across the State, leveraging our 500kV network. This will position Sarawak as a digital leader in the region.

Sarawak Energy Fibre Optic Network

More than 6,500 km of fibre optic connections have been installed by Sarawak Energy since 2020 including the Optical Ground Wire (OPGW), All Dielectric Self Supporting (ADSS), and Optical Underground (OPUG) fibres. Additionally, we have also erected more than 6,000 transmission towers and 400,000 distribution poles.

Note:
Points of connection on the map are approximate.

Sarawak Energy's Sustainability Strategy & Roadmap

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Sustainable Growth

SUSTAINABLE HYDROPOWER: ACCELERATING TOWARDS A JUST TRANSITION

Our hydropower projects and operations align with the UN SDGs, international best practices and good governance, ensuring we embed the correct principles in managing, empowering and protecting indigenous people by supporting their needs and livelihoods.

This includes respecting their dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resources-based livelihoods. Our commitment to developing sustainable hydropower contributes to the economy, the protection of natural resources, environmental stewardship and social accountability.

As part of our ongoing dedication to enhancing our HEP's performance and upholding good governance, Sarawak Energy established a Sustainability Partnership with the International Hydropower Association (IHA) in 2011. This initiative demonstrates our commitment to sustainability and involves the development and operation of our hydropower projects in alignment with the Hydropower Sustainability Tool (HST) and the Hydropower Sustainability Standard (HSS).

Hydropower Sustainability Standard (HSS)

The Hydropower Sustainability Standard is a robust assessment and certification framework that ensures accountability in hydropower development. It charts a path for harnessing hydropower's potential to drive positive impact, benefiting both communities and our environment. The Standard propels the responsible growth of this essential energy source, balancing progress with safeguarding our world.

Source:
Hydropower Sustainability Alliance website.

Hydropower Sustainability Assessment Tools (HST)

The three complementary tools that constitute the HSS framework are:

Hydropower Sustainability Assessment Protocol (HSAP)

Provides a structured approach to assessing the sustainability of hydropower projects

Hydropower Sustainability ESG Gap Analysis Tool (HESG)

Identifies and addresses gaps in ESG performance

Hydropower Sustainability Guidelines on Good International Industry Practice (HGIIP)

Outlines best practices to ensure hydropower projects adhere to high sustainability standards

Together, these tools enable us to implement the following:

- Managing and addressing sustainability risks and opportunities
- Meeting the expectations and requirements of investors and lenders
- Benchmarking our performance against international best practices

Through this robust framework, we aim to not only align with global sustainability standards but also to enhance the overall sustainability performance of our hydropower projects.

Sarawak Energy's Sustainability Strategy & Roadmap

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Safeguarding Sustainability Best Practices in Hydropower

Our commitment to advancing sustainable practices in generating hydropower is led by the Sarawak Energy HSS Internal Assessment Team. Established in 2014 and endorsed by the Sarawak Energy Executive Management Committee, the assessment team is a multidisciplinary group with representatives from various departments. Each member of the team has direct or indirect involvement in the development and operation of hydropower projects.

The team has received comprehensive training and is skilled in conducting internal assessments at various stages of a hydropower project, from the Early Stage to the Preparation Stage, Implementation Stage and Operation Stage. They had also conducted assessments on an international level including in Indonesia, Nepal, New Zealand and Tajikistan demonstrating the credibility of our homegrown certified assessors.

Our long-standing commitment to sustainable hydropower development is underpinned by the need for a robust governance process that ensures fair and transparent assessments. Additionally, it is crucial that the company maintains the necessary capacity and capability to support our growth and success. These efforts align with our Key Focus Areas and Core Values.

This is also aligned with Sarawak Energy's commitment to the San José Declaration on Sustainable Hydropower with the following principles:

Sustainable hydropower delivers ongoing benefits to communities, livelihoods and the climate

Moving forward, the only acceptable form of hydropower is sustainable hydropower

Sustainable hydropower necessitates collaborative efforts among stakeholders

To provide robust oversight and effective management of our initiatives, the Group Sustainability Committee oversees all activities and is supported by the HSS Sponsor which champions HSS initiatives. Sustainability efforts and practices are communicated across departments by the HSS Single Point of Contact, while lead assessors head assessment processes and internal assessors conduct daily evaluation in compliance with sustainability standards. The number of accredited assessors increased to six assessors in 2023 from four assessors in 2022.

Our Internal HSS Assessment Team conducted HSS Assessment, for Sunkoshi-2 Hydropower Project in Nepal with Accredited Assessors from Hydropower Sustainability Alliance.

HSS Internal Assessment Team

As of December 2023, the number of internal assessment team is as follows:

4	18	51
HSS Accredited Assessors	**Provisionally Accredited Assessors**	**HSS Certified Users**

Our internal assessors strive to:

- Act as change agents within their departments to continually embed sustainability practices in our business processes
- Conduct internal assessments for hydropower projects using the HST prior to official evaluations
- Develop and enhance internal capabilities

Sarawak Energy's Sustainability Strategy & Roadmap

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CAPACITY DEVELOPMENT ROADMAP FOR SARAWAK ENERGY'S INTERNAL ASSESSMENT TEAM

1 Knowledge Internal Assessor

- Undergo Hydropower Sustainability Tools (HST) Training
- Pass as Certified User of HST
- Participate in Internal Capacity Development Workshop
- Attend ISO Internal Audit Training
- Conduct or participate in Internal Assessment as an assessor or Local Support Team

1–2 years

2 Skill Provisionally Accredited Assessor

- Attend Official Accredited Assessor Course
- Pass the Official Accredited Assessor Course's Examination
- Conduct Internal Assessment (Topic Lead)
- Specialises in specific HS topic
- Lead Internal Assessment
- Become IRCA-certified Lead Auditor

3–4 years

3 Mastery Accredited Assessor

- Conduct Official Assessment (HSAP/HESG/HSS)
- Able to master all HS topics

> 4 years

Climate Action Mitigation

Advancing Carbon Sequestration Efforts at Batang Ai

The Batang Ai Dam is one of our largest projects that has generated positive ecological impacts to the local community. Since our collaboration with the Forest Department Sarawak (FDS) to initiate a forest landscape restoration at the site in 2021, we have sequestered 229,260kg of CO_2.

Objective
To restore vegetation on the degraded lands adjacent to the Batang Ai Dam, thereby enhancing the local environment and improving water catchment functions

Tree planting
Strategic cultivation of indigenous timber trees, fruit-bearing trees and non-timber forest species such as rattan. This selection was made in consultation with and at the request of the local community, ensuring that the reforestation efforts were aligned with local needs and preferences

Key Highlights

- Cultivated **6,000** indigenous tree species, including Belian, Gaharu, Engkabeng, Kapur and Meranti
- Preserved and rehabilitated over **6+ ha.** of forest
- Provided forestry training to **7 longhouse** communities
- Engaged more than **200 individuals** through restoration awareness campaigns
- Enhanced key **biodiversity and ecosystem** services through four targeted projects
- Educated over **100 youths** on environmental conservation

Sarawak Energy's Sustainability Strategy & Roadmap

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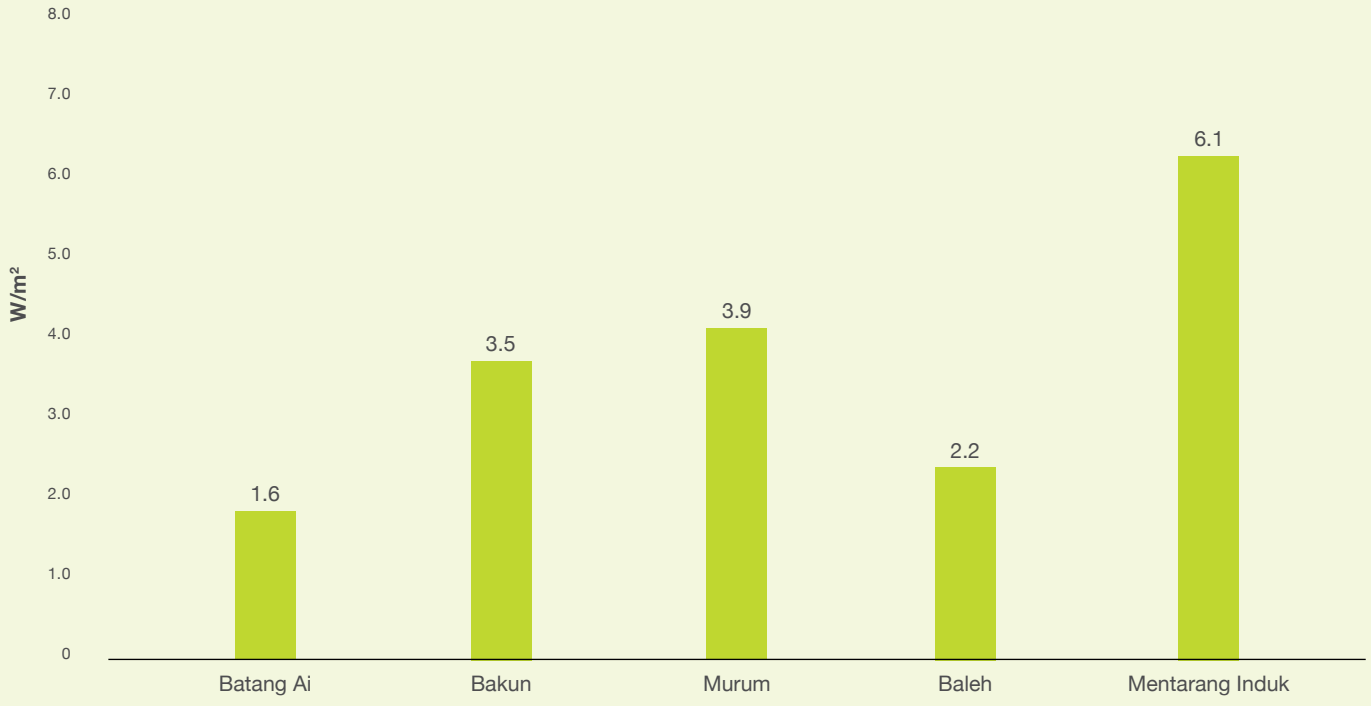
Measuring Carbon Outputs in Our Hydropower Projects

Power density serves as a key metric for emissions intensity. The correlation between power density and emissions intensity implies that projects exceeding 5 W/m² typically demonstrate emissions intensity levels below 100 gCO_2eq/kWh. To predict the net GHG emissions of reservoirs, we execute a meticulous evaluation, verification and documentation of each reservoir's carbon footprint. This procedure employs the G-res Tool, an online platform developed in collaboration with the IHA and UNESCO Chair for Global Environmental Change.

POWER DENSITY AT SARAWAK ENERGY'S HYDROPOWER PROJECTS

Hydro-power Project	G-res ID	Power Density (W/m^2)	Allocated Emissions Intensity (gCO_2eq/kWh)
Batang Ai HEP	3.02155	1.6	176.5
Bakun HEP	3.02158	3.5	39.9
Murum HEP	3.02157	3.9	29.4
Baleh HEP	3.112265	2.2	89.5
Mentarang Induk HEP[a]	3.02156	6.1	30.6



Notes:
The power density of a hydropower facility is its nameplate capacity divided by the surface area of its reservoir.
1. Power Density (W/m^2) – The ratio of installed capacity to total reservoir surface area.
2. Allocated Emissions Intensity (gCO_2eq/kWh) - The life cycle emission rate of greenhouse gases (CO_2 + CH_4) relative to the intensity of power production.

Sarawak Energy's Sustainability Strategy & Roadmap

Research on Bioremediation to Mitigate GHGs in Hydropower Reservoirs

The global concern over carbon footprint and GHG emissions from hydropower reservoirs has been a long-standing issue, and it is also evident in Sarawak Energy's operations. As a responsible organisation committed to global citizenship, Sarawak Energy's Limnology & Gases unit (Environmental Sciences Division, R&D) has been conducting extensive research to address this challenge. These long-term studies include in-house measurements and align with the Sustainable Development Goals (SDGs) and international best practices such as the Hydropower Sustainability Standard (HSS).

Our intensive studies, coupled with the use of the G-res Tool, have revealed that GHG emissions are released from hydropower reservoirs. This prompted our team to identify the need for active mitigation measures. Aligned with the company's commitment to the 1.5°C pathway and Malaysia's 2050 "Race to Zero" decarbonisation goal, we propose bioremediation as a proactive solution to this long-standing issue faced by Sarawak Energy.

On 20 June 2023, the Environmental Sciences Division (R&D) officially entered into a research agreement with Curtin University Malaysia for a project titled Bioremediation for Mitigation of Greenhouse Gases in Hydropower Reservoirs. This research involves developing a lab-scale prototype using bioremediation, a process driven by microorganisms, for the potential mitigation of GHG emissions in hydropower reservoirs.

All research activities are currently being conducted by the Environmental Sciences Division (R&D) and researchers from Curtin University Malaysia utilising the Sarawak Biovalley Pilot Plant (SBPP) for laboratory-scale studies.

Sarawak Energy-Curtin University Malaysia Research MoA Handover Ceremony.

Sarawak Energy's Sustainability Strategy & Roadmap

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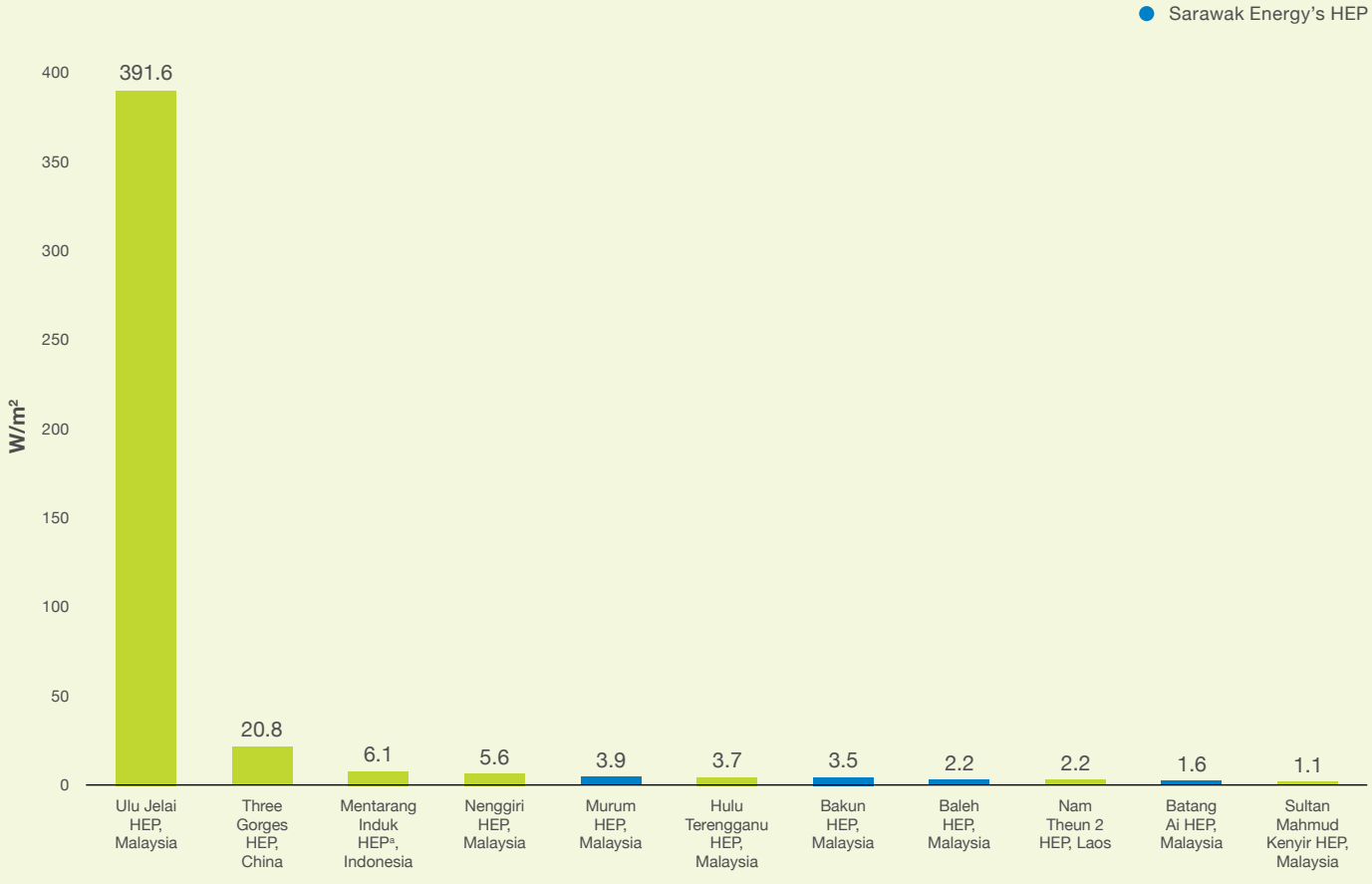
International Comparison of HEPs' Power Density (W/m²)

Hydro-power Project	Power Density (W/m²)
Ulu Jelai HEP, Malaysia	391.6
Three Gorges HEP, China	20.8
Mentarang Induk, Indonesia	6.1
Nenggiri HEP, Malaysia	5.6
Murum HEP, Malaysia	3.9
Hulu Terengganu HEP, Malaysia	3.7
Bakun HEP, Malaysia	3.5
Baleh HEP, Malaysia	2.2
Nam Theun 2 HEP, Laos	2.2
Batang Ai HEP, Malaysia	1.6
Sultan Mahmud Kenyir HEP, Malaysia	1.1



Note:

[a] *Mentarang Induk HEP is a joint venture project in Kalimantan Utara, Indonesia between Sarawak Energy & KPP Group.*

Sarawak Energy's Sustainability Strategy & Roadmap

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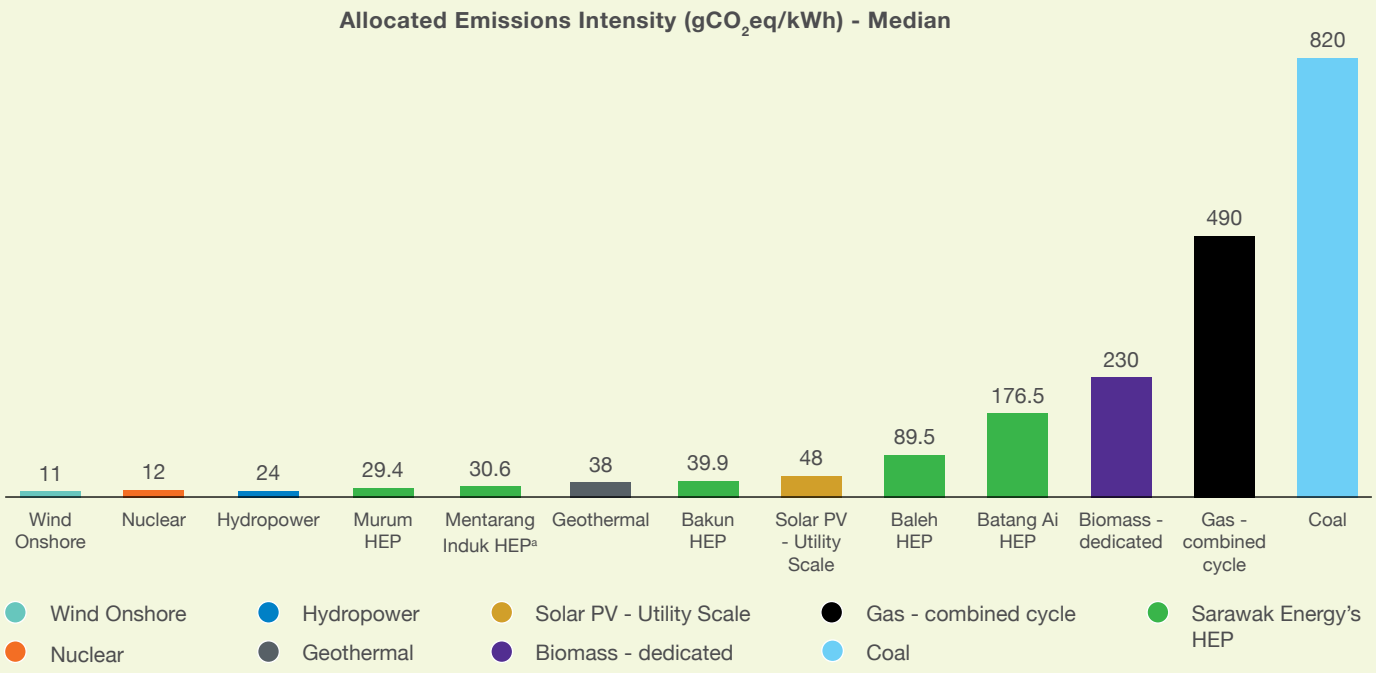
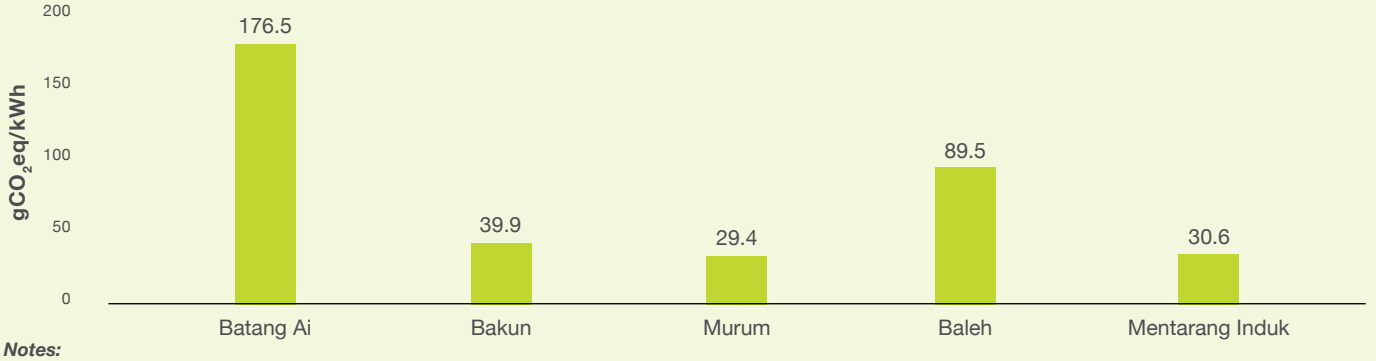
COMPARISON OF ALLOCATED EMISSIONS INTENSITY (gCO_2eq/kWh) BY TECHNOLOGIES – MEDIAN



Sarawak Energy's HEPs Allocated Emissions Intensity (gCO_2eq/kWh) - Project Life Cycles

Hydro-power Project	Allocated Emissions Intensity (gCO_2eq/kWh)
Batang Ai HEP	176.5
Bakun HEP	39.9
Murum HEP	29.4
Baleh HEP	89.5
Mentarang Induk HEP[a]	30.6



Notes:

1. *Source: Hydropower Criteria – Development of Eligibility Criteria for the Climate Bonds Standard & Certification Scheme; Hydro-Background-Paper-Mar 2021-release3(1).pdf (climatebonds.net).*
2. *Sources: IPCC (2014), IPCC Working Group III – Mitigation of Climate Change, Annex III: Technology – specific cost and performance parameters; IPCC Working Group III Mitigation of Climate Change, Annex II Metrics and Methodology.*
3. *Include albedo effect.*

[a] *Menterang Induk HEP is a joint venture project in Kalimantan Utara, Indonesia between Sarawak Energy & KPP Group.*

Sarawak Energy's Sustainability Strategy & Roadmap

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EMBARKING ON 1.5°C JOURNEY

We are committed to setting science-based emissions reduction targets across relevant scopes, in line with the Paris Agreement to pursue efforts to limit the global temperature increase to 1.5°C above pre-industrial levels by 2030. This underpins our commitment to the legally binding agreement adopted at the UN Framework Convention on Climate Change.

In 2023, Sarawak Energy became the first large corporation in Malaysia to receive the Science Based Target initiative (SBTi) validation and approval, confirming that our emissions reduction targets are consistent with the Paris Agreement's 1.5°C. This marked a significant milestone, as we lead Malaysia's industries and corporations towards Net Zero carbon emissions by 2050. It also underlines the increasing need to support the transition to a low-carbon economy with long-term goals to balance different interests with potential large-scale investments, as we race against time to limit global temperature rise.

2,079
Companies with approved targets (as of Nov 2023)

2,151
Companies with commitments to set targets

36,8 tn
USD market cap

Approved Science Based Targets initiative (SBTi)
We are the first large corporation in Malaysia to receive this validation and approval from SBTi

Sarawak Energy's Sustainability Strategy & Roadmap

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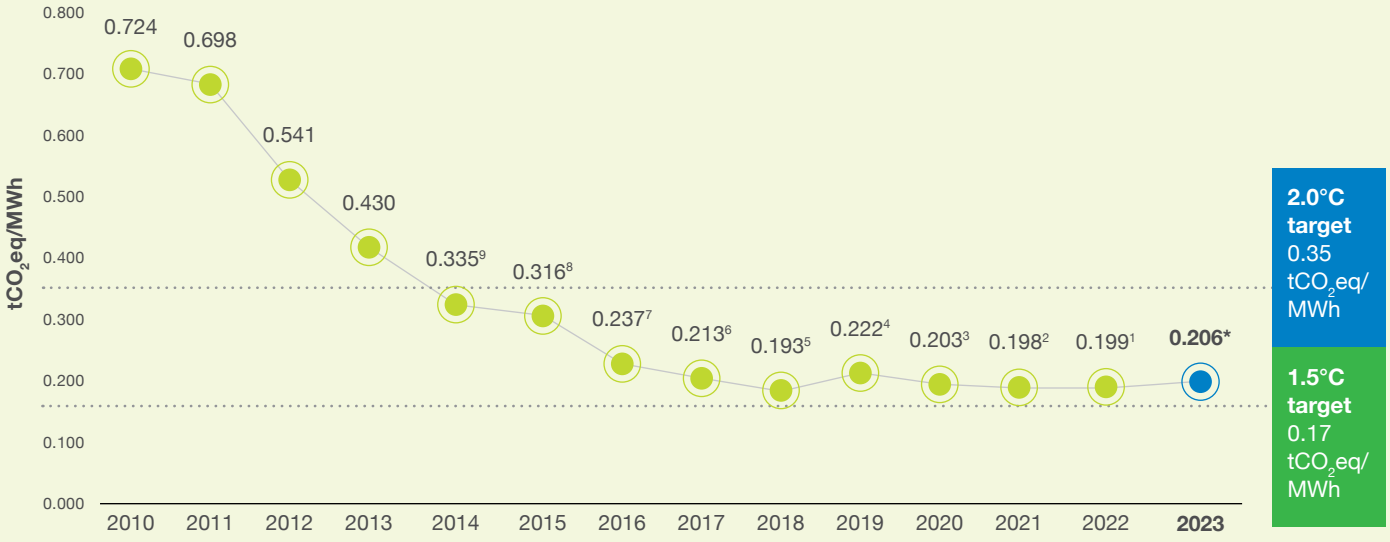
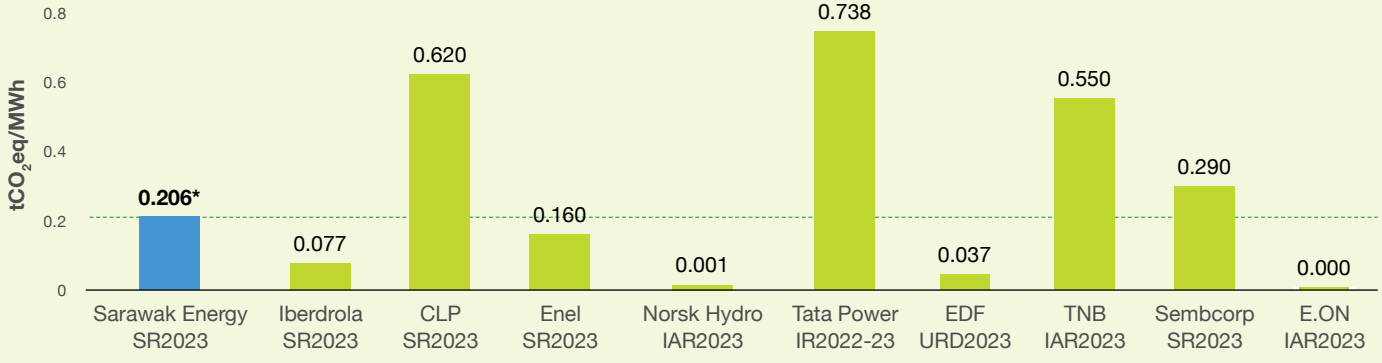
Since 2014, we have achieved 2°C for our Main Grid CO_2 emissions intensity. In 2023, we continued to maintain the emissions intensity within the 2°C and 1.5°C targets, in accordance with the Paris Agreement.

Main Grid CO_2 Emissions Intensity within the 2°C and 1.5°C Targets in Accordance with the Paris Agreement



International Comparison of CO_2 Emission Intensity for Power Utility Companies



Note:
Published Annual, Sustainability & Integrated Report 2023.

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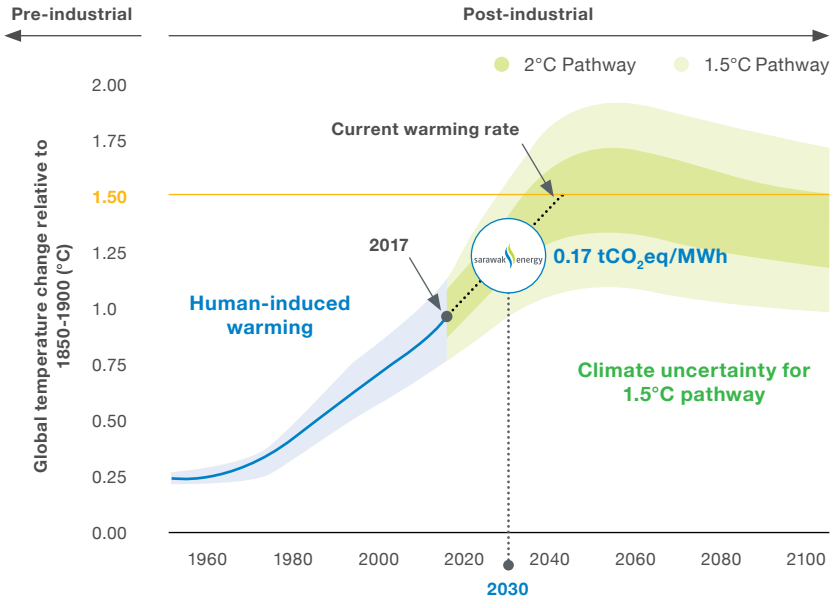
EMBARKING ON 1.5°C PATHWAY JOURNEY –

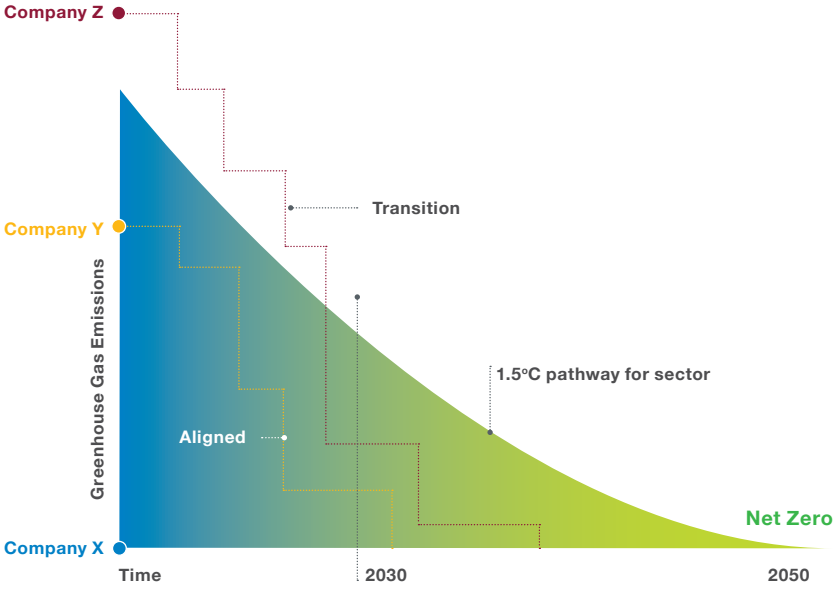
LIMITING GLOBAL WARMING TO 1.5°C ABOVE PRE-INDUSTRIAL LEVELS

Global Commitment – Paris Agreement



Source: *Climate Bond Initiatives https://www.climatebonds.net/climate-bonds-standard-v4*

Global Commitment level to Corporate Commitment Level



Source: *The Intergovernmental Panel on Climate Change (IPCC).*

GHG emissions have risen since the pre-industrial era, leading to global temperature increases

By 2017, human-induced warming caused a **1°C rise** in global average temperature.

Paris Agreement targets capping global temperature rise at **1.5°C**

Sarawak Energy aligns with the Paris Agreement by aiming to limit carbon intensity to **0.17 tCO_2eq/MWh** by 2030

Companies that commit to SBTi needs to set the target and is within the **1.5°C and Net Zero** pathway

Each company committed to SBTi will have their own specific targets

Sarawak Energy's Sustainability Strategy & Roadmap

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Workforce and Supply Chain

BUILDING A SUSTAINABLE SUPPLY CHAIN ECOSYSTEM

Sustainable supply chains are vital for contributing to world-wide efforts of limiting global temperature rise to 1.5°C above pre-industrial levels. At Sarawak Energy, we are committed to building a sustainable supply chain in our endeavour to reduce indirect Scope 3 GHG emissions. This is in line with the rising demand for sustainable supply chains, which are essential for accelerating the transition to a low-carbon economy.

In 2023, we rolled out two sustainability programmes for our vendors to enhance their sustainability performance and ensure more resilient and sustainable suppliers for Sarawak Energy. Local vendors, specifically in Kuching, Samarahan and Serian, were screened according to Construction Industry Development Board (CIDB) and Sarawak Energy Vendor Appraisal & Awards (SEVAA) grading before they were selected for the programmes to determine their readiness to adopt sustainable practices.

The programmes, ESG Start and Sustainable Supply Chain Movement, involved about 100 participants in 2023 and is elaborated in the following infographics:

ESG START

- A capacity building programme aimed at upgrading Small and Medium-sized Enterprises (SMEs) sustainability maturity level.
- Interactive and participatory, involving facilitator led sharing, case studies, practitioner sharing and tool-driven exercises.
- Participants discuss challenges and solutions, including exchange experiences and perspectives about sustainability in their respective organisations.

Objectives

i. To create awareness among vendors on embarking on sustainability journey.
ii. To elevate vendors' understanding on the future ESG requirements.
iii. To support Sarawak Energy's in achieving our 1.5°C Business Ambition by 2030.

Benefits to Suppliers

i. Facilitating the integration of sustainable process across the organisation in a scalable manner.
ii. Equipping SMEs with requisite knowledge, resources and tools to evaluate their existing sustainable performance.
iii. Mapping their future sustainable objectives with their business objectives.
iv. Providing SMEs with a Sustainability Action Plan, upon completion of the programme, to aid in adoption of sustainable practices in their respective organisations.

Key Result Areas

i. Sustainability Action Plan.
ii. Scope 1 and 2 Carbon Footprint Report.

Outcomes

2023 (1st Batch)

19 SMEs trained

12 completed the SME ESG Start Assessment

16 graduated and certified[a]

Note:

[a] *Submission of Sustainability Action Plan is required to be certified.*

Sarawak Energy's Sustainability Strategy & Roadmap

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SUSTAINABLE SUPPLY CHAIN MOVEMENT

- A collaboration between Sarawak Energy – UNGCMYB - ALLIANCE BANK – BURSA Malaysia to enable an ecosystem to incentivise Sarawak Energy's suppliers to transition towards decarbonisation pathways.
- Suppliers are provided with training from UNGCMYB on calculating GHG emissions and using Bursa Malaysia's ESG disclosure platform.
- Suppliers who complete the programme receive financial incentives such as loan discounts and other offerings from Alliance Bank.

Objectives

i. To reduce Scope 3 GHG emissions for Sarawak Energy by enabling and rewarding suppliers who adopt sustainability and improve their carbon footprint.
ii. To help Sarawak Energy's suppliers build business resilience and competitiveness via ESG improvements.

Benefits to Suppliers

i. Strengthening their relationship with Sarawak Energy through commitments to reducing emissions (thereby reducing Sarawak Energy's Scope 3 GHG emissions).
ii. Gaining access to financial incentives such as better rates, tax benefits and available grants.
iii. Reducing operational costs through use of renewable energy and improvement of energy efficiency.
iv. Boosting suppliers' ESG profiles amongst investors, providing them with a competitive edge in securing business deals in the future.

Value proposition

i. Better financing and deposit rates.
ii. Exclusive green solution offers.
iii. Training and advisory resources.

Key Result Areas

i. Financial incentives for Sarawak Energy's suppliers to disclose Scope 1 & Scope 2.
ii. Digital disclosure platform on Sarawak Energy's Scope 3 GHG emissions data.

Outcomes

2023 (1st Batch)

79[a]
SMEs attended the briefing session

38
completed SME PROGRESS Climate Assessment

Note:
[a] Number of individuals (not companies)

	Laggard	Beginner	Intermediate	Advanced	Leader	Total
ESG Start Assessment	2	3	4	2	1	12
PROGRESS Climate Assessment	12	14	9	2	1	38

Sarawak Energy's Sustainability Strategy & Roadmap

Climate Action

HARNESSING CLIMATE-RELATED OPPORTUNITIES

As a provider of energy services, our business faces considerable exposure to climate change effects such as floods and storms. These events have the potential to disrupt our power lines, generation facilities, and distribution systems, influencing our long-term financial performance. We strive to keep our stakeholders informed of our climate action and mitigation, including physical and transitional risks and opportunities, by adopting the globally recognised climate-related risks and opportunities standards.

In line with our commitment, we actively monitor the developments in the international ESG reporting standards. In June 2023, two new sustainability disclosure standards, IFRS S1[a] and IFRS S2[b], were released by the International Sustainability Standards Board (ISSB). These new standards are built on existing frameworks and incorporated with various leading initiatives such as the recommendations by the Task Force on Climate-related Financial Disclosures (TCFD), Integrated Reporting (IR), the Sustainability Accounting Standards Board (SASB) and the Climate Disclosure Standards Board (CDSB).

In response to the latest changes, Sarawak Energy is committed to transitioning to the adoption of International Financial Reporting Standards (IFRS) and has incorporated selected IFRS S2 climate-related disclosures into this year's reporting as we embark on the transitional journey. Our dedication to adopting the latest reporting disclosure standards reflects our commitment to further making sustainability a core part of our corporate strategy. This includes integrating risk and opportunity assessment process into our governance, as well as disclosing our strategies and metrics in relation to material sustainability issues.

Notes:

[a] *IFRS S1 covers General Requirements for Disclosure of Sustainability-related Financial Information.*

[b] *IFRS S2 covers Climate-related Disclosures.*

Sarawak Energy's Sustainability Strategy & Roadmap

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The International Financial Reporting Standards (IFRS) S2 Climate-Related Disclosures

This section serves as a tool to inform investors and stakeholders of our approach towards climate change and its impacts on our business. We adopt the four pillars of the IFRS S2, providing a consistent structure to facilitate analysis and disclosing transparent, reliable and consistent climate-related information to our stakeholders.

IFRS S2 Requirements	
Governance	**The objective of climate-related financial disclosures on governance is to enable users of general-purpose financial reports to understand the governance processes, controls and procedures an entity uses to monitor, manage and oversee climate-related risks and opportunities.** The Group Sustainability Committee (GSC) ensures that Sarawak Energy's disclosures on climate risks and opportunities are in line with the requirements of the IFRS S2.
Risk Management	**The objective of climate-related financial disclosures on risk management is to enable users of general-purpose financial reports to understand an entity's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management process** We have undertaken a climate scenario analysis encompassing five scenarios sourced from the World Bank's Climate Change Portal to identify and mitigate physical and transition risks
Strategy	**The objective of climate-related financial disclosures on strategy is to enable users of general-purpose financial reports to understand an entity's strategy for managing climate-related risks and opportunities** The foundation of our climate action strategy lies in a five-pronged approach, addressing key areas aimed at minimising and mitigating climate-related risks across our operational framework
Metrics and Targets	**The objective of climate-related financial disclosures on metrics and targets is to enable users of general-purpose financial reports to understand an entity's performance in relation to its climate-related risks and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation** Our approach to carbon emission management includes monitoring and reporting on Scope 1, Scope 2, and Scope 3 GHG emissions according to global reporting standards. Sectoral Decarbonisation Approach (SDA) trajectory of the Science Based Targets initiative (SBTi) tool is used - This helps Sarawak Energy to monitor and ensure the Company remains on course with its validated and approved science-based GHG emissions reduction targets.

Sarawak Energy's Sustainability Strategy & Roadmap

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Governance

In 2023, Sarawak Energy strengthened its governance and oversight of sustainability by establishing a Group Sustainability Committee (GSC), which succeeds the CSR Steering Committee. Going forward, we target to establish a Board Sustainability Committee (BSC) by the end of 2024. BSC's Terms of Reference (ToR) has been approved by the Board, and GSC's ToR was approved by the GCEO, underlining our commitment to sustainability governance.

Board Sustainability Committee

The BSC's role is crucial in setting Sarawak Energy's overarching sustainability direction, strategy and roadmap. The BSC has oversight on the management's execution of Sustainability Strategy, Roadmap and Plan.

Group Sustainability Committee (GSC)

The GSC is responsible for ensuring a proper and effective implementation of Sarawak Energy's Strategy, Roadmap and Plan.

Terms of Reference

The BSC & GSC ensure that:

- Sustainability strategy and plan of the Company support long-term value creation with a proper implementation action plan;
- Sustainability consideration and requirements have been properly embedded into Sarawak Energy's business and decision-making process;
- Proper monitoring and measurement (end to end) from strategy to the implementation phase has been properly developed, implemented, and monitored;
- Ongoing and emerging sustainability issues, risks, and opportunities relevant to the Company are well-understood and managed through a strategic and holistic approach; and
- The Company remains resilient and is able to maintain the confidence of its stakeholders.

Responsibilities

- Govern and set the Company's strategic direction and objectives for sustainability, and ensure that they are aligned with the corporate strategy and vision;
- Exercise oversight on management's implementation of sustainability strategies, standards, initiatives and plans;
- Oversee sustainability performance of the Company to meet established objectives;
- Review the effectiveness and adequacy of the sustainability-related frameworks & policies;
- Monitor sustainability targets and Key Performance Indicators of the Company and their implementation;
- Advise the Board of Directors on matters pertaining to sustainability; and
- Acts as a guiding body to enhance sustainability practices and performance throughout the organisation.

- Set the Company's sustainability targets and Key Performance Indicators (KPIs);
- Review, challenge and approve sustainability-related corporate strategy and roadmap, corporate planning and direction, and disclosures, and monitor their performance and effective execution;
- Monitor and assess management processes and planning, and ensure its compliance with sustainability best practices; and
- Advise the Group Executive Committee on matters pertaining to sustainability.throughout the organisation.

