sarawak energy

100 YEARS
Power to Grow

SUSTAINABILITY REPORT 2021

204-1, 305-4, EU29

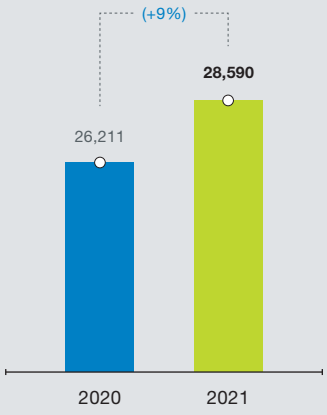
SUSTAINABILITY KEY HIGHLIGHTS

PERFORMANCE AT A GLANCE

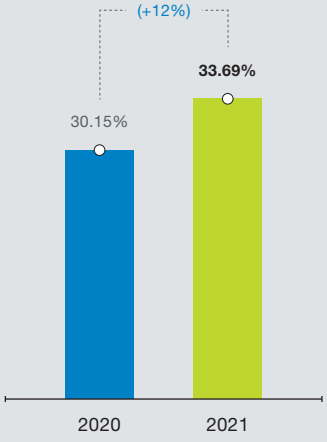
Sarawak Energy is committed to providing reliable and renewable energy for the people of Sarawak in the long term. We are always seeking opportunities for long-term sustainable growth to create value and positive impacts for our stakeholders and the region. As we continue to generate financial growth, we strive to conserve natural resources and uplift our society. Above all, we endeavour to meet the region's energy needs and achieve prosperity for Sarawak. To ensure sustainable growth, we measure our performance against Economic, Environment and Social, the key pillars of sustainability, as presented in the following infographics:

2021 Highlights

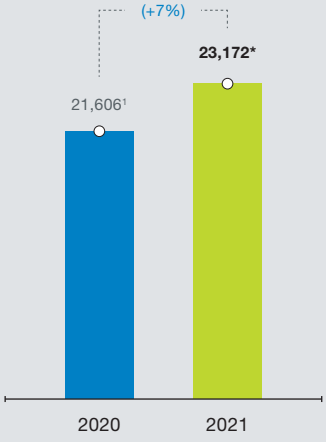
Total Electricity Sales (GWh) - **28,590 GWh**



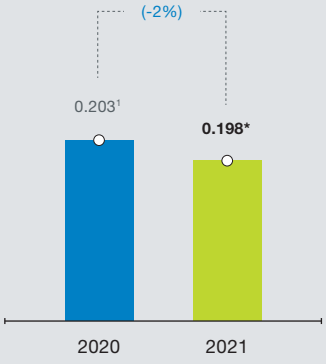
Operating Expenses Ratio (%) - **33.69%**



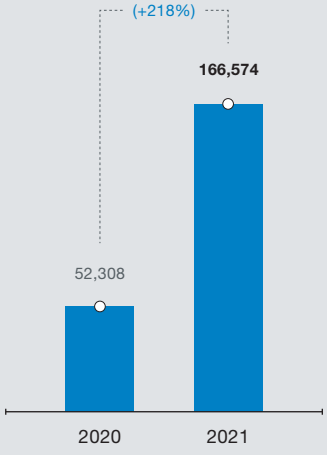
Renewable Energy Generated (GWh) - **Main Grid: 23,172 GWh***



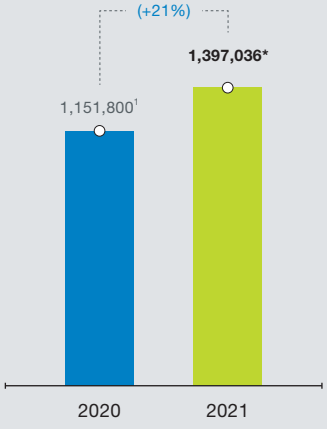
Emissions Intensity - Main Grid (tCO_2eq/MWh) - **0.198 tCO_2eq/MWh***



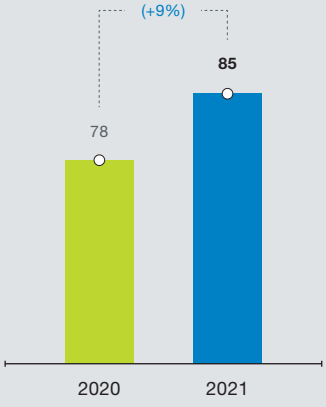
Total Hours of Training (Hours) - **166,574 hrs**



Tenders Awarded to Local Sarawakian Companies (RM'000) - **RM1,397,036***



SAIDI – Distribution (Minutes per Customer) - **85**



First utility company in the country to secure a

100 million

sustainability-linked loan (SLL) in the form of a revolving credit facility - a loan linked to measurable sustainability performance targets

- reaffirms Sarawak Energy's commitment to keep its grid emissions intensity in alignment with the Paris Agreement and light up 100% of Sarawak by 2025

Notes:

[1] *These main grid CO_2 emissions intensity, net energy generated and total value of tenders awarded to local Sarawakian companies' data have been assured by a third party for Sustainability Report 2020.*

* *These main grid CO_2 emissions intensity, net energy generated and total value of tenders awarded to local Sarawakian companies' data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

102-42, 102-43, 102-44, 102-47, 102-49

MATERIALITY ISSUES

Material issues are sustainability matters that are most significant to our stakeholders and our business. Knowing our material issues will allow us to identify the opportunities and mitigate the risks of each material issue. Our material issues are identified through various methods such as thought leader perspectives, surveys and stakeholder feedback, as well as social media coverage.