To demonstrate our commitment towards Sarawak Energy's sustainability agenda, we have established a comprehensive Sustainability Strategy and Roadmap and incorporated them into our Key Performance Index (KPI). We remain steadfast in our efforts to deepening the integration of sustainability across Sarawak Energy's business units and corporate functions through integrated inter-departmental relationships that are in harmony with our business priorities, striving to achieve our corporate goals. Refer to Sarawak Energy's Sustainability Strategy & Roadmap on pages 120 to 121.

Sarawak Energy's Sustainability Strategy & Roadmap

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Upholding Sarawak Energy's Sustainable Hydropower

- Benchmarking our internal practices/processes against global best practices and processes
- Enhancing the adoption of HSAP practices at project and corporate levels
- Enhancing the technical capabilities of Sarawak Energy's Internal Assessment Team
- Identifying areas for future improvement
- Sustaining our efforts to embed sustainability practices
- Developing hydropower sustainability proficiencies
- Preparing projects for official assessment

SARAWAK ENERGY INTERNAL HYDROPOWER SUSTAINABILITY STANDARD (HSS) GOVERNANCE STRUCTURE

Sarawak Energy's Sustainability Strategy & Roadmap

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ROLES AND RESPONSIBILITIES

HSS SPONSOR
HEAD OF CORPORATE SERVICES

- Act as a sponsor for proposals in relation to the internal and official assessment programme, including assessment for certification, and embedding process
- Provide support in getting necessary resources for the whole internal and official assessment programmes
- Provide inputs on the effectiveness of the HSAP/HESG/HSS assessment system to top management

HSS FOCAL POINT OF CONTACT
HEAD OF SUSTAINABILITY

- Define audit objectives, scope, and criteria
- Conduct an assessment and plan for the HSAP/HESG/HSS internal and official assessments needs & programmes including budget requirement
- Monitor and review the effectiveness of the assessment programmes for continuous improvement
- Ensure the internal assessment meets the HSAP/HESG/HSS principles and requirements
- Authorise responsibility for the internal and official assessment programmes
- Develop, review and implement the competence development plan for the whole internal IHA assessment team
- Sign off the internal assessment findings and improvement opportunities before presenting them to top management

LEAD ASSESSORS (CERTIFIED ASSESSORS)
VARIOUS DEPARTMENTS

- Lead the internal assessment processes (e.g. evidence preparation, assessment team, assessment plan)
- Lead the opening and closing meeting of the assessment and preparation of the assessment reports
- Act as a reference point to other internal assessors
- Manage and prepare for the internal assessment exercise
- Oversee the systematic, independent, and documented process for obtaining evidence and evaluating it objectively to determine the extent of conformity
- Keep appropriate assessment records to monitor and review the specific assessment programme
- Provide advisory support on areas related to embedding hydropower sustainability best practices
- Provide support for an official assessment (HSAP/HESG/HSS assessments)

INTERNAL ASSESSORS (PROVISIONALLY ACCREDITED ASSESSORS/CERTIFIED USERS)
VARIOUS DEPARTMENTS

- Carry out internal assessment according to tasks assigned by lead assessor
- Systematically and independently review documents and processes to obtain assessment evidence and evaluate it objectively to determine the extent of conformity
- Follow auditing approaches in conducting the assessment
- Prepare internal assessment reports
- Verifies conformity to requirements and identifies improvement opportunity on specific topic
- Provide advisory support on areas related to embedding hydropower sustainability best practices
- Provide support for an official assessment (HSAP/HESG/HSS assessments)

Sarawak Energy's Sustainability Strategy & Roadmap

3-3

Navigating Climate Risks and Embracing Opportunities

Rising global temperatures and precipitation levels can lead to extreme weather events, which may disrupt our operations and pose various challenges to our stakeholders. To adapt to climate change, we remain committed to seizing the opportunities presented by climate change and keeping our stakeholders informed of our climate action.

Risks	**Impact of climate change on power generation (hydropower & thermal)**	**Impact of climate change on power infrastructure (transmission & distribution)**	**Impact of climate change on power delivery**	**Financial impact of climate change**

Opportunities

- Clear approach and planning towards GHG reduction, mitigation and adaptation
- Fostering the adoption of low-carbon technology (technical & policy)
- Increasing the adoption of disruptive technologies
- Improving the resilience of electricity infrastructure
- Increasing the integration of other renewable energy sources with hydrowpower
- Increasing other green generation
- GHG mitigation and adaption beyond the power sector

Table 1: *High-level Strategic Risks and Opportunities Arising from Climate Change.*

Sarawak Energy's Sustainability Strategy & Roadmap

3-3

Strategy

Climate Action Strategy

Our approach is driven by a comprehensive strategy encompassing five key areas across our operations aimed at mitigating and minimising climate-related risks as we transition to renewable energy and work towards a low-carbon economy. The primary goal of our climate action strategy is to mitigate risks stemming from the physical impacts of climate change, including rising temperatures, shifts in weather patterns, and the heightened frequency and severity of extreme weather events.

Strategy	Key Areas
Developing a holistic approach and plan towards GHG mitigation and adaptation for the power sector in Sarawak	• GHG mitigation and adaptation for the power sector in Sarawak
Exploring other renewable energy sources	• Integration of other renewable energy sources (renewable and variable renewable energy) • Small- and large-scale green hydrogen production • Innovative energy extraction for future energy resources (renewable and alternative energy)
Developing an integrated approach in improving resilience of power generation to climate change	• Statewide flood modelling – adaptation to climate change • Catchment Management – adaptation to climate change for hydropower and water resources • Greenhouse gas (GHG) emissions' measurement from large-scale hydropower reservoirs • Improving the accuracy and method of GHG emissions' estimation
Assessment and planning on disruptive technology in enhancing the adoption of low-carbon technology	• Integration of disruptive technology • Guidelines and policies on interconnection within the distributed resources into the local system • Establishing energy efficiency and energy management
Supporting climate action beyond the power sector that is aligned with energy sector directions	• Enhancing the energy sector's role in the adoption of low-carbon/smart/green city framework and circular economy • Conservation and protection of catchment/operation areas via integrated catchment management and carbon sequestration

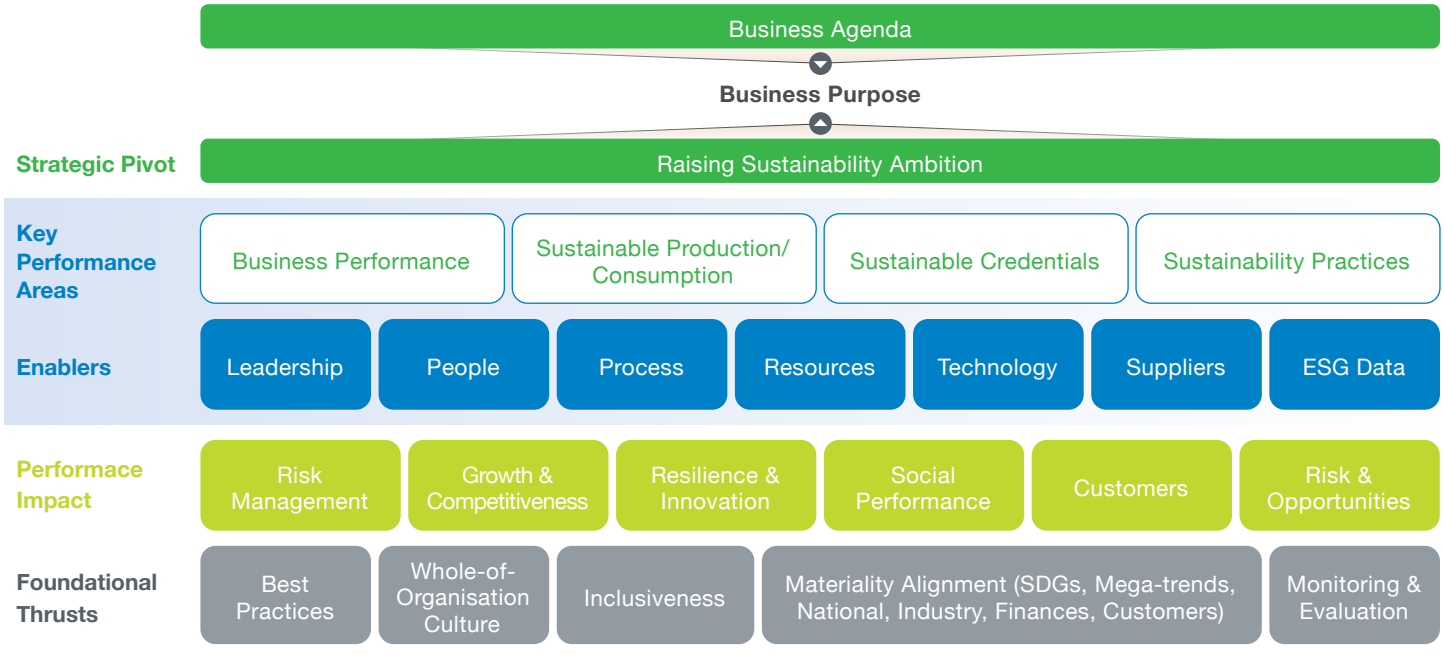
Sarawak Energy's Sustainability Strategy & Roadmap

Sarawak Energy's Sustainability Performance and Climate Change – Internal and External Factors

We adopt a holistic strategy in risk mitigation, which considers both internal and external factors. This includes meticulously identifying and evaluating the strategic impact of ESG issues on our business and stakeholders, covering both emerging internal and external ESG risks and opportunities as we pursue our strategic and business objectives.

Sarawak Energy's Sustainability Strategy Framework

To fulfil our sustainability agenda, we base our actions on a framework centred around a sustainability strategy, emphasising four primary focus areas and supported by seven key enablers.



Sarawak Energy's Sustainability Strategy & Roadmap

Risk Management

Climate Action Strategy

To enhance our climate resilience, we conducted a climate scenario analysis in 2021. Utilising data from the World Bank's Climate Change Knowledge Portal, the analysis covered five climate scenarios projecting mean temperatures and average precipitation levels over five probable conditions and time periods (short and medium-short term). The findings from the analysis indicated potential increases in average air temperature and rainfall in Sarawak from 2021 to 2030. Additionally, the projections suggested rising maximum sea levels, which could heighten the risk of floods. The 2021 analysis also anticipated periods of dry spells in Sarawak from 2045 to 2055[a].

Parameter	Observed (1970 - 2000)	Projected for 2030	Projected for 2050
Average Annual Temperature	24.8 - 26.2°C	25.6 - 26.8°C (0.6 to 0.8°C increase)	26.4 - 27.5°C (1.3 to 1.6°C increase)
Average Annual Rainfall	3,551 - 3,907mm	3,597 - 4,144mm (1 to 6% increase)	3,574 - 4,124mm (1 to 5% increase)
Parameter	**Observed Rate (1993 - 2010)**	**Projected for 2030**	**Projected for 2050**
Sea Level Rise	3.82 - 5.11mm/year	0.04 - 0.12m	0.15 - 0.22m

Table:
Observed and Projected Climate Change and Sea Level Rise in Sarawak.

Note:
[a] *Source: Malaysia Third National Communication and Second Biennial Update Report to the UNFCCC.*

The data from our projections depicts the variability and distribution of the most likely projected changes in the climate system associated with the current selection of Shared Socioeconomic Pathways (SSPs). The SSPs aim to inform future climate conditions by examining distinct emissions, mitigation strategies, and developmental trajectories.

Period		2020-2039				2040-2059			
Scenario	**Historical (Reference Period: 1995-2014)**	**SSP1-2.6**	**SSP2-4.5**	**SSP3-7.0**	**SSP5-8.5**	**SSP1-2.6**	**SSP2-4.5**	**SSP3-7.0**	**SSP5-8.5**
Mean Temp. (°C)	25.81	26.37	26.39	26.34	26.48	26.64	26.87	26.98	27.31
Average Largest 1-Day Precipitation (mm)	48.35	51.44	50.98	50.46	51.5	52.43	53.67	53.49	54.69
Average Largest 5-day Cumulative Rainfall (mm)	131.3	137.2	137.18	139.63	137.82	139.98	141.5	141.16	144.99

Table:
Projected Sarawak Climate Scenario 2020 – 2059.

Notes:
1. *Source: Sarawak Climate Scenario Based on World Bank Climate Change Knowledge Portal (WBCCKP).*
2. *Data presented is Coupled Model Intercomparison Project 6 (CMIP6), derived from the Sixth phase of the CMIPs. The CMIPs form the data foundation of the IPCC Assessment Reports. CMIP6 supports the IPCC's Sixth Assessment Report.*
3. *Projection data is presented as multi-model ensembles which represent the range and distribution of the most plausible projected outcomes of change in the climate system for a selected Shared Socioeconomic Pathways (SSPs).*
4. *Shared Socioeconomic Pathways (SSPs) are meant to provide insight into future climates based on defined emissions, mitigation efforts, and development paths.*

Sarawak Energy's Sustainability Strategy & Roadmap

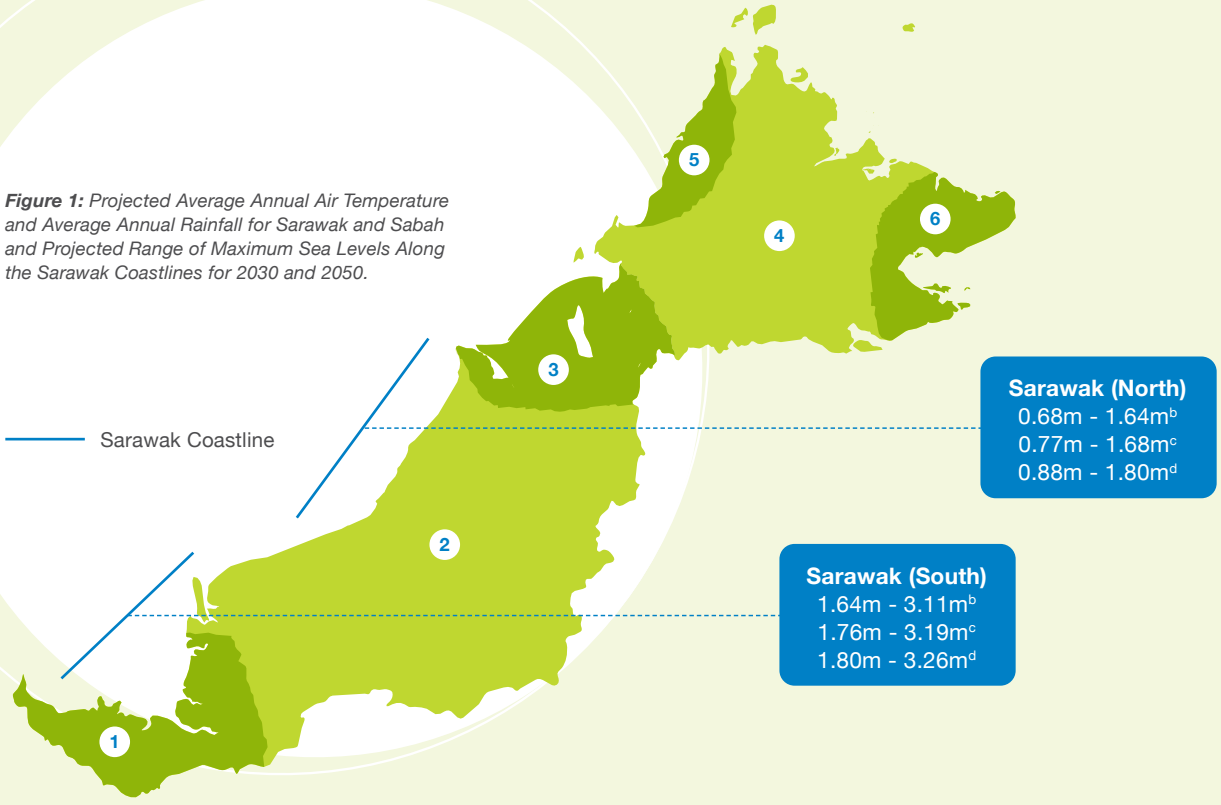


Figure 1: *Projected Average Annual Air Temperature and Average Annual Rainfall for Sarawak and Sabah and Projected Range of Maximum Sea Levels Along the Sarawak Coastlines for 2030 and 2050.*

1 Southern Sarawak
Average Annual Air Temperature: 26.2°C[a]
2030: 26.8°C (+2.6%)
2050: 27.5°C (+5.3%)
Average Annual Rainfall: 3,907mm[a]
2030: 4,144mm (+61%)
2050: 4,124mm (5.5%)

2 Central Sarawak
Average Annual Air Temperature: 24.8°C[a]
2030: 25.6°C (+3.4%)
2050: 26.4°C (+6.3%)
Average Annual Rainfall: 3,551mm[a]
2030: 3,597mm (+1.3%)
2050: 3,578mm (+0.8%)

3 Northern Sarawak
Average Annual Air Temperature: 25.3°C[a]
2030: 26.1°C (+3.1%)
2050: 26.9°C (+6.0%)
Average Annual Rainfall: 3,538mm[a]
2030: 3,628mm (+2.6%)
2050: 3,574mm (+1.0%)

4 Central Sabah
Average Annual Air Temperature: 24.3°C[a]
2030: 25.3°C (+4.3%)
2050: 25.7°C (+6.0%)
Average Annual Rainfall: 2,264mm[a]
2030: 2,338mm (+3.3%)
2050: 2,284mm (+0.9%)

5 West Coast Sabah
Average Annual Air Temperature: 26.0°C[a]
2030: 26.5°C (+1.9%)
2050: 26.9°C (+3.5%)
Average Annual Rainfall: 3,532mm[a1]
2030: 3,392mm (-3.9%)
2050: 3,549mm (+0.5%)

6 East Coast Sabah
Average Annual Air Temperature: 26.1°C[a]
2030: 26.9°C (+3.1%)
2050: 27.4°C (+5.0%)
Average Annual Rainfall: 2,320 mm[a]
2030: 2,434mm (+4.9%)
2050: 2,375mm (+2.3%)

Notes:
[a] *Historical data (average annual air temperature & average annual rainfall: year 1970 - 2000).*
[b] *Current (year 2016) sea level;* [c] *year 2030 sea level;* [d] *year 2050 sea level.*
Source: Malaysia's Third National Communication and Second Biennial Update Report to the UNFCCC.

Sarawak Energy's Sustainability Strategy & Roadmap

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TRANSITION – RISKS & OPPORTUNITIES

Timescale: Short to Medium Term (1-5 years)

Type of Risks: Transition Risks

Strategy Response

Risks and Opportunities	Planning and Response
Corporate • Enhancing carbon inventory (Scope 1, 2, 3)[a] for better access to relevant data in managing climate-related risks for effectively measuring and evaluating climate-related risks • Quantifying the climate change impact risks • Enhancing carbon emissions reporting, structure and governance of climate-related risks and climate-related financial disclosures • Renewable energy incentives • Access to new financing platforms • Regulatory and policy frameworks to drive climate-related initiatives • Stringent legal/market requirements on climate change (cost of carbon) • Cost to transition to low-carbon technology **Generation** **Hydropower & Thermal Generation (Development & Operation)** • Embedding climate change risks in hydropower development at design stage • Understanding and quantifying the risks of climate change • Clear & practical approach and planning towards mitigation of and adaptation to climate risks • Technology advancement – efficiency improvement • Other Renewable Energy Sources **Other Renewable Energy Sources** • Integration of other renewable energy sources with hydropower generation • Aligning with global, national and state goals and targets in GHG emissions reduction **Transmission & Distribution** • Assessment of climate change risks in hydropower development at design stage • Climate change impacts on electricity infrastructure and delivery	**Better assessment, reporting and governance of climate change risks** • Detached from non-renewable generation sources • Integrated approach in improving the resilience of electricity assets and infrastructure to climate change risks (including upstream resources) • Holistic and consolidated approach to investment in energy efficiency improvement and adoption of low-carbon technology that is aligned with longer-term emissions reduction initiatives • Resilience of electricity delivery system via efficient, smart & flexible system infrastructure • Advancement in development of flexible system infrastructure as platform for integrating other new renewable energy capacity • Advocating best practices in managing climate risks - ahead of the regulatory frameworks • Meeting the growing expectations of stakeholders (e.g. shareholders, financial institutions, customers and general public)

Table 4:
Climate-Related Transition Risks & Opportunities and Impacts on Business Strategy and Financial Planning.

Note:
[a] *Guided by International Financial Reporting Standards (IFRS) and Science Based Targets initiative (SBTi) standards & requirements.*

Sarawak Energy's Sustainability Strategy & Roadmap

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PHYSICAL – RISKS & OPPORTUNITIES

Timescale: Long Term (>5 years)	Type of Risks: Physical Risks

Strategy Response	
Risks and Opportunities	**Planning and Response**
Corporate • Stringent legal/market requirements on climate change (cost of carbon) **Generation** • Extreme weather events impacting generation assets • Extreme weather events impacting hydropower generation • Rising sea levels impacting power assets and infrastructure • Rising mean temperatures impacting plant efficiency & reliability **Transmission & Distribution** • Extreme weather events impacting electricity delivery, system reliability and efficiency • Rising mean temperatures impacting the power delivery efficiency	• Improving the resilience of electricity assets, infrastructure and upstream resources • Increasing the resilience of electricity delivery system to climate change • Integrating other new renewable energy capacity • Detailed climate modelling studies to assess vulnerability of specific resilience improvement plans • Enhancing demand side management to better understand changes in demand patterns • Establishing a clear linkage between financial planning and carbon intensity • Establishing solid governance of climate change issues • Climate change as one of the core elements in corporate planning

Table 5:
Climate-Related Physical Risks & Opportunities and Strategic Response.

Metrics And Targets

Our management of carbon emissions involves meticulous monitoring of relevant disclosures and metrics. We demonstrate our commitment to transparency by disclosing the Scope 1, Scope 2, and Scope 3 of our GHG emissions, adhering to global standards. Since 2022, we have achieved the 2°C target outlined in the Paris Agreement. Sarawak Energy remains committed to promoting the energy transition and meeting the goals set to achieve our 1.5°C business ambition. Up until 2023, significant investments include:

RM 6.8 billion*
allocated to renewable energy, aimed at delivering 3,355MW of renewable installed capacity by the end of 2023.

RM 3.2 billion*
dedicated to networks, grid extension, grid interconnection, and system reliability improvements.

RM 99 million*
invested in EV chargers, the Sejingkat microalgae cultivation facility, and a hydrogen pilot plant.

Sarawak Energy's Sustainability Strategy & Roadmap

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Category - Greenhouse Gas Emissions

Absolute Scope 1, Scope 2, and Scope 3 GHG Emissions (tCO_2eq)

Scope 1 Emissions	Unit	2021	2022	2023
Main Grid	tCO_2eq	5,976,874.06[2]	6,483,137.99[1]	**7,083,870.39***
Northern Grid	tCO_2eq	100,595.84[2]	104,238.93[1]	**126,725.74***
Stand-alone Grid	tCO_2eq	8,818.18[2]	9,958.58[1]	**7,109.53***
Company-owned Vehicle	tCO_2eq	3,766.89	2,112.89[1]	**2,025.50***
SUM	tCO_2eq	**6,090,054.97**	**6,599,448.39[1]**	**7,219,731.17***

Note:
Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.

Scope 2 Emission	Unit	2021	2022	2023
Building Electricity Consumption (Offices & Substations)	tCO_2eq	11,991.48[2]	12,809.41[1]	**13,635.19***

Note:
Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.

Scope 3 Emission	Unit	2021	2022	2023
Business Air Travel	tCO_2	252.41[2]	1,922.01[1]	**3,866.82***

SEB's relevant Scope 3 category based on SBTi

Upstream categories

Category 1: Purchased goods and services
Category 2: Capital goods
Category 3: Fuel - and energy-related activities (not included in Scope 1 or Scope 2)
Category 4: Upstream transportation and distribution
Category 5: Waste generated in operations
Category 6: Business travel
Category 7: Employee commuting

Downstream categories

Category 9 : Downstream transportation and distribution
Category 11 : Use of sold products
Category 15 : Investments

Sarawak Energy's Sustainability Strategy & Roadmap

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Scope 3 Categories	Unit	2020	2021	2022	2023
Category 1: Purchased goods and services	tCO_2eq	51,017.84	62,439.76	73,843.71	**71,412.68**
Category 2: Capital goods	tCO_2eq	211,373.65	243,456.29	232,293.51	**256,077.68**
Category 3: Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	tCO_2eq	1,391,123.18	1,491,236.75	1,638,047.91	**1,735,100.15**
Category 4: Upstream transportation and distribution	tCO_2eq	The upstream transportation and distribution are included in Category 3			
Category 5: Waste generated in operations	tCO_2eq	6.59	13.61	8.70	**9.27**
Category 6: Business air travel	tCO_2eq	565.13[3]	252.42[2]	1,922.01[1]	**3,866.82***
Category 7: Employee commuting	tCO_2eq	2,113.84	2,137,801.86	2,175,121.07	**4,015,870.00**
Category 9: Downstream transportation and distribution	tCO_2eq	Data has been calculated in Scope 1			
Category 11: Use of sold products	tCO_2eq	-	172,423.70	156,993.33	**-**
Category 15: Investments	tCO_2eq	Investment to JV company - no emission yet as the project is at early stage			

Note:
Measurement of Scope 3 emissions for categories 1, 2, 3, 4, 5, 7, 9, 11 & 15 began in the year 2020, with 2021 serving as baseline data for SBTi validation.

SF_6 consumption (Tonne)

Category	2021	2022	2023
Generation Level	17.63	17.63	**17.63**
Transmission Level	43.52	44.35	**48.24**
Distribution Level	13.92	14.45	**14.48**
Total	**75.07**	**76.43**	**80.35**

Cost of fuel (RM)

Category	2021	2022	2023
	Cost of Fuel (RM)	Cost of Fuel (RM)	Cost of Fuel (RM)
Main Grid (Thermal & Hydro)	1,405,313,739	1,689,161,675	**1,808,427,491**
Northern Grid (Thermal & Hydro)	84,519,368	156,714,589	**159,039,468**
Stand-Alone Grid (Thermal)	8,562,663	16,220,429	**11,901,249**
Company Owned Vehicles - Diesel & Petrol Fuel	507,732.66	3,503,585.07	**3,279,796.29**

Sarawak Energy's Sustainability Strategy & Roadmap

201-2, 305-4, 3-3

Scope 1 & Scope 2 intensity (tCO_2eq/MWh)

Scope 1 Emission Intensity	Unit	2021	2022	2023
Normalised by Gross Energy	tCO_2eq/MWh	0.196	0.197	**0.204**
Normalised by Net Energy	tCO_2eq/MWh	0.201	0.201	**0.208**

Scope 2 Emission Intensity	Unit	2021	2022	2023
Normalised by Gross Energy	tCO_2eq/MWh	0.000387	0.000382	**0.000385**
Normalised by Net Energy	tCO_2eq/MWh	0.000395	0.000391	**0.000394**

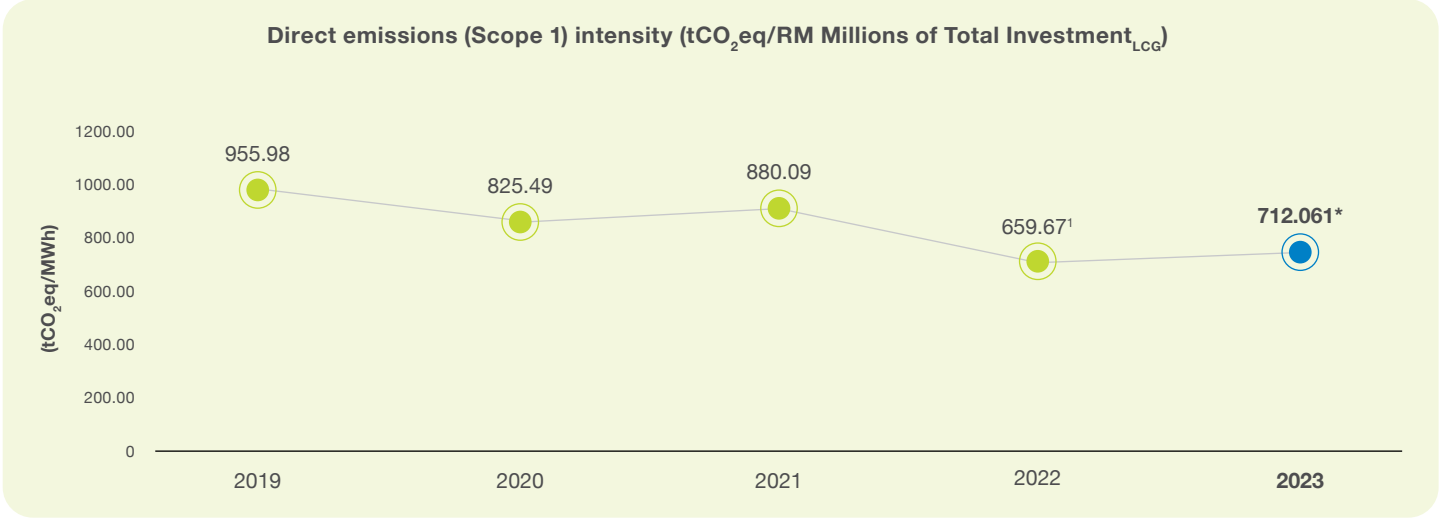
Direct emissions (Scope 1) Intensity (tCO_2eq/RM Millions of Revenue)

Year	Total tCO_2eq Emissions (Scope 1)	Revenue (RM Million)	Direct Emissions (Scope 1) Intensity (tCO_2eq/RM Million)	Unit
2022	6,599,448.39[1]	6,964.87	947.53[1]	tCO_2eq/RM Millions of Revenue
2023	**7,219,731.17***	**7,147.20**	**1,010.15***	**tCO_2eq/RM Millions of Revenue**

Note:
Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.

Direct emissions (Scope 1) intensity (tCO_2eq/RM Millions of Total Investment$_{LCG}$)

Year	Total tCO_2eq Emissions (Scope 1)	Total Investment$_{LCG}$ (RM Million)	Direct emissions (Scope 1) intensity (tCO_2eq/RM Millions of Total Investment$_{LCG}$)	Unit
2022	6,599,448.39[1]	10,004.17[1]	659.67[1]	tCO_2eq/RM Millions of Revenue
2023	**7,219,731.17***	**10,139.17***	**712.06***	**tCO_2eq/RM Millions of Revenue**



Notes:
1. *Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.*
2. *$_{LCG}$ Low-Carbon Generation.*

Sarawak Energy's Sustainability Strategy & Roadmap

2-19, 201-2, (Former EU8), 3-3

Category – Transition Risks

Amount and extent/percentage of assets or business activities vulnerable to climate-related transition risks

Percent of revenue from coal mining

	2021	2022	2023
Revenues (RM Million)	6,152.60	7,060.80	**7,324.40**
Sales of Coal (RM Million)	18.89	18.24	**-**
Sales of Coal/Revenue (%)	0.31	0.26	**-**

Category – Climate-related Opportunities

Proportion of revenue, assets, or other business activities aligned with climate-related opportunities

Number of (1) zero-emissions vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold

Electric Car
5

Electric Scooter
19

Hydrogen SUV
2

Renewable Energy Generation Intensity (RM Millions of Electricity Sales Revenue$_{ES}$/MWh)

Scope 1 Emission Intensity	Unit	2019	2020	2021	2022	2023
Renewable energy generation intensity	Millions of Revenues from Electricity Sales (RM) $_{ES}$/MWh	0.00026	0.00026	0.00026	0.00029[1]	**0.00028***

Notes:

1. *Revenue from products or services that support the transition to a low-carbon economy (Hydropower).*
2. *$_{ES}$ Electricity Sales.*
3. *Year 2014 – Murum HEP commissioned.*
4. *Year 2015 – Lundu PS commissioned.*
5. *Year 2017 – Bakun HEP acquired from the Ministry of Finance.*

Category - Capital Deployment

Amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities

Annual capital invested in R&D for low-carbon products/services

Category	2019	2020	2021	2022	2023
Investment in R&D of low-carbon products/ service over Revenue (%)	0.06	0.12	0.13	0.08	**0.13**

Category - Remuneration

Proportion of executive management remuneration linked to climate considerations

- The remuneration for the board of directors of government-linked companies is recommended and approved by the board of directors and shareholders, respectively subject to the limits set by the Majlis Mesyuarat Kerajaan Negeri. Any revision to the remuneration requires the approval of the Majlis Mesyuarat Kerajaan Negeri.
- Corporate Sustainability Strategy & Roadmap has been approved and was part of Sarawak Energy's corporate KPI in 2022 entailing the following five (5) key themes: Sustainability Leadership Sustainability Growth Business Resilience Climate Action Workforce and Supply Chain.

Sarawak Energy's Sustainability Strategy & Roadmap

301-1, 306-3, 3-3

INPUT

FUEL CONSUMPTION

	COAL	NATURAL GAS	DIESEL
2021	2,940,286.82 Tonne[2]	32,806,349.50 MMBtu[2]	26,313,382.07 Litres[2]
2022	3,087,236.06 Tonne[1]	42,464,815.69 MMBtu[1]	27,887,522.36 Litres[1]
2023	**3,210,032.55 Tonne***	**47,502,815.02 MMBtu***	**29,023,942.56 Litres***

FUEL CONSUMPTION INTENSITY

	COAL	NATURAL GAS	DIESEL	TOTAL
2021	1,566.85 MJ/MWh	1,115.95 MJ/MWh	75.13 MJ/MWh	2,757.92 MJ/MWh
2022	1,524.41 MJ/MWh	1,336.91 MJ/MWh	72.64 MJ/MWh	2,933.96 MJ/MWh
2023	**1,478.16 MJ/MWh**	**1,414.69 MJ/MWh**	**82.44 MJ/MWh**	**2,975.29 MJ/MWh**

WATER WITHDRAWAL INTENSITY BY SOURCE

	MUNICIPAL WATER WITHDRAWAL INTENSITY	SEA WATER OR OTHER NATURAL WATER SOURCE WITHDRAWAL INTENSITY
2021	0.08 m^3/MWh	33.10 m^3/MWh
2022	0.08 m^3/MWh	37.11 m^3/MWh
2023	**0.08 m^3/MWh**	**32.69 m^3/MWh**

WATER REGULATED INTENSITY FOR HYDROPOWER

	WATER VOLUME REGULATED BY HYDROPOWER PLANTS FOR ELECTRICITY GENERATION
2021	2,274.27 m^3/MWh
2022	2,246.65 m^3/MWh
2023	**2,260.64 m^3/MWh**

SCHEDULED WASTE GENERATION

Category	Unit	2021	2022	2023
Fly Ash	Tonne	152,605.28	158,790.28	**157,163.64**
Bottom Ash	Tonne	243,874.85	288,116.33	**285,832.79**
Others (Used Oil, Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	Tonne	653.06	420.96	**440.27**
TOTAL	**Tonne**	**397,133.19**	**447,327.57**	**443,436.70**

Sarawak Energy's Sustainability Strategy & Roadmap

305-1, 305-2, 305-3, 305-4, EU2

II

OUTPUT

Scope 1 Emissions	Unit	2021	2022	2023
Main Grid	tCO_2eq	5,976,874.06[2]	6,483,137.99[1]	**7,083,870.39***
Northern Grid	tCO_2eq	100,595.84[2]	104,238.93[1]	**126,725.74***
Stand-alone Grid	tCO_2eq	8,818.18[2]	9,958.58[1]	**7,109.53***
Company-owned Vehicle	tCO_2eq	3,766.89	2,112.89[1]	**2,025.50***
TOTAL	tCO_2eq	**6,090,054.97**	**6,599,448.39[1]**	**7,219,731.17***

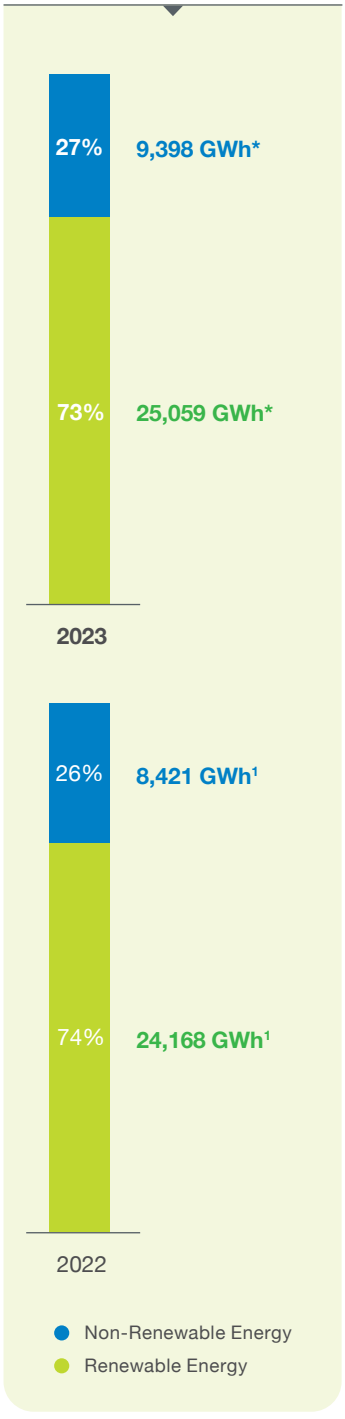
Scope 2 Emission	Unit	2021	2022	2023
Building Electricity Consumption (Offices & Substations)	tCO_2eq	11,991.48[2]	12,809.42[1]	**13,635.19***

Scope 3 Emission	Unit	2021	2022	2023
Business Air Travel	tCO_2	252.42[2]	1,922.01[1]	**3,866.82***

Scope 1 and Scope 2 Emission Intensity	Unit	2021	2022	2023
Scope 1 Emission Intensity (normalised by gross energy)	tCO_2eq/MWh	0.196	0.197	**0.204**
Scope 1 Emission Intensity (normalised by net energy)	tCO_2eq/MWh	0.201	0.201	**0.208**
Scope 2 Emission Intensity (normalised by gross energy)	tCO_2eq/MWh	0.000387	0.000382	**0.000385**
Scope 2 Emission Intensity (normalised by net energy)	tCO_2eq/MWh	0.000395	0.000391	**0.000394**

Scheduled Waste Generation Intensity				
Type of Waste	**Unit**	**2021**	**2022**	**2023**
Fly Ash	t/GWh	5.20	5.08	**4.94**
Bottom Ash	t/GWh	8.31	9.22	**8.98**
Others (Used Oil, Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	t/GWh	0.02	0.01	**0.01**
Total Scheduled Waste Generation Intensity	t/GWh	13.54[2]	14.32[1]	**13.93***

GENERATION MIX



Sarawak Energy's Sustainability Strategy & Roadmap

305-1, 305-2, 305-3, 305-4, 3-3

The Science Based Targets Initiative (SBTi)

Setting the Pace for 1.5°C Pathway

Sarawak Energy is dedicated to setting science-based emission reduction targets that align with the goals of the Paris Agreement. Our aim is to contribute to global efforts to limit the temperature increase to 1.5°C above pre-industrial levels by 2030. In 2023, Sarawak Energy was the first large corporation in Malaysia to receive the science-based targets validation and approval from SBTi that our emissions reduction targets are consistent with the Paris Agreement's 1.5°C target. This milestone serves as a compelling call to other businesses in Malaysia to aim for achieving Net Zero carbon emissions by 2050. As we urgently pursue this ambitious goal, meticulous long-term planning, strategic coordination to harmonise diverse interests, and substantial investments to facilitate the transition will be crucially important.

1.5°C TARGETS

In 2023, we have already achieved

2°C

as committed under Paris agreement.

Our Main Grid CO_2eq emission intensity is within the

2°C and 1.5°C

targets in accordance with Paris Agreement

Moving forward, we aim to achieve the

1.5°C

targets

Setting Science-Based Climate Targets – SBTi Tool

The trajectory of Sarawak Energy's carbon intensity reduction aligns closely with its current business plan and long-term decarbonisation strategy. As part of this commitment, we also commit to significantly reducing our Scope 1 and Scope 2 GHG emissions from power generation by 80.3% per tCO_2eq per MWh by 2030. This reduction equates to lowering grid emission intensity to 0.17 tCO_2eq/MWh against the baseline year of 2020. Additionally, we are committed to decreasing absolute Scope 3 GHG emissions from the use of sold products by 42%, equivalent to 100,006 tCO_2eq by 2030, compared to 2021 baseline year.

To guide our decarbonisation efforts, we employ the Sectoral Decarbonisation Approach (SDA) trajectory provided by the SBTi tool. This approach ensures transparency and facilitates a clear comparison, enabling us to remain steadfast on our path towards our decarbonisation goals.

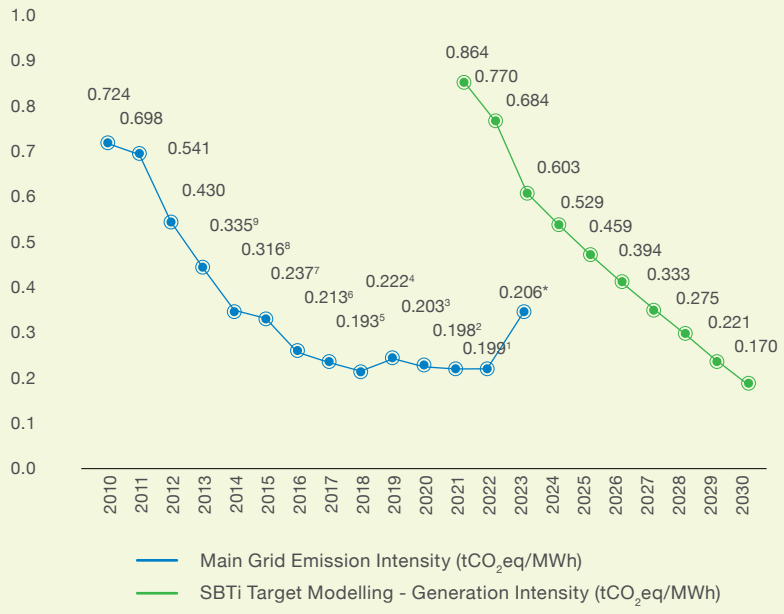
Sarawak Energy's Sustainability Strategy & Roadmap

305-1, 305-2, 305-3, 305-4, 3-3

I

WHERE WE ARE?

MAIN GRID EMISSION INTENSITY VS SBTi TARGET MODELLING (tCO_2eq/MWh)



Sarawak Energy has committed to reduce Scope 1 and 2 GHG emissions from power generation by 80.3% per tCO_2eq per MWh (0.17 tCO_2eq/MWh) by 2030 since 2020 via:

Scope 1 and 2 GHG emissions from power generation by 80.3% per tCO_2eq per MWh (0.17 tCO_2eq/MWh) by 2030 since 2020 via:

- Increasing renewable energy share in term of capacity and generation mix
- Diversifying our renewable energy resources
- Ensuring energy efficiency in our operations
- Adoption of low carbon technology
- Responsible production and consumption
- Decarbonisation of the supply and demand sides

Sarawak Energy has also committed to a 42% reduction in absolute Scope 3 GHG emissions from the use of sold products (Category 11) by 2030 since 2021 by:

- Reduction on use of sold products
- Reducing carbon emission in our value chain

II

HOW MUCH EMISSIONS TO BE REDUCED?
(ABSOLUTE & INTENSITY)

TARGETS APPROVED AND COMMITTED BY YEAR 2030

0.17

tCO_2eq/MWh

(emission intensity)

or

80.3%

(absolute emission) Reduction

In Scope 1 and 2 GHG emissions by 2030 since 2020

42%

reduction

in absolute Scope 3 GHG emissions from the use of sold products (Category 11) by 2030 since 2021

Sarawak Energy's Sustainability Strategy & Roadmap

2-6, 2-24, 3-3

III

HOW WE ARE GOING TO ACHIEVE THE 1.5°C TARGET

KEY ACTION PLANS TOWARD 1.5°C SCIENCE-BASED TARGETS

Governance

- Climate requirements embedded into our policy, procedure, planning, investment decision & operation
- Incentive to enable the adoption of low carbon technology
- Capacity development - workforce & supply chain

Carbon Offset

- Exploring offset mechanism (CCUS)
- Developing nature-based supply side

Use of Product Sold

- Reduce sale of coal

Planning Generation
- Low carbon generation technology
- RE capacity and generation mix

Operation Efficiency-Generation
- RE availability
- Digitalisation and automation
- Energy efficiency (e.g, energy audit, retrofitting, improve heat rate etc.)
- Advance process control Co-firing (with RE)
- Condition based monitoring
- Optimising RE

Build Environment
- Low carbon design
- Adoption low carbon technology

Responsible Production/ Consumption
- Circularity
- Green procurement
- Decarbonisation of Sarawak Energy value chain

Operation Efficiency - Transmission
- Transmission technical & non-technical losses
- Improvement of SAIDI/SAIFI
- Digitalisation and automation
- Fleet management

Adoption of Low Carbon Technology
- Smart grid
- Superconductor
- Efficient equipment
- Infrastructure preparedness

Build Environment
- Low carbon design
- Adoption low carbon technology

Responsible Production/ Consumption
- Circularity
- Green procurement
- Decarbonisation of Sarawak Energy value chain

Operation Efficiency - Distribution
- Distribution technical & non-technical losses
- Improvement of SAIDI/SAIFI
- Digitalisation and automation
- Fleet management

Adoption of Low Carbon Technology
- Smart grid
- Efficient equipment
- Distributed generation
- Infrastructure preparedness

Build Environment
- Low carbon design
- Adoption low carbon technology

Responsible Production/ Consumption
- Circularity
- Green procurement
- Decarbonisation of Sarawak Energy value chain

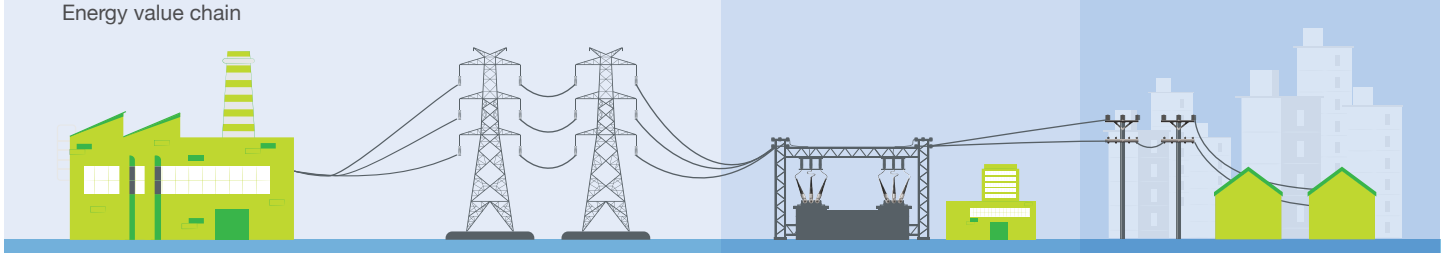
Operation - Retail & Value Chain
- Digitalisation and automation
- Fleet management

Workforce
- Behavioral change and sustainability culture
- Access to low carbon technology/mobility

Penetration of Low Carbon Technology
- Digitalisation

Responsible Production/ Consumption
- Green procurement
- Decarbonisation of Sarawak Energy value chain

Circularity in demand side
- Access to RE technology
- Distributed generation
- Penetration of low carbon technology
- Energy efficiency

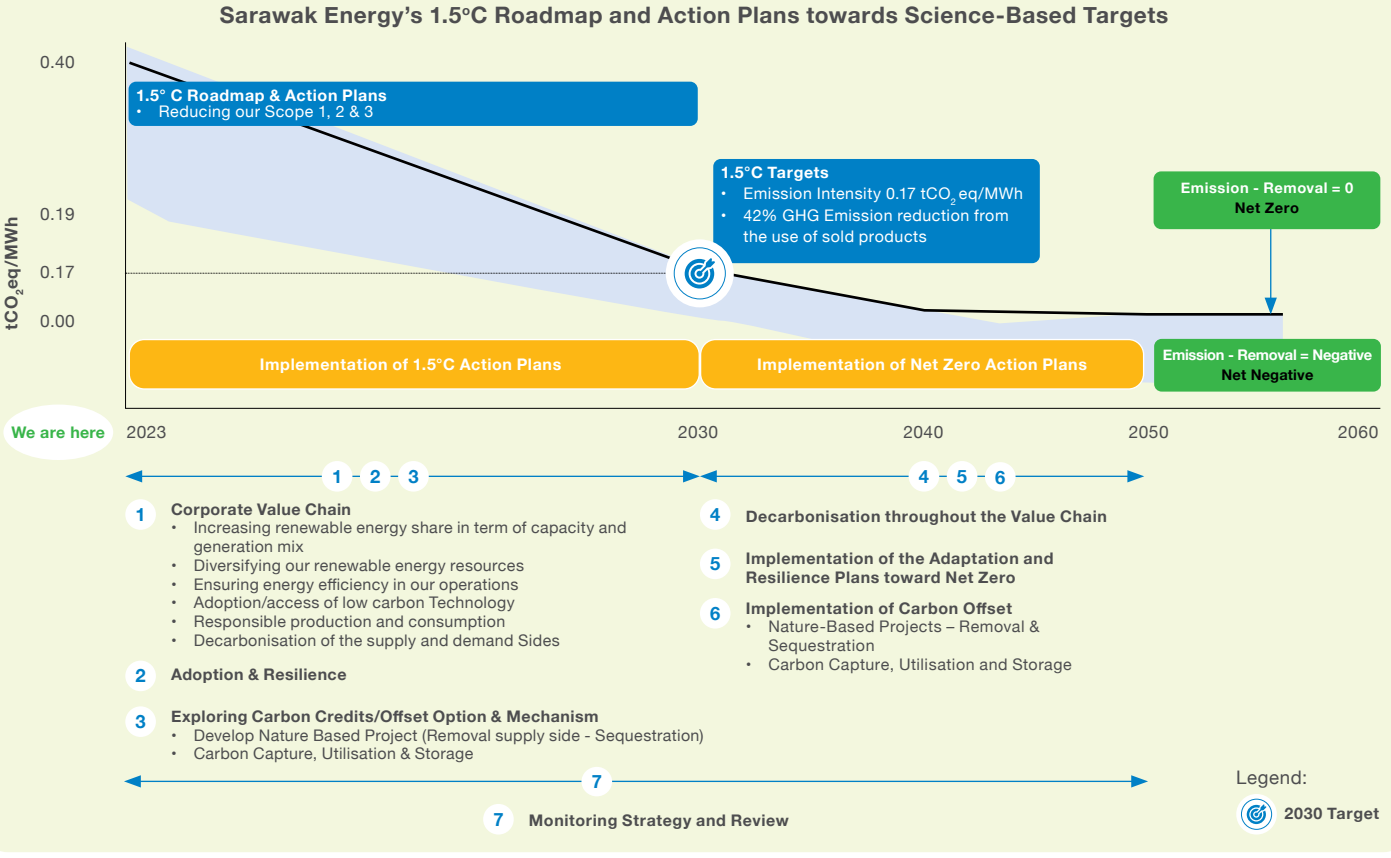


GENERATION | TRANSMISSION | DISTRIBUTION | SUPPLY

Scope 1 | Scope 2 | Scope 3

Sarawak Energy's Sustainability Strategy & Roadmap

2-24, 305-4, 3-3



Sarawak Energy's Emission Intensity vs SBTi Targets (2020-2023)

In 2023, Sarawak Energy continued to meet its Science-Based Targets aligned with the 1.5°C pathway.

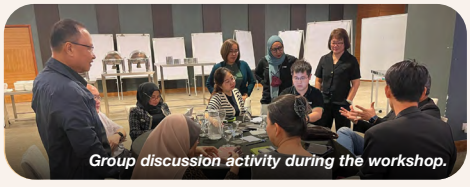
Year	Sarawak Energy Emission Intensity	SBTi Target Emission Intensity	% Difference (Sarawak Energy vs SBTi Targets)
2020	0.208[3]	0.864	122% lower
2021	0.198[2]	0.770	118% lower
2022	0.199[1]	0.684	110% lower
2023	**0.206***	**0.529**	**88% lower**

Sarawak Energy's 1.5°C Business Ambition Roadmap and Action Plans Development Workshop

In May and June of 2023, Sarawak Energy conducted a comprehensive corporate-wide workshop aimed at developing a structured, integrated, and holistic 1.5°C Business Ambition Roadmap and Action Plans. This pivotal event brought together over 200 employees, including members of the Group Executive Committee (GEC), GEC-1, and middle management, representing 16 departments.

During the workshop, participants engaged in several critical activities related to climate action. They assessed the current carbon footprint of the power utility, meticulously identifying key sources of emissions and gaining a profound understanding of the specific challenges within the relevant operations. Armed with this baseline understanding, the roadmap was drafted to outline targeted actions and milestones. These initiatives are designed to guide Sarawak Energy in its transition towards a low-carbon and sustainable energy model, underscoring the company's commitment to environmental stewardship and proactive climate action.

The workshop was facilitated by Mr. Faroze Nadar, Executive Director of the United Nations of Global Compact Malaysia & Brunei (UNGCMYB).



Group discussion activity during the workshop.

Sarawak Energy's Sustainability Strategy & Roadmap

305-1, 305-2, 305-3, 305-4, EU2, 3-3

Providing Decarbonisation Value Beyond Sarawak

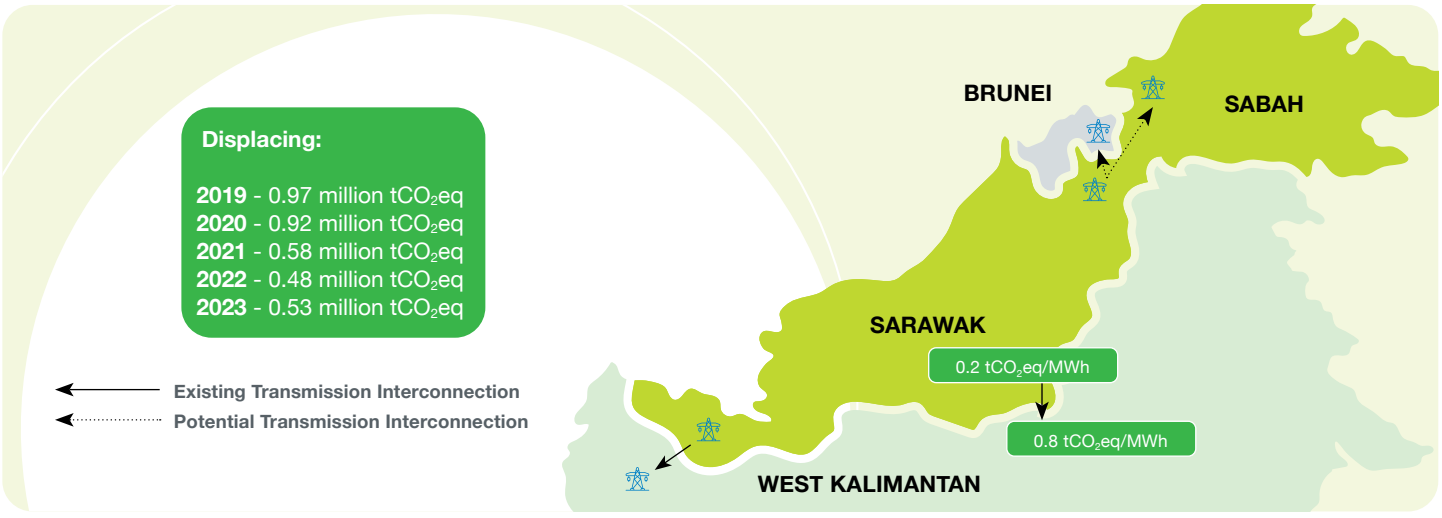
In our efforts to reduce carbon emissions across diverse sectors of our environment, economy and society, we are dedicated to mitigating global warming and achieving a sustainable, low-carbon future. Our commitment extends beyond Sarawak as we contribute to the global initiative to limit temperature rise to 1.5°C.

To lead the industry in sustainability and renewable energy, Sarawak Energy's electricity generation mix includes hydro, coal, gas and diesel, serving the economic needs of our customers in Malaysia and Indonesia. In 2023, renewable energy mix from hydropower had risen to 73%, a significant increase from 17% in 2011. This highlights our focus on meeting energy demands with clean hydropower, contrasting with fossil fuels like coal, gas and diesel. During the year, electricity sales increased slightly to 33,011 GWh (6% up from 31,278 GWh in 2022), reflecting our commitment to meeting customer demand.

Our journey in decarbonisation began with the construction of the Sarawak-West Kalimantan Interconnection in 2016, linking the Mambong 275 kV substation in Sarawak to the Bengkayang 275 kV substation in West Kalimantan. As of 2023, we have exported a total of 9,166 GWh of energy to West Kalimantan, offsetting 5.43 million tCO_2eq, equivalent to sequestering carbon in 15,295 hectares of tropical forest.

Sarawak Energy's Generation Mix (2011 vs 2023)

Source	2011 (GWh)	%	2023 (GWh)	%
Hydro	1,248	16.51%	**25,059***	**72.73%**
Coal	3,067	40.58%	**3,953***	**11.47%**
Gas	3,170	41.94%	**5,429***	**15.76%**
Diesel	73.48	0.97%	**15***	**0.04%**
Total	**7,558**	**100.00%**	**34,456***	**100.00%**



Note:
West Kalimantan grid – using conservative estimation based on diesel emission factor of 0.8 tCO_2eq/MWh (IPCC 2016).

Furthermore, as part of our commitment to minimise our carbon footprint, we have intensified our initiatives to decrease emissions across Scopes 1, 2 and 3.

Scope 1 Emissions

Main, Northern, Stand-alone Grids and Company-owned Vehicles

7,219,731.17 tCO_2eq*

Scope 2 Emissions

Buildings and Offices

13,635.19 tCO_2eq*

Scope 3 Emissions

Business Air Travel

3,866.82 tCO_2*

Notes:
1. *Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.*
[a] *Scope 3 emissions – Business air travel is calculated using ICAO Carbon Emissions Calculator as on 16 May 2024.*

Sarawak Energy and the Economy

201-1, 3-3

Operating Costs Ratio

35.94%

Renewable Energy Generated

25,059 GWh*

Economic Value Distributed

RM4,739.40 Million

Achieving Sustainable Economic Growth for Sarawak and the Region.

Sarawak Energy maintains a steadfast commitment to environmentally friendly business practices, harnessing renewable sources to ensure clean and reliable electricity for the state and region. Our proactive approach and robust capabilities in fostering sustainable economic activities across our supply chain empower both the state and its residents to maximise the advantages derived from these initiatives.

Charting a Sustainable Course for Sarawak

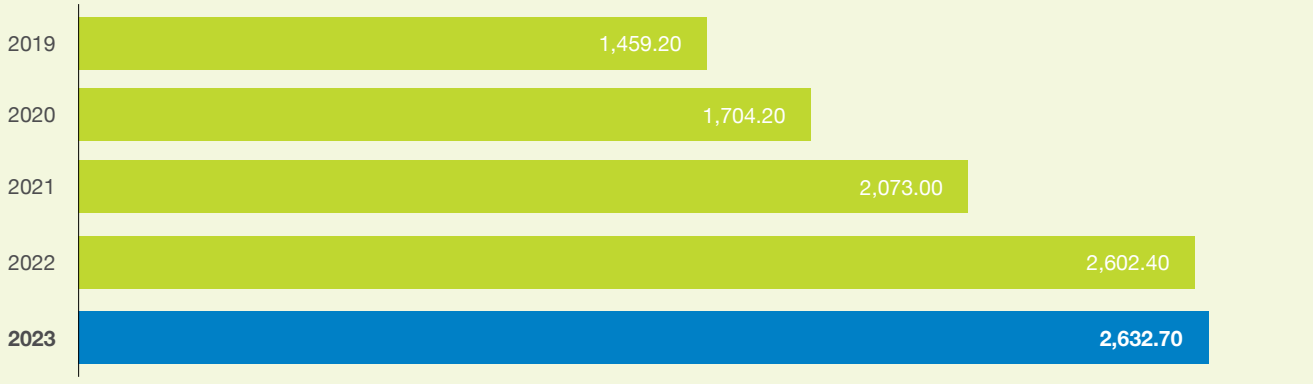
During the year under review, Sarawak Energy distributed RM4.73 billion through operating costs, employee remuneration, interest payments and taxes. This led to an economic value retained of RM2.59 billion*, slightly lower from RM2.64 billion[1] in 2022.

Sarawak Energy and the Economy

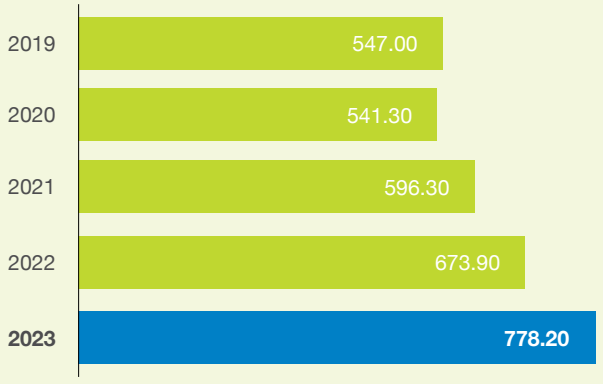
201-1

ECONOMIC VALUE DISTRIBUTED

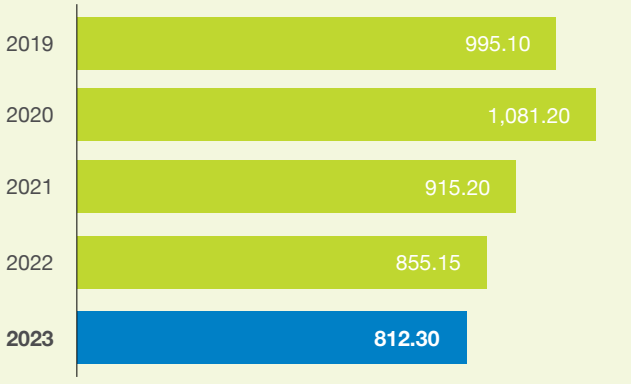
Operating Costs *(RM Million)*



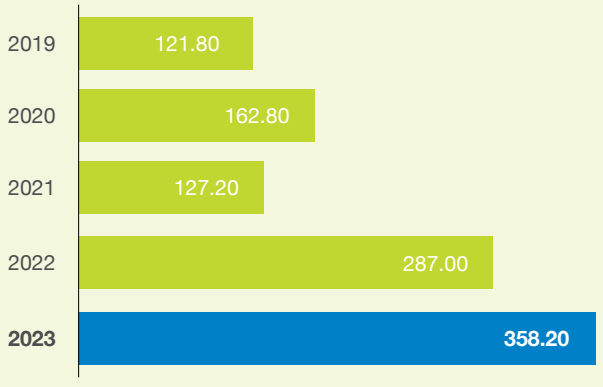
Employee Remuneration *(RM Million)*



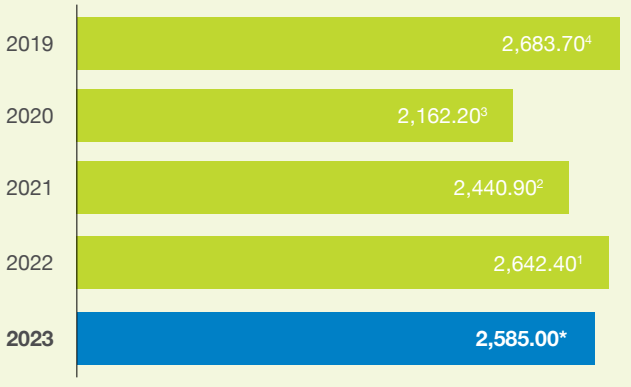
Payments to Capital providers - Interest Paid *(RM Million)*



Payments to the Government - Income Taxes Paid (Net of Refunds) *(RM Million)*



Economic Value Retained *(RM Million)*



Sarawak Energy and the Economy

Electricity Sales
(GWh)
+5.54%
From 2022

Net Profit Margin Ratio
-52.26%
From 2022

Operating Costs Ratio
35.94%

Operating Costs
(RM)
+1.16%
From 2022

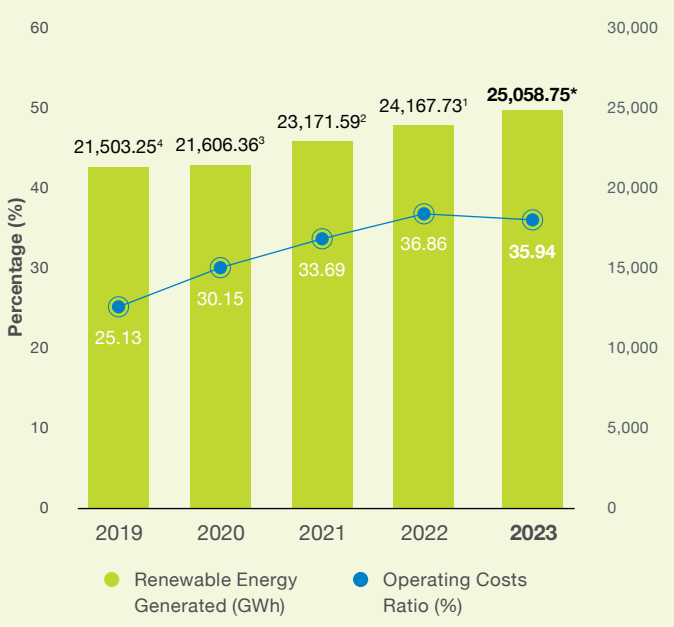
Electricity Sales (RM) Per Sarawak GDP[a]
4%

Electricity Consumption Per Capita
+4.17%
From 2022

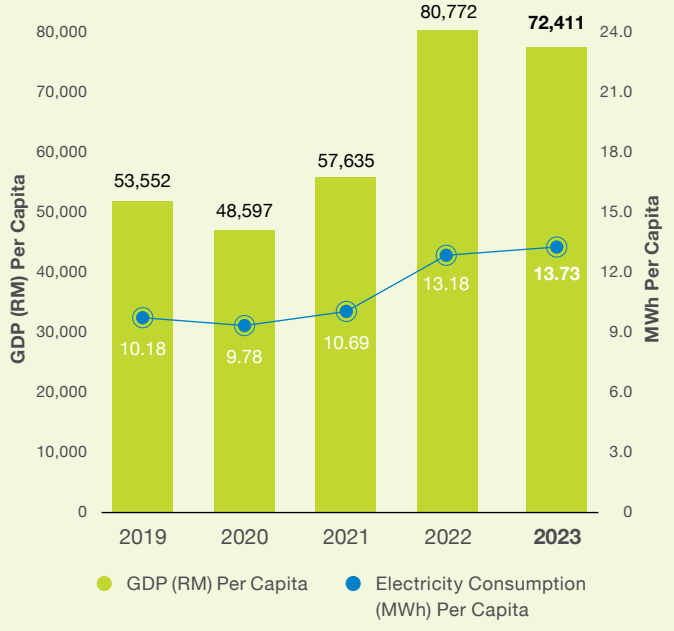
Total Electricity Sales
(GWh)
33,011

Note:
[a] *GDP for State of Sarawak in 2023 is based on current prices.*

Renewable Energy Generated vs Operating Costs Ratio 2019-2023



Electricity Intensity – Electricity Consumption Per Sarawak GDP 2019-2023



Electricity Sales (GWh)

By Customer Type	2019	2020	2021	2022	2023
Domestic	2,401	2,620	2,867	2,916	**3,099**
Commercial	2,768	2,584	2,620	2,973	**3,199**
Industrial	2,297	2,329	2,298	2,656	**3,029**
Public Lighting	104	109	109	113	**117**
Bulk Customers	19,620	18,569	20,696	22,620	**23,567**
Total Electricity Sales	27,190	26,211	28,590	31,278	**33,011**

Sarawak Energy and the Economy

204-1, EU10, 3-3

Forecasted Demand to Increase to ~5,000MW by 2025

Committed Demand (MW)	2019	2020	2021	2022	2023
Organic Customers	1,426	1,440	1,523	1,647	**1,726**
Bulk Customers (incl. export)	2,424	2,478	2,880	2,894	**3,000**
Total Committed Demand (MW)	3,850	3,918	4,403	4,541	**4,726**

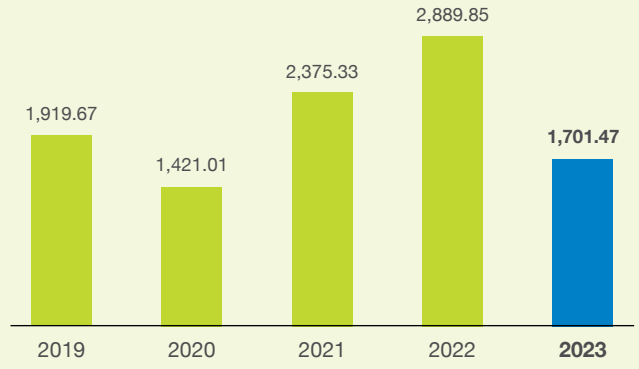
Malaysian vs International *(RM Million)*

Status	2019	2020	2021	2022	2023
Malaysian	1,568	1,265	1,818	2,511	**1,470**
International	352	156	557	379	**231**
Overall Total	1,920	1,421	2,375	2,890	**1,701**

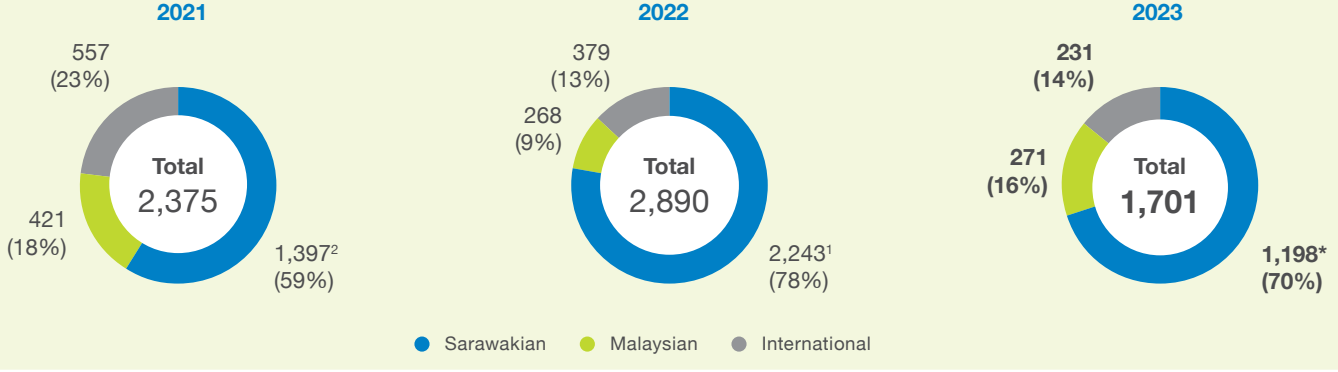
Fostering Local Economic Growth Through Strategic Partnerships

Sarawak Energy is dedicated to catalysing sustainable development in Sarawak by actively facilitating investor attraction and bolstering local businesses. As the primary energy provider for Sarawak, we consistently nurture relationships with State's vendors and enterprises to streamline operations and enhance connectivity. In 2023, we awarded the majority of our projects to Sarawakian and Malaysian (non-Sarawakian) entities, valued at RM1,470 million. Sarawakian firms demonstrated strong performance, securing 70% of these projects valued at RM1,198 million*, highlighting our proactive approach in driving business growth and fostering local economic development. The total value of our projects decreased in 2023 due to no new major works were awarded as compared to 2022 (mostly long-term contract).

Total Tenders Awarded by Sarawak Energy (Malaysia & International) 2019-2023 *(RM Million)*



Tenders Awarded	Status	2019	2020	2021	2022	2023
Capital Works	Sarawakian	416,366,166.99[4]	114,555,097.49[3]	335,983,187.44[2]	295,198,815.38[1]	**254,790,542.37***
	Malaysian (Non-Sarawakian)	274,575,584.00	44,542,098.60	226,103,506.14	32,522,488.80	**90,342,509.10**
	International	299,412,243.00	117,782,423.00	528,705,566.15	100,626,345.66	**145,318,205.15**
Operations and Maintenance	Sarawakian	822,335,735.58[4]	1,037,245,113.37[3]	1,061,052,945.37[2]	1,947,373,513.08[1]	**943,688,077.61***
	Malaysian (Non-Sarawakian)	54,243,444.92	68,301,534.66	194,827,901.20	235,672,775.79	**181,527,068.79**
	International	52,732,516.13	38,580,626.30	28,660,053.82	278,455,646.61	**85,804,593.19**

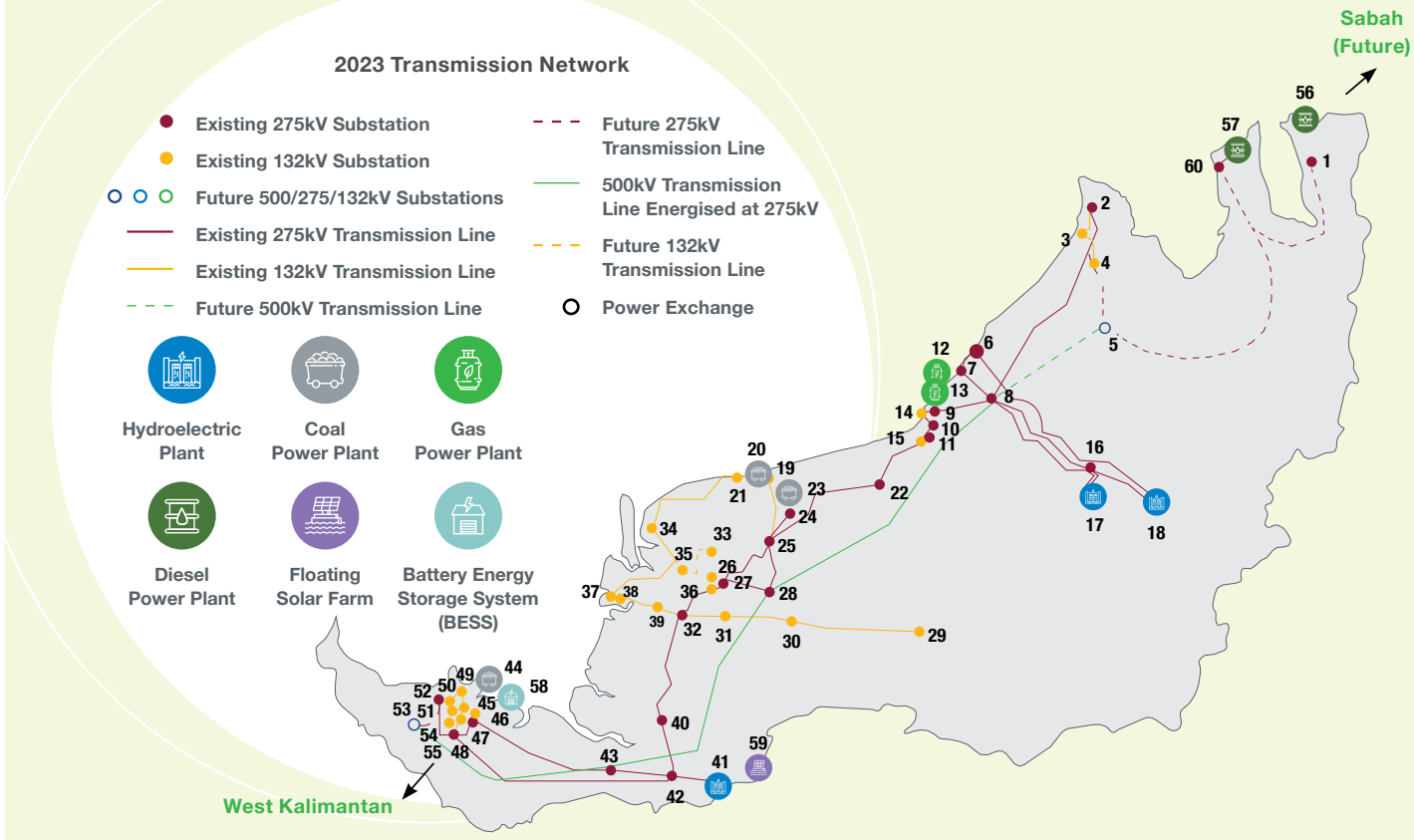


Sarawak Energy and the Economy

203-1, EU1, EU10

Powering Up Sarawak

In 2023, Sarawak experienced a 4% increase in energy demand compared to 2022, reflecting growth across all sectors. Sarawak Energy anticipates this electricity demand will increase to approximately 5,000MW by 2025.



1	Lawas 275/33kV S/S	21	Petian 132/33kV S/S	41	Batang Ai HEP 94MW
2	Tudan 275/132/33kV S/S	22	Tatau 275/132/33kV S/S	42	Engkilili 275/33/11kV S/S
3	Eastwood 132/33kV S/S	23	Balingian P/S 578MW	43	Lachau 275/33kV S/S
4	Marudi Junction 275/132/33kV S/S	24	Balingian 275/33kV	44	Sejingkat Power Corporation P/S 80MW
5	Bunut 500/275/33kV S/S	25	Selangau 275/132/33kV S/S	45	Muara Tabuan 132/33kV S/S
6	Samalaju B 275/132/33kV S/S	26	Deshon 132/33kV S/S	46	Samajaya 132/33kV S/S
7	Samalaju 275/132/33kV S/S	27	Oya 275/132/33/11kV S/S	47	Entinggan 275/132/33kV S/S
8	Similajau 500/275/33kV S/S	28	Mapai 500/275/33kV S/S	48	Mambong 275/132/33kV S/S
9	Bintulu 275/132kV S/S	29	Kapit 132/33/11kV S/S	49	Sejingkat 132/33kV S/S
10	Bintulu B 275/132kV S/S	30	Song 132/33/11kV S/S	50	Astana 132/33kV S/S
11	Kemena 275/132/33kV S/S	31	Kanowit 132/33/11kV S/S	51	Mendu 132/33kV S/S
12	Tanjung Kidurong CCGT P/S 826MW	32	Kemantan 275/132/33/11kV S/S	52	Matang 275/132/33kV S/S
13	Sarawak Power Generation P/S 280MW	33	Sg. Merah 132kV S/S	53	Tondong 500/275/33kV S/S
14	Tanjung Kidurong 132/33/11kV S/S	34	Daro 132/33kV S/S	54	Semenggo 132/33kV S/S
15	Sibiyu 132/33/11kV S/S	35	Sg. Maaw 132/33kV S/S	55	Stakan 132/33kV S/S
16	Murum Junction 275/33kV S/S	36	Salim 132/33kV S/S	56	Lawas P/S 15.6MW
17	Bakun HEP 2,520MW	37	Tanjung Manis B 132/33kV S/S	57	Limbang P/S 22MW
18	Murum HEP 944MW	38	Tanjung Manis 132/33/11kV S/S	58	BESS 60MW
19	Matadeng 132/33kV S/S	39	Sarikei 132/33/11kV S/S	59	Batang Ai Floating Solar 50MW
20	Mukah Power Generation P/S 243MW	40	Serudit 275/132/33kV S/S	60	Limbang Town 275kV S/S

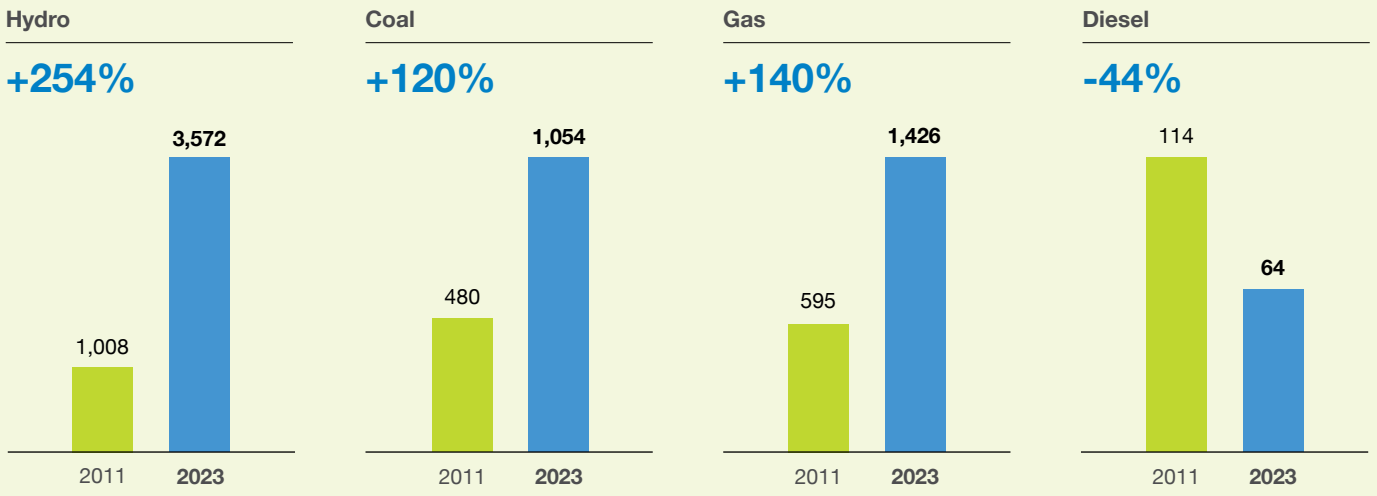
Sarawak Energy and the Economy

EU1, EU30

Realising a Low-Carbon Economy

In 2023, Sarawak Energy's grid-connected power plant capacity increased to 6,116MW, up from a total installed capacity of 5,996MW in 2022.

GRID CONNECTED POWER PLANT CAPACITY (MW) - BY ENERGY SOURCE



Establishing Reliability and Trust

We take pride in our track record as a dependable energy supplier, ensuring robust power supply across plant, transmission and distribution stages. This underscores our ongoing commitment to excellence in delivering exceptional service to our customers.

Hydropower Plant Average Availability Factor

89.51%

Coal-Fired Power Plant Equivalent Availability Factor

67.18%

Gas-Fired Power Plant Equivalent Availability Factor

74.31%

Diesel-Fired Power Plant Equivalent Availability Factor

90.57%[a]

Notes:

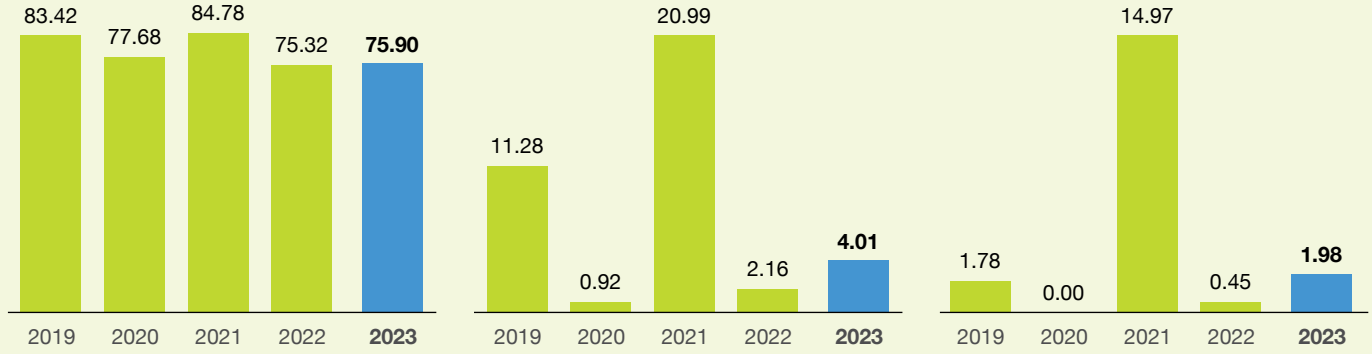
1. Equivalent Availability Factor (EAF) and Availability Factor (AF) using simple average.

[a] Consists of Sg. Biawak, Limbang & Lawas Diesel-Fired Power Plants.

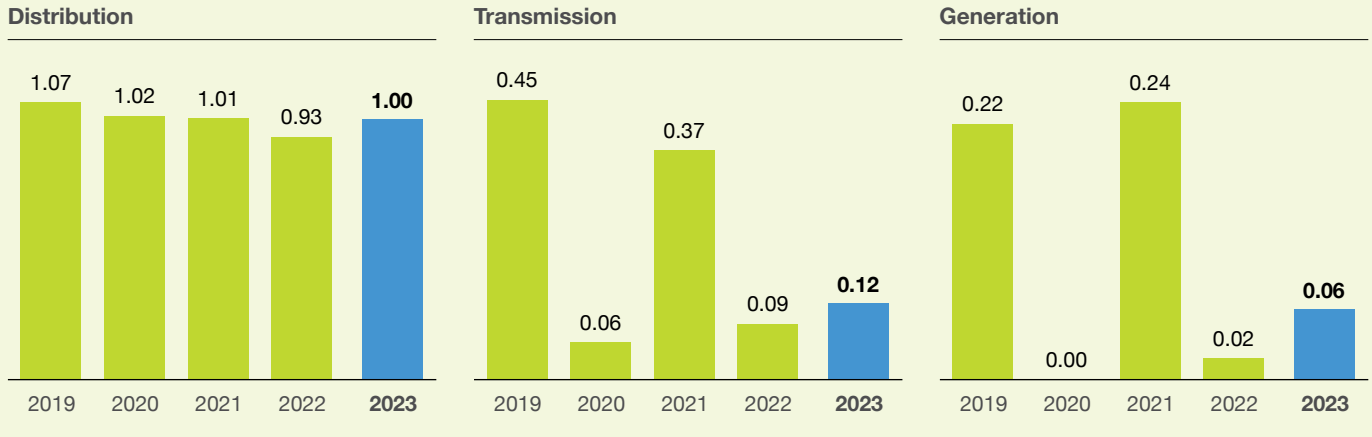
Sarawak Energy and the Economy

EU28, EU29

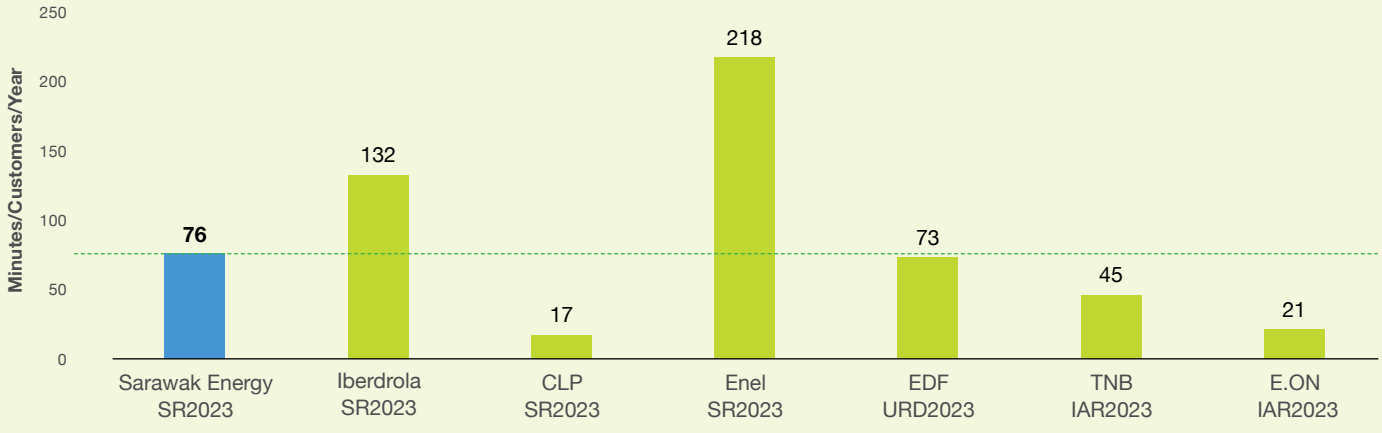
EU 29 SAIDI



EU 28 SAIFI



International Comparison of SAIDI for Power Utility Companies



Note:
Published Annual, Sustainability & Integrated Report 2023.

Sarawak Energy and the Economy

EU12, 3-3

Transmission and Distribution Losses

During the year under review, we have maintained a consistent transmission and distribution losses through initiatives aimed at boosting system efficiency and combating power theft. These efforts included replacing and refurbishing transmission lines and transformers, introducing new injection points, installing energy-efficient amorphous transformers, and restoring capacitor banks.

In 2023, we have successfully reduced the Non-Technical Loss (NTL) rate to 1.48% compared to the previous year of 2.35%, attributed to the implementation of new strategies and the unwavering commitment of our team to combat electricity theft in the State.

Despite the challenges encountered in 2023, our electricity theft operations persisted, focusing on thorough meter inspections at shophouses, residential areas, meters at gateposts, and HV meters. Throughout the year, we conducted a total of 52 successful Executive Action (EA) operations and released 19 press releases to raise public awareness about power theft.

No. of Cases and Losses (RM) Due to Cable Theft

Year	2019	2020	2021	2022	2023
Losses (RM)	2,114,769.76	214,147.00	1,280,148.44	1,332,565.56	**2,925,010.08**
No. of Cases	588	148	123	187	**153**

Notably, the rise in electricity theft related to cryptocurrency mining operations posed a significant challenge, exacerbated by the surge in cryptocurrency values and reduced meter inspections during the Control Movement Order (MCO). To address this issue, we intensified our efforts to target illegal cryptocurrency mining premises. As a result, we conducted raids on 41 cryptocurrency mining operations across the state, uncovering instances of tampered meters, illegal wirings, or direct connections to service lines without meters.

As we move forward, our focus remains unwavering on combating electricity theft and illegal cryptocurrency mining operations. Through continued vigilance and the implementation of proactive measures, we are committed to safeguarding the integrity of our electrical infrastructure and protecting the interests of our stakeholders.

In 2023, estimated monthly losses due to electricity theft related to cryptocurrency mining reached RM539,200. To address this issue, various strategies were implemented, including collaboration with the Ministry of Utility and Telecommunications (MUT), Malaysian Anti-Corruption Commission (MACC), and Royal Malaysia Police (PDRM) to conduct raids and seize cryptocurrency mining rigs. Offenders were prosecuted in court to deter future theft.

PDRM conducted five raids, seizing a total of 219 cryptocurrency mining servers, while Sarawak Energy conducted 36 raids, resulting in the seizure of 1,262 mining servers. Additionally, to enhance detection capabilities, a drone equipped with a thermal camera was deployed to identify cryptocurrency mining premises. To operate the drone effectively, team members underwent intensive drone Remote Control Operator Certificate (RCOC-B) training to obtain the necessary licenses.

As of December 2023, a total of 12 competent drone pilots from the Retail Department have been trained across the region, ensuring that the team is equipped with the latest technology and expertise to combat electricity theft effectively.

Distribution losses can be categorised into technical and non-technical losses. The former results from power dissipation in system components such as transmission and distribution lines, transformers, and measurement systems. Meanwhile, non-technical losses stem from external factors and include electricity theft, non-payment by customers, and errors in accounting and record-keeping.

In 2023, non-technical losses decreased to 1.48% from 2.35% in 2022, while technical losses stood at 7.31% in 2023 an increase from 2022's 7.17%.

Year	2019	2020	2021	2022	2023
Transmission Losses (%)	2.17	2.32	2.51	2.52	**2.09**
Distribution Losses (Technical) (%)	6.59	6.47	6.29	7.17	**7.31**
Distribution Losses (Non-Technical) (%)	4.41	4.05	4.32	2.35	**1.48**

Sarawak Energy and the Economy

Sarawak Energy is committed to reducing our technical and non-technical losses to ensure that seamless energy supply. To this end, we have implemented the Technical Losses Management System for Distribution Technical Losses estimation development, which reduces errors in calculation and allows for better monitoring and accurate data.

Combating Power Theft in 2023

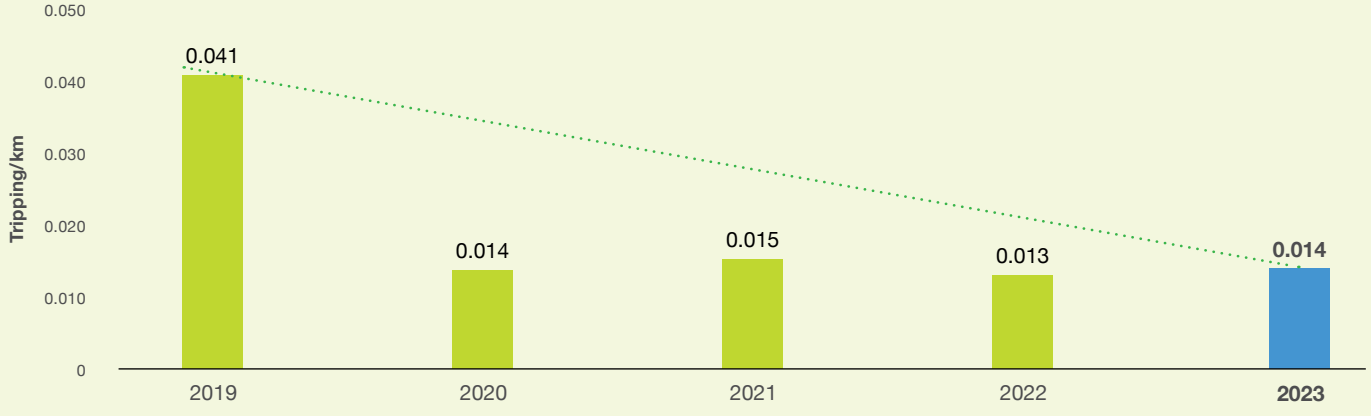
- **Electricity theft operations**
- **Heightened public awareness through Power Theft Campaign**
- **Prosecute the electricity theft offenders in Court**
- **Enhancement of Fraud Detection Analytics**
- **Collaborations with authorities and agencies**
- **Disconnection of illegal online gambling**

NUMBER OF TRANSMISSION TRIPPING

Total Number of Transmission Tripping and Tripping Intensity at Transmission

Year	2019	2020	2021	2022	2023
Substation	29	15	12	15	**7**
Transmission	69	53	64	49	**74**
Total	**98**	**68**	**76**	**64**	**81**
Transmission Tripping Intensity (Tripping/km)	**0.041**	**0.014**	**0.015**	**0.013**	**0.014**

Transmission Tripping Intensity *(Tripping/km)*



Sarawak Energy and the Economy

EU27

The number of disconnected accounts in Kuching, Sibu, Sarikei, Bintulu, Miri, Limbang, and Lawas surged from 13,608 in 2022 to 19,428 in 2023. After receiving RM22.23 million, we reconnected 17,446 accounts and restored power to 15,233 accounts within 24 hours of payment.

Summary of Payment and Reconnection by Categories

Year	<48 Hours	48 – 1 Week	1 Week – 1 Month	1 Month – 1 Year	>1 Year
2019	13,669	1,188	233	32	0
2020	9,401	973	144	276	0
2021	7,857	516	390	480	0
2022	8,698	1,043	618	671	9
2023	**14,917**	**1,623**	**614**	**288**	**10**

Year	<24 Hours	24 Hours – 1 Week	>1 Week
2019	14,841	397	24
2020	9,047	891	89
2021	8,695	326	90
2022	10,178	531	562
2023	**15,233**	**1,651**	**568**

Breakdown of Disconnected and Reconnected Accounts

Year	Total Accounts Disconnected	Total Amount Disconnected (RM)	Total Accounts Reconnected	Total Amount Reconnected (RM)
2019	7,961	48,033,995	6,253	22,334,925
2020	11,312	35,567,618	9,135	18,939,264
2021	8,808	19,431,684	7,267	12,675,901
2022	13,608	27,490,239	11,413	13,870,686
2023	**19,428**	**25,919,227**	**17,446**	**22,233,667**

Power Theft Arrears Bill Recovery

Continuous efforts were undertaken to recover electricity theft arrears bills issued. From 2008 to 2022, a significant sum totalling approximately RM179.24 million was successfully recovered. In 2023, RM16.19 million was recovered from arrear customers, compared to RM13.61 million in 2022.

We will continue to deter power theft through collaborations with local enforcement agencies and research and development. This includes partnering China Light Power (Hong Kong) in researching and developing of a fraud analytics model to improve power theft identification and detection. Internally, we will keep enhancing the knowledge of our meter inspection teams across the region to ensure efficiency in combatting power theft.

Sarawak Energy and the Economy

403-2

Business Continuity Management (BCM)

Sarawak Energy's BCM Framework complies with both local and international standards and guidelines including the ISO 22301:2019, and ISO 22313:2012. Established in 2016, the framework aims to safeguard stakeholders' interests, protect the Company's reputation, and ensure the continuity of value creation. Additionally, the BCM framework enables us to closely collaborate with authorities during crises or disasters.

Sarawak Energy's BCM Policy Statement

Sarawak Energy is dedicated to maintaining and ensuring the continuity of our services through our BCM Programme, minimising the impact on stakeholders in the event of any service disruptions.

BCM Implementation

Our BCM framework continues to include emergency response, business continuity plan (BCP) training, testing and improvements in 21 locations.

WHY BCM

1 **Customers and Stakeholders**

- Readiness to respond in a timely manner to major emergencies and crises safeguard the interests of key stakeholders
- Increase customers and stakeholders' confidence and trust
- Minimise threats to life, health & safety

2 **Environment**

- Reduce potential impact of environment risks
- Achieve sustainable development
- Safe working environment

3 **Company's Reputation and Brand**

- Safeguard Company's reputation and brand
- Manage and mitigate critical operational risks improve business continuity and resiliency
- Aligned with international BCM standards and best practices

4 **Financial**

- Prevent losses to Company (revenue and assets)
- Reduce insurance premium and duration of any disruption
- Comply with legal requirements and statutory obligations

Milestones Achieved

In 2023, we continued carrying out emergency response training such as fire drills, evacuation drills, dam safety emergency drills and business recovery exercises. We also conducted crisis simulation desktop walkthrough exercises, organised workshops and site visits to improve the knowledge on BCM and risk management practices. We continued enhancing our BCM implementation by:

Enhancing efforts in emergency response and crisis management

Benchmarking against international best practices, such as organising a benchmarking visit to "Singapore Power" (SP)

Creating awareness and capability building, including identifying areas for improvement

Sarawak Energy and the Economy

403-2, 418-1, 3-3

Dam Safety and Emergency Drills

We ensure that our employees continue to stay up to date in safety procedures through Dam Safety Emergency drills. These drills are in line with established protocols that mitigate the risk of incidents and LTIs.

In 2023, there were no critical issues for all dams identified that are detrimental to dam safety integrity. All dams have been monitored through dam safety programmes guided by International Commission on Large Dams (ICOLD) and Malaysia Dam Safety Management (MYDAMS). This is conducted through routine inspection and bi-annual inspections for all three dams comprising a team from different units to provide a fresh view of dam performance and condition.

A five yearly dam safety review has been carried out at Bakun and Murum Dam by an international consultant, and the final report was completed in 2023, citing no major issue has been found with the consultant assessment rated “fair to good” on the overall condition and performance for both dams. The dam safety unit has two certified dam safety inspectors by Entura Hydro Tasmania who are actively involved in monitoring the performance of the three main dams at Sarawak.

During the year under review, the following activities were conducted:

Disaster/Emergency Planning & Response

- Outreach Session with Belaga District Disaster Management Committee (DDMC) on Dam Safety Awareness (DAMSA)
- Outreach Session with Belaga Action Committee (BAC) Head Leaders on Dam Safety Awareness (DAMSA)
- MKN Latih Amal Ex-Red Tilapia 2023 Batang Ai Hep/Batang Ai DSEP Drill Exercise
- Bakun DSEP Workshop and Tabletop Exercise
- Murum DSEP Workshop and Tabletop Exercise

In-House Dam Safety Training Programmes

- On-Site Training KMIDam – Post-Earthquake Assessment System (Bighorn) at Bakun
- Survey Training on Using Global Navigation Satellite System (GNSS) with Bakun DS at Bakun
- Sharing Session about Instrumentation for Baleh HEP
- Dam Safety Emergency Plan Workshop was held physically for Bakun, Murum and Batang Ai
- Generation Connect - Sharing on the Dam Design and Surveillance

Customer Service Excellence

Our customers service teams play a crucial role in enabling Sarawak Energy to fulfil the needs of our customers. Apart from social and mass media, we also engage our clients through our customer service platforms, Sarawak Energy Cares (SEB cares) web and mobile. These platforms were developed to provide convenience to customers in terms of billing and meter reading, payments, enquiries and reporting of technical issues. We take steps to build innovative solutions through digitalisation, in line with Sarawak’s digital transformation initiatives. This also enables us to support sustainable practices, through reducing paper usage.

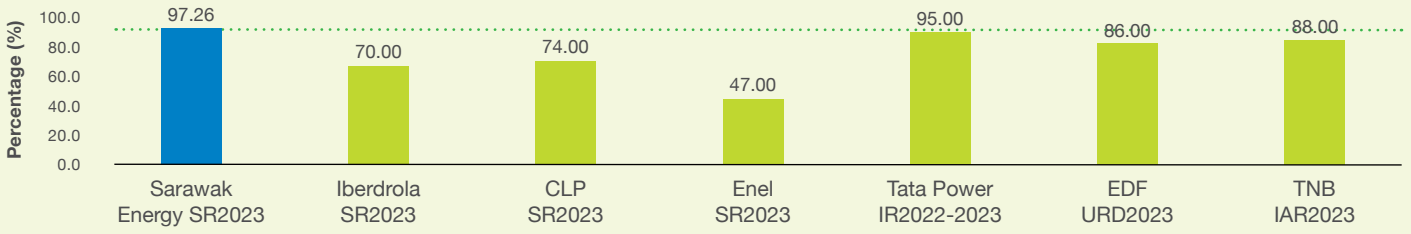
In 2023, our Customer Satisfaction Index (CSI) rating rose from the previous year’s 97.15% to 97.26%. Our Customer Care Centre (CCC), which consistently engages with our customers to address their needs and issues, maintained top-notch customer service excellence. We will continue to improve customer experience through digital platforms while using social and mass media advertisements to raise awareness about our mobile app and online facilities.

Sarawak Energy and the Economy

3-3

Year	2019	2020	2021	2022	2023
Customer Satisfaction Index (%)	95.08	95.20	96.51	97.15	**97.26**

International Comparison of Customer Satisfaction Index for Power Utility Companies



Note:
Published Annual, Sustainability & Integrated Report 2023.

Enhancing Our E-Customer Experience (eCX)

Our eCX system, launched in 2020, streamlines online power supply applications and supports Sarawak's digital transformation by reducing paper usage. It offers a seamless, contactless experience for customers, featuring services like Change of Name, Supply Upgrading/Downgrading, and Meter Testing through Sarawak Energy's corporate website and the SEB cares platform.

The system also facilitates bulk electricity supply applications by electrical consultants and internal wiring contractors, aligning with the Sarawak Digital Transformation Roadmap and promoting digitalisation during the pandemic.

Advantages of eCX

- **Standardised practices, processes and understanding across all regions**
- **Online processes, reducing paper usage**
- **Information storage in a centralised portal**

Our chatbot, Carina, which was launched in 2020, has been uploaded in our Voice Response (IVR) in our telephony system. The feature guides customers to Carina for further assistance, empowering customers to find information and solutions independently. Despite the negative effects on our service level, the experience also highlighted opportunities for process improvement and reinforced the importance of effective communication in managing customer expectations during periods of change.

In 2023, Carina achieved a Customer Service Rating of 81.40%.

2023

87,921 Carina users

2022

27,927 Carina users

Our Salesforce CRM, which was fully implemented in 2021, has now entered its mature phase with ongoing minor adjustments to enhance processes such as case management. Previously managed by the Fulfilment Team, enquiry cases are now handled by our Customer Care Centre Executives (CCE). Specific case statuses and sub-statuses in the CRM are updated regularly, allowing case owners, including CCEs and team leads, to monitor and follow up on cases until they are resolved and closed.

Sarawak Energy and the Economy

3-3

Payment Kiosks

In 2023, we have installed three units of multi-service payment kiosks at three different shopping malls in Kuching as a pilot project before we launch more in other regions. To date, we have a total of 30 payment kiosks statewide.

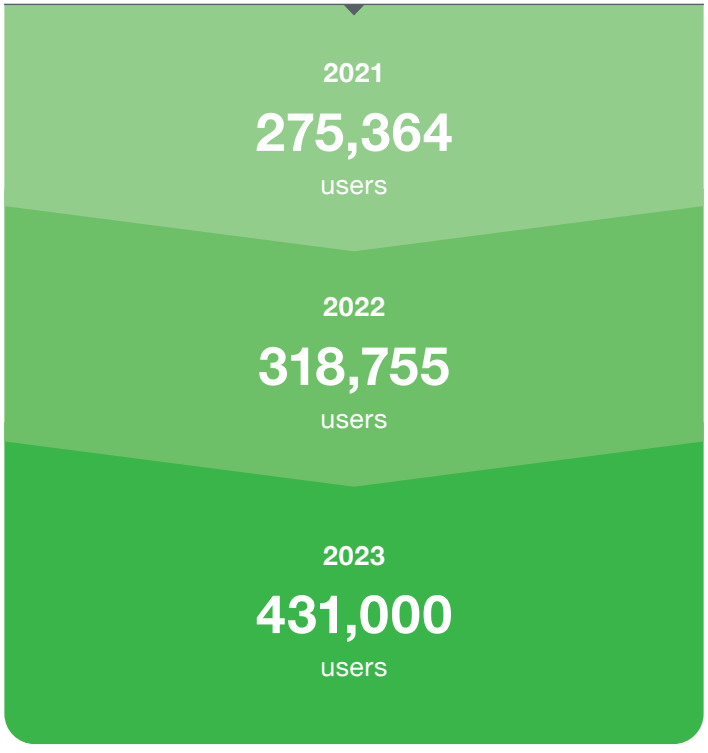
Sarawak Energy Mobile App SEB cares

The SEB cares mobile app was developed to enhance customer payment efficiency and improve overall user experience. Additionally, the app delivers updates, event notifications, and programme alerts.

In the year under review, we upgraded SEB cares to a different platform, presenting a fresh, modern, and enhanced user interface and functionality. The new version of SEB cares features online version of some services that previously can only be done at the counter such as Change of Name, Request for Meter Testing and Request for Internal Wiring Testing. The development of the new app is still ongoing, and more features will be added from time to time.

To date, SEB cares continues to record an increase in user registration with 431,000 user registrations in 2023, an increase of 35% from 2022.

SEB CARES REGISTERED USERS



Managing Our Assets

To elevate our operational efficiencies and drive our performance, we have implemented measures aimed at strengthening our assets to align with the needs and expectations of our customers. We are committed to refining and enhancing various processes that are integral to our operations.

Mobile Field Force Automation (MFFA)

- To observe and assess the response time of technical field crew, including the operational teams in Kuching, Bintulu, Miri and Sibu
- Since 2016, the system has been integrated into our auditing performance monitoring and enhancement features
- MFFA Mobile App Offline Mode and Replatform
  - In 2023, the implementation of offline mode for the application had been completed, allowing users to continue using the app to update work orders even without Internet connection. The initiative aimed to resolve the challenge faced by users with poor or limited Internet connection
  - The MFFA app platform was also upgraded to support the offline mode feature

Enterprise Asset Management System (EAM)

- Fully extended to Rural Operations since 2021
- In 2023, the enhancements made were:
  - Completed the Oil Sampling job plan
  - Improved Work Order Tracking page
  - Increased the capacity work order attachment for larger space

Geographical Information System (GIS)

- Facilitates the Distribution and Retail departments by presenting the distribution of network assets and customers' locations via a web application
- In 2023, the GIS System team continued holding hands-on training for regional GIS Operators to enhance their knowledge on open-source software to update and upkeep near real-time the dataset into centralised spatial data repository
- The GIs team will continue exploring the ArcGIS Utilities Network Extension to model our distribution network for power source/outage tracing capability

Sarawak Energy and the Environment

303-1, 303-2, 303-3, 305-7, 3-3

Hydro

Water for Power Generation

57,017.86 million m^3*

Total Annual Water Volume Intensity for Energy Generation

2,260.64 m^3/MWh

Thermal

Water Withdrawal (Cooling process)

1,147 million m^3*

Seawater or Other Natural Water Source Withdrawal Intensity

32.69 m^3/MWh

SO_x and NO_x Emissions Intensity (Main Grid)

SO_x: 8.88 x 10-5

$kgSO_x$/kWh

NO_x: 7.10 x 10-5

$kgNO_x$/kWh

Waterfall in the Baleh National Park at Upper Baleh Catchment Area.

Water Management

Water is fundamental to all our operational processes and activities. It serves as the primary energy source for our hydroelectric facilities and is essential for the cooling systems in our thermal power plants. As water is a finite resource, the responsible stewardship of water is paramount to ensuring equitable access, social well-being and sustainable development. To this end, we are deeply committed to the responsible use and sustainable management of water resources to mitigate water shortage and combat climate change.

Sarawak Energy and the Environment

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SARAWAK ENERGY'S INTEGRATED CATCHMENT MANAGEMENT STRATEGY – SAFEGUARD UPSTREAM WATER RESOURCES

Catchment Management Policy, Procedures and Guidelines For Hydropower

Sarawak Energy

(Catchment Management)

MANAGEMENT	TECHNICAL
Good Practices in Catchment Management	Water Resource, Hydrology & Sedimentation
Hydropower Sustainability Standard (HSS)	Reservoir Storage & Lifespan
Addressing Sustainability Issues – Long-Term Risks	Maintenance
Realignment – International, National & State Levels	Biodiversity
Advocating and Communicating Good Catchment Management Practices	Social & Environment

The scope of work for the Catchment Management Study consists of three main components:

Overview of the Overall Catchment Management Study

1 **Catchment Management Policy**

- Conservation & Gazettement
- Land Use

2 **Catchment Management Procedures & Guidelines**

- Socio-economic & Livelihood
- Conservation Planning & Priority Conservation Area
- Stakeholder Engagement
- Management Practices
- Catchment Management Roadmap

3 **Catchment Management Initiatives**

- Inventory of Biodiversity – Heart of Borneo (HoB)
- Information & Monitoring - Common Baselines
- Sedimentation Management
- Ecosystem Services
- Monitoring Land Use
- Environmental Flow

Sarawak Energy and the Environment

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Hydro Plant	Data	Unit	2019	2020	2021	2022	2023
Batang Ai	Annual Inflow	million m^3	2,852.00	4,255.00	3,651.00	3,277.00	**3,160.20**
	Annual Water Volume for Energy Generation	million m^3	2,844.00[4]	3,974.38[3]	3,617.61[2]	3,534.20[1]	**3,512.34***
Murum	Annual Inflow	million m^3	8,183.00	9,993.00	9,660.00	10,791.00	**9,129.00**
	Annual Water Volume for Energy Generation	million m^3	7,482.00	8,321.00	8,506.00	9,416.00	**9,228.00**
		million m^3 (include EPS)	7,532.00[4]	8,548.94[3]	8,583.01[2]	9,496.38[1]	**9,291.93***
Bakun	Annual Inflow	million m^3	40,373.00	55,730.00	49,894.00	50,884.00	**43,249.27**
	Annual Water Volume for Energy Generation	million m^3	38,827.00[4]	36,965.72[3]	40,874.51[2]	41,636.95[1]	**44,213.59***
Total Annual Water Volume for Energy Generation		million m^3	49,203.00[4]	49,489.05[3]	53,075.13[2]	54,667.53[1]	**57,017.86***
Total Annual Water Volume Intensity for Energy Generation (Hydro Main Grid gross energy)		m^3/MWh	2,271.48	2,275.56	2,274.27	2,246.65	**2,260.64**

Paving the Way for a Green Energy Revolution

As we endeavour to create a more sustainable future, it is imperative to implement significant initiatives to reduce our carbon footprint while addressing the growing energy demands. Our commitment is centred on the efficient management of our resources, the mitigation of risks and the optimisation of power generation. In 2023, we implemented the following initiatives:

Long Kebuho Rainfall Station

A new rainfall station has been established at Long Kebuho, located upstream of the Bakun Hydroelectric Plant (HEP), marking a significant enhancement to the hydrometric network across the Murum-Bakun catchment area. The site work for its establishment commenced as planned on 8 December 2023 and was successfully completed by 12 December 2023, adhering to the designated timeline.

This newly established station significantly augments our capabilities for hydrological data collection, operating in real-time to provide crucial monitoring and recording of essential data. All collected data are securely stored in the Aquarius Database server, ensuring accurate and reliable access for ongoing and future analyses.

Long Kebuho Rainfall Station

Sarawak Energy and the Environment

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GENERATION ASSET MANAGEMENT INITIATIVES

Men at Work at Murum HEP.

Generation Asset Assurance

- Attained the ISO55001:2014 Certification at all eight major power stations
- Completed essential procedures including Procedure, Practice, Guideline (PPG) – Bypass Management, Foreign Material Exclusion (FME) and Measuring Equipment Calibration & Verification
- Conducted Asset Health Condition Assessments across all major power stations and facilitated the closure of FM Global Risk recommendations, specifically addressing recommendations for Boiler & Machinery (105) and Fire Safety (115)

Enterprise Asset Management (EAM)

- Onboarded schedulers for coal plants
- Introduced a Document Controller role at SEB Power
- Increased training and improvements
- Optimised data and transactions, enhancing document registration through digitisation
- The SERAPI SAP S/4 projects is on schedule and integrated with other recognised modules

Generation Asset Assurance (GAA)

- Conducted a record number of 22 GENCON sessions, the highest participation since its inception in 2021
- Completed training in hydroelectric operations for all levels of hydroelectric operations
- Provided valuable support to Subject Matter Experts (SMEs) in structuring and developing their skills, reinforcing organisational capabilities and ensuring readiness to meet operational demands

ENHANCING THE PERFORMANCE OF OUR HYDRO PLANTS


Batang Ai HEP.

Batang Ai HEP

- Attained an availability factor of 79.94%, surpassing the targeted 77%, demonstrating robust operational reliability. The forced outage rate was maintained at 0.63%, below the targeted 1.00%
- Completed automation work for Units 1 and 4, and a major overhaul for Unit 1

Bakun HEP

- Surpassed its target, achieving an availability factor of 95.37%, exceeding the targeted 90%, underscoring its operational reliability. The forced outage rate remained low, averaging at 0.29%, well below the 1.00% target
- In 2023, we installed an Automatic Tube Cleaning System (ATCS) to optimise heat exchanger efficiency by automating cleaning processes and enhanced the ventilation system to mitigate hydrogen sulphide (H_2S) effects in critical areas. Units 2 and 8 also underwent preventive maintenance and inspection to bolster safety and reliability

Sarawak Energy and the Environment

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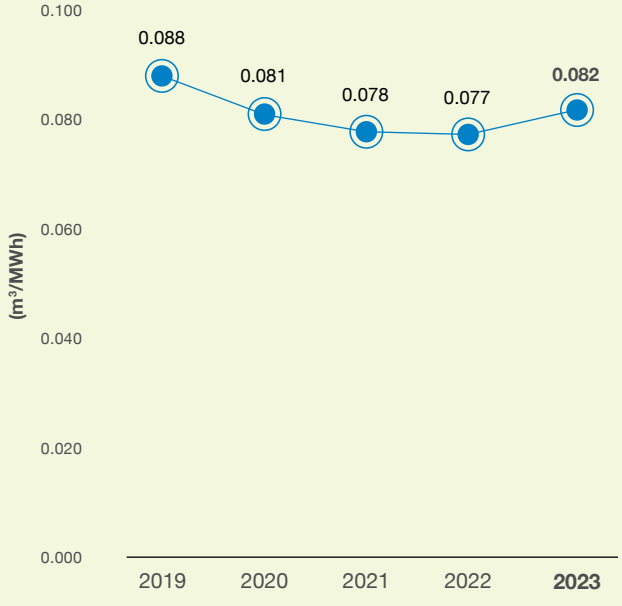
Water Withdrawal

In the reporting year, water withdrawal (municipal) escalated by +12% in 2023 from 2022 was due to heavy usage of water during construction activities. Our cooling processes at thermal power plants rely on water sourced from the sea.

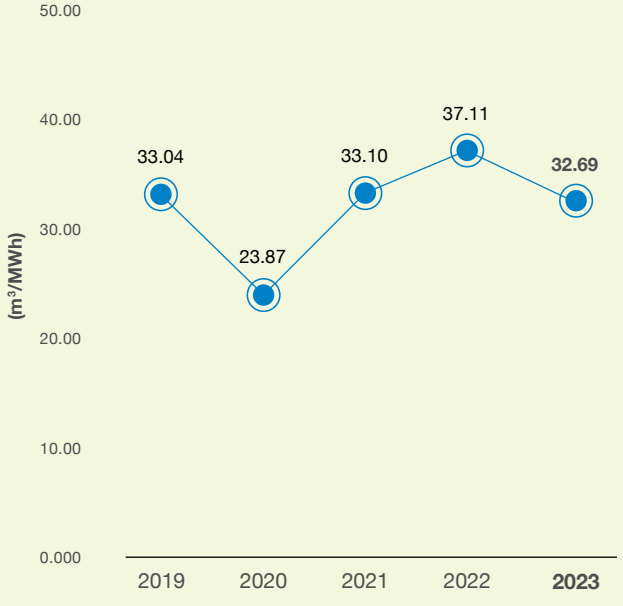
Plant Type	Source	Unit	2019	2020	2021	2022	2023
Coal	Municipal	m^3	2,204,029.00[4]	2,007,712.00[3]	1,965,834.00[2]	2,110,812.00[1]	**2,218,185.00***
	Sea Water or other natural water source	m^3	724,178,991.74[4]	569,688,758.40[3]	528,585,158.70[2]	507,079,011.12[1]	**440,665,880.40***
Natural Gas	Municipal	m^3	353,319.00[4]	279,765.00[3]	435,583.00[2]	434,769.00[1]	**621,529.00***
	Sea Water or other natural water source	m^3	241,935,030.72[4]	104,047,121.52[3]	491,928,176.88[2]	729,470,134.50[1]	**710,796,682.00***
Diesel	Municipal	m^3	6,896.13[4]	1,731.51[3]	4,417.00[2]	5,673.66[1]	**7,469.06***
	Sea Water or other natural water source	m^3	-[4]	-[3]	-[2]	-[1]	**-***

Water Withdrawal Intensity by Source (Thermal Plants MWh)	Unit	2019	2020	2021	2022	2023
Municipal Water Withdrawal Intensity (Thermal)	m^3/MWh	0.088	0.081	0.078	0.077	**0.082**
Sea Water or Other Natural Water Source Withdrawal Intensity (Thermal)	m^3/MWh	33.04	23.87	33.10	37.11	**32.69**

Municipal Water Withdrawal Intensity (Thermal)



Sea Water or Other Natural Water Source Withdrawal Intensity (Thermal)



Sarawak Energy and the Environment

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Sarawak Energy's Circularity Framework

In addition to our emission reduction efforts, we strive to mitigate the impacts of our emissions by reducing and managing energy, waste and resource consumption. In the year under review, we established a Circularity Framework to support our Sustainability Strategy and Roadmap. This framework aligns with our commitment to sustainable development and enables all business units to implement circularity practices, maximising positive impacts while minimising negative environmental impacts. The framework focuses on five strategic goals:

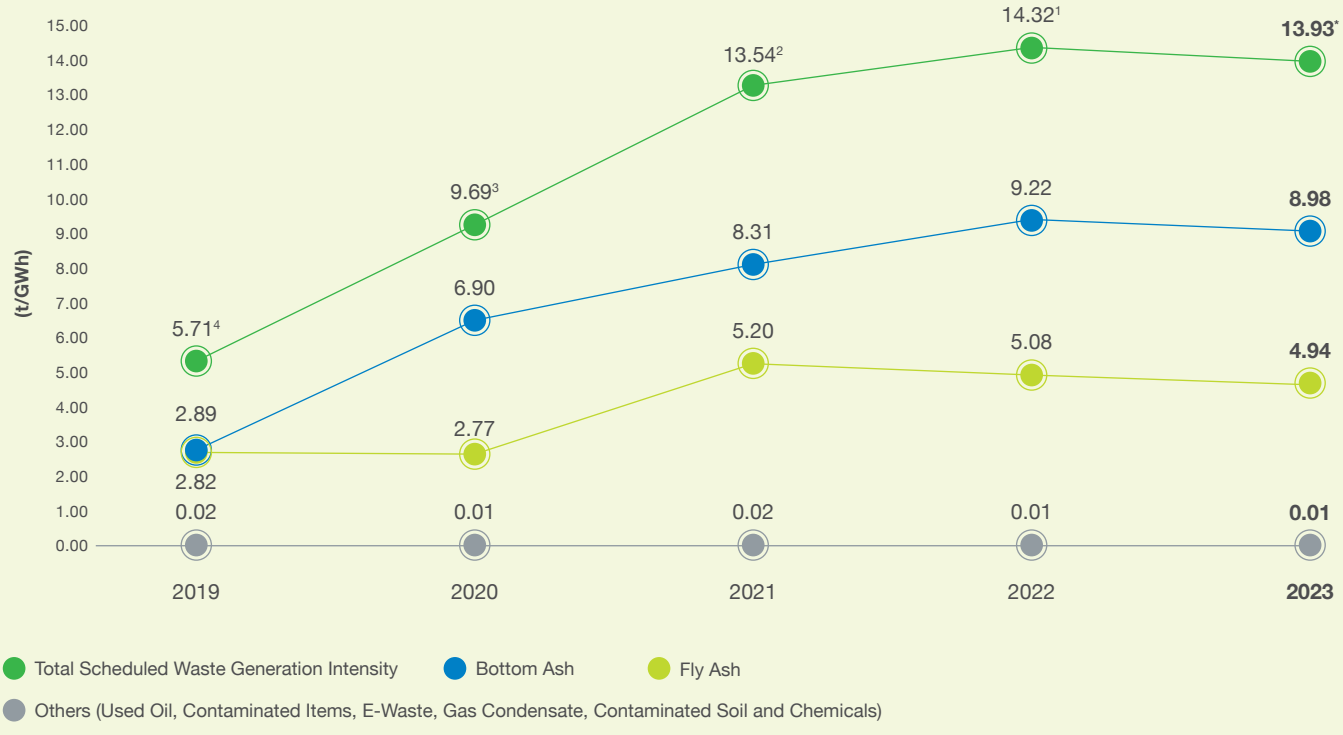
- **WASTE REDUCTION**
- **RESOURCE EFFICIENCY**
- **EMISSION REDUCTION**
- **GREEN ENERGY**
- **ENERGY EFFICIENCY**

Through this framework, we aim to support climate action beyond Sarawak Energy, advancing our organisation's transition towards a low-carbon economy.

Responsible Waste Management

In our commitment to environmental sustainability, we remain dedicated to the responsible disposal of our scheduled waste in accordance with the Environmental Quality (Scheduled Wastes) Regulation 2005. Monthly inventory reporting is consistently enforced across our operations, and we collaborate with external contractors for the collection and responsible disposal of our scheduled waste. In 2023, there were no instances of fines or penalties due to non-compliances with regulatory requirements.

Scheduled Waste Generation Intensity



Sarawak Energy and the Environment

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Parameter	Unit	Year				
		2019	2020	2021	2022	2023
Total SO_x & NO_x Emissions						
SO_x	tonne	454.33	3,589.52	858.73	2,639.73	**3,060.32**
NO_x	tonne	2,307.27	5,433.16	2,251.75	3,528.49	**2,443.38**
SO_x & NO_x Emissions Intensity						
SO_x	kg/kWh	0.000017	0.00013	0.000028	0.000081	**0.000089**
NO_x	kg/kWh	0.000085	0.00020	0.000075	0.00011	**0.000071**

Ensuring Environmental Compliance

Sarawak Energy has set an ambitious goal of achieving 100% environmental compliance by 2023 as part of our commitment to Health, Safety and Environment (HSE) Excellence under our Key Focus Area (KFA). To align with this objective, we have implemented an Internal Environmental Compliance Audit (IECA) for all 11 of our major project developments that have received Environmental Impact Assessment (EIA) or Environmental Management Plan (EMP) approval. The IECA is designed to promote self-regulated environmental compliance and strengthen overall environmental management, fostering exemplary environmental practices in power project development.

The IECA serves as an early detection system for identifying non-compliance issues, ensuring that corrective actions are swiftly undertaken and preventive measures are established before any inspections by external third-party auditors or regulatory bodies such as the Natural Resources and Environment Board (NREB) or the Department of Environment (DOE). These audits are conducted bi-annually for substation, transmission line, coal mining and Samalaju Combined Cycle Power Plant projects, and annually for the Baleh Hydroelectric Project.

In 2023, all Sarawak Energy EIA projects successfully recorded zero penalties or fines from both Federal and State environmental authorities. However, on 13 January 2023, the NREB issued a stop work order for the Proposed Quarry B and Quarry C Licence for stone removal (Baleh HEP projects) at Batang Baleh, Ulu Sg. Putai, Kapit Division, Sarawak. This order was subsequently lifted on 20 April 2023.

Driving Compliance Through Environmental Training

To achieve environmental excellence across our operations, it is crucial to elevate the skills and knowledge of our contractors in environmental management and regulatory compliance. Therefore, we offer comprehensive training sessions and workshops covering a diverse array of topics relevant to our business and operational needs. These include environmental management practices, adherence to regulatory requirements, erosion and sediment control measures, and effective scheduled waste management.

During the year, we conducted training for the following:

Environmental Training for Project Sites

Organised by the EIA of the HSSE Department, the training encompassed a range of topics, including Environmental Management Guidelines for Construction Sites, Scheduled Waste Management Requirements, and Erosion and Sediment Control. A total of 194 participants attended the training sessions, to integrate robust environmental management practices into daily operational routines, allowing contractors to minimise environmental impacts through their work. Additionally, it provides an opportunity for contractors and Sarawak Energy to collaboratively address environmental challenges, engage in problem-solving and implement proactive measures for environmental improvement, particularly in areas such as scheduled waste management, erosion and sediment control at project sites. This initiative underscores Sarawak Energy's commitment to achieving 100% environmental regulatory compliance and reinforces our role in ensuring meticulous planning, execution, monitoring and auditing of environmental mitigation measures on-site.

Environmental Training for SKG 4 Project Delivery Academy

Approximately 50 participants attended the environmental training session held on 22 August 2023. This event marked the first in-person environmental training of 2023, organised by the EIA section of the HSSE Department, in collaboration with the Project Delivery Department and Sejingkat Power Corporation of SEB Power. The transition to a physical format underscores the importance of this training in refreshing and reinforcing participants' knowledge of effective environmental management practices, particularly concerning the management of scheduled waste at project sites.

Sarawak Energy and the Environment

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In addition to our training initiatives, we also took steps to ensure compliance with environmental laws and regulations by enhancing and establishing comprehensive guidelines. In 2023, we updated the Environmental Management Guidelines for Construction to reflect current best practices. We also introduced the Erosion and Sediment Control Plan (ESCP) Guideline in Q4 of 2022 and endorsed the Environmental Management Guidelines for Coal Mining in November 2023. These measures underscore our commitment to maintaining high standards of environmental compliance and sustainable practices across our operations.

Biodiversity Conservation

Biodiversity conservation is essential for maintaining the health of our planet and safeguarding the well-being of humanity. It is a collective responsibility that demands unified efforts to protect and restore the diversity of life on Earth. This includes creating protecting areas, restoring degraded ecosystems, managing the use of natural resources and mitigating the impacts of climate change. In alignment with this vision, Sarawak Energy is committed to preserving critical flora and fauna within Sarawak.

Our Biodiversity Conservation Committee (BCC) is responsible for coordinating and enhancing biodiversity conservation initiatives throughout Sarawak Energy. It bolsters our capacity in research and conservation, in line with our objectives and international best practices, including the HSAP[a], HESG[b], ESMS[c] and the UN SDGs.

Furthermore, the BCC actively advocates for and recommends policies to relevant government stakeholders, while promoting environmental and social innovation in line with international best practices and Sarawak's strategic vision. The BCC is chaired by department heads who report directly to the Group Executive Committee and convene quarterly.

Notes:

[a] *Hydropower Sustainability Assessment Protocol.*
[b] *Hydropower Sustainability ESG Gap Analysis Tool.*
[c] *Environmental and Social Management System.*

Objectives of the BCC

To streamline biodiversity conservation initiatives across the organisation, fostering environmental excellence

To optimise positive impacts and mitigate adverse impacts of our projects and operations on biodiversity through the implementation of effective conservation measures

To build internal capacities and explore emerging areas of biodiversity research, laying a strong foundation for our conservation efforts

To promote, design, implement and oversee biodiversity conservation measures in alignment with regulatory standards and international best practices, benchmarking against global organisations such as the IUCN, among others

Sarawak Energy and the Environment

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BCC Key Focus Areas

BIODIVERSITY CONSERVATION POLICY & GOVERNANCE

BIODIVERSITY KNOWLEDGE CREATION & MANAGEMENT

PROTECTION & CONSERVATION OF BIODIVERSITY

CONSERVATION EDUCATION & PUBLIC AWARENESS (CEPA)

COLLABORATION & PARTNERSHIP IN BIODIVERSITY CONSERVATION

In 2023, the BCC updated its roadmap and targets to further benchmark against international good practices, safeguarding its licence to operate and accelerating growth. The review and update of the roadmap was conducted through a day-long workshop with 25 participants from across departments, including HSSE, R&D, Corporate Services, Sustainability, Project Delivery, SEB Power and Sarawak Energy Resources. The workshop aimed to form collaborative action plans and initiatives aligned with the respective strategies outlined under the roadmap for 2023 – 2024, as well as discussions on roadmaps and deliverables for 2025 and beyond.

Focusing on policies, procedures and guidelines for biodiversity conservation, the roadmap addresses environmental impacts and the management of biodiversity conservation across all business units. It also explores innovative conservation technologies and new methodologies through dedicated research, and it actively advocates for the gazettement of national parks within hydropower catchment areas.

Updated Roadmap and Targets (2023)

Environmental Excellence: Meeting International Good Practices, Maintaining our Licence to Operate and Accelerating Growth

2023-2024	2025 and Beyond
Centre of Excellence for Biodiversity Conservation (Strengthen and Deepen the Framework/Impact)	**Breaking New Ground (Explore Potential Business Diversification)**
• Develop an integrated biodiversity ecosystem and value network • Explore potential partnerships and collaborations with benchmark organisations, higher national and international learning institutes and NGOs • Strengthen existing governance framework on biodiversity conservation and embed biodiversity conservation as part of ESMS in relevant projects and business of Sarawak Energy	• Develop Biodiversity Digital Dashboard • Advocate and recommend gazettement of high conservation value areas within hydropower catchment or Sarawak Energy operation area • Explore new technologies and conservation methodologies through research • Develop specialised disciplines of Subject Matter Expert (SME) and experts who can provide expert services beyond Sarawak Energy • Leverage ecotourism as potential business diversification to alternative sustainable livelihood for communities

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Corporate Biodiversity Policy, Procedure & Guideline (PPG)

Established in 2022, the PPG is aligned with the BCC Roadmap and Sarawak Energy's Key Focus Areas for achieving HSSE Excellence and exceeding environmental compliance. The PPG outlines the company's policy statement and provides comprehensive guidelines and procedures to guide the organisation, stakeholders and Community, Environment and Public Affairs (CEPA) in identifying critical biodiversity issues and managing impacts through various approaches. These approaches include the Biodiversity Management Plan, Biodiversity Monitoring and Evaluation Plan and Biodiversity Action Plan.

The PPG will be implemented throughout the entire lifecycle of projects, guided by key reference documents such as the International Hydropower Association's (IHA) guide on Biodiversity and Invasive Species. It is accessible to all Sarawak Energy entities, projects and employees, embedding biodiversity excellence in project development and operational activities.

In 2023, we rolled out the PPG for internal stakeholders through various sessions. These sessions were attended by colleagues from SESCO, SEB Power, Sarawak Energy Resources, Project Delivery, Corporate Communication, Research & Development, Sustainability and HSSE. The primary objective was to inform and brief our internal stakeholders on the content of the PPG, as well as to clarify the roles and objectives of the BCC.

Nurturing Biodiversity in Our Projects

During the reporting period, we implemented significant efforts to enhance our ongoing projects and initiated various activities to disseminate knowledge and raise awareness on the importance of biodiversity conservation.

MURUM CONSERVATION GARDEN

- In 2015, a collaborative partnership was established with the Sarawak Forestry Corporation (SFC) to develop and maintain a conservation garden, which houses a diverse collection of significant plant species
- In 2022, an additional 200 plants were introduced, increasing the total to 1,728 plants
- Currently there are 28 Ensurai and 10 Gaharu seedlings placed under nursery care. Additional seedlings will be planted in 2024
- The delegation from Balai Taman Nasional Kayan Mentarang (BTNKM) commemorated their visit by planting 500 tree seedlings in September 2023
- Going forward, we will explore the feasibility of collaborating on research initiatives for the Conservation Learning Hub, investigate the potential for ecotourism and educational tourism, while enhancing infrastructure and logistics

Types of Plants	Total as of 2022	Target Planted in 2023
Trees		
Gaharu	363	30
Ensurai	310	50
Tongkat Ali	128	10
Belian	5	10
Keruing	5	10
Meranti	20	20
Nyatoh	5	10
Engkabang	15	20
Non - Trees		
Orchids	280	20
Ethno - Botanical Plants	154	10
Bamboo	243	10
Total	**1,528**	**200**
Overall Total		**1,728**

Sarawak Energy and the Environment

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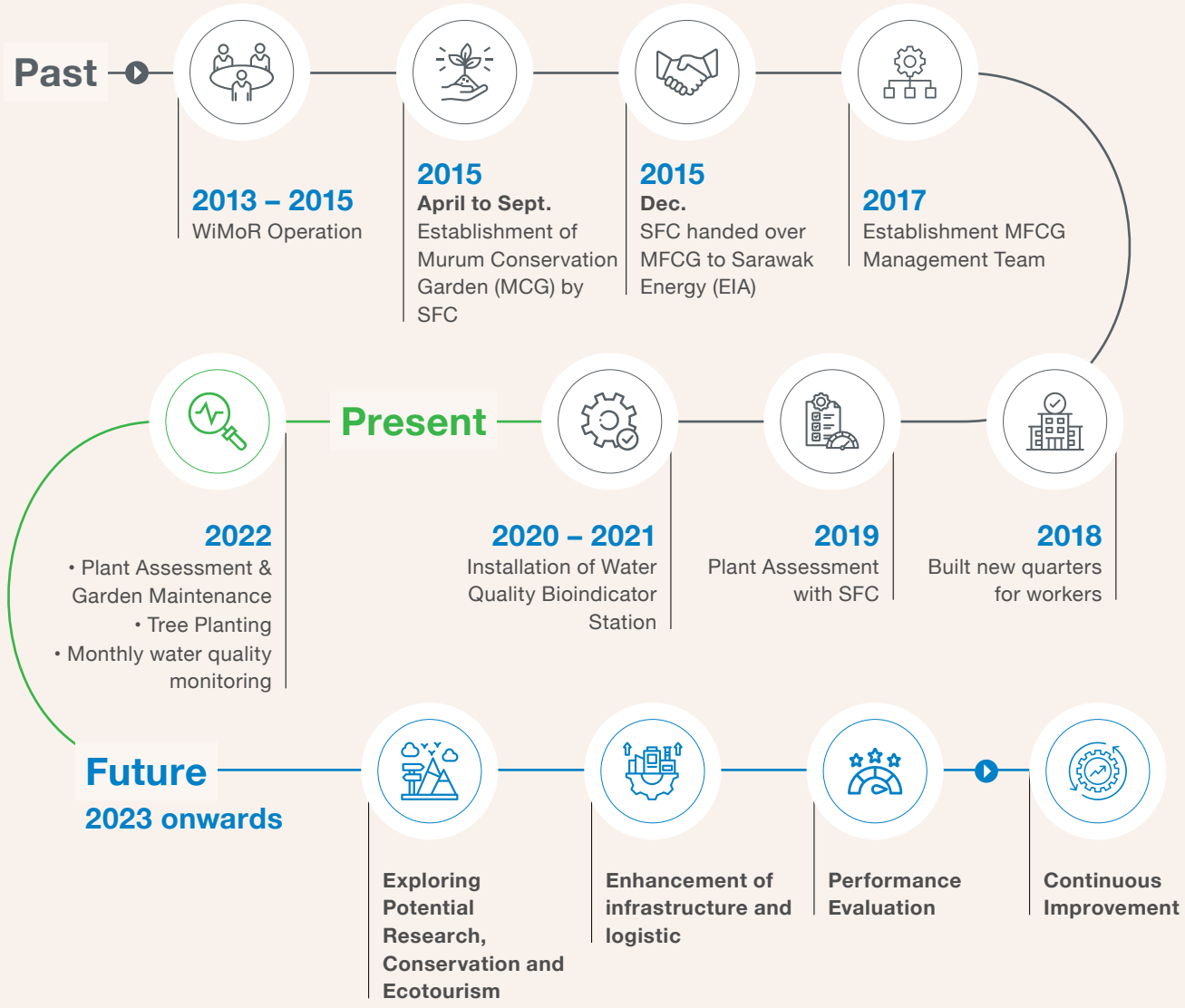
Roadmap of Murum Conservation Garden



Sarawak Energy and the Environment

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SUNGAI LEKASI TAGANG SYSTEM

- The local community actively conducts regular fish stock assessments and oversees the controlled fishing system known as Tagang
- Sarawak Energy has collaborated closely with the Department of Agriculture (DoA) to empower the local community with essential skills and knowledge to ensure project success. This partnership has facilitated regular fish stock assessments, Ensurai tree planting and skills development initiatives within the community
- The Tagang committee has identified a need for additional training and exposure for all members and have proposed restructuring the committee. Consequently, on 5 December 2023, Sarawak Energy and the Department of Agriculture (DoA) conducted a dialogue session with the communities to assess their perspectives through surveys and questionnaires
- The survey indicates that 100% of respondents are satisfied with the implementation and support provided by the local government and Sarawak Energy. Findings from the surveys also shows that 100% of the community members have benefitted from the implementation of the Sg. Lekasi Tagang system

Fish Stock Assessment 2023

Fish Growth Measurement record (as of 2023)				
	Average Weight (gm)			Growth Rate (%) Based on 2021
Species	2021	2022	2023	
Semah	765.00	781.30	**795.00**	3.92%
Kulong	418.30	406.80	**438.30**	4.78%
Adong	220.30	266.70	**300.30**	36.31%
Boeng	-	-	**210.00**	-

Note: *Yearly data on fish growth trend (Average Weight as of 2023).*

Sarawak Energy and the Environment

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SARAWAK ENERGY R&D INITIATIVES ON BIODIVERSITY CONSERVATION

Since 2013, Sarawak Energy has actively engaged in comprehensive environmental and biodiversity assessments within its hydropower project areas. This initiative, known as the Hydropower Environmental Sustainability Programme (HESP), has played a pivotal role in minimizing negative environmental impacts and maximizing positive contributions to the ecosystem. Building on the success of HESP, Sarawak Energy further solidified its commitment to environmental research and monitoring through the Sarawak Energy Hydro Environmental Sciences Research Blueprint which was established in 2018. This blueprint provides a strategic roadmap for enhancing the scientific foundation of the company's environmental initiatives.

Recognizing the transformative potential of technology, Sarawak Energy has implemented a range of digital and technological solutions to enhance environmental monitoring and research. This integration has significantly improved the efficiency, accuracy, and scope of our environmental data collection and analysis.

Sarawak Energy utilises advanced technological tools and applications to monitor wildlife populations and habitat conditions within the project areas. These innovative approaches provide valuable data for understanding ecological responses to hydropower development and informing sustainable management practices. The adoption of drones for aerial surveys, remote sensors for real-time data acquisition, camera traps for wildlife monitoring, and eDNA analysis for biodiversity assessment has allowed for more precise and comprehensive environmental monitoring.

eDNA analysis is a powerful non-invasive technique that detects species by extracting their DNA from environmental samples. This innovative approach allows us to assess species presence and distribution, particularly for elusive aquatic species that are challenging to observe directly.

eDNA Sampling Using Smith-Root Sampler at Bakun HEP Reservoir.

Release Tagged Fish at Sg. Gayum, Baleh.

Sarawak Energy and the Environment

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SARAWAK ENERGY BIODIVERSITY DAY

- In conjunction with International Biodiversity Day celebrated annually on 22 May, Sarawak Energy successfully organised a virtual half-day biodiversity awareness programme on 28 June 2023. Themed "Biodiversity Matters: Be Part of the Solution", the event aimed to raise awareness about biodiversity among Sarawak Energy staff
- The programme featured knowledge-sharing sessions and talks by various speakers from Forest Research Institute (FRIM), Forest Department of Sarawak (FDS) and Sarawak Forestry Corporation (SFC) on the importance and management of biodiversity, in celebration of the International Day of Biological Diversity (IDB)

PERJANJIAN KERJASAMA STRATEGIS (PKS) WORKSHOP ON BIODIVERSITY MANAGEMENT FOR MIHEP

- A workshop to finalise the Perjanjian Kerjasama Strategis (PKS) between Balai Taman Nasional Kayan Mentarang (BTNKM) and PT Kayan Hydropower Nusantara (PT KHN) was held from 1 to 3 February 2023 in Bogor, Indonesia
- The workshop aimed to reach an agreement with BTNKM on the technical and legal aspects of the Biodiversity Management and Monitoring Plan for managing the impacted area within the national park
- The BCC Working Level Team (EIA and R&D), along with representatives from Adaro, KPP and BTNKM, worked on finalising the Rencana Pelaksanaan Program (RPP), Rencana Kerja Lima Tahunan (RKL) and Rencana Kerja Tahunan (RKT) focused on biodiversity aspects
- Sarawak Energy Legal, Adaro Legal, the appointed Legal Counsel, Adnan Kelana Haryanto & Hermanto (AKHH) and the Direktorat Jenderal Konservasi Sumber Daya Alam dan Ekosistem (KSDAE) legal team worked on finalising the legal agreement of the PKS. The PKS between BTNKM and PT KHN was finalised and signed on 3 February 2023
- This strategic cooperation under Indonesian law aims to manage the impact of the Mentarang Induk HEP reservoir inundation in TNKM, covering an area of 243 hectares

STUDY VISIT BY BALAI TAMAN NASIONAL KAYAN MENTARANG (BTNKM) DELEGATION

- The Sarawak Energy team, consisting of members from HSSE, R&D, Business Development and Project Delivery of MIHEP, hosted a study visit for representatives from Balai Taman Nasional Kayan Mentarang (BTNKM) and Kementerian Lingkungan Hidup dan Kehutanan Indonesia
- This study visit was part of the activities under the Perjanjian Kerjasama Strategis (PKS) between PT KHN and BTNKM, focusing on knowledge sharing regarding biodiversity and social management for hydropower development. The event involved activities including a biodiversity knowledge sharing session, visits to Sarawak Energy's Species Survival Programme and Bakun Hydropower Station, tree planting activity at the Murum HEP reservoir area and community engagement session on the Bakun HEP development
- These programmes and activities were organised to provide the delegation with relevant information and references to facilitate their preparation for executing the terms and conditions specified in the PKS signed in February 2023

Sarawak Energy and the Environment

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Promoting Eco-Consciousness

We are committed to promoting environmental awareness among communities and stakeholder groups. During the year, we implemented several initiatives to instil a sense of responsibility among people, encouraging sustainable practices and addressing the current environmental challenges to ensure a sustainable tomorrow.

SARAWAK ENERGY TREE PLANTING, PROTECTION AND HABITAT RESTORATION CAMPAIGN 2021-2030

- This campaign is a comprehensive 10-year initiative aimed at planting and/or protecting 500,000 trees across Sarawak by 2030
- Sarawak Energy conducted a workshop on our Tree Planting, Protection and Habitat Restoration Campaign 2021-2030 in collaboration with the Forest Department Sarawak (FDS). The workshop aimed to generate and explore ideas for enhancing collaboration between the two parties to achieve our ambitious tree planting and protection goals
- A tree planting programme "Leaf Life 1.0" was also jointly organised with UPMKB at Nirwana Forest, where participants planted 700 plant saplings from various species including Kapur (*Dryobalanops beccarii*), Meranti Tembaga (*Shorea leprosula*) and Meranti Batu (*Shore dasphylla*)
- In 2023, we have surpassed our annual target by planting and protecting a total of 70,959 trees:

54,337
Trees Planted

16,622
Trees Protected

Tree Planting Programme "Leaf Life 1.0".

Sarawak Energy Celebrates Sarawak-Level Earth Day 2023 Themed "Invest in Our Planet".

Sarawak Energy and the Environment

GO GREEN – BEACH CLEANING PROGRAMMES

- **Beach Cleaning Programme at Lutong Beach, Miri –** The HSSE department organised a beach cleaning event which was participated by approximately 160 volunteers, including Sarawak Energy staff, Miri City Council (MCC) members and students from Curtin University. A total of 622.40kg of waste was collected at Lutong Beach
- **Beach Cleaning Programme at Kala Dana Beach, Mukah –** Around 70 participants from Sarawak Energy joined forces with staff from the Dalat & Mukah District Council (MDDM) in this initiative, collecting a total of 410.57kg of waste

Beach Cleaning Programme with the Community.

BORNEO ENVIRONMENT CONFERENCE (BENCONF) 2023

- The conference was held at the Imperial Hotel, Kuching, from 15 to 16 November 2023 under the theme "Knowing and Managing Climate Change". This collaborative event was organised by the Natural Resources and Environment Board Sarawak, Institut Kimia Malaysia (IKM) Sarawak Branch and Sarawak Energy's HSSE Department, in partnership with the Ministry of Energy and Environmental Sustainability Sarawak (MEESty)
- BEnConf 2023 aimed to raise awareness among stakeholders and the public about the causes and impacts of climate change. It also focused on sharing adaptation strategies to mitigate climate change effects and highlighted community-led initiatives in response to climate challenges

Borneo Environment Conference (BEnConf) 2023.

ECOLUTION CHALLENGE 2023

- Ecolution Challenge 2023 returned for its second season, presenting a new array of challenges and enticing rewards. This year's theme, "Green Starts from Workplace", emphasised how employees can promote sustainability and cultivate an eco-friendly lifestyle within their work environment
- Five new challenges were introduced this year, involving a tree-planting challenge, terrarium building challenge, plogging challenge, carpooling challenge and photography challenge. A total of 201 staff participated in this year's event

Green Starts in the Workplace.

Sarawak Energy and the People

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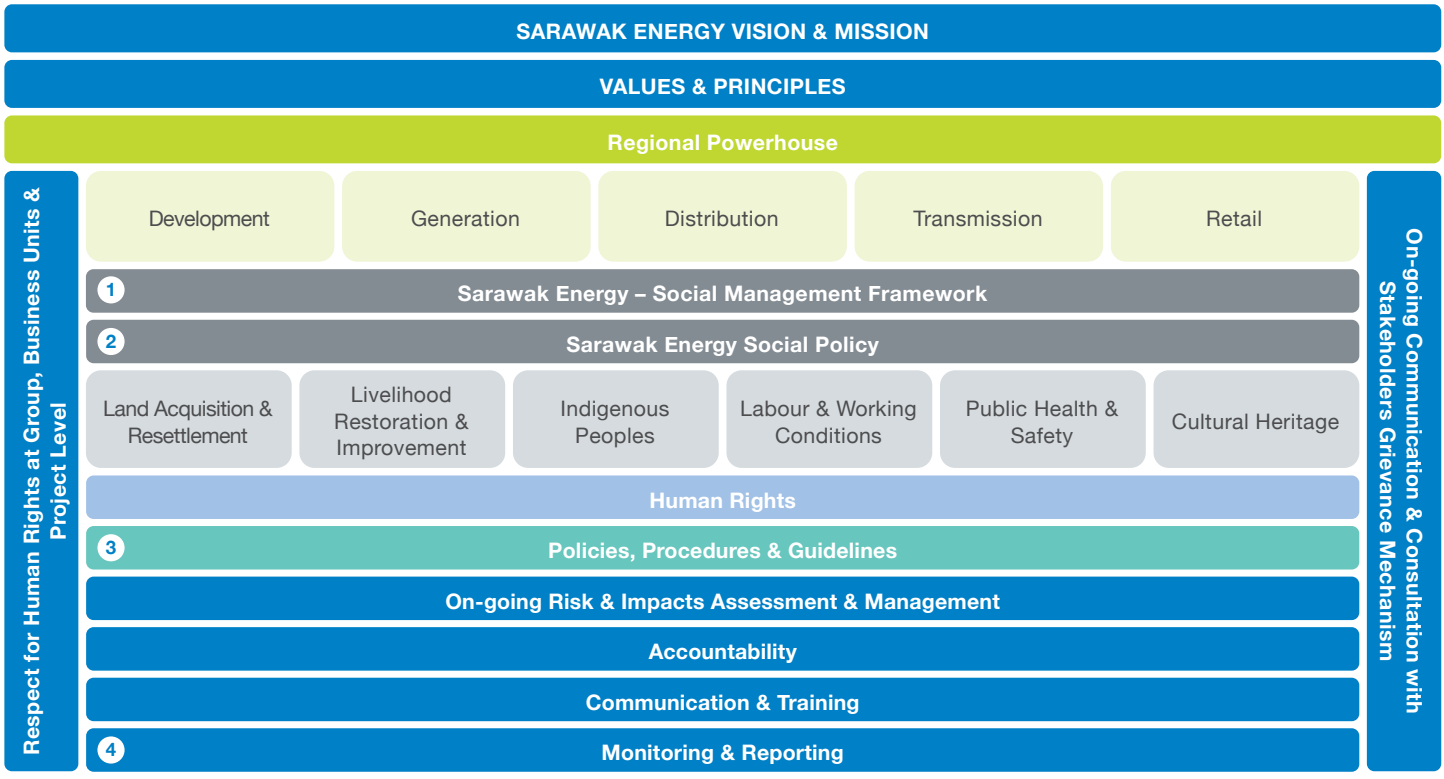
As an energy provider, our stakeholders, employees, vendors and the communities where we operate, are crucial to our business, supplying the resources, insights and support essential for our success and long-term viability. To this end, we are committed to engaging with our stakeholders and managing social impacts and risks holistically to promote sustainability.

Empowering Our Approach to Social Governance

In December 2022, Sarawak Energy established its Social Management Framework which guides us in the management of social risks and impacts arising from our operations and activities. This framework, approved by the Group Executive Committee (GEC) and incorporates Sarawak Energy's Social Policy, outlines our corporate commitments, guiding principles and overall strategy in relation to social aspects.



1 **Foundation to systematic & strategic management of social risk & opportunities**
- Strengthen governance & accountability

2 **Corporate commitments**
- Guiding principles
- Basis for company's overall strategy in respective social aspects

3 Required **measures to be implemented** (with additional guidance for decision making) in accordance with local & international good practices

4 Against meaningful **social performance indicators**

Sarawak Energy and the People

3-3

Background

- Despite having a strong foundation and reputation in terms of Corporate Social Responsibility, the Company's management of social issues that (1) are impacted by our activities and (2) affect our competitiveness was inadequate.
- There is a need for a corporate structure adjustment to strengthen the governance and accountability for social sustainability, through:
  - Establishment of specific function at corporate level to manage & monitor social impacts & performance
  - Firming up commitment on social sustainability
- The Social Management Framework (SMF) was approved by the Group Executive Committee (GEC) on 5th December 2022, after several rounds of stakeholder engagements and discussions.

Objective

- With the objective of reaching higher level of social sustainability, Social Management Framework is developed to provide an overview of the way in which we should proactively manage our social risks and impacts to ensure sustainable social development.
- The document forms a foundation for self-governance and provides key principles in the way we manage our social risks in a structured, holistic and integrated manner.
- Apart from strengthening the governance and accountability for social sustainability, the SMF also aims to:
  - Form the foundation towards a strategic management of the business' social risks and opportunities;
  - Provide better transparency in the management of material social issues; and
  - Provide an overview on how to meet stakeholders' and business growth requirements (e.g., financiers, investors and rating agencies) on international best practices.

Key Milestones

Key Milestone	Date
Establishment of Social Performance (Interim) Team	1 March 2022
Establishment of ESG Governance & E&S Performance Unit	1 May 2023
Approval of the following social policies, procedures and guidelines: **1. Sarawak Energy Social Policy** **2. Land Acquisition and Resettlement Policy, Procedures & Guidelines (PPG)** **3. Livelihood Restoration & Community Development PPG** **4. Cultural Heritage PPG**	18 May 2023

Sarawak Energy and the People

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Governance & reporting structure for social performance of Sarawak Energy Berhad (per approved SMF)

Roles	Responsibilities
(Management Oversight) **Sustainability Committee (i.e., Group Sustainability Committee[1] & Board Sustainability Committee[2])**	• Report on social performance to Board • Oversee management processes to **ensure compliance** with social policies, procedures and guidelines • Advisor to Sarawak Energy's Board of Directors on matters pertaining **sustainability (transition & physical) risks**, including social sustainability
(Corporate Function) **ESG Governance, E&S Performance Unit**	• Lead the application and embedding of social policies, procedures and guidelines in respective business unit across all social aspects • Provide guidance and strategic support to other relevant business units • **Monitor, assess and review overall social performance** against appropriate **KPIs**, at corporate level • Provide **periodic reporting** and **structured & systematic documentation** to top management • Update top management on the key social performance issues, risks and area of improvement
(Business Units)	• **Identification, assessment and management** of social risks and impacts of activities, and/or opportunities/contributions • Develop social management plan and implement mitigation measures and controls • **Monitor and track delivery and evaluate effectiveness** of action plans/mitigation measures • **Checking of progress and outcomes** towards meeting long-term social objectives • Internal and external (where applicable) reporting to gain feedback • Implement continuous improvement measures/corrective actions

Notes:

[1] *Formed in 2023, succeeding the CSR Steering Committee.*

[2] *Formal establishment of the Board Committee is expected by 2024.*

Sarawak Energy Social Policy[a]

- **Land Acquisition & Resettlement PPG**
- **Livelihood Restoration & Community Development PPG**
- **Cultural Heritage PPG**
- **Disclosure Policy**
- **Stakeholder Management Policy**

Note:

[a] *These policies, procedures and guidelines are non-exhaustive.*

Additionally, our Social Policy aligns with our mission to uphold the highest ethical and corporate standards, integrate best practices into our operations and proactively manage social risks. We believe that our policies, procedures and guidelines will establish clear corporate commitments, reduce inefficiencies and enhance the overall social performance of our people.

Sarawak Energy and the People

2-7, 401-1, 3-3

Cultivating the Best Talent at Sarawak Energy

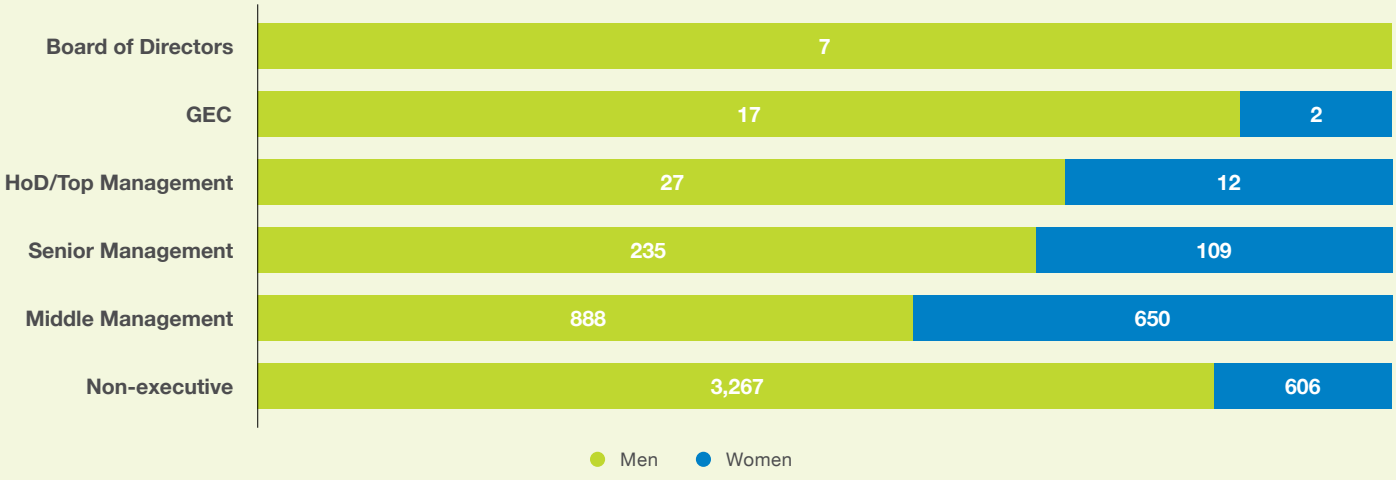
Our employees are the cornerstones of our business, driving innovation, productivity and growth. Their skills, dedication and hard work are crucial for achieving our corporate goals and delivering exceptional products and services. Consequently, we invest in their training, development, safety and well-being to cultivate a motivated and engaged workforce. This ensures higher morale, lower turnover and enhanced performance. We firmly believe that the success and sustainability of our organisation are tied to the commitment and capabilities of our talent pool.

Promoting Workplace Equality

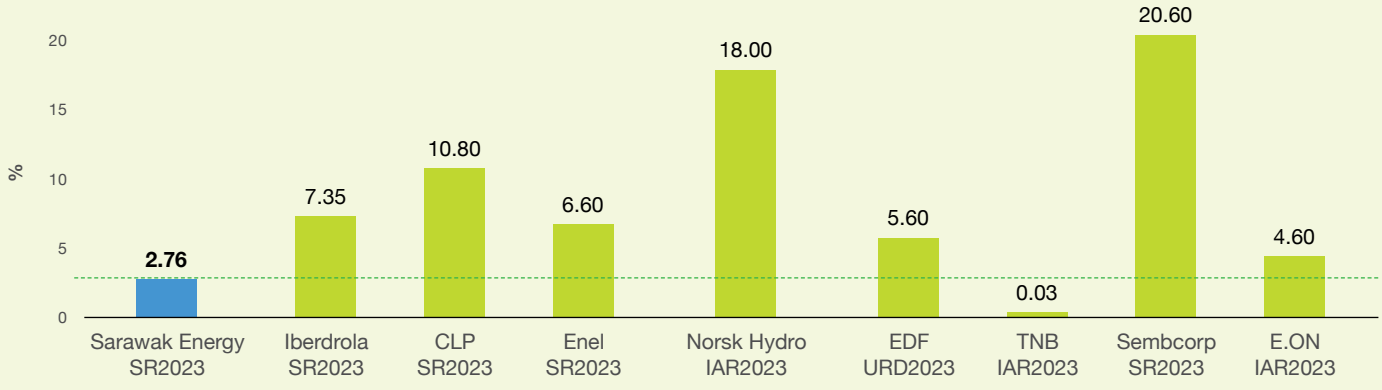
In 2023, our workforce grew from 5,537 to 5,809 employees, with 437 new hires joining our team. Among these, 130 were women and 307 were men. Throughout the year, we experienced a turnover of 165 employees. For a detailed breakdown of new hires and staff turnover by gender and age, please refer to pages 239 to 241 in Our Performance Data section.

The statistics below reflect our workforce growth:

Employee Breakdown by Gender for Year 2023



International Comparison of Turnover Rate for Power Utility Companies



Note:
Published Annual, Sustainability & Integrated Report 2023.

Sarawak Energy and the People

2-7, 404-1

At Sarawak Energy, Diversity, Equity and Inclusiveness (DEI) is a key component of our success as it impacts overall employee experience and engagement. We employ a multi-faceted approach to embedding Diversity, Equity, and Inclusion (DEI) into our processes and champion it as a key initiative. The following are some of the ways we promote DEI in our organisation:

DEI is a guiding principle in succession planning and we have set a target of 50:50 gender and ethnic representation

We have had a DEI Framework in place since 2021, ensuring that we provide an inclusive work environment

59 DEI ambassadors are actively raising awareness and addressing biases in the workplace

The DEI Community of Practice facilitates ongoing learning, shares best practices and collaborates in innovative DEI initiatives throughout the organisation

Our Accelerated Development Programme (ADP) achieved our DEI target with a gender balance of 50% male and 50% female and an ethnic representation of 48% non-Bumiputera and 52% Bumiputera in 2023

Our DEI efforts are reflected in the positive feedback from our annual employee survey, with an increasing trend over the past three years culminating in an 84% DEI SEES score in 2023

Empowering Women in the Workplace

The Sarawak Energy Leading Women Network (SELWN) continues to champion a workplace with equal opportunities for women. In support of the Sustainable Development Goal (SDG) to achieve 30% female representation in decision-making positions, we currently have 29% of women in leadership roles, demonstrating significant progress towards our target.

Highlights from SELWN activities in 2023 include:

Benchmarking our women empowerment programmes against other industry leaders

Continuing the Women Mentoring Women programme, which began in 2019 and now includes 70 mentors and 187 mentees

Collaborating with the Employee & Industrial Relations division to promote safe working environments through the Zero Tolerance for Sexual Harassment initiative across the organisation

Employee Learning & Development

Learning and development (L&D) is vital for fostering employee engagement and supporting their professional growth. We are committed to enhancing employees' skills and knowledge to enable them to perform their jobs more efficiently, while ensuring they remain competitive in the workplace. In 2023, we dedicated 283,547 hours to learning, with 162,305 of those hours conducted online/virtually. The tables below provide a detailed breakdown of participation across different categories.

Total and Average Training Hours

Year	2020	2021	2022	2023
Total Sarawak Energy Employees	5,381	5,442	5,537	**5,809**
Total Employees Who Attended Learning Activities	2,405	5,062	5,487	**5,750**
Total Learning Hours	78,103.06	166,573.86	220,368.81	**283,547**
Total Online/Virtual Learning Hours	51,556 (66% of total learning hours)	156,783.61 (94% of total learning hours)	167,332.22 (76% of total learning hours)	**162,304.96 (57% of total learning hours)**
Learning Hours per Employee (Annual)	14.51	30.61	39.79	**48.81**

Sarawak Energy and the People

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Total Learning Activities by Category

	% of Learning Hours			
Year	**2020**	**2021**	**2022**	**2023**
Technical	52	43	58.64	**56.77**
Business	39	45	29.76	**30.54**
Leadership	7	10	7.57	**7.32**
Conferences	2	2	4.03	**5.37**

Notes:
1. Y2020 data was revised to reflect additional learning hours recaptured during internal L&D learning data cleansing exercise in Y2021.
2. Starting Y2021 data includes formal learning programmes, knowledge sharing and learning activities.

Summary of Overall Average Hours of Training by Employee Category

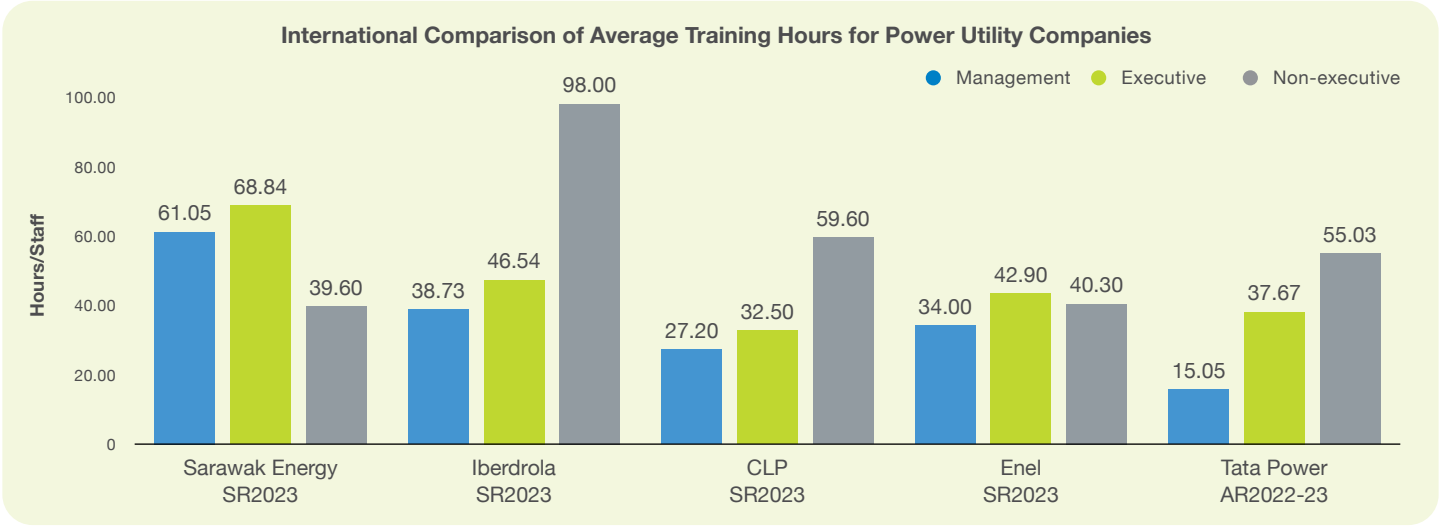
Year		**2019**	**2020**	**2021**	**2022**	**2023**
Total Number of Employees by Category	Management	145	54	49	352	**398**
	Executive	1,538	1,468	1,578	1,371	**1,538**
	Non-executive	3,338	3,864	3,815	3,814	**3,873**
Total Hours of Training by Category	Management	3,269.00	1,505.80	1,971.82	25,704	**24,299**
	Executive	28,932.00	40,945.16	87,115.35	70,987	**105,877**
	Non-executive	57,864.00	35,652.10	77,486.69	123,678	**153,371**
Average Hours of Training by Category	Management	22.54	27.89	40.24	73.02	**162.00**
	Executive	18.81	27.89	55.21	51.78	**68.84**
	Non-executive	17.33	9.23	20.31	32.43	**39.60**

Average Hours of Training Recorded by Category and Gender

		2021		**2022**		**2023**	
Year		**Male**	**Female**	**Male**	**Female**	**Male**	**Female**
Management	Average	31.10	53.02	70.52	79.08	**56.03**	**72.29**
	Total Training Hours	1,335.60	636.22	17,559.38	8,144.83	**15,407.09**	**8,892.24**
	No. of Employees	37	12	249	103	**275**	**123**
Executive	Average	54.62	56.13	53.20	49.79	**70.03**	**67.21**
	Total Training Hours	52,708.67	34,406.68	42,557.97	28,428.67	**62,187.41**	**43,689.70**
	No. of Employees	965	613	800	571	**888**	**650**
Non-executive	Average	19.14	26.47	33.51	26.65	**40.86**	**32.79**
	Total Training Hours	61,341.71	16,144.98	107,661.60	16,016.34	**133,502.98**	**19,867.89**
	No. of Employees	3,205	610	3,213	601	**3,267**	**606**

Sarawak Energy and the People

404-1, 404-2



Note:
Published Annual, Sustainability & Integrated Report 2023.

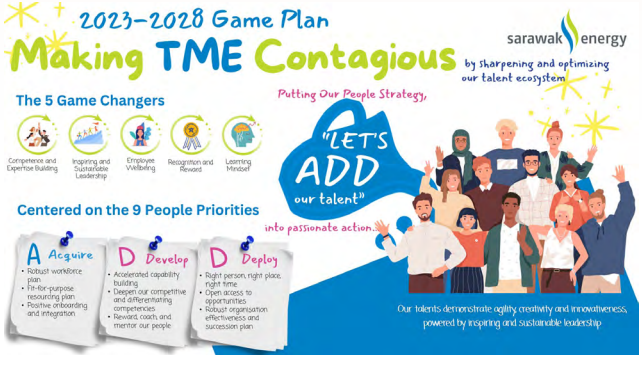
People Development

We have established a comprehensive Talent Management Excellence Roadmap which ensures that we invest in the development of our people. This approach allows us to implement effective initiatives that nurture talent across various segments within the organisation, equipping our workforce with the essential skills needed to thrive in a rapidly changing work environment. Our strong organisational learning culture has shown significant growth in recent years, as evidenced by the consistent increase in corporate-wide learning hours since 2020. In 2023, 57% of these learning hours were conducted online, underscoring our dedication to embracing digital learning methods.

During the year, we implemented the following initiatives:

Talent Management Excellence (TME) & People Strategy

To empower our workforce with the right skills, knowledge and experiences, we established Talent Management Excellence (TME) Key Focus Areas. The TME provides a holistic approach in talent management through a 2023-2028 Game Plan themed 'Making TME Contagious', which aims to build competencies and expertise, inspire sustainable leadership, enhance employee well-being, provide recognition and reward and cultivate a learning mindset. TME's People Strategy is **Acquire, Develop and Deploy**, focusing on the acquisition, development and deployment of talents and into roles that maximise their potential.



Sarawak Energy and the People

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A

ACQUIRE

Talent acquisition is key to building a robust workforce to meet current and future demands. To this end, we invested in the following initiatives:

- **Scholarship**

  We awarded scholarships to 207 exceptional students and employees, aiming to cultivate future leaders across diverse academic disciplines. Among them, 16 recipients are Sarawak Energy employees, who have benefitted from educational opportunities to enhance their skills. Since 2014, Sarawak Energy has granted a total of 1,058 scholarships, with a remarkable 87.75% of bonded scholars subsequently joining our organisation. These initiatives empower Sarawak's youth, enabling them to fulfil their potential and contribute to the region's development in alignment with the Sarawak Government's Post COVID-19 Development Strategy (PCDS 2030).

  In 2023, RM16 million was allocated for undergraduate and postgraduate scholarships and RM5 million for UNITEN's diploma programme. This diploma scholarship programme supports 44 SPM leavers in fast-tracked courses and workplace learning relevant to the power utility industry. Notably, the first batch of 27 Diploma in Electrical Engineering recipients from UNITEN successfully completed their 2.5-year programme, mandatory apprenticeship and obtained L1 Chargeman and First Aid certifications.

- **Internship**

  At Sarawak Energy, our internship programme is a key component of our corporate social responsibility, aimed at nurturing students and giving them real-world experiences within our organisation. In 2023, we welcomed 775 interns into various departments, providing valuable exposure and cultivating a dynamic and inclusive workforce. This programme is crucial to our talent strategy, ensuring that we develop and maintain a strong pool of skilled individuals. Additionally, in 2023, we hired 90 interns into our organisation, demonstrating our commitment to continuous talent development.

- **Welcome to Sarawak Energy (SE01)**

  To foster an enterprise-first mindset among our employees, we provided integrated blended learning experiences to enhance technical, safety, leadership and commercial skills. As a result, over 650 employees benefitted from these comprehensive programmes. We also integrated 410 new joiners into Sarawak Energy through our Welcome to Sarawak Energy (SE01) programme, ensuring they align with our organisational values.

- **Employee Satisfaction from Onboarding and Integration**

  Our commitment to continuous improvement is evident in the results of our recent onboarding survey, which achieved a satisfaction rate of 87%. We remain dedicated to further refining and enhancing our onboarding processes to ensure an exceptional experience for all our talent.

- **Sapphire Young Professional Network**

  A two-year programme designed for Executive 1 employees with less than two years of tenure at Sarawak Energy, this initiative focuses on the holistic growth, development and networking opportunities within the organisation. In its inaugural year in 2023, we welcomed 241 participants, focusing on themes such as individual development, business acumen, environmental and societal contributions.

Sarawak Energy and the People

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D

DEVELOP

Tailoring development programmes to our employees' needs starts with their Individual Development Plan (IDP). The IDP allows employees to track their career development, capture key insights from discussions with Line Managers and prioritise action plans to close competency gaps. In 2023, we surpassed our TME target of 95% IDP completion, achieving 98%. Our IDP works alongside the Competence Assurance Framework (CAF) and Competence Assurance (CA) Assessment to support career development. Together, these tools help employees plan their career progression. In 2023, we achieved a 93% CAF assessment rate, the highest in the last three years, showcasing our employees' proactive approach and commitment to growth.

This focus on development has led to an increase in staff progressions in 2023, with 52% of progressions for Non-Executives and 48% for Executives. Additionally, we have seen a continuous rise in the progression of female talent over the past three years: 16% in 2021, 29% in 2022, and 30% in 2023.

We also organised the following initiatives to enhance development, leadership and technical knowledge:

- **Non-Executive Bridging Programme (Non-Technical)**

A total of **54** individuals participated

7 successfully completed and progressed to E1

- **Sarawak Energy Mentoring Programme**

1,500 mentees and 98 mentors enrolled since its launching in 2017

- **Technician Foundation Programme (TFP) & Technical Executive Programme (TEP)**

55 learners concluded the TFP

2 learners completed the TEP

- **Introduction to Sarawak Energy Business (SE02) & Commercial Acumen Fundamentals (SE03)**

81 participants (SE02)

162 participants (SE03)

- **In-house Programme: Facilitation & Intervention**

223 participants since inception in 2021

- **Business Smart People, People Smart Business (BSP PSB)**

Visited **5** locations (Sibu Regional Office, Tg. Kidurong Power Plant Bintulu, Bakun HEP and Miri Regional Office) to disseminate information to colleagues on people matters and our organisational strategy

Sarawak Energy and the People

2-29, 404-2

D

DEPLOY

Deploying talent to the right roles at the right time begins with strengthening the capabilities of our talent pipeline. We have identified 95% of successors for critical positions as "Ready Now" and 96% as "Ready Later" (within 2-3 years). This consistent achievement over the past three years reflects our commitment to maintaining optimal operation and a sustainable talent pipeline equipped to meet future demands.

We have also appointed 335 Subject Matter Experts (SMEs), who play a crucial role in developing technical and functional capabilities, mentoring, coaching, curating learning content and fostering talent growth. SMEs also collaborate on in-house programmes, such as the Leadership Conference 2023 themed "Inspirational Leadership in Focus". This event brought together SMEs and EAGLES (Exceptional Apprentice for GEC Leaders) and saw participation from 1,246 employees.

Sarawak Energy People Survey 2023

In 2023, we conducted a survey, achieving the status of a 'Greater Place to Work.' Our Scores have surpassed both local and global benchmarks:

Overall Satisfaction
87%

Continuous Improvement
84%

Employee Engagement
91%

Diversity & Inclusiveness
84%

Recognising & Celebrating the Achievements of our People

The Sarawak Energy Hall of Fame (SEHOF) which was established in 2017, serves as a prestigious platform to honour employees who have made significant contributions to our Key Focus Areas and strategic objectives. To date, 1,526 individuals have been celebrated as SEHOF winners. Furthermore, in 2022, 583 employees received Long Service Awards, recognising their longstanding commitment and achievements.

Sarawak Energy bagged the following awards:

HR Asia
'Best Company to Work for in Asia 2023' & 'Digital Transformation Award 2023'

Brandon Hall Human Capital Management Awards
2 Gold Awards under Learning & Development

Sarawak Energy and the People

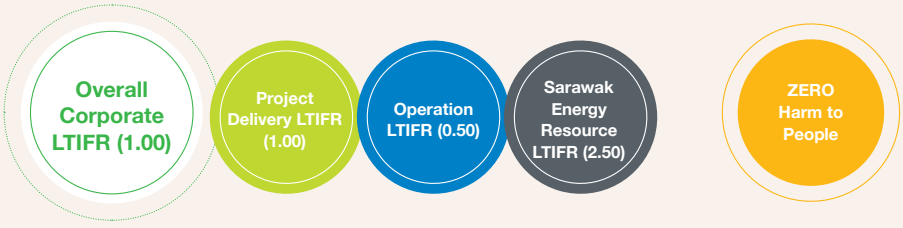
403-9, 3-3

Strengthening Our HSSE Performance

Sarawak Energy fosters a culture of HSSE Excellence by cultivating a proactive HSSE ethos that empowers employees to take full ownership of Health, Safety, Security and Environment (HSSE) responsibilities.

OUR COMMITMENT TOWARDS ZERO INJURIES & FATALITIES

Corporate KPI Safety Performance 2023 (Fatality & LTIFR - Lost Time Injury Frequency Rate)



The lost time injury frequency rate (LTIFR) measures the number of lost-time injuries per million hours worked and is a standard safety metric across various industries. As of December 2023, we continue to track and measure our LTIFR in three categories: Operations, Project Delivery, and Sarawak Energy Resources. The total man-hours worked across these categories determine the overall corporate LTIFR. Operations encompass our Corporate Functions (HR, HSSE, Finance, etc.) and core business operations and projects, including Generation (thermal and hydropower), Distribution, Transmission, Retail, and SE(RES).

Sarawak Energy Resources represents our coal mining operations, while Project Delivery pertains to our ongoing projects.

We are pleased to report that we achieved 0.329* for our Corporate Lost time Injury Frequency Rate, which was significantly lower than our overall corporate LTIFR target of 1.0 for 2023. However, despite stringent safety measures, we recorded one fatal incident involving two contractor workers who sustained severe injuries, including electrocution and burns, during vegetation clearing in Sibu. This incident was not included in our safety performance metrics because investigations by the authorities revealed that the contractors were negligent and failed to comply with the general and HSSE requirements outlined in the contract. Consequently, the contractors faced penalties imposed by DOSH.

Safety Performance 2023 (Fatality & LTIFR - Lost Time Injury Frequency Rate)

Business Units	Total Man-Hours Worked	LTI Case	Fatality Case	LTIFR
Operation	19,760,603.16*	7*	0	0.354
SER	1,876,921.00*	0*	0	0.000
PDD	8,801,014.16*	3*	0	0.341
Overall Total	30,438,538.32*	10*	0	0.329*

Rate of Fatalities as a Result of Work-related injury

Category	Employees only	Contractors only
Number of fatalities	0*	0*
Number of hours worked	13,203,675*	17,234,863*
Hours worked rate	1,000,000	1,000,000
Rate of fatalities	0.000	0.000

Rate of High-consequence Work-related Injuries (excluding fatalities)

Category	Employees only	Contractors only
Number of LTI (excluding fatalities)	3*	7*
Number of hours worked	13,203,675*	17,234,863*
Hours worked rate	1,000,000	1,000,000
Rate of high-consequence work-related injuries (excluding fatalities)	0.227	0.406
Types of work-related injury	Burnt injury (1), slip & fall (1) & injury due to wear and tear faulty gate stopper (1)	Burnt injury (2), electrical shock (2), fall from height (2) & accidental activation of the excavator bucket (1)

Note: *LTIFR figure excluding fatalities.*

Our Performance Data

201-1, 203-1, 204-1

We assess the effectiveness of our sustainability strategy and initiative by monitoring the key sustainability, or ESG performance data over five years. Our data is prepared with reference to the GRI Standards 2021 and also reports on the GRI G4 Electric Utilities Sector Disclosures (EUSD) by the Global Reporting Initiative.

Financial

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Direct Economic Value Generated							GRI 201-1
Revenue	RM Million	5,806.80	5,651.70	6,152.60	7,060.84	7,324.40	
Economic Value Distributed							
Operating Costs (RM Million)	RM Million	1,459.20	1,704.21	2,073.00	2,602.44	2,632.70	
Employee remuneration (RM Million)	RM Million	547.00	541.30	596.30	673.85	778.20	
Dividends paid (RM Million)	RM Million	-	-	-	-	158.00	
Interest paid (RM Million)	RM Million	995.10	1,081.20	915.20	855.15	812.30	
Payments to the government - Income taxes paid (net of refunds)	RM Million	121.80	162.80	127.20	286.97	358.20	
Economic Value Retained	**RM Million**	**2,683.70[4]**	**2,162.19[3]**	**2,440.90[2]**	**2,642.42[1]**	**2,585.00***	

Note:
Revenue figures include rental income, interest received & proceeds from disposal of property, plant & equipment for the Economic Value Retained calculation.

Tariff

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Average Tariff by Customer Type							GRI 203-1
Average Organic	cent/kWh	28.22	28.22	28.30	28.17	28.05	
Domestic	cent/kWh	28.47	28.81	28.96	28.81	28.91	
Commercial	cent/kWh	30.65	30.70	30.59	30.54	30.53	
Public Lighting	cent/kWh	47.20	47.27	47.28	47.70	47.65	
Industrial	cent/kWh	24.16	23.89	23.96	23.97	23.80	

Procurement

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Capital Works							GRI 204-1
Sarawakian	RM	416,366,166.99[4]	114,555,097.49[3]	335,983,187.44[2]	295,198,815.38[1]	254,790,542.37*	
Malaysia (Non-Sarawakian)	RM	274,575,584.00	44,542,098.60	226,103,506.14	32,522,488.80	90,342,509.10	
International	RM	299,412,243.00	117,782,423.00	528,705,566.15	100,626,345.66	145,318,205.15	
Operations and Maintenance							
Sarawakian	RM	822,335,735.58[4]	1,037,245,113.37[3]	1,061,052,945.37[2]	1,947,373,513.08[1]	943,688,077.61*	
Malaysia (Non-Sarawakian)	RM	54,243,444.92	68,301,534.66	194,827,901.20	235,672,775.79	181,527,068.79	
International	RM	52,732,516.13	38,580,626.30	28,660,053.82	278,455,646.61	85,804,593.19	

Our Performance Data

205-1, 205-2, 205-3

Anti-Corruption

Disclosure	Unit	2023	GRI Disclosures/ IFRS
Operations Assessed for Risks Related to Corruption			GRI 205-1
Total number of operations assessed for risks related to corruption	Number	50	
Communication and Training About Anti-Corruption Policies and Procedures			GRI 205-2
Governance body members that the organisation's anti-corruption policies and procedures have been communicated to	Number of Session[a]	21	
Employees that the organisation's anti-corruption policies and procedures have been communicated to	Number of Session[a]	27	
Business partners that the organisation's anti-corruption policies and procedures have been communicated to	Number of Session[b]	3	
Governance body members that have received training on anti-corruption	Number of Session[a]	2	
Employees that have received training on anti-corruption[c]	%[a]	100%	

Notes:

[a] *Engagement with Internal Stakeholders.*

[b] *Zero Tolerance to Fraud Bribery & Corruption (ZTFBC) Briefing to External Stakeholders.*

[c] *Completion of Mandatory Anti Bribery & Corruption E-Learning.*

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Confirmed Incidents of Corruption and Actions Taken							GRI 205-3
Total number and nature of confirmed incidents of corruption	Number	7	4	0	1	1	
Total number of confirmed incidents in which employees were dismissed or disciplined for corruption	Number	7	4	0	1	1	
Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to corruption	Number	N/A	N/A	N/A	N/A	N/A	
Public legal cases regarding corruption brought against the organisation or its employees during the reporting period and the outcomes of such cases	Number	1	1	0	1	1	

Our Performance Data

301-1

Materials Used

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Category: Non-Renewable Materials Used							GRI 301-1
Plant Type (Main Grid)							
Coal	Tonne	3,064,825.62[4]	2,684,065.69[3]	2,940,286.82[2]	3,087,236.06[1]	3,201,032.55*	
Diesel	Litre	12,584,999.55[4]	24,301,619.57[3]	26,313,382.07[2]	27,887,522.36[1]	29,023,942.56*	
Natural Gas	mmbtu	36,756,369.74[4]	33,066,287.95[3]	32,806,349.50[2]	42,464,815.69[1]	47,502,815.02*	
Plant Type (Northern Grid)							
Diesel	Litre	40,959,417.00[4]	38,353,272.00[3]	39,435,748.00[2]	40,863,919.00[1]	47,121,041.00*	
Plant Type (Stand-alone Grid)							
Diesel	Litre	5,666,656.00[4]	3,597,926.00[3]	3,457,144.00[2]	3,904,567.00[1]	2,787,511.00*	
Category: Renewable Materials Used							
Batang Ai HEP							
Annual Inflow (annual inflow from catchment)	million m^3	2,852.00	4,255.00	3,651.00	3,277.00	3,160.20	
Annual water volume for energy generation	million m^3	2,844.00[4]	3,974.38[3]	3,617.61[2]	3,534.20[1]	3,512.34*	
Annual water regulated (Spillway discharge)	million m^3	0.00	0.00	0.00	0.00	0.00	
Murum HEP							
Annual Inflow (annual inflow from catchment)	million m^3	8,183.00	9,993.00	9,660.00	10,791.00	9,129.00	
Annual water volume for energy generation	million m^3	7,532.00[4]	8,548.94[3]	8,583.01[2]	9,496.38[1]	9,291.93*	
Annual water regulated (Spillway discharge)	million m^3	0.00	1,446.00	1,159.00	1,175.00	6.00	
Bakun HEP							
Annual Inflow (annual inflow from catchment)	million m^3	40,373.00	55,730.00	49,894.00	50,884.00	43,249.27	
Annual water volume for energy generation	million m^3	38,827.00[4]	36,965.72[3]	40,874.51[2]	41,636.95[1]	44,213.59*	
Annual water regulated (Spillway discharge)	million m^3	0.00	15,589.00	10,436.00	6,278.00	1,453.00	

Our Performance Data

301-1

Cost of Materials Used

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Fuel Cost (RM) & Power Plant by Our Main Grid, Northern Grid & Stand-Alone Grid							GRI 301-1
Plant Type: Coal (Main Grid)							
Sejingkat Power Corp.	RM	62,240,358	63,965,074	46,941,917	45,351,027	39,871,865	
PPLS Power Generation	RM	73,207,127	69,420,961	62,355,174	77,450,023	73,998,822	
Mukah Power Generation	RM	136,815,314	80,100,452	83,435,903	85,905,113	94,286,946	
Balingian Power Generation	RM	76,236,790	93,326,367	146,213,300	199,080,660	211,711,152	
Total	**RM**	**348,499,589**	**306,812,854**	**338,946,294**	**407,786,823**	**419,868,785**	
Plant Type: Natural Gas (Main Grid)							
Sarawak Power Generation	RM	104,969,215	82,595,756	165,916,342	227,209,389	210,967,476	
Kidurong Power Generation	RM	-	12,593,455	198,763,919	285,328,211	393,518,731	
Bintulu PS	RM	56,669,505	56,237,474	47,281,118	102,007,412	91,138,864	
Miri PS	RM	54,433,029	65,076,152	70,473,886	57,123,718	40,111,431	
Total	**RM**	**216,071,749**	**216,502,837**	**482,435,265**	**671,668,730**	**735,736,502**	
Plant Type: Diesel (Main Grid)							
Sg Biawak PS	**RM**	**1,650,986**	**322,805**	**528,727**	**2,454,593**	**22,321,190**	
Plant Type: Diesel (Northern Grid)							
Limbang PS	RM	55,632,336	45,428,664	57,097,815	108,187,732	97,434,689	
Lawas PS	RM	35,417,332	23,783,999	27,421,553	44,331,780	61,604,779	
Total	**RM**	**91,049,668**	**69,212,663**	**84,519,368**	**152,519,512**	**159,039,468**	
Plant Type: Diesel (Stand-alone)							
Belaga PS	RM	3,624,602	3,211,011	3,150,084	5,561,759	1,234,998	
Song PS	RM	4,375,076	30,867	-	-	-	
Ng Mujong PS	RM	153,147	-	-	-	-	
Ng Jagau PS	RM	280,448	262,055	334,741	577,906	187,817	
Ng Entawau PS	RM	267,409	241,753	256,501	469,904	411,857	
Mulu PS	RM	1,753,085	991,743	844,404	1,864,707	2,583,282	
Long Lama PS	RM	2,815,294	2,314,513	2,348,843	4,726,129	4,691,742	
Banting PS	RM	345,082	289,425	322,281	544,571	537,533	
Paloh PS	RM	597,609	526,382	726,271	1,431,549	1,449,946	
Murum Resettlement PS OP	RM	518,120	432,971	579,538	1,043,904	804,074	
Total	**RM**	**14,729,872**	**8,300,720**	**8,562,663**	**16,220,429**	**11,901,249**	

Our Performance Data

303-3

Water

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Plant Type: Coal							GRI 303-3
Sejingkat Power Corp + PPLS							
Municipal	meter cubic (m^3)	1,140,932.00[4]	1,265,838.00[3]	1,133,445.00[2]	1,163,372.00[1]	1,221,203.00*	
Sea Water or other natural water source	meter cubic (m^3)	331,568,280.00[4]	348,383,088.00[3]	305,121,492.00[2]	266,940,141.12[1]	222,789,427.20*	
Mukah Power Generation							
Municipal	meter cubic (m^3)	1,063,097.00[4]	741,874.00[3]	814,465.00[2]	931,051.00[1]	968,521.00*	
Sea Water or other natural water source	meter cubic (m^3)	392,610,711.74[4]	219,655,670.40[3]	219,276,979.20[2]	235,671,120.00[1]	213,275,203.20*	
Balingian Power Generation							
Municipal	meter cubic (m^3)	-	N/A[3]	17,924.00[2]	16,389.00[1]	28,461.00*	
Sea Water or other natural water source	meter cubic (m^3)	-	1,650,000.00[3]	4,186,687.50[2]	4,467,750.00[1]	4,601,250.00*	
Plant Type: Natural Gas							
SPG (Combined Cycle) + Bintulu SESCO (Open Cycle)							
Municipal	meter cubic (m^3)	329,516.00[4]	250,223.00[3]	275,082.00[2]	232,815.00[1]	598,081.00* (with KPG)	
Sea Water or other natural water source	meter cubic (m^3)	241,935,030.72[4]	104,047,121.52[3]	87,860,036.88[2]	228,063,636.00[1]	194,278,482.00*	
KPG (Combined Cycle)							
Municipal	meter cubic (m^3)	-	-	112,863.00[2]	162,506.00[1]	-[a]	
Sea Water or other natural water source	meter cubic (m^3)	-	-	404,068,140.00[2]	501,406,498.50[1]	516,518,200.00*	
Miri SESCO (Open Cycle)							
Municipal	meter cubic (m^3)	23,803.00[4]	29,542.00[3]	47,638.00[2]	39,448.00[1]	23,448.00*	
Sea Water or other natural water source	meter cubic (m^3)	N/A[4]	N/A[3]	N/A[2]	N/A[1]	N/A*	

Our Performance Data

303-3, 305-1, 305-4, IFRS S2-29(a), 33(a)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Plant Type: Diesel							GRI 303-3
Sg Biawak SESCO							
Municipal	meter cubic (m^3)	6,896.13[4]	1,731.51[3]	4,417.00[2]	5,673.66[1]	7,469.06*	
Sea Water or other natural water source	meter cubic (m^3)	0.00[4]	0.00[3]	0.00[2]	0.00[1]	0.00*	
Non-Grid - Limbang							
Municipal	meter cubic (m^3)	40,859.00	41,251.00	43,936.00	46,726.00	67,577.00	
Non-Grid - Lawas							
Municipal	meter cubic (m^3)	2,837.00	3,700.00	4,220.00	4,683.00	5,450.00	

Note:

[a] *KPG's municipal water bill started to combine with SPG & BTU in year 2023.*

Climate

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Direct (Scope 1) GHG Emissions							GRI 305-1, 305-4, IFRS S2-29(a), 33(a)
Main Grid	tCO_2eq	6,348,254.39[4]	5,600,892.97[3]	5,976,874.06[2]	6,483,137.99[1]	7,083,870.39*	
Northern Grid	tCO_2eq	104,477.64[4]	97,829.99[3]	100,595.84[2]	104,238.93[1]	126,725.74*	
Stand-Alone Grid	tCO_2eq	14,453.34[4]	9,176.85[3]	8,818.18[2]	9,958.58[1]	7,109.53*	
Company-owned vehicles	tCO_2eq	5,353.45	4,167.74	3,766.89	2,112.89[1]	2,025.50*	
Total	**tCO_2eq**	**6,472,538.82**	**5,712,067.55**	**6,090,054.97**	**6,599,448.39[1]**	**7,219,731.17***	
Scope 1 Emissions Intensity							
Normalised by Gross Energy	tCO_2eq/MWh	0.220	0.201	0.196	0.197	0.204	
Normalised by Net Energy	tCO_2eq/MWh	0.225	0.206	0.201	0.201	0.208	
Direct Emissions (Scope 1) Intensity (over Revenue)[a]	tCO_2eq/ Millions of Revenue (RM)	1,143.14	1,033.70	1,006.82	947.53[1]	1,010.15*	
Direct Emissions (Scope 1) Intensity (over Total Investment$_{LCG}$)[a]	tCO_2eq/ RM Millions of Total Investment$_{LCG}$	955.98	825.49	880.09	659.67[1]	712.06*	

Our Performance Data

305-1, 305-2, 305-3, 305-4, IFRS S2-29(a), 33(a)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Energy Indirect (Scope 2) GHG Emissions							GRI 305-1, 305-2, 305-3, 305-4, IFRS S2-29(a), 33(a)
Building Electricity Consumption (Offices & Substations)	tCO_2eq	13,709.25	13,447.19[3]	11,999.62[2]	12,809.42[1]	13,635.19*	
Scope 2 Emissions Intensity							
Normalised by Gross Energy	tCO_2eq/ MWh	0.000466	0.000474	0.000387	0.000382	0.000385	
Normalised by Net Energy	tCO_2eq/ MWh	0.000477	0.000485	0.000395	0.000391	0.000394	
Other Indirect (Scope 3) GHG Emissions Relevant to Sarawak Energy							
Category 1: Purchased goods and services	tCO_2eq/ MWh	-	51,017.84	62,439.76	73,843.71	71,412.68	
Category 2: Capital goods	tCO_2eq	-	211,373.65	243,456.29	232,293.51	256,077.68	
Category 3: Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	tCO_2eq	-	1,391,123.18	1,491,236.75	1,638,047.91	1,735,100.15	
Category 4: Upstream transportation and distribution	tCO_2eq	-	The upstream transportation and distribution are included in Category 3				
Category 5: Waste generated in operations	tCO_2eq	-	6.59	13.61	8.70	9.27	
Category 6: Business air travel	tCO_2	2,582.05	565.13[3]	252.41[2]	1,922.01[1]	3,866.82*	
Category 7: Employee commuting	tCO_2eq	-	2,113.84	2,137.80	2,175.12	4,015.87	
Category 9: Downstream transportation and distribution	tCO_2eq	-	Data has been calculated in Scope 1				
Category 11: Use of sold products	tCO_2eq	-	No sale of coal	172,423.70	156,993.33	No sale of coal	
Category 15: Investments	tCO_2eq	-	Investment to JV company - no emission yet as the project is at early stage				
Total CO_2 Emissions (Main Grid)							
Sejingkat Power Corp.	tCO_2eq	679,890.56	671,849.96	462,019.95	335,052.46	261,612.76	
	tCH_4 in tCO_2eq	62.80	62.24	46.81	35.02	26.87	
	tN_2O in tCO_2eq	966.09	954.22	673.10	485.66	380.30	
PPLS Power Generation	tCO_2eq	697,347.40	650,276.32	605,853.28	571,262.26	486,389.35	
	tCH_4 in tCO_2eq	63.72	59.62	59.05	57.59	48.93	
	tN_2O in tCO_2eq	992.53	925.05	887.99	832.93	709.40	

Our Performance Data

305-1, IFRS S2-29(a), 33(a)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total Emissions (Main Grid)							GRI 305-1, IFRS S2-29(a), 33(a)
Mukah Power Generation	tCO_2eq	1,585,818.75	871,167.29	895,037.02	805,325.80	724,579.25	
	tCH_4 in tCO_2eq	145.25	79.60	88.01	79.53	75.61	
	tN_2O in tCO_2eq	2,256.25	1,239.92	1,310.06	1,177.97	1,050.59	
Balingian Power Generation	tCO_2eq	1,423,412.27	1,605,680.74	2,234,823.71	2,501,945.80	3,080,223.60	
	tCH_4 in tCO_2eq	131.96	145.95	217.07	242.57	299.51	
	tN_2O in tCO_2eq	2,021.45	2,287.15	3,277.24	3,669.97	4,516.23	
Sarawak Power Generation	tCO_2eq	950,462.21	749,873.97	600,125.08	778,083.39	712,374.87	
	tCH_4 in tCO_2eq	146.99	116.00	98.77	128.06	117.25	
	tN_2O in tCO_2eq	139.12	109.84	90.49	117.32	107.41	
Kidurong Power Generation 1	tCO_2eq	-	103,455.03	668,870.02	462,530.86	642,401.95	
	tCH_4 in tCO_2eq	-	19.32	110.13	77.70	105.73	
	tN_2O in tCO_2eq	-	23.54	100.95	59.58	96.86	
Kidurong Power Generation 2	tCO_2eq	-	-	-	364,529.62	649,141.30	
	tCH_4 in tCO_2eq	-	-	-	60.33	106.84	
	tN_2O in tCO_2eq	-	-	-	55.78	97.88	
Bintulu PS	tCO_2eq	520,329.19	520,956.75	167,782.04	312,304.24	283,045.95	
	tCH_4 in tCO_2eq	80.61	80.62	27.67	54.83	48.75	
	tN_2O in tCO_2eq	76.52	76.40	25.43	55.49	47.98	
Miri PS	tCO_2eq	488,542.53	427,168.65	341,586.19	348,464.37	224,142.23	
	tCH_4 in tCO_2eq	76.73	74.00	67.20	61.59	38.81	
	tN_2O in tCO_2eq	74.49	82.59	78.36	62.91	38.49	
Sg Biawak PS	tCO_2eq	2,451.47	464.25	776.76	3,639.19	19,959.14	
	tCH_4 in tCO_2eq	0.94	0.18	0.32	1.49	8.18	
	tN_2O in tCO_2eq	1.79	0.34	0.58	2.73	14.99	

Our Performance Data

305-1, IFRS S2-29(a), 33(a)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total Emissions (Main Grid)							GRI 305-1, IFRS S2-29(a), 33(a)
Total Emissions (Main Grid)	**tCO_2eq**	**6,348,254.39[4]**	**5,600,892.97[3]**	**5,976,874.06[2]**	**6,483,137.99[1]**	**7,083,870.39***	
	tCH_4 in tCO_2eq	**709.01**	**637.54**	**715.02**	**798.73**	**876.49**	
	tN_2O in tCO_2eq	**6,528.23**	**5,699.05**	**6,444.20**	**6,520.35**	**7,060.14**	
Total Emissions (Northern Grid)							
Limbang PS	tCO_2eq	63,744.59	64,646.28	67,682.00	71,502.75	77,991.67	
	tCH_4 in tCO_2eq	24.56	24.90	27.75	29.32	31.98	
	tN_2O in tCO_2eq	46.48	47.14	50.84	53.71	58.59	
Lawas PS	tCO_2eq	40,733.05	33,183.71	32,913.84	32,736.18	48,734.08	
	tCH_4 in tCO_2eq	15.69	12.78	13.49	13.42	19.98	
	tN_2O in tCO_2eq	29.70	24.20	24.72	24.59	36.61	
Total Emissions (Northern Grid)	**tCO_2eq**	**104,477.64[4]**	**97,829.99[3]**	**100,595.84[2]**	**104,238.93[1]**	**126,725.74***	
	tCH_4 in tCO_2eq	**40.25**	**37.68**	**41.24**	**42.74**	**51.96**	
	tN_2O in tCO_2eq	**76.18**	**71.34**	**75.56**	**78.30**	**95.20**	
Total Emissions (Stand-alone Grid)							
Belaga PS	tCO_2eq	3,700.81	3,859.01	3,603.22	3,783.97	794.07	
	tCH_4 in tCO_2eq	1.43	1.49	1.48	1.55	0.33	
	tN_2O in tCO_2eq	2.70	2.81	2.71	2.84	0.60	
Song PS	tCO_2eq	4,742.08	-	-	-	-	
	tCH_4 in tCO_2eq	1.83	-	-	-	-	
	tN_2O in tCO_2eq	3.46	-	-	-	-	
Ng Mujong PS	tCO_2eq	157.66	-	-	-	-	
	tCH_4 in tCO_2eq	0.06	-	-	-	-	
	tN_2O in tCO_2eq	0.11	-	-	-	-	
Ng Jagau PS	tCO_2eq	248.55	253.84	298.84	319.19	101.19	
	tCH_4 in tCO_2eq	0.09	0.10	0.12	0.13	0.04	
	tN_2O in tCO_2eq	0.17	0.19	0.22	0.24	0.08	
Ng Entawau PS	tCO_2eq	294.89	289.32	292.80	296.77	283.79	
	tCH_4 in tCO_2eq	0.11	0.11	0.12	0.12	0.12	
	tN_2O in tCO_2eq	0.20	0.21	0.22	0.22	0.21	

Our Performance Data

305-1, IFRS S2-29(a), 33(a)

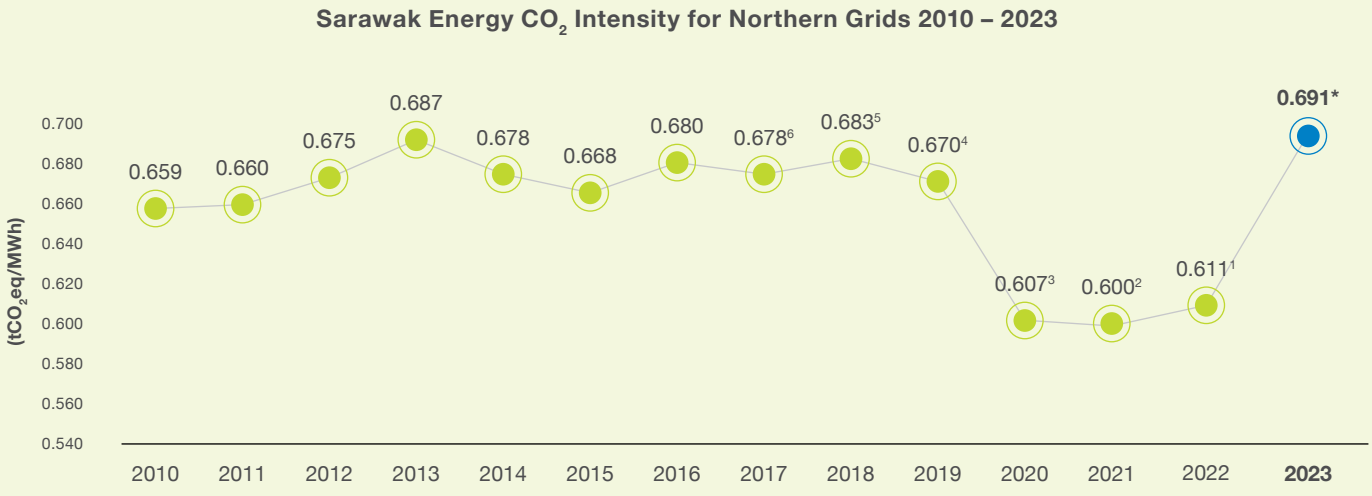
Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total Emissions (Stand-alone Grid)							GRI 305-1, IFRS S2-29(a), 33(a)
Mulu PS	tCO_2eq	1,604.22	1,005.82	896.63	1,216.42	1,617.29	
	tCH_4 in tCO_2eq	0.59	0.39	0.37	0.50	0.66	
	tN_2O in tCO_2eq	1.11	0.73	0.67	0.91	1.21	
Long Lama PS	tCO_2eq	3,081.32	2,848.51	2,759.08	3,299.35	3,198.11	
	tCH_4 in tCO_2eq	1.13	1.10	1.13	1.35	1.31	
	tN_2O in tCO_2eq	2.13	2.08	2.07	2.48	2.40	
Banting PS	tCO_2eq	314.53	297.26	287.88	303.02	314.59	
	tCH_4 in tCO_2eq	0.12	0.11	0.12	0.12	0.13	
	tN_2O in tCO_2eq	0.22	0.22	0.22	0.23	0.24	
Paloh PS	tCO_2eq	617.32	623.10	679.72	739.86	800.51	
	tCH_4 in tCO_2eq	0.23	0.24	0.28	0.30	0.33	
	tN_2O in tCO_2eq	0.43	0.45	0.51	0.56	0.60	
Total Emissions (Stand-alone Grid)	**tCO_2eq**	**14,453.34[4]**	**9,176.85[3]**	**8,818.18[2]**	**9,958.58[1]**	**7,109.53***	
	tCH_4 in tCO_2eq	**5.57**	**3.54**	**3.62**	**4.08**	**2.91**	
	tN_2O in tCO_2eq	**10.54**	**6.69**	**6.62**	**7.48**	**5.34**	
Total Emissions (Company-owned Vehicle)							
Total Emissions	**tCO_2eq**	**5,353.45**	**4,167.74**	**3,766.89**	**2,112.89**	**2,025.50**	
	tCH_4 in tCO_2eq	**11.68**	**9.10**	**8.22**	**4.61**	**4.39**	
	tN_2O in tCO_2eq	**23.70**	**18.45**	**16.67**	**9.35**	**8.97**	
Total SF_6 Consumption – by Business Level							
Generation	Tonne	17.18	17.41	17.63	17.63	17.63	
Transmission	Tonne	33.47	34.03	43.52	44.35	48.24	
Distribution	Tonne	13.06	13.62	13.92	14.45	14.48	
Total	**Tonne**	**63.71**	**65.05**	**75.08**	**76.43**	**80.35**	

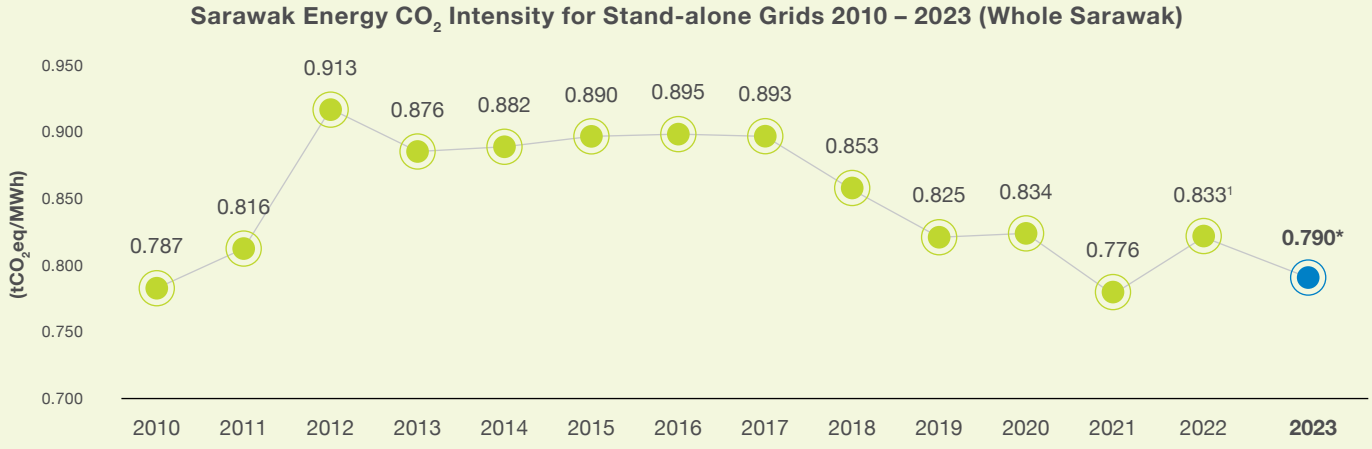
Notes:

1. *Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.*
2. *Scope 3 emissions – Business air travel is calculated using ICAO Carbon Emissions Calculator as on 16 May 2024.*
3. *Measurement of Scope 3 emissions for categories 1, 2, 3, 4, 5, 7, 9, 11 & 15 began in the year 2020, with 2021 serving as baseline data for SBTi validation.*
4. *$_{LCG}$ Low Carbon Generation.*
5. *^{a} IFRS S2 related metrics.*

Our Performance Data

305-4, EU2, IFRS S2-33(a)





Net Energy Generated

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total Net Energy Generated for Main Grids							GRI EU2 IFRS S2-33(a)
Plant Type: Hydro							
Batang Ai	MWh	386,993.39[4]	517,434.53[3]	475,024.49[2]	471,217.65[1]	467,360.36*	
Bakun	MWh	15,424,402.00[4]	14,680,879.00[3]	16,239,095.00[2]	16,549,475.00[1]	17,579,266.78*	
Murum	MWh	5,688,832.30[4]	6,406,413.20[3]	6,456,371.70[2]	7,145,655.30[1]	7,010,179.90*	
Lundu PS	MWh	3,024.10[4]	1,637.74[3]	1,094.91[2]	1,379.18[1]	1,941.20*	
Total	**MWh**	**21,503,251.79[4]**	**21,606,364.48[3]**	**23,171,586.10[2]**	**24,167,727.13[1]**	**25,058,748.23***	
Renewable energy generation intensity[a]	Millions of Revenues from Electricity Sales (RM)/ MWh	0.00026	0.00026	0.00026	0.00029[1]	0.00028*	

Our Performance Data

EU2, IFRS S2-33(a)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Plant Type: Coal							GRI EU2 IFRS S2-33(a)
Sejingkat Power Corp.	MWh	505,914.49[4]	494,902.10[3]	330,743.60[2]	181,343.10[1]	180,417.40*	
PPLS Power Generation	MWh	518,672.85[4]	516,329.80[3]	500,261.90[2]	422,287.60[1]	372,566.80*	
Mukah Power Generation	MWh	1,343,966.90[4]	770,626.40[3]	776,398.80[2]	685,932.10[1]	549,431.90*	
Balingian Power Generation	MWh	1,421,724.40[4]	1,263,976.37[3]	2,104,908.50[2]	2,556,189.00[1]	2,850,346.40*	
Total	**MWh**	**3,790,278.65[4]**	**3,045,834.67[3]**	**3,712,312.80[2]**	**3,845,751.80[1]**	**3,952,762.50***	
Plant Type: Natural Gas							
Sarawak Power Generation	MWh	2,106,253.75[4]	1,594,561.40[3]	1,073,279.19[2]	1,640,519.17[1]	1,410,958.73*	
Kidurong Power Generation 1	MWh	-	212,114.57[3]	1,626,879.19[2]	1,166,241.95[1]	1,731,097.70*	
Kidurong Power Generation 2	MWh	-	-	-	1,056,307.39[1]	1,762,904.80*	
Bintulu PS	MWh	615,465.59[4]	608,672.49[3]	204,363.70[2]	333,360.49[1]	300,127.54*	
Miri PS	MWh	535,371.43[4]	468,368.98[3]	374,955.17[2]	377,202.85[1]	224,295.50*	
Total	**MWh**	**3,257,090.78[4]**	**2,883,717.44[3]**	**3,279,477.25[2]**	**4,573,631.85[1]**	**5,429,384.26***	
Plant Type: Diesel							
Sg Biawak PS	MWh	887.78[4]	0.00[3]	0.00[2]	1,913.17[1]	15,434.50*	
Total Net Energy Generated for Northern Grids							
Plant Type: Mini Hydro							
Lawas M/H (Kalamuku)	MWh	2,012.81[4]	1,603.95[3]	786.20[2]	1,025.43[1]	481.17*	
Lawas M/H (Sg.Kota 1)	MWh	3,993.69[4]	0.00[3]	1,403.46[2]	2,728.00[1]	3,649.23*	
Lawas M/H (Sg.Kota 2)	MWh	1,849.88[4]	21,321.83[3]	26,985.88[2]	28,211.39[1]	16,248.68*	
Total	**MWh**	**7,856.38[4]**	**22,925.78[3]**	**29,175.54[2]**	**31,964.82[1]**	**20,379.08***	
Plant Type: Diesel							
Limbang PS	MWh	90,569.93[4]	91,660.87[3]	93,756.55[2]	95,730.16[1]	101,353.20*	
Lawas PS	MWh	57,466.64[4]	46,662.14[3]	44,838.54[2]	42,956.23[1]	61,609.30*	
Total	**MWh**	**148,036.57[4]**	**138,323.01[3]**	**138,595.09[2]**	**138,686.39[1]**	**162,962.50***	
Total Net Energy Generated for Stand-alone Grids							
Plant Type: Diesel							
Belaga PS	MWh	4,256.13	4,519.19[3]	4,914.29[2]	5,110.62[1]	1,057.91*	
Ng Jagau PS	MWh	218.24	232.60[3]	256.19[2]	282.62[1]	95.47*	
Ng Entawau PS	MWh	328.64	340.59[3]	342.67[2]	345.22[1]	369.87*	
Mulu PS	MWh	1,641.00	1,056.89[3]	948.10[2]	1,543.48[1]	2,075.09*	

Our Performance Data

305-4, EU2, IFRS S2-29(a)(iv), 33(a)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Plant Type: Diesel							GRI EU2 IFRS S2-33(a)
Long Lama PS	MWh	3,628.99	3,778.73[3]	3,768.35[2]	3,522.21[1]	4,200.75*	
Banting PS	MWh	342.47	335.12[3]	340.40[2]	340.21[1]	356.43*	
Paloh PS	MWh	699.00	735.61[3]	796.90[2]	804.07[1]	845.81*	
Total	**MWh**	**11,114.47**	**10,998.73[3]**	**11,366.90[2]**	**11,948.43[1]**	**9,001.33***	

Note:

[a] *IFRS S2 related metrics.*

Plants CO_2 & CO_2 Intensity (tCO_2eq & tCO_2eq/MWh) – Main Grid

Disclosure	Plant Type	Plant (Main Grid)	CO_2 Emissions (tCO_2eq)	Gross Energy Generated (MWh)	CO_2 Emissions Intensity (tCO_2eq/MWh)	GRI Disclosures/ IFRS
2019	Coal	Sejingkat Power Corp	679,890.56	553,289.86	1.229	GRI 305-4, IFRS S2-29(a)(iv), 33(a)
		PPLS	697,347.40	637,196.85	1.094	
		MPG	1,585,818.75	1,515,106.28	1.047	
		BPG	1,423,412.27	1,562,639.57	0.911	
	Natural Gas	SPG	950,462.21	2,145,919.00	0.443	
		Bintulu SESCO	520,329.19	625,274.14	0.832	
		Miri SESCO	488,542.53	541,988.30	0.901	
	Diesel	Sg Biawak SESCO	2,451.47	2,127.20	1.152	
2020	Coal	Sejingkat Power Corp	671,849.96	505,307.39	1.330	
		PPLS	650,276.32	634,529.00	1.025	
		MPG	871,167.29	858,735.07	1.014	
		BPG	1,605,680.74	1,532,546.58	1.048	
	Natural Gas	SPG	749,873.97	1,628,610.51	0.460	
		KID1	103,455.03	222,919.67	0.464	
		Bintulu SESCO	520,956.75	616,612.83	0.845	
		Miri SESCO	427,168.65	474,195.11	0.901	
	Diesel	Sg Biawak SESCO	464.25	330.20	1.406	
2021	Coal	Sejingkat Power Corp	462,019.95	372,898.69	1.239	
		PPLS	605,853.28	560,269.00	1.081	
		MPG	895,037.02	861,797.57	1.039	
		BPG	2,234,823.71	2,326,198.96	0.961	
	Natural Gas	SPG	600,125.08	1,101,259.00	0.545	
		KID1	668,870.02	1,682,655.19	0.398	
		Bintulu SESCO	167,782.04	207,738.65	0.808	
		Miri SESCO	341,586.19	380,266.89	0.898	
	Diesel	Sg Biawak SESCO	776.76	621.70	1.249	

Our Performance Data

305-4, IFRS S2-29(a)(iv), 33(a)

Disclosure	Plant Type	Plant (Main Grid)	CO_2 Emissions (tCO_2eq)	Gross Energy Generated (MWh)	CO_2 Emissions Intensity (tCO_2eq/MWh)	GRI Disclosures/ IFRS
2022	Coal	Sejingkat Power Corp	335,052.46	213,475.20	1.570	GRI 305-4, IFRS S2-29(a)(iv), 33(a)
		PPLS	571,262.26	486,652.60	1.174	
		MPG	805,325.80	779,242.85	1.033	
		BPG	2,501,945.80	2,826,894.64	0.885	
	Natural Gas	SPG	778,083.39	1,686,662.00	0.461	
		KID1	462,530.86	1,214,330.75	0.381	
		KID2	364,529.62	1,057,768.99	0.345	
		Bintulu SESCO	312,304.24	339,006.56	0.921	
		Miri SESCO	348,464.37	383,976.59	0.908	
	Diesel	Sg Biawak SESCO	3,639.19	3,083.40	1.180	
2023	Coal	Sejingkat Power Corp	261,612.76	212,964.38	1.228	
		PPLS	486,389.35	417,872.00	1.164	
		MPG	724,579.25	646,944.82	1.120	
		BPG	3,080,223.60	3,132,287.69	0.983	
	Natural Gas	SPG	712,374.87	1,451,912.00	0.491	
		KID1	642,401.95	1,771,315.80	0.363	
		KID2	649,141.30	1,821,580.67	0.356	
		Bintulu SESCO	283,045.95	305,623.60	0.926	
		Miri SESCO	224,142.23	229,510.87	0.977	
	Diesel	Sg Biawak SESCO	19,959.14	16,637.50	1.200	

Note:
Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.

Plants CO_2 & CO_2 Intensity (tCO_2eq & tCO_2eq/ MWh) – Northern Grid

Disclosure	Plant Type	Plant (Main Grid)	CO_2 Emissions (tCO_2eq)	Gross Energy Generated (MWh)	CO_2 Emissions Intensity (tCO_2eq/MWh)	GRI Disclosures/ IFRS
2019	Diesel	Limbang PS	63,744.59	93,953.17	0.678	GRI 305-4, IFRS S2-29(a)(iv), 33(a)
		Lawas	40,733.05	59,529.64	0.684	
2020	Diesel	Limbang PS	64,646.28	94,979.15	0.681	
		Lawas	33,183.71	48,450.37	0.685	
2021	Diesel	Limbang PS	67,682.00	97,218.98	0.696	
		Lawas	32,913.84	46,575.33	0.707	
2022	Diesel	Limbang PS	71,502.75	99,053.53	0.722	
		Lawas	32,736.18	44,515.03	0.735	
2023	Diesel	Limbang PS	77,991.67	104,951.50	0.743	
		Lawas	48,734.08	63,359.39	0.769	

Note:
Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.

Our Performance Data

305-7

Nitrogen Oxides (NO_x) & Sulfur Oxides (SO_x)

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Plant Type: Coal							GRI 305-7
Sejingkat Power Corp.							
SO_x Emissions	kg	89,848.99	378,491.95	81,348.10	-	93,072.87	
NO_x Emissions	kg	16.42	359,136.25	69,304.95	315,322.64	152,957.57	
SO_x Intensity	$kgSO_x$/ kWh	1.62×10^{-4}	7.49×10^{-4}	2.18×10^{-4}	-	4.37×10^{-4}	
NO_x Intensity	$kgNO_x$/ kWh	2.97×10^{-8}	7.11×10^{-4}	1.86×10^{-4}	1.48×10^{-3}	7.18×10^{-4}	
PPLS Power Generation							
SO_x Emissions	kg	91,591.63	735,016.78	141,190.26	276,202.52	138,357.85	
NO_x Emissions	kg	440.51	904,654.39	111,777.62	1,524,118.24	576,410.31	
SO_x Intensity	$kgSO_x$/ kWh	1.44×10^{-4}	1.16×10^{-3}	2.52×10^{-4}	5.68×10^{-4}	3.31×10^{-4}	
NO_x Intensity	$kgNO_x$/ kWh	6.91×10^{-7}	1.43×10^{-3}	2.00×10^{-4}	3.13×10^{-3}	1.38×10^{-3}	
Mukah Power Generation							
SO_x Emissions	kg	251,154.40	1,021,298.63	215,766.98	21,166.71	9,863.74	
NO_x Emissions	kg	669.96	1,134,177.51	343,351.40	-	-	
SO_x Intensity	$kgSO_x$/ kWh	1.66×10^{-4}	1.19×10^{-3}	2.50×10^{-4}	2.72×10^{-5}	1.52×10^{-5}	
NO_x Intensity	$kgNO_x$/ kWh	4.42×10^{-7}	1.32×10^{-3}	3.98×10^{-4}	-	-	
Balingian Power Generation							
SO_x Emissions	kg	-	416,981.70	309,364.12	2,304,493.51	2,783,565.87	
NO_x Emissions	kg	-	363,580.35	54,820.72	778,711.24	1,260,156.54	
SO_x Intensity	$kgSO_x$/ kWh	-	2.72×10^{-4}	1.33×10^{-4}	8.15×10^{-4}	8.89×10^{-4}	
NO_x Intensity	$kgNO_x$/ kWh	-	2.37×10^{-4}	2.36×10^{-5}	2.75×10^{-4}	4.02×10^{-4}	
Plant Type: Natural Gas							
Sarawak Power Generation							
SO_x Emissions	kg	8,765.45	14,055.59	21,690.53	19,698.94	15,037.57	
NO_x Emissions	kg	2,305,925.09	1,178,960.42	1,238,778.14	892,473.53	434,031.69	
SO_x Intensity	$kgSO_x$/ kWh	4.08×10^{-6}	8.63×10^{-6}	1.97×10^{-5}	1.17×10^{-5}	1.04×10^{-5}	
NO_x Intensity	$kgNO_x$/ kWh	1.07×10^{-3}	7.24×10^{-4}	1.12×10^{-3}	5.29×10^{-4}	2.99×10^{-4}	

Our Performance Data

305-7

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Kidurong Power Generation 1							GRI 305-7
SO_x Emissions	kg	-	-	10,102.91	5,938.55	6,847.96	
NO_x Emissions	kg	-	-	16,182.00	11,649.81	8,813.80	
SO_x Intensity	$kgSO_x$/ kWh	-	-	6.00×10^{-6}	4.89×10^{-6}	3.87×10^{-6}	
NO_x Intensity	$kgNO_x$/ kWh	-	-	9.62×10^{-6}	9.59×10^{-6}	4.98×10^{-6}	
Kidurong Power Generation 2							
SO_x Emissions	kg	-	-	-	5,045.96	7,319.85	
NO_x Emissions	kg	-	-	-	6,089.95	10,914.22	
SO_x Intensity	$kgSO_x$/ kWh	-	-	-	4.77×10^{-6}	4.02×10^{-6}	
NO_x Intensity	$kgNO_x$/ kWh	-	-	-	5.76×10^{-6}	5.99×10^{-6}	
Bintulu PS							
SO_x Emissions	kg	12,003.51	1,023,678.72	77,778.18	6,501.58	5,853.43	
NO_x Emissions	kg	130.25	1,384,977.34	137,827.00	70.55	63.52	
SO_x Intensity	$kgSO_x$/ kWh	1.92×10^{-5}	1.66×10^{-3}	3.74×10^{-4}	1.92×10^{-5}	1.92×10^{-5}	
NO_x Intensity	$kgNO_x$/ kWh	2.08×10^{-7}	2.25×10^{-3}	6.63×10^{-4}	2.08×10^{-7}	2.08×10^{-7}	
Miri PS							
SO_x Emissions	kg	965.92	-	1,488.01	680.55	404.68	
NO_x Emissions	kg	83.38	107,678.46	279,706.00	58.74	34.93	
SO_x Intensity	$kgSO_x$/ kWh	1.78×10^{-6}	-	-	1.77×10^{-6}	1.76×10^{-6}	
NO_x Intensity	$kgNO_x$/ kWh	1.54×10^{-7}	2.27×10^{-4}	7.36×10^{-4}	1.53×10^{-7}	1.52×10^{-7}	

Our Performance Data

306-3

Waste

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
Waste Volume Generated from Hydro Power Plants by Category										GRI 306-3
Hydro	Bakun HEP	Used lubricating oil	SW 305	Turbine bearing and crane motor	19.80	0.20	0.00	4.40	0.85	
		Used hydraulic oil	SW 306	Power intake and governor	28.40	12.60	16.30	79.10	0.00	
		Spent mineral oil -water emulsion	SW 307	Dewatering pit - oil spill due to excursion from unit	11.80	1.38	2.25	2.00	1.29	
				SUM	**60.00**	**14.18**	**18.55**	**85.50**	**2.14**	
		Contaminated rags	SW 410	Maintenance activities	0.30	0.74	0.66	0.74	1.52	
		Contaminated oil filter	SW 410	Maintenance activities	0.01	0.00	0.39	0.01	0.27	
		Empty contaminated container	SW 409	Maintenance activities	0.02	0.36	0.07	0.02	0.18	
				SUM	**0.33**	**1.10**	**1.12**	**0.77**	**1.96**	
		Used fluorescent tube and bulbs	SW 109	Powerhouse and residential area	0.22	0.04	0.13	0.27	0.56	
		Waste of batteries containing cadmium and nickel or mercury or lithium	SW 103	Battery room/UPS room	0.34	0.00	0.10	0.00	0.00	
		Electrical and electronic waste	SW 110	Powerhouse and residential area	0.82	0.28	0.37	1.10	0.92	
				SUM	**1.38**	**0.31**	**0.59**	**1.37**	**1.48**	
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	1.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**1.00**	
		Chemicals that are discarded or off-specification	SW 429	Chemical store	0.38	0.91	0.00	0.66	0.77	
		Spent inorganic acids	SW 206	Battery room/UPS room	0.32	0.00	0.00	0.00	0.00	
				SUM	**0.71**	**0.91**	**0.00**	**0.66**	**0.77**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
Hydro	Murum HEP	Used lubricating oil	SW 305	Diesel genset	1.12	0.22	1.05	1.87	0.30	GRI 306-3
		Used hydraulic oil	SW 306	For hydraulic system, e.g., intake gate	31.69	25.00	169.45	12.98	26.61	
		Oil water emulsion	SW 307	Lube oil contaminated with water through process (dewatering pit, lube oil contaminated with water during operation i.e. leak heat exchange tube)	3.58	9.20	70.61	1.62	0.60	
		Dirty diesel	SW 311	Cleaning of bolts and nuts and parts of the turbine	0.03	0.00	0.00	0.00	0.00	
		Used transformer oil	SW 327	-	0.00	0.00	0.00	0.00	0.00	
				SUM	**36.42**	**34.42**	**241.10**	**16.47**	**27.51**	
		Discarded Oxidant Media	SW 104	-	0.24	0.00	0.00	0.00	0.00	
		Discarded media of air circulation unit (carb)	SW 104	-	0.00	0.00	0.00	0.00	0.00	
		Discarded paint cans	SW 409	-	0.02	0.09	0.03	0.12	0.00	
		Container contaminated with SW	SW 409	-	0.74	0.05	0.00	1.51	0.03	
		Used oil filter	SW 410	-	0.11	0.05	0.12	0.22	0.03	
		Empty spray can	SW 409	-	0.01	0.01	0.01	0.01	0.00	
		Contaminated rags	SW 410	-	1.15	0.56	1.35	0.90	0.65	
				SUM	**2.26**	**0.77**	**1.51**	**2.76**	**0.71**	
		Discarded Light Bulb/Tube	SW 109	Building maintenance	0.04	0.00	0.04	0.06	0.03	
		Discarded Lead Acid Battery	SW 102	From Genset and DC Supply System	0.00	0.00	0.12	4.37	0.00	
		E-Waste	SW 110	Electrical device	0.02	0.02	0.17	0.29	0.24	
		Discarded Battery	SW 103	From DC supply	0.04	0.00	0.14	0.04	0.00	
				SUM	**0.09**	**0.02**	**0.47**	**4.75**	**0.27**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.67	0.00	0.00	GRI 306-3
				SUM	**0.00**	**0.00**	**0.67**	**0.00**	**0.00**	
		Spent sodium hydroxide	SW 206	-	0.00	0.00	0.00	0.00	0.00	
		Spent hydrochloric acid	SW 206	-	0.00	0.00	0.00	0.00	0.00	
		Mixture of SW and non-SW (Paints, plant maintenance)	SW 422	-	0.03	0.00	0.04	0.02	0.00	
		Obsolete laboratory chemicals	SW 430	-	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.03**	**0.00**	**0.04**	**0.02**	**0.00**	
Hydro	Batang Ai HEP	Used lubricating oil	SW 305	Maintenance activities	8.60	5.23	6.65	16.51	27.00	
		Used transformer oil	SW 327	Transformer oil maintenance	22.11	23.00	11.00	0.00	0.00	
		Used transformer oil	SW 306	Transformer oil maintenance	0.00	0.00	34.00	0.00	0.00	
				SUM	**30.71**	**28.23**	**51.65**	**16.51**	**27.00**	
		Disposed drums contaminated with chemicals	SW 409	-	0.00	0.24	0.25	4.00	23.00	
		Disposed containers contaminated with chemicals	SW 409	-	2.13	0.12	0.11	0.00	0.00	
		Contaminated rags	SW 410	Maintenance activities	3.62	0.55	0.80	6.00	14.00	
				SUM	**5.75**	**0.91**	**1.16**	**10.00**	**37.00**	
		Discarded bulbs	SW 109	-	0.30	0.56	0.50	0.04	0.00	
				SUM	**0.30**	**0.56**	**0.50**	**0.04**	**0.00**	
		Contaminated soil	SW 408	-	0.00	0.35	0.30	0.00	0.00	
				SUM	**0.00**	**0.35**	**0.30**	**0.00**	**0.00**	
		Chemicals disposed (if applicable)	SW 429	-	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Category										GRI 306-3
Coal	SPC	Used lubricating oil	SW 305	Machinery maintenance	24.19	4.39	10.94	3.98	11.56	
		Used hydraulic oil	SW 306	Machinery maintenance	9.65	6.28	5.57	13.62	17.35	
				SUM	**33.83**	**10.67**	**16.52**	**17.60**	**28.91**	
		Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled waste	SW 409	-	4.00	2.41	2.09	1.42	5.23	
		Contaminated rags	SW 410	Items used for maintenance work	18.05	14.79	2.92	1.48	10.09	
				SUM	**22.05**	**17.20**	**5.01**	**2.91**	**15.31**	
		Waste of lead acid batteries in whole or crushed form	SW 102	Machinery maintenance	0.27	0.21	0.26	0.00	0.00	
		Waste of batteries containing cadmium and nickel or mercury or lithium	SW 103	Machinery maintenance	0.02	0.01	0.01	0.01	0.00	
		E-waste	SW 110	Electrical & electronic maintenance	0.51	0.13	0.04	0.12	0.04	
		Disposed fluorescent bulb	SW 109	Electrical & electronic maintenance	-	-	0.04	0.08	0.10	
				SUM	**0.80**	**0.35**	**0.35**	**0.21**	**0.14**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Contaminated soil, debris or matter resulting from cleaning-up spilled chemicals, mineral oil or scheduled waste	SW 408	-	3.73	3.70	5.02	1.26	0.96	GRI 306-3
				SUM	**3.73**	**3.70**	**5.02**	**1.26**	**0.96**	
		Chemicals that are discarded or off-specification	SW 429	-	1.74	1.72	0.47	0.60	0.00	
				SUM	**1.74**	**1.72**	**0.47**	**0.60**	**0.00**	
		Fly Ash	SW 104	Plant operation	0.00	3,529.47	5,515.16	4,057.87	2,366.36	
		Bottom Ash (Wet/bottom)	SW 104	Plant operation	0.00	63,652.00	48,827.28	38,334.90	38,940.59	
		Wet Ash (Wet and dry ashes stored in ash pond)	SW 104	Plant operation	70,589.01	-	-	-	-	
			Fly Ash	**SUM**	**0.00**	**3,529.47**	**5,515.16**	**4,057.87**	**2,366.36**	
			Bottom Ash	**SUM**	**70,589.01**	**63,652.00**	**48,827.28**	**38,334.90**	**38,940.59**	
Coal	MPG	Used lubricating oil	SW 305	From machine/ equipment during shutdown	11.44	21.18	3.70	9.09	18.92	
		Used hydraulic oil	SW 306	Hydraulic system (e.g., for the torch system)	0.52	0.35	0.17	7.09	0.04	
				SUM	**11.96**	**21.53**	**3.87**	**16.18**	**18.96**	
		Contaminated empty drum	SW 409	From machine/ equipment during shutdown & service	0.00	0.78	0.76	0.65	0.00	
		Contaminated rags	SW 410	Service & cleaning oil spillage	0.14	0.43	0.06	0.55	0.41	
				SUM	**0.14**	**1.21**	**0.82**	**1.20**	**0.41**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Used batteries	SW 102	From equipment, electrical & electronic parts, for genset, double AA, torchlight, for testing equipment, auxiliary equipment	0.00	0.00	0.12	6.89	0.00	GRI 306-3
		E-waste	SW 110	From machine/ equipment, laptop parts, parts of electrical (panel)	0.51	0.15	0.00	5.21	0.31	
				SUM	**0.51**	**0.15**	**0.12**	**12.10**	**0.31**	
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
		Discarded Chemical Waste	SW 429	Analysis and sampling, from lab	0.01	0.08	0.00	0.01	0.01	
				SUM	**0.01**	**0.08**	**0.00**	**0.01**	**0.01**	
		Fly Ash	SW 104	Plant operation	80,394.56	7,686.03	27,024.77	22,982.96	24,461.48	
		Boiler Bottom Ash Hopper	SW 204	Plant operation	8,047.50	5,099.19	2,705.17	2,556.50	2,720.97	
			Fly Ash	**SUM**	**80,394.56**	**7,686.03**	**27,024.77**	**22,982.96**	**24,461.48**	
			Bottom Ash	**SUM**	**8,047.50**	**5,099.19**	**2,705.17**	**2,556.50**	**2,720.97**	
Coal	BPG	Used lubricating oil	SW 305	Machinery maintenance	-	1.90	5.05	14.41	2.94	
		Used hydraulic oil	SW 306	Machinery maintenance	-	0.00	0.00	0.95	0.00	
		Waste oil or oily sludge	SW 311	Machinery maintenance & operation	-	-	-	0.27	0.00	
		Oily residue from automotive workshop, service station, oil or grease interceptor	SW 312	Machinery maintenance & operation	-	0.07	0.25	2.14	0.00	
				SUM	**0.00**	**1.97**	**5.30**	**17.77**	**2.94**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Pathogenic waste, clinical waste or quarantined materials	SW 404	Items used for swab test	-	-	-	0.11	0.00	GRI 306-3
		Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled waste	SW 409	-	-	2.70	1.64	0.62	0.60	
		Contaminated rags	SW 410	Items used for maintenance work	-	0.54	1.12	2.24	0.62	
		Fibre wools	SW 201	Machinery Maintenance	-	-	0.10	1.92	1.92	
				SUM	**0.00**	**3.24**	**2.86**	**4.89**	**3.14**	
		Waste of lead acid batteries in whole or crushed form	SW 102	Machinery maintenance	-	0.00	0.11	0.21	0.00	
		Waste of batteries containing cadmium and nickel or mercury or lithium	SW 103	Machinery maintenance	-	0.00	0.01	0.00	0.00	
		Waste containing mercury or its compound	SW 109	Electrical & electronic maintenance	-	-	-	0.04	0.00	
		E-waste	SW 110	Electrical & electronic maintenance	-	0.00	0.28	0.14	0.00	
				SUM	**0.00**	**0.00**	**0.40**	**0.40**	**0.00**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Contaminated soil, debris or matter resulting from cleaning-up of a spill of chemical, mineral oil or scheduled wastes	SW 408	-	-	7.00	0.00	1.76	0.47	GRI 306-3
				SUM	**0.00**	**7.00**	**0.00**	**1.76**	**0.47**	
		Chemicals that are discarded or off-specification	SW 429	-	-	0.00	2.95	0.61	1.29	
				SUM	**0.00**	**0.00**	**2.95**	**0.61**	**1.29**	
		Fly Ash (Dry/ fly ash was last produced in July 2017. Thus, total generation is less than 2016)	SW 104	Plant operation	-	66,967.71	120,065.35	131,749.45	130,335.80	
		Bottom Ash (Wet/bottom)	SW 104	Plant operation	-	11,817.83	12,111.00	23,249.90	23,000.43	
		Wet Ash (Wet and dry ashes stored in ash pond)	SW 104	Plant operation	-	113,845.11	180,231.40	223,975.03	221,170.80	
			Fly Ash	**SUM**	**-**	**66,967.71**	**120,065.35**	**131,749.45**	**130,335.80**	
			Bottom Ash	**SUM**	**0.00**	**125,662.94**	**192,342.40**	**247,224.93**	**244,171.23**	
Natural Gas	Bintulu PS	Used lubricating oil	SW 305	Maintenance	28.20	35.20	40.50	31.67	64.95	
		Dirty Diesel	SW 421	Diesel engine, sometimes used for engine cleaning	2.60	3.97	2.60	0.00	0.30	
			SW 421	Mixture of Scheduled Waste	-	-	-	1.70	1.60	
				SUM	**30.80**	**39.17**	**43.10**	**33.37**	**66.85**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Used Paint Cans	SW 409	Maintenance	0.80	0.46	0.01	1.22	0.14	GRI 306-3
		Disposed Container Contaminated with Chemical	SW 409	Maintenance	-	-	-	-	2.46	
		Used WD-40 Spray Cans	SW 409	Maintenance	-	-	0.05	0.01	0.08	
		Used Chemical Bottles	SW 409	Maintenance	0.80	0.08	0.02	0.02	0.10	
		Contaminated rags	SW 410	Maintenance	4.21	0.20	3.50	0.75	0.00	
		Sodium Hypochlorite residue	SW 425	Maintenance	-	-	-	0.08	9.00	
		Used oil filter	SW 410	Maintenance	5.40	3.28	2.20	0.96	2.45	
		Spent Silica Gel	SW 429	Maintenance	2.10	1.43	0.61	0.00	0.00	
		Contaminated containers	SW 409	Maintenance	-	-	-	0.23	0.00	
		Spent Resin	SW 429	Maintenance	-	-	14.60	0.80	0.00	
		Contaminated matters	SW 410	Maintenance	-	-	-	2.82	5.90	
				SUM	**13.31**	**5.45**	**20.99**	**6.89**	**20.13**	
		Used Cadmium Batteries	SW 103	From control system in MCR, gas turbine	0.00	0.00	0.00	0.00	0.00	
		Chemical waste containing mercury	SW 109	Maintenance	0.00	0.00	0.00	0.00	0.00	
		Used Bulbs	SW 110	Building Maintenance	0.11	0.21	0.03	0.12	0.03	
		E-waste	SW 110	Building Maintenance	0.00	0.36	0.05	0.01	0.02	
				SUM	**0.11**	**0.57**	**0.08**	**0.13**	**0.05**	
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	7.70	4.00	1.50	
				SUM	**0.00**	**0.00**	**7.70**	**4.00**	**1.50**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Mixed Chemicals	SW 429	Maintenance	0.20	0.06	0.00	0.00	0.00	GRI 306-3
		Sludge from Interceptor	SW 312	Maintenance	-	-	19.60	0.00	0.00	
		Sludge containing metal	SW 204	Maintenance	-	-	57.20	0.00	0.00	
		Sludge containing lead	SW 204	Maintenance	3.00	0.00	0.00	0.00	0.00	
				SUM	**3.20**	**0.06**	**76.80**	**0.00**	**0.00**	
		Gas condensate	SW 421	-	0.00	0.00	0.00	0.00	1.60	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**1.60**	
Natural Gas	Miri PS	Used lubricating oil	SW 305	-	2.20	2.20	11.60	17.80	1.60	
		Used transformer oil	SW 306	-	0.40	2.60	0.80	0.60	4.20	
		Oil-water emulsion (dirty diesel, cleaning of engine, operation of gen set)	SW 307	-	0.00	0.00	0.80	0.00	0.20	
		Sludge from mineral oil storage tank (sludge from the diesel storage tank)	SW 310	-	0.00	0.00	0.00	0.00	0.00	
		Mixture scheduled waste (cleaning of gen set, collected by products)	SW 421	-	0.60	0.40	2.80	1.80	0.40	
				SUM	**3.20**	**5.20**	**16.00**	**20.20**	**6.40**	
		Contaminated drum	SW 409	-	0.04	0.03	0.06	0.02	0.00	
		Contaminated rags	SW 410	-	0.70	0.80	1.50	1.20	0.80	
		Used oil filter	SW 410	-	0.60	0.40	1.50	0.50	0.20	
				SUM	**1.34**	**1.23**	**3.06**	**1.72**	**1.00**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Used battery (gen set, acid battery)	SW 103	-	1.90	0.00	0.00	0.00	0.73	GRI 306-3
		Fluorescent tube lighting	SW 109	-	0.20	0.00	0.40	0.10	0.10	
				SUM	**2.10**	**0.00**	**0.40**	**0.10**	**0.83**	
		Contaminated soil disposed (if applicable)	SW 409	-	0.00	0.00	0.00	0.00	0.50	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	
		Chemicals disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
		Gas condensate	SW 421	-	3.40	2.40	0.60	3.20	6.40	
				SUM	**3.40**	**2.40**	**0.60**	**3.20**	**6.40**	
Diesel	Sg Biawak PS	Used lubricating oil	SW 305	From diesel engine (flushing of lube separators)	88.95	2.22	2.23	4.95	0.00	
		Used hydraulic oil	SW 306	From transformer	17.81	0.00	0.00	0.00	0.00	
				SUM	**106.76**	**2.22**	**2.23**	**4.95**	**0.00**	
		Uncured Resin waste	SW 325	Termination insulation of transformer	0.00	0.00	0.00	0.00	0.00	
		Contaminated empty drums	SW 409	-	0.18	0.00	0.00	0.00	0.00	
		Discarded chemical bottles	SW 409	Laboratory	0.00	0.04	0.00	0.01	0.00	
		Contaminated rags	SW 410	Cleaning of Diesel engine	0.01	0.03	0.00	0.05	0.00	
		Used oil filter	SW 410	Diesel engine lube oil filter	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.19**	**0.07**	**0.00**	**0.06**	**0.00**	
		Used battery acid plumbum	SW 102	From diesel fire pump (for starting)	0.00	0.00	0.02	0.00	0.00	
		Waste containing mercury or its compound	SW 109	Fluorescent tubes	0.04	0.00	0.00	0.00	0.00	
				SUM	**0.04**	**0.00**	**0.02**	**0.00**	**0.00**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.00	GRI 306-3
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
Diesel	Limbang PS	Used lubricating oil	SW 305	Machinery maintenance	42.60	56.80	66.00	57.25	61.60	
		Dirty Diesel	SW 421	Machinery maintenance	22.80	30.40	14.20	7.90	33.80	
				SUM	**65.40**	**87.20**	**80.20**	**65.15**	**95.40**	
		Contaminated Used Drum	SW 409	Machinery maintenance	2.24	1.84	2.03	1.69	4.00	
		Contaminated Used Paint Can	SW 409	Machinery maintenance	0.40	0.15	0.00	0.00	0.00	
		Contaminated rags	SW 410	Machinery maintenance	1.30	1.80	1.90	3.15	1.90	
		Used oil filter	SW 410	Machinery maintenance	0.10	0.07	0.63	1.48	1.10	
				SUM	**4.04**	**3.86**	**4.56**	**6.32**	**7.00**	
		Lead Acid Battery	SW 102	From machine/ equipment (Fork lift, from fire hydrant pump)	0.00	0.00	0.00	0.00	0.00	
		Unused Air Conditioner (e-waste)	SW 110	From machine/ equipment	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
		Contaminated Soil	SW 408	Machinery maintenance	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	
		Chemicals disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.10	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.10**	

Our Performance Data

306-3

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
					Waste Quantity by Year (Tonne)					
Diesel	Lawas PS	Used lubricating oil	SW 305	-	11.57	20.20	30.00	55.40	52.20	GRI 306-3
		Dirty Diesel	SW 421	-	12.49	0.00	0.00	0.00	2.00	
		Oily Residue from Station Interceptor	SW 312	-	-	-	3.00	0.00	0.00	
		Spent Hydraulic Oil	SW 306	-	-	-	-	-	1.00	
				SUM	**24.06**	**20.20**	**33.00**	**55.40**	**55.20**	
		Contaminated empty drums	SW 409	-	1.05	0.65	0.18	0.46	1.36	
		Contaminated rags	SW 410	-	1.98	1.40	0.80	0.90	1.00	
		Used Oil Filters	SW 410	-	-	-	0.00	0.00	0.90	
		Used Fuel Filters	SW 410	-	-	-	0.00	0.00	0.40	
		Used Water Separators	SW 410	-	-	-	0.00	0.00	0.20	
				SUM	**3.03**	**2.05**	**0.98**	**1.36**	**3.86**	
		E-waste disposed (if applicable)	-	-	0.00	0.00	1.86	0.00	0.00	
				SUM	**0.00**	**0.00**	**1.86**	**0.00**	**0.00**	
		Contaminated soil	SW 108	-	0.00	0.00	0.20	1.80	0.16	
				SUM	**0.00**	**0.00**	**0.20**	**1.80**	**0.16**	
		Chemicals disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.00	
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	

Type of Plant	Type of Waste	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
		Scheduled Waste Generation (Tonne)					
Overall	Fly Ash	80,394.56	78,183.21	152,605.28	158,790.28	157,163.64	GRI 306-3
	Bottom Ash	78,636.51	194,414.13	243,874.85	288,116.33	285,832.79	
	Others (Used Oil, Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	473.72	320.27	652.97	420.96	440.27	
	Total Quantity (Tonne)	**159,504.78[4]**	**272,917.61[3]**	**397,133.10[2]**	**447,327.57[1]**	**443,436.70***	

Our Performance Data

2-27, 306-3, 401-1

Type of Plant	Type of Waste	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
		Scheduled Waste Generation Intensity (t/GWh)					
Overall	Fly Ash	2.89	2.77	5.20	5.08	4.94	GRI 306-3
	Bottom Ash	2.82	6.90	8.31	9.22	8.98	
	Others (Used Oil, Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	0.02	0.01	0.02	0.01	0.01	
	Total	**5.73**	**9.68[3]**	**13.53[2]**	**14.31[1]**	**13.93***	

Environmental Compliance

Disclosure	GRI Disclosures/ IFRS
Non-Compliance with Environmental Laws and Regulations	GRI 2-27
In 2023, there is no fine/penalty/compound from environmental authorities recorded for Sarawak Energy.	

New Hires and Turnover by Gender and Age

New Hires (by Gender)	2019			2020			2021			2022			2023			GRI Disclosures/ IFRS
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Total	**258**	**110**	**368**	**275**	**75**	**350**	**121**	**42**	**163**	**186**	**75**	**261**	**307**	**130**	**437**	GRI 401-1
By age, in numbers																
Up to 30 years old	159	67	226	222	53	275	89	31	120	161	58	219	241	94	335	
Between 31 and 50 years old	99	43	142	45	22	67	29	11	40	18	15	33	56	33	89	
Over 50 years old	0	0	0	8	0	8	3	0	3	7	2	9	10	3	13	

Staff Turnover (by Gender)	2019			2020			2021			2022			2023			GRI disclosures/ IFRS
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Total	**147**	**26**	**173**	**146**	**30**	**176**	**155**	**27**	**182**	**134**	**32**	**166**	**136**	**29**	**165**	GRI 401-1
By age, in numbers																
Up to 30 years old	76	23	99	18	10	28	13	6	19	10	4	14	10	2	12	
Between 31 and 50 years old	0	0	0	22	6	28	28	11	39	36	14	50	32	10	42	
Over 50 years old	71	3	74	106	14	120	114	10	124	88	14	102	94	17	111	

Our Performance Data

401-1

New Hires (by Company)	2019			2020			2021			2022			2023			GRI Disclosures/ IFRS
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Total	**258**	**110**	**368**	**275**	**75**	**350**	**121**	**42**	**163**	**186**	**75**	**261**	**307**	**130**	**437**	GRI 401-1
By company, in numbers																
Sarawak Energy Berhad	**258**	**110**	**368**	**275**	**75**	**350**	**121**	**42**	**163**	**186**	**75**	**261**	**307**	**130**	**437**	

Staff Turnover (by Company)	2019			2020			2021			2022			2023			GRI Disclosures/ IFRS
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	
Total	**147**	**26**	**173**	**146**	**30**	**176**	**155**	**27**	**182**	**134**	**32**	**166**	**136**	**29**	**165**	GRI 401-1
By company, in numbers																
Sarawak Energy Berhad	34	12	46	35	11	46	37	11	48	29	12	41	30	8	38	
Sejingkat Power Generation	11	-	11	-	-	-	4	0	4	-	-	-	3	0	3	
Mukah Power Generation	3	-	3	-	-	-	2	0	2	2	1	3	2	0	2	
Syarikat SESCO Bhd	-	-	-	-	-	-	-	-	-	101	19	120	98	21	119	
SESCO Headquarters	37	10	47	37	8	45	40	6	46	-	-	-	-	-	-	
SESCO Kuching	14	1	15	36	4	40	34	6	40	-	-	-	-	-	-	
SESCO Sri Aman	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	
SESCO Sarikei	11	-	11	4	1	5	7	0	7	-	-	-	-	-	-	
SESCO Sibu	14	-	14	9	1	10	17	1	18	-	-	-	-	-	-	
SESCO Bintulu	7	1	8	5	0	5	3	2	5	-	-	-	-	-	-	
SESCO Miri	12	1	13	14	4	18	5	1	6	-	-	-	-	-	-	
Balingian Power Generation	-	1	1	-	-	-	1	0	1	-	-	-	-	-	-	
Sarawak Hidro Power Sdn. Bhd.	1	-	1	2	0	2	3	0	3	-	-	-	-	-	-	
Bakun Hydro Power Generation	-	-	-	4	1	5	2	0	2	1	-	1	3	-	3	
Sarawak Power Gen.	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	

Our Performance Data

2-7, 201-3, 401-1, 401-2

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Turnover rate	%	3.32	3.27	3.34	3.00	2.76	GRI 401-1

Benefits Provided to Full-Time Employees

Disclosure	Description	GRI Disclosures/ IFRS
Retirement Token for employees on permanent establishment and on fixed term contract of employment (Effective 7 August 2023)	The Retirement Token was extended to employees on fixed term contract of employment with effect from 7 August 2023. The Retirement Token is a token of appreciation for all the staff for their services. This token is designed to let our staffs know that Company value all their hard works and commitments towards the Company.	GRI 201-3, 401-2
Flexible Work Arrangement – Hybrid Arrangement (Effective 6 July 2023)	The Flexible Work Arrangement is a permanent feature of the organisation. This is to support our employees to work from anywhere and anytime. It can help to increase productivity as a result of saving in commuting time which at the same time contribute towards reduction in carbon footprint.	
Enhancement of medical benefits (effective 1 September 2023)	1. No yearly renewal or approval needed for medical benefit for Dependent children pursuing higher education. 2. Abolish the recovery of ward charges for all employees (including eligible retirees) and eligible dependents. 3. Removal of supply cap for long term medication collection. 4. Full cover for child delivery charges regardless of method of delivery (up to 6th child) & 5 times postnatal care after discharge. 5. Revise the limit of circumcision procedure & haemodialysis treatment to cover the actual cost. 6. Extend cancer treatment at private panel medical providers for employees (including eligible retirees) and eligible dependents. 7. Extend psychologist counselling, psychotherapy and psychiatry treatments to employees' eligible dependents as well.	

Employees

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total number of employees	Number	5,207	5,381	5,442	5,537	5,809	GRI 2-7
Total female employees	Number	1,155	1,200	1,235	1,278	1,379	
Total male employees	Number	4,052	4,181	4,207	4,259	4,430	
Permanent female employees	Number	4,052	1,156	1,182	1,216	1,315	
Permanent male employees	Number	3,947	3,961	3,958	4,023	4,169	
Contract female employees	Number	23	44	53	62	64	
Contract male employees	Number	105	220	249	236	261	

Our Performance Data

2-7, 403-4

Total Employees by Age Group

	2019			2020		
	Men	Women	Total	Men	Women	Total
Total Staff (by Gender)	**4,052**	**1,155**	**5,207**	**4,181**	**1,200**	**5,381**
By age, in numbers						
Below 20 years old	4	1	5	3	0	3
Between 21 and 25 years old	313	54	367	331	62	393
Between 26 and 30 years old	904	276	1,180	860	237	1,097
Between 31 and 35 years old	1,028	361	1,389	1,131	401	1,532
Between 36 and 40 years old	532	166	698	599	190	789
Between 41 and 45 years old	366	110	476	389	116	505
Between 46 and 50 years old	255	75	330	266	82	348
Between 51 and 55 years old	267	65	332	242	62	304
Between 56 and 60 years old	361	47	408	335	50	385
Above 60 years old	22	0	22	25	0	25

Total Employees by Grade & Position

			2019		
By Grade	By Position	Unit	Men	Women	Total
Board of Directors	Board of Directors	Number	5	0	5
SG1 and above	GEC	Number	12	2	15
	HoD/Top Management	Number	17	7	24
E5-E8	Senior Management	Number	228	61	228
E1-E4	Middle Management	Number	662	454	1,116
NE1-NE6	Non-executive	Number	3,193	631	3,824
Total (Excl. BoD)		**Number**		**5,207**	

Environment & Occupational Health & Safety (EOSH) Members in 2022 & 2023

Disclosure	Unit	2022	2023	GRI Disclosures/ IFRS
Members				GRI 403-4
Chairman	Number	22	23	
Secretary	Number	22	23	
Employer Representative	Number	211	262	
Employees Representative	Number	301	282	

Training

Disclosure	Unit
Total and Average of Hours of Training Recorded by Category and Gender for 2019 - 2023	
Management	No. of Employees
	Total Training Hours
	Average
Executive	No. of Employees
	Total Training Hours
	Average
Non-executive	No. of Employees
	Total Training Hours
	Average

Our Performance Data

2-7, 2-9, 404-1

2021			2022			2023			GRI Disclosures/ IFRS
Men	Women	Total	Men	Women	Total	Men	Women	Total	GRI 2-7
4,207	**1,235**	**5,442**	**4,259**	**1,278**	**5,537**	**4,430**	**1,379**	**5,809**	
3	0	3	0	0	0	1	0	1	
326	65	391	264	82	346	288	106	394	
776	195	971	804	176	980	817	205	1,022	
1,175	423	1,598	1,120	404	1,524	1,092	360	1,452	
683	223	906	831	266	1,097	949	336	1,285	
410	121	531	405	132	537	463	147	610	
301	84	385	340	97	437	357	108	465	
220	75	295	206	74	280	218	66	284	
293	49	342	266	46	312	220	49	269	
20	0	20	23	1	24	25	2	27	

2020			2021			2022			2023			GRI Disclosures/ IFRS
Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	GRI 2-9
5	0	5	6	0	6	6	0	6	7	0	7	
13	2	15	13	2	15	12	2	14	13	2	15	
24	10	34	24	10	34	24	10	34	27	12	39	
179	70	249	190	84	274	213	91	304	235	109	344	
728	491	1,219	775	529	1,304	799	572	1,371	888	650	1,538	
3,237	627	3,864	3,205	610	3,815	3,211	603	3,814	3,267	606	3,873	
	5,381			**5,442**			**5,537**			**5,809**		

2019		2020		2021		2022		2023		GRI Disclosures/ IFRS
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	GRI 404-1
95	50	42	12	37	12	249	103	275	123	
1,713.00	1,556.00	1,019.80	486.00	1,335.60	636.22	17,559.38	8,144.83	15,407.09	8,892.24	
18.03	31.12	24.28	40.50	36.10	53.02	70.52	79.08	570.63	72.29	
995	543	907	561	965	613	800	571	888	650	
19,219.00	9,713.00	24,021.30	16,923.86	52,708.67	34,406.68	42,557.97	28,428.67	62,187.41	43,689.70	
19.32	17.89	26.48	30.17	54.62	56.13	53.20	49.79	70.03	67.21	
2,933	405	3,237	627	3,205	610	3,213	601	3,267	606	
51,316.00	6,548.00	30,697.05	4,955.05	61,341.71	16,144.98	107,661.60	16,016.34	133,502.98	19,867.89	
17.50	16.17	9.48	7.90	19.14	26.47	33.51	26.65	40.86	32.79	

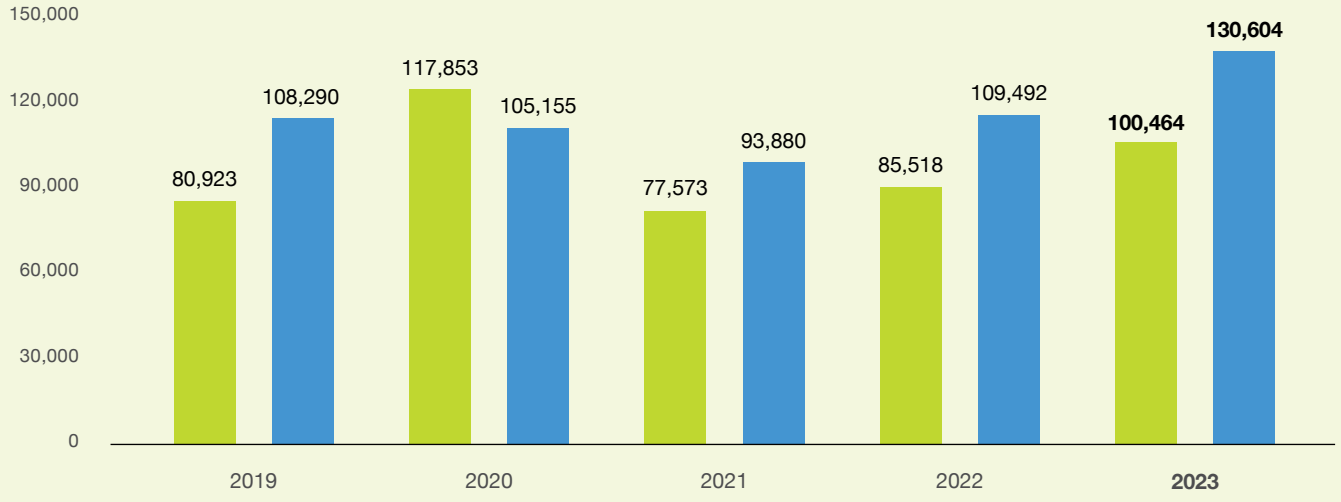
Our Performance Data

418-1

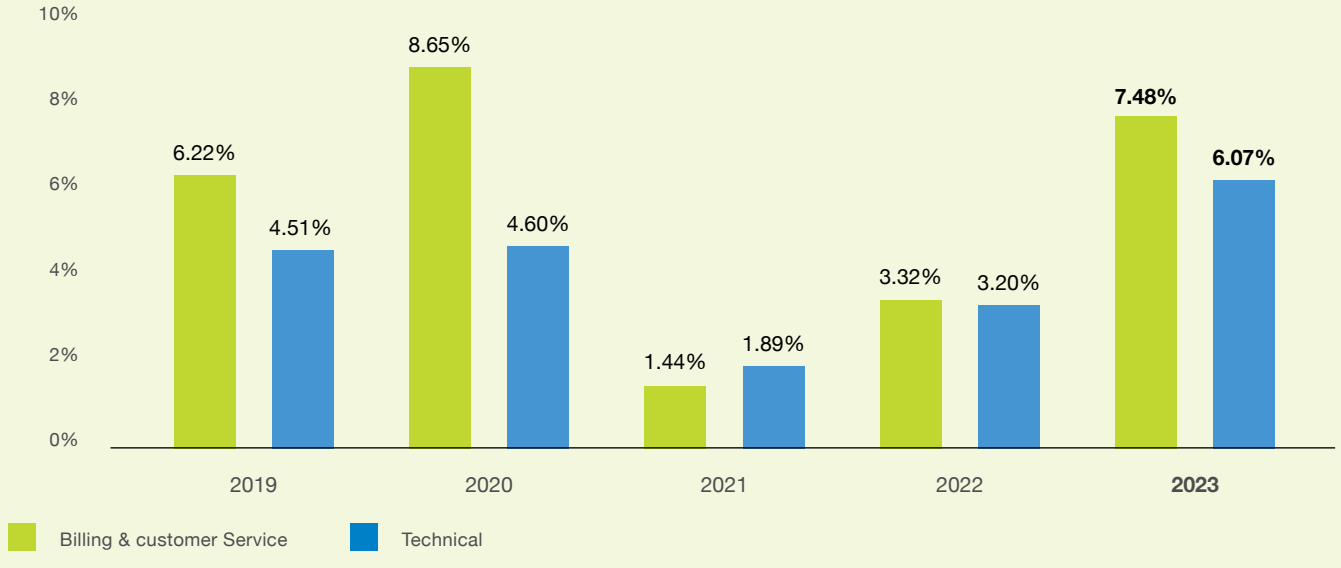
Customer Privacy

Disclosure	GRI Disclosures/ IFRS
Substantiated complaints concerning breaches of customer privacy and losses of customer data	GRI 418-1
There were no substantiated complaints regarding breaches of customer privacy and losses of customer data in 2023.	

Customer Service -
No. of Calls Handled by Sarawak Energy Call Centre 2019 - 2023



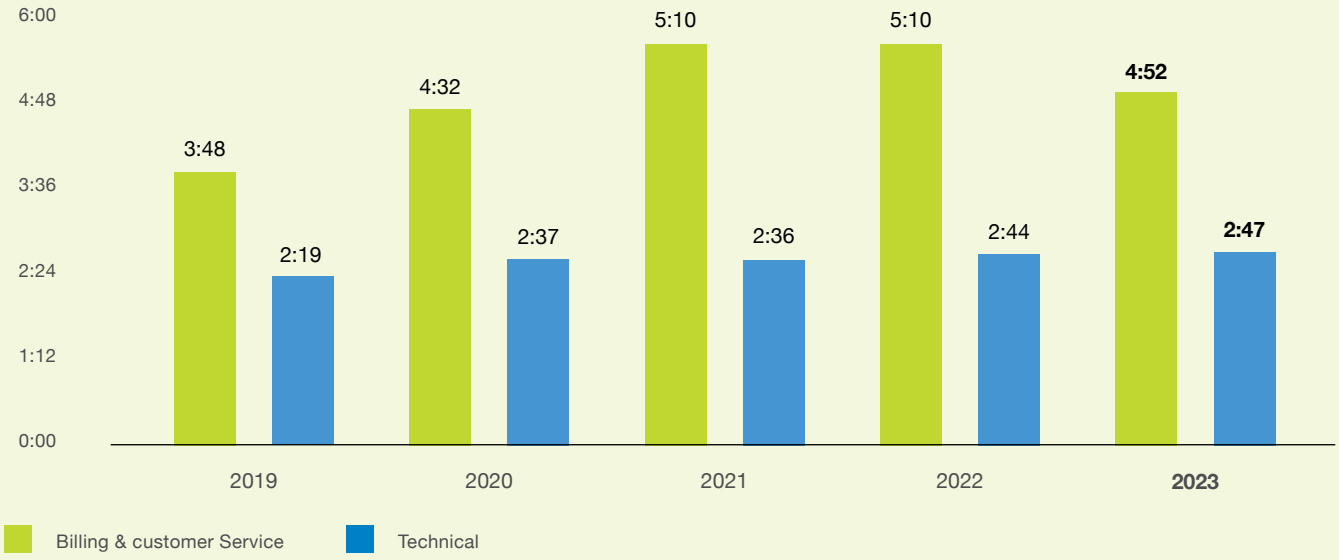
Customer Service -
Overall Abandon Rate 2019 - 2023



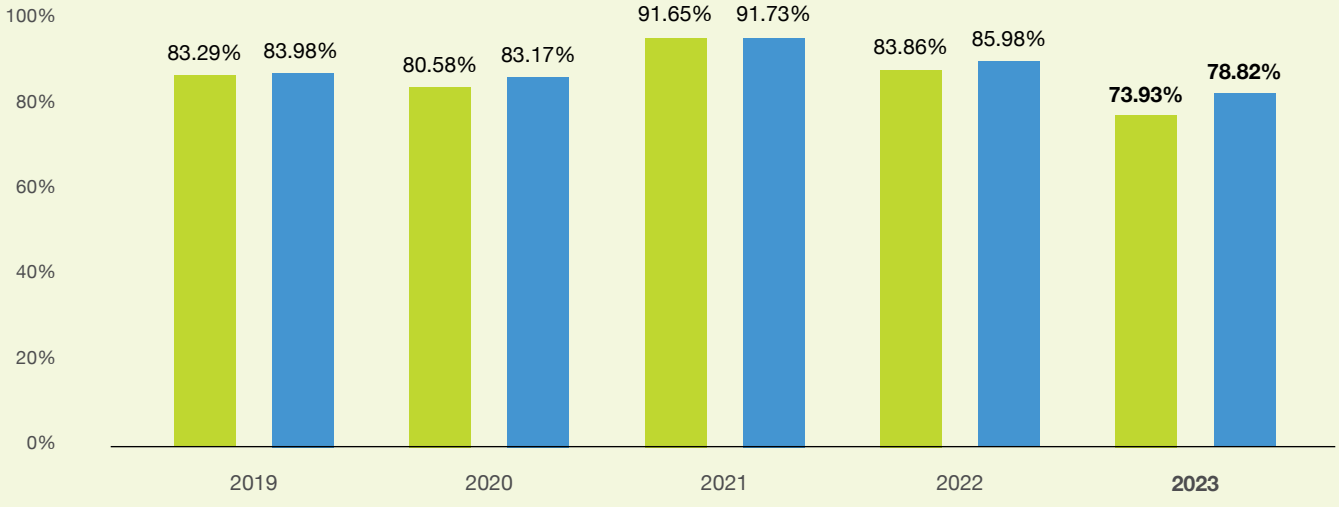
Our Performance Data

418-1

Customer Service -
Average Handling Time 2019 - 2023



Customer Service -
Overall Service Level by Sarawak Energy Call Centre 2019 - 2023



Notes:

1. *For Billing and Customer Service, our customer care executives offer assistance and handle enquiries associated with new applications, billing and meter related issues, as well as general enquires (office location, counter operating hours, tariff, etc).*
2. *For Technical, we primarily cover outages, streetlight and other technical issues such as vegetation clearing, voltage issue, slanting/broken pole or wire, vandalism etc.*

Our Performance Data

EU3, EU4

Customers' Data

Disclosure					GRI Disclosures/ IFRS
Number of Residential, Industrial, Institutional and Commercial Customer Accounts					GRI EU3
Grid/Non-Grid No. of Customers Account Ending 2023					
Grid	**Tariff**	**No. of Active Customers' Account**	**No. of Inactive Customers' Account**	**Total No. of Customers' Account**	
Grid	C1	107,042	6,597	113,639	
Grid	C2	20	0	20	
Grid	C3	41	0	41	
Grid	DOM	627,070	23,265	650,335	
Grid	I1	954	18	972	
Grid	I2	27	1	28	
Grid	I3	92	1	93	
Grid	I4	15	0	15	
Grid	PL	12,703	204	12,907	
Grid	SESCO[a]	520	12	532	
Non-Grid	C1	4,426	178	4,604	
Non-Grid	C2	1	0	1	
Non-Grid	DOM	23,354	942	24,296	
Non-Grid	I1	24	0	24	
Non-Grid	PL	315	2	317	
Non-Grid	SESCO[a]	31	7	38	
Total		**776,635**	**31,227**	**807,862**	

Note:
[a] *SESCO's office buildings.*

Transmission and Distribution Lines

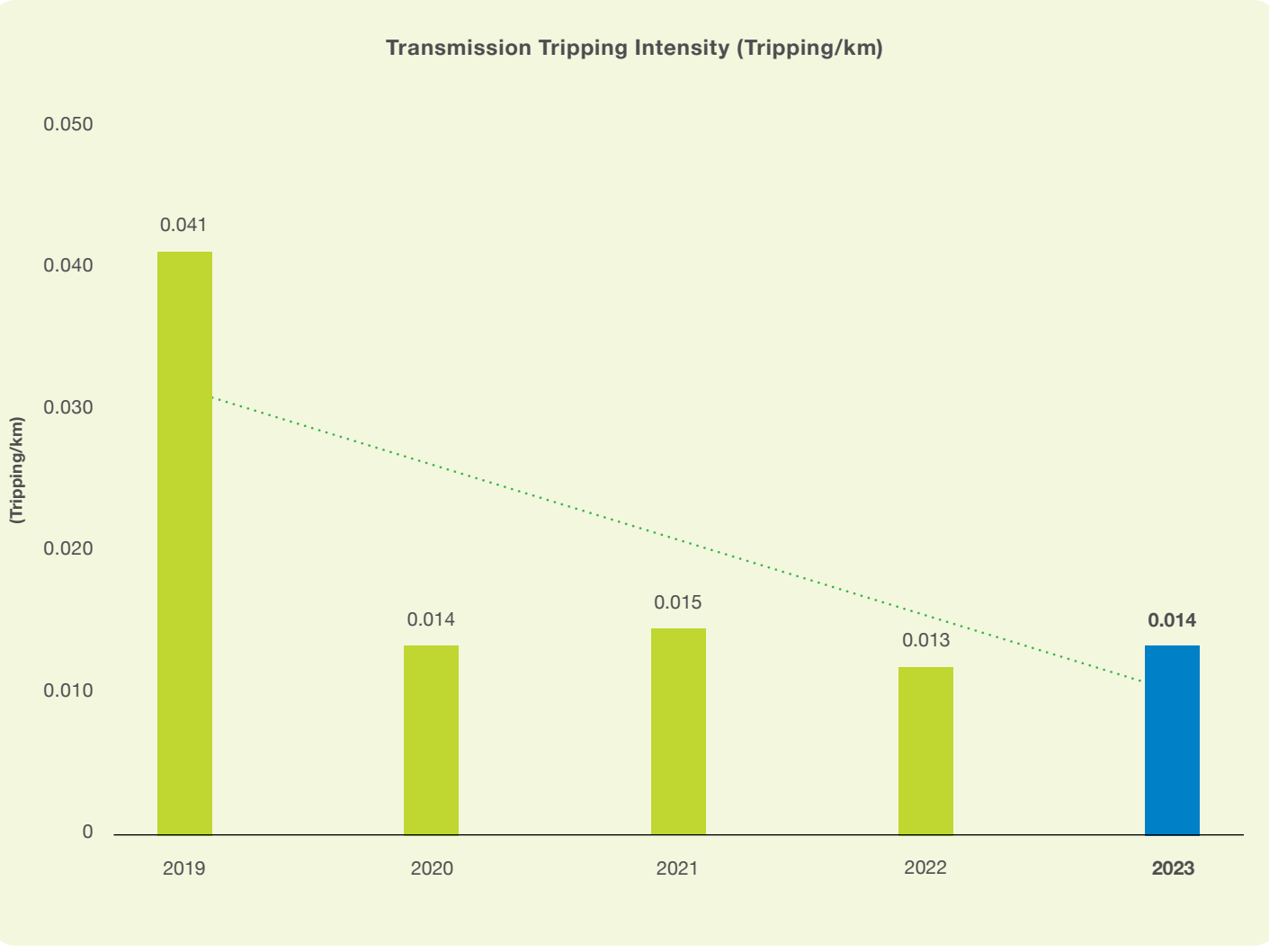
Disclosure								GRI Disclosures/ IFRS
Length of Above and Underground Transmission and Distribution Lines by Regulatory Regime								GRI EU4
Total Length of Distribution Lines in 2023								
		33kV Distribution		**11kV Distribution**		**415V Distribution**		
Region	**Unit**	**O/H**	**U/G**	**O/H**	**U/G**	**O/H**	**U/G**	
WR Kuching	km	1,166.58	851.16	2,264.73	1,970.71	5,559.29	1,786.31	
WR Sri Aman	km	869.66	64.12	1,592.96	186.07	1,503.93	105.51	
CR Sarikei	km	405.97	77.66	519.20	116.28	1,273.12	154.88	
CR Sibu	km	1,402.04	1,120.86	1,662.61	1,176.85	3,842.66	1,123.13	
NR Bintulu	km	860.78	299.75	241.42	387.60	557.44	253.64	
NR Miri	km	414.06	674.50	779.86	724.63	2,863.12	656.32	
NR Limbang	km	122.37	16.10	696.19	78.66	580.57	39.46	
Total	**km**	**5,241.46**	**3,104.15**	**7,756.97**	**4,640.80**	**16,180.13**	**4,119.25**	
Total Length of Transmission Lines in 2023								
Category	**Unit**	**500kV energised at 275kV**		**275kV**		**132kV**		
Overhead	km	1,030.88		3,635.44		1,191.32		
Underground	km	-		-		46.94		
Total	**km**	**1,030.88**		**3,635.44**		**1,238.26**		

Our Performance Data

EU12

Transmission Tripping Intensity

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total Distance							GRI EU12
Transmission	km	2,404.76	4,707.46	5,033.05	5,029.51	5,904.58	
Number of Transmission Tripping							
Substation	Number	29	15	12	15	7	
Transmission	Number	69	53	64	49	74	
Total	**Number**	**98**	**68**	**76**	**64**	**81**	
Transmission Tripping Intensity	**Tripping/ km**	**0.041**	**0.014**	**0.015**	**0.013**	**0.014**	



Our Performance Data

EU11, EU26

System Efficiency

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
Total Average Energy Efficiency							GRI EU11
Plant Type: Coal							
Sejingkat Power Corp.	%	27.25	25.11	26.83	21.18	26.84	
PPLS Power Generation	%	30.72	32.62	22.00	28.59	28.64	
Mukah Power Generation	%	31.90	33.01	32.19	32.28	29.64	
Balingian Power Generation	%	35.58	31.85	35.22	37.64	34.16	
Plant Type: Natural Gas							
Sarawak Power Generation	%	40.25	38.68	32.72	38.50	36.33	
Kidurong Power Generation 1	%	-	-	44.78	41.72	49.15	
Kidurong Power Generation 2	%	-	-	-	49.73	50.02	
Bintulu PS	%	21.22	21.03	21.85	14.11	15.30	
Miri PS	%	21.28	21.44	21.79	14.45	14.80	
Plant Type: Diesel							
Sg Biawak PS	%	22.14	17.86[a]	20.48[a]	21.68[a]	21.95	
Limbang PS	%	34.69	34.58	33.81	32.61	33.40	
Lawas PS	%	34.40	34.37	33.31	32.01	32.27	

Notes:

1. Total average energy efficiency for Sarawak Energy thermal power plants connected to Main and Northern grids.

[a] *Plant on standby mode.*

Electrification

Disclosure	Unit	2019	2020	2021	2022	2023	GRI Disclosures/ IFRS
New households connected							GRI EU26
Normal Rural Electrification Scheme (RES)	Number	5,239	3,186	4,010	3,437	1,834	
Hybrid Programmes	Number	483	70	115	13	0	
SARES	Number	3,122	3,354	1,912	2,061	161	
Total	**Number**	**8,844**	**6,610**	**6,037**	**5,511**	**1,995**	

Our Performance Data

EU30

Average Plant Availability Factor

Year	2019		2020		2021		2022		2023		GRI Disclosures/ IFRS
Category	Equivalent Availability Factor (%)	Forced Outage (Hours)	Equivalent Availability Factor (%)	Forced Outage (Hours)	Equivalent Availability Factor (%)	Forced Outage (Hours)	Equivalent Availability Factor (%)	Forced Outage (Hours)	Equivalent Availability Factor (%)	Forced Outage (Hours)	GRI EU30
Plant Type: Hydro											
Batang Ai HEP	83.83	172.22	91.40	122.04	95.89	19.04	88.78	46.24	79.94	216.97	
Murum HEP	85.09	1,076.91	94.85	250.51	93.69	295.29	98.22	187.38	93.23	596.18	
Bakun HEP	97.13	482.17	94.84	284.22	95.68	278.59	93.88	475.46	95.37	204.88	
Plant Type: Coal											
Sejingkat Power Corp	73.32	3,998.20	82.88	1,187.65	83.32	1,573.05	78.94	376.48	73.98	930.02	
PPLS	89.56	1,191.70	90.34	400.93	95.36	44.48	80.72	509.46	67.10	1,752.52	
MPG	75.43	519.98	87.73	220.67	86.36	452.72	76.67	861.27	50.08	2,411.19	
BPG	41.48	5.88	97.04	182.72	73.41	1,053.22	78.20	776.03	77.58	1,769.52	
Plant Type: Natural Gas											
SPG	88.25	252.24	72.04	282.87	61.55	877.16	92.31	1,298.48	78.48	345.85	
Bintulu SESCO	91.1	642.26	87.04	237.44	95.02	1,458.72	89.74	2,649.46	81.76	570.75	
Kidurong Power Generation 1	-	-	-	-	87.48	1,835.77	56.85	799.77	74.17	405.82	
Kidurong Power Generation 2	-	-	-	-	-	-	88.36	42.52	84.31	365.82	
Miri SESCO	93.48	273.45	88.81	2,108.05	82.32	5,446.14	56.29	21,492.05	52.82	15,869.91	
Plant Type: Diesel											
Sg Biawak SESCO	99.06	32.29	98.79	0.00	89.34	0.00	63.85	6,303.75	91.21	847.86	
Limbang SESCO	97.05	221	97.48	120.00	86.87	10,627.00	79.33	22,459.00	89.60	6,951.00	
Lawas SESCO	74.57	1,560	95.59	114.00	82.02	137.00	84.53	4,615.00	90.91	7,755.00	

Our Performance Data

(Former EU8)

R&D Expenditure

No.	Project	Approved Budget (RM)	GRI Disclosures/ IFRS
Research and Development Projects for 2023			GRI (Former EU8)
1	Battery Performance Evaluation System	40,000.00	
2	GHG Monitoring of HEPs (CP)	64,000.00	
3	Transformer Oil & Lubricating Oil Laboratory	100,000.00	
4	Hydro Env Sci Research Programmes	66,000.00	
5	Semadang Microgrid Project	4,923,017.20	
6	Development of AI Robotic System	16,000.00	
7	Integration of Smart and Low-Cost Sensor	10,400.00	
8	Development of 3D Printing System	24,000.00	
9	Solar-Hydrogen in rural electrification	232,141.47	
10	Grid Connected Energy Storage System	80,000.00	
11	Energy Efficiency and Energy Management Initiatives	102,750.00	
12	Waterpower Prototype & Research Program	20,000.00	
13	Proposed Microgrid Study - HIL Testing	418,400.00	
14	SE R&D Laboratory 2.0	2,365,760.00	
15	R&D Display Rack for Robotic	6,000.00	
16	Solid Modelling CAD software	56,000.00	
17	R&D New Laboratory	10,000.00	
18	Battery Home Solar System	240,000.00	
19	Lightning Research Study on 275kV TL	460,821.70	
Total		**9,235,290.37**	

Notes and References

Symbol	Description
*	*The data has been assured by a third party. Read the Independent Assurance Report on pages 252 - 258.*
1	*The data has been assured by a third party for Sustainability Report 2021.*
2	*The data has been assured by a third party for Sustainability Report 2020.*
3	*The data has been assured by a third party for Sustainability Report 2019.*
4	*The data has been assured by a third party for Sustainability Report 2018.*
5	*The data has been assured by a third party for Sustainability Report 2017.*
6	*The data has been assured by a third party for Sustainability Report 2016.*
7	*The data has been assured by a third party for Sustainability Report 2015.*
8	*The data has been assured by a third party for Sustainability Report 2014.*

Independent Third Part Assurance Statement

2-5

INDEPENDENT ASSURANCE OPINION STATEMENT

Statement No.: **SRA-MY 798241**

Sarawak Energy Berhad (SEB) Sustainability Report 2023

The British Standards Institution is independent of Sarawak Energy Berhad (hereafter referred to as "SEB" in this statement) and has no financial interest in the operation of SEB other than for the assessment and verification of the sustainability statements contained in this report.

This independent assurance opinion statement has been prepared for the stakeholders of SEB only for the purposes of verifying its statements relating to its environmental, social and governance (ESG), more particularly described in the scope, below. It was not prepared for any other purpose. The British Standards Institution will not, in providing this independent assurance opinion statement, accept or assume responsibility (legal or otherwise) or accept liability for or in connection with any other purpose for which it may be used, or to any person by whom the independent assurance opinion statement may be read.

This independent assurance opinion statement is prepared on the basis of review by the British Standards Institution of information presented to it by SEB. The review does not extend beyond such information and is solely based on it. In performing such review, the British Standards Institution has assumed that all such information is complete and accurate.

Any queries that may arise by virtue of this independent assurance opinion statement or matters relating to it should be addressed to SEB only.

Scope

The scope of engagement agreed upon with SEB includes the following:

The assurance covers part of the report and focuses on systems and activities during the period from 1st January 2023 to 31st December 2023 (the "**Reporting Year**"), for the following sustainability subject matter.

1. Main Grid CO_2 Emissions Intensity (tCO_2eq/MWh) for the financial year 2023:
   - Fuel consumption (FC_j)
   - Net energy generated (NEG_j)
   - Net calorific value (NCV_j)

2. Northern Grid CO_2 Emissions Intensity (tCO_2eq/MWh) for the financial year 2023:
   - Fuel consumption (FC_j)
   - Net energy generated (NEG_j)
   - Net calorific value (NCV_j)

3. Direct Emissions (Scope 1) Intensity (tCO_2eq/ RM Millions of Revenue) for the financial year 2023:
   - Main, Northern, Stand-Alone Grid and Company Owned Vehicles Emissions (tCO_2eq)
   - Revenue (RM Million)

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4. Direct Emissions (Scope 1) Intensity (tCO_2eq/ RM Millions of Total Investment$_{LCG}$) for the financial year 2023:

   • Main, Northern, Stand-Alone Grid and Company Owned Vehicles Emissions (tCO_2eq)
   • Total Investment in Low Carbon Generation (RM Millions of Total Investment$_{LCG}$)

   Note: LCG - Low Carbon Generation

5. Renewable Energy Generation Intensity (RM Millions of Revenue$_{ES}$ / MWh) for the financial year 2023:

   • Revenue$_{ES}$ (RM Million)
   • Net energy generated (NEGj) – Hydropower (MWh)

   Note: ES – Electricity Sales

6. Scope 2 - Buildings & offices (tCO_2eq) for the financial year 2023

7. Scope 3 - Business air travel (tCO_2) for the financial year 2023

8. Total Water Withdrawal by Source (m^3) for the financial year 2023:
   • Municipal water (m^3)
   • Natural water (m^3) and Operating hours (Hrs)

9. Scheduled Waste Generation Intensity (Tonne/GWh) for the financial year 2023:
   • Volume of waste generated (Tonne)
   • Gross electricity generated (GEG_j)

10. Annual Water Volume for Electricity Generation (Million m^3) for the financial year 2023:
    • Operating hours (Hrs)

11. Economic Value Retained (RM) for the financial year 2023

12. Total Value of Tenders Awarded to Local Sarawakian Companies (RM) for the financial year 2023:
    • Operations (RM)
    • Capital works (RM)

13. Loss Time Injury Frequency Rate (LTIFR) for the financial year 2023:
    • Total loss time injury cases
    • Total man hours (Hrs)

14. Sarawak Electrification Coverage (%) for the financial year 2023:
    • Rural electrification coverage (%)

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The evaluation of the nature and extent of the SEB's adherence to all four AA1000 AccountAbility principles and the reliability of specified sustainability performance information in this report as conducted in accordance with Type 2 Moderate Level (Limited Assurance) of AA1000AS v3 sustainability assurance engagement.

Opinion Statement

Based on our work described in the verification report, nothing has come to our attention that causes us to believe that data and information stated in the SEB's Sustainability Report is not correctly presented or with omission, in any material respects or that Inclusivity, Materiality Responsiveness and Impact based on AA1000 criteria are not correctly addressed.

We conclude that the sustainability subject matter of the Report provides a fair view of SEB's sustainability programmes and performance in the Reporting Year. We believe that the economic, social and environment performance disclosures are accurate and are supported by robust internal verification processes.

Our work was carried out by a team of sustainability report assurors in accordance the AA1000 Assurance Standard v3. We planned and performed this part of our work to obtain the necessary information and explanations. We considered to provide sufficient evidence that SEB's description of their approach to AA1000 Assurance Standard and their self-declaration of compliance with the GRI standards were fairly stated.

Methodology

Our work was designed to gather evidence on which our conclusion is based. We undertook the following activities:

- a top-level review of issues raised by external parties that could be relevant to SEB's policies to check on the appropriateness of statements made in the report.
- discussion with managers and staff on SEB's approach to stakeholder engagement. We had no direct contact with external stakeholders.
- interview with staff involved in sustainability management, report preparation and provision of report information.
- review of key organizational developments.
- review of supporting evidence for claims made in the reports.
- an assessment of the SEB's reporting and management processes concerning this reporting against the principles of Inclusivity, Materiality, Responsiveness and Impact as described in the AA1000 AccountAbility Principles Standard.

Conclusions

A detailed review against the AA1000 AccountAbility Principles of Inclusivity, Materiality, Responsiveness and Impact and the GRI Standards is set out below:

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Inclusivity
The Report has reflected the fact that SEB is seeking the engagement of its stakeholders. The participation of stakeholders has been initiated in developing and achieving an accountable and strategic response to sustainability. The reporting systems are being developed to deliver the required information. There are fair reporting and disclosure for economic, social and environment information in this report, so that appropriate planning and target-setting can be supported. In our professional opinion the report covers SEB's principle of Inclusivity.

Materiality
SEB publishes sustainability information that enables its stakeholders to make informed judgments about SEB's management and performance. In our professional opinion, the report adheres to the principle of Materiality and identifies SEB's material aspects by using appropriate methods of materiality analysis and demonstrating material issues in a matrix form. Areas for enhancement of the report were adopted by SEB before the issuance of this statement.

Responsiveness
SEB has implemented practices that respond to the expectations and perceptions of its stakeholders. These include sustainability reporting for both internal and external stakeholders. In our professional opinion, SEB adheres to the principle of Responsiveness. Areas for enhancement of the Report were adopted by SEB before the issuance of this statement.

Impact
SEB has demonstrated a process on identify impacts that encompass a range of environmental, social and governance topics, and fairly represented the impacts in the report. These processes enable SEB to assess its impact and disclose them in the sustainability subject matter of the report. In our professional opinion, SEB adheres to the principle of Impact. Areas for enhancement of the report were adopted by SEB before the issuance of this statement.

GRI Sustainability Reporting Standards
SEB provided us with their declaration reporting with reference to the GRI Standards of compliance within GRI Standards-Universal Standards 2021. Based on our review, we confirm that social responsibility and sustainable development disclosures with reference to the GRI Standards are reported. In our professional opinion the declaration covers the SEB's social responsibility and sustainability issues.

Assurance Level
The moderate (limited) level of assurance provided is in accordance with AA1000 Assurance Standard v3 in our review, as defined by the scope and methodology described in this opinion statement.

Responsibility & Limitations
This Sustainability Report is the responsibility of the SEB's management as declared in the responsibility letter. Our responsibility is to provide an independent assurance opinion statement to stakeholders giving our professional opinion based on the scope and methodology described.

Competency and Independence
The assurance team was composed of Lead Auditors and Carbon Footprint Verifiers experienced in industrial sector, and trained in a range of sustainability, environmental and social standards including AA1000 AS, ISO14001, ISO14064, ISO 45001 and ISO 9001. BSI is a leading global standards and assessment body founded in 1901

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For and on behalf of BSI:

Ms Evelyn Chye
Managing Director

Verifier of the Report:

Mr. Shaiful Rahman
Lead Assuror

18 August 2024

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Appendix 1: Summary of SEB's Selected Disclosures for Year 2023

Key performance indicators	Value	Units
Main Grid CO_2 Emissions Intensity (tCO_2eq/MWh) for the financial year 2023:	0.206	tCO_2eq/MWh
• Fuel consumption (FC_j)		
• Coal	3,201,032.55	Tonne
• Natural Gas	47,502,815.02	MMBtu
• Diesel	29,023,942.56	Litre
• Net energy generated (NEG_j)	34,456,329.50	MWh
• Net calorific value (NCV_j)		
• Coal	16,359.24	kj/kg
• Natural Gas	38.20	MJ/Nm^3
• Diesel	37.00	MJ/Litre
Northern Grid CO_2 Emissions Intensity (tCO_2eq/MWh) for the financial year 2023:	0.691	tCO_2eq/MWh
• Fuel consumption (FC_j) - Diesel	47,121,041.00	Litre
• Net energy generated (NEG_j)	183,341.56	MWh
• Net calorific value (NCV_j) – Diesel	37.00	MJ/Litre
Direct Emissions (Scope 1) Intensity (tCO_2eq/ RM Millions of Revenue) for the financial year 2023:	1,010.15	tCO_2eq/ RM Millions of Revenue
• Main, Northern, Stand-Alone Grid and Company Owned Vehicles Emissions (tCO_2eq)	7,219,731.17	tCO_2eq
• Revenue (RM Million)	7,147.20	RM Million
Direct Emissions (Scope 1) Intensity (tCO_2eq/ RM Millions of Total $Investment_{LCG}$) for the financial year 2023:	712.06	tCO_2eq/ RM Millions of Total $Investment_{LCG}$
• Main, Northern, Stand-Alone Grid and Company Owned Vehicles Emissions (tCO_2eq)	7,219,731.17	tCO_2eq
• Total Investment in Low Carbon Generation (RM Millions of Total $Investment_{LCG}$)	10,139.17	RM Million
Renewable Energy Generation Intensity (RM Millions of Revenue / MWh) for the financial year 2023:	0.00028	RM Millions of Revenue / MWh
• Revenue (RM Million)	7,136.21	RM Million
• Net energy generated (NEGj) – Hydropower (MWh)	25,058,748.23	MWh
Scope 2 - Buildings & offices (tCO_2eq) for the financial year 2023	13,635.19	tCO_2eq
Scope 3 - Business air travel (tCO_2) for the financial year 2023	3,866.82	tCO_2
Total Water Withdrawal by Source (m^3) for the financial year 2023:		
• Municipal water (m^3)	2,847,183.06	m^3
• Natural water (m^3)	1,146,861,312.40	m^3
• Surface Water (River Water)	4,601,250.00	m^3
• Operating hours (Hrs)	53,973	Hours

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Scheduled Waste Generation Intensity (Tonne/GWh) for the financial year 2023: • Volume of waste generated (Tonne) • Gross electricity generated (GEG_j)	13.93 443,436.70 31,833,916.22	Tonne/GWh Tonne MWh
Annual Water Volume for Electricity Generation (million m^3) for the financial year 2023: • Operating hours (Hrs)	57,017.87 122,933.32	Million m^3 Hours
Economic Value Retained (RM) for the financial year 2023	2,585.00	RM Million
Total Value of Tenders Awarded to Local Sarawakian Companies (RM) for the financial year 2023: • Operations (RM) • Capital works (RM)	1,198,478,619.98 943,688,077.61 254,790,542.37	RM RM RM
Loss Time Injury Frequency Rate (LTIFR) for the financial year 2023: • Employees Only • Contractors Only • Total loss time injury cases • Employees Only • Contractors Only • Total man hours (Hrs) • Employees Only • Contractors Only	0.329 0.227 0.406 10 3 7 30,438,538 13,203,675 17,234,863	LTIs / Million Man Hours (excluding fatalities) LTIs / Million Man Hours LTIs / Million Man Hours Number of Injuries Number of Injuries Number of Injuries Hours Hours Hours
Sarawak Electrification Coverage (%) for the financial year 2023: • Rural electrification coverage (%)	99.35 98.38	% %

GRI Content Index

GRI CONTENT INDEX ADVANCED SERVICE WITH REFERENCE OPTION	2024	For the Content Index – Advanced With Reference option Service, GRI Services reviewed that the GRI content index has been presented in a way consistent with the requirements for reporting with reference to the GRI Standards, and that the information in the index is clearly presented and accessible to the stakeholders.
Statement of use		Sarawak Energy Berhad has reported the information cited in this GRI Content Index for the period 1 January 2023 to 31 December 2023 with reference to the GRI Standards.
GRI 1 used		GRI 1: Foundation 2021

GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
GRI 2: General Disclosures 2021	2-1 Organisational details	Pg. 3			
	2-2 Entities included in the organisation's sustainability reporting	Pg. 2, 42			
	2-3 Reporting period, frequency and contact point	Pg. 2			
	2-4 Restatements of information	No restatement has been made in the reporting period			
	2-5 External assurance	Pg. 2, 252 - 258	Yes		
	2-6 Activities, value chain and other business relationships	Pg. 2-3, 6, 8-11, 13-19, 21-23, 27-30, 32, 36-37, 118-119, 166			
	2-7 Employees	Pg. 3, 80, 118, 125, 202-204, 241-243		8	
	2-8 Workers who are not employees	Sarawak Energy Internship Programme offers students in their final year of tertiary education (university, college, or polytechnic) the opportunity to gain valuable on-the-job experience			
	2-9 Governance structure and composition	Pg. 43-65, 122, 148, 243			
	2-10 Nomination and selection of the highest governance body	Pg. 59-63			
	2-11 Chair of the highest governance body	Pg. 59-63			
	2-12 Role of the highest governance body in overseeing the management of impacts	Pg. 59-66, 148, 201			
	2-13 Delegation of responsibility for managing impacts	Pg. 67-73, 122, 148			
	2-14 Role of the highest governance body in sustainability reporting	Pg. 65-66, 73			
	2-15 Conflicts of interest	Pg. 60, 72			
	2-16 Communication of critical concerns	Pg. 67-68, 72-73, 122, 148			

GRI Content Index

GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
	2-17 Collective knowledge of the highest governance body	Pg. 60, 73			
	2-18 Evaluation of the performance of the highest governance body	Pg. 60			
	2-19 Remuneration policies	Pg. 161			
	2-20 Process to determine remuneration	Pg. 61			
	2-21 Annual total compensation ratio	Pg. 61			
	2-22 Statement on sustainable development strategy	Pg. 20-25, 27-28, 31, 75, 123			
	2-23 Policy commitments	Pg. 22, 72-73, 86, 91, 97, 134-135		16	
	2-24 Embedding policy commitments	Pg. 22, 72-73, 86, 120-121, 141-145, 148-150, 166-167, 199			
	2-25 Processes to remediate negative impacts	Pg. 97-98, 120-121, 127-137, 139-145			
	2-26 Mechanisms for seeking advice and raising concerns	Pg. 87, 112, 116			
	2-27 Compliance with laws and regulations	Pg. 66, 78, 188-190, 239		16	
	2-28 Membership associations	Pg. 3, 51, 126			
	2-29 Approach to stakeholder engagement	Pg. 2, 17-19, 22, 68, 87-90, 112, 116, 196, 208			
	2-30 Collective bargaining agreements	Terms as agreed in Collective Agreement are extended to all non-executive staff under Sarawak Energy Group.		8	
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Pg. 116			
	3-2 List of material topics	Pg. 117			
Topic: Economic Performance					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 40, 169			
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Pg. 119, 169-170, 210	Yes	2	
	201-2 Financial implications and other risks and opportunities due to climate change	Pg. 156-157, 160-161			IFRS
	201-3 Defined benefit plan obligations and other retirement plans	Pg. 241			
	201-4 Financial assistance received from government	Pg. 29, 102			

GRI Content Index

GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
Topics: • Indirect Economic Performance • Public Policy					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 6, 8-9, 11, 21-23, 27-30, 32, 100-102, 104, 128-129, 132-133, 144-145			
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Pg. 6, 8-11, 13, 21-24, 27-30, 32, 99-101, 104, 110-111, 128-129, 132-133, 144-145, 173, 210		7, 9, 11	
	203-2 Significant indirect economic impacts	Pg. 6, 8-11, 27-28, 32, 34, 102-103, 110-111, 119, 132-133, 144-145		1, 2, 8, 10, 17	
Topics: • Procurement Practices • Labour/Management Relations • Market Presence					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 172			
GRI 204: Procurement Practices 2016	204-1 Proportion of spending on local suppliers	Pg. 114, 119, 125, 172, 210	Yes	12	
Topics: • Ethics and Integrity • Socioeconomic Compliance					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 72			
GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	Pg. 72, 211		16	
	205-3 Confirmed incidents of corruption and actions taken	Pg. 211		16	
Topic: Materials					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 118			
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Pg. 118, 162, 185, 212-213	Yes	8, 12	IFRS
Topic: Water					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 183			
GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Pg. 183-184		6	
	303-2 Management of water discharge-related impacts	Pg. 183-184		6	
	303-3 Water withdrawal	Pg. 183, 187, 214-215	Yes	6	
Topic: Biodiversity					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 126, 193			
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Pg. 126, 184, 192		6, 14, 15	
	304-2 Significant impacts of activities, products and services on biodiversity	Pg. 98, 184, 192		6, 14, 15	

GRI Content Index

GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
Topic: Emissions					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 164-165, 168			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Pg. 158, 163-165, 168, 215-219	Yes	3, 12, 13, 14, 15	IFRS
	305-2 Energy indirect (Scope 2) GHG emissions	Pg. 158, 163-165, 168, 216	Yes	3, 12, 13, 14, 15	IFRS
	305-3 Other indirect (Scope 3) GHG emissions	Pg. 158-159, 163-165, 168, 216	Yes	3, 12, 13, 14, 15	IFRS
	305-4 GHG emissions intensity	Pg. 114, 119-120, 124, 137, 140, 142-143, 160, 163-165, 167-168, 215-216, 220, 222-223	Yes	3, 12, 13, 14, 15	IFRS
	305-5 Reduction of GHG emissions	Pg. 124		13, 14, 15	IFRS
	305-7 Nitrogen oxides (NO_x), sulfur oxides (SO_x), and other significant air emissions	Pg. 183, 189, 224-225		3, 12, 14, 15	
Topics: • **Effluent & Waste** • **Environmental Compliance**					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 162, 188			
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Pg. 188		12	
	306-2 Management of significant waste-related impacts	Pg. 188		12	
	306-3 Waste generated	Pg. 162, 226-239	Yes	12	
Topic: Employment					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 202			
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Pg. 119, 202, 239-241		5, 8	
	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	Pg. 241		8	
Topics: • **Occupational Health & Safety** • **Customer Health & Safety** • **Disaster/Emergency Planning Response**					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 34, 88-90, 93-94, 180, 209			
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Pg. 12, 94		3, 8	
	403-2 Hazard identification, risk assessment, and incident investigation	Pg. 89, 91, 94, 179-180		3, 8	
	403-3 Occupational health services	Pg. 87, 89-90, 95-96		3, 8	

GRI Content Index

GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
	403-4 Worker participation, consultation, and communication on occupational health and safety	Pg. 88-90, 93-96, 242		3, 8	
	403-5 Worker training on occupational health and safety	Pg. 89-90, 93-96		3, 8	
	403-6 Promotion of worker health	Pg. 89-90, 93		3, 8	
	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Pg. 88, 93, 95-96		3, 8	
	403-9 Work-related injuries	Pg. 12, 34, 209	Yes	3, 8	
	403-10 Work-related ill health	Pg. 95-96		3, 8	
Topic: Training and Education					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 80-85			
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Pg. 203-205, 243		4, 5, 8	
	404-2 Programs for upgrading employee skills and transition assistance programs	Pg. 80-85, 205-208		8	
	404-3 Percentage of employees receiving regular performance and career development reviews	100%		5, 8	
Topics: • Indigenous Rights • Non-discrimination					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 112			
GRI 411: Rights of Indigenous Peoples 2016	411-1 Incidents of violations involving rights of indigenous peoples	There were no identified incidents of violations involving the rights of indigenous peoples during the reporting period. Pg. 112		2	
Topics: • Local Communities • Supplier Assessment for Labour Practices					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 105-106, 112, 194			
GRI 413: Local Communities 2016	413-1 Operations with local community engagement, impact assessments, and development programs	100% of Sarawak Energy's operations involves and includes local community engagement, impact assessments and development programs, particularly projects categorised under "prescribed activities" by the Natural Resources and Environment Board, Sarawak and Department of Environment. Pg. 105-112, 194		16	

GRI Content Index

GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
Topics: • Customer Privacy • Customer Service and Satisfaction					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 180			
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	There were no substantiated complaints regarding breaches of customer privacy and losses of customer data in 2023. Pg. 180, 244-245		16	
ELECTRIC UTILITIES SECTOR DISCLOSURES					
Topics: • Electricity Exports • Energy					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 8, 118			
GRI G4 Sector Disclosures: Electric Utilities	EU1 Installed Capacity, Broken Down by Primary Energy Source and by Regulatory Regime	Pg. 8, 173-174		7	IFRS
	EU2 Net Energy Output Broken Down by Primary Energy Source and by Regulatory Regime	Pg. 118, 163, 168, 220-222	Yes	7, 14	IFRS
	EU3 Number of Residential, Industrial, Institutional and Commercial Customer Accounts	Pg. 3, 246			
	EU4 Length of Above and Underground Transmission and Distribution Lines by Regulatory Regime	Pg. 123, 246		7	
Topics: • Availability & Reliability • Demand Side Management					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 6, 8, 172			
GRI G4 Sector Disclosures: Electric Utilities	EU10 Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	Pg. 6, 8, 172-173		7	

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GRI Standard	Disclosure	Location and Direct Answers	External Assurance	SDG Linkage to Disclosure	IFRS
Topic: System Efficiency					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 130, 152, 156, 166			
GRI G4 Sector Disclosures: Electric Utilities	EU11 Average generation efficiency of thermal plants by energy source and by regulatory	Pg. 248		7, 8, 12, 13, 14	
	EU12 Transmission and distribution losses as a percentage of total energy	Pg. 123, 176, 247		7, 8, 12, 13, 14	
Topic: Access					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 6, 28-29, 34, 77			
GRI G4 Sector Disclosures: Electric Utilities	EU26 Percentage of population unserved in licensed distribution or service areas	Pg. 6, 13, 29, 119, 123, 248	Yes	1, 7	
	EU27 Number of residential disconnections for nonpayments, broken down by duration of disconnection and by regulatory regime	Pg. 178		1, 7	
	EU28 Power outage frequency	Pg. 34, 77, 175		7	
	EU29 Average power outage duration	Pg. 28, 34, 77, 114, 123, 175		1, 7	
	EU30 Average plant availability factor by energy source and by regulatory regime	Pg. 76, 123, 174, 249		1, 7	
Topic: Research & Development					
GRI 3: Material Topics 2021	3-3 Management of material topics	Pg. 103-104			
GRI G4 Sector Disclosures: Electric Utilities	(Former EU8) Research and development activity and expenditure aimed at providing reliability electricity and promoting sustainable development	Pg. 161, 250		7, 9, 17	

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