In 2017, we conducted a comprehensive materiality assessment guided by GRI Standards and identified 32 material issues according to Sarawak Energy's Economic, Environment and Social impacts.

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 for 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

Our materiality matrix is shown below:

EU4, EU12, EU26, EU29, EU30

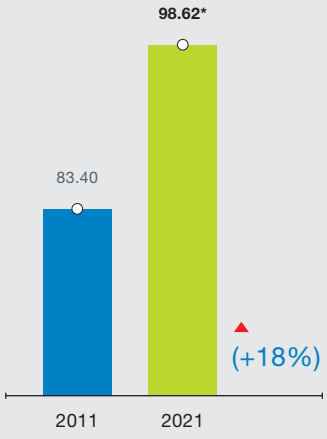
INTERNALISING THE GLOBAL SUSTAINABILITY AGENDA

The United Nations Development Programme has identified 17 Sustainable Development Goals (SDGs) to make the world a better place by 2030. To realise the goals, it requires contribution from governments, corporate organisations, civil society and the general public.

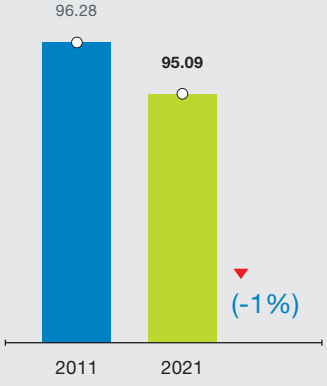
At Sarawak Energy, we are actively doing our part to work towards six selected SDGs that are aligned with our business activities.

7 - Affordable and Clean Energy

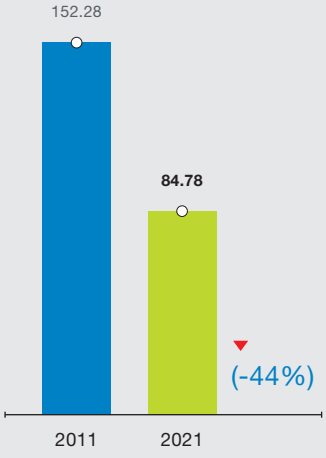
Sarawak Electricity Coverage (%)



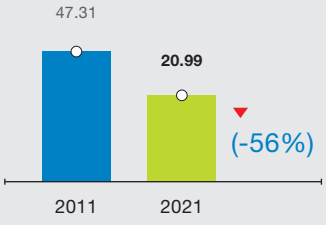
Hydropower Average Availability Factor (%)



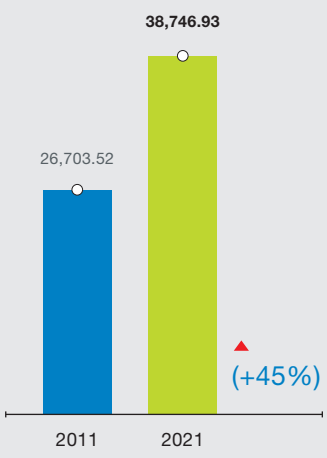
SAIDI for Distribution (min/customer)



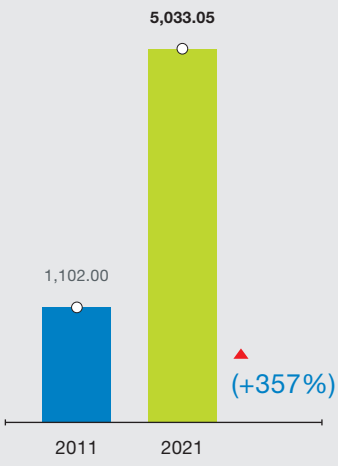
SAIDI for Transmission (min/customer)



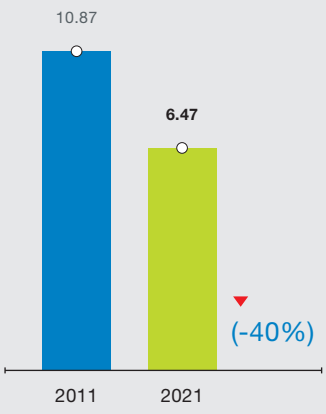
Total Length - Distribution (km)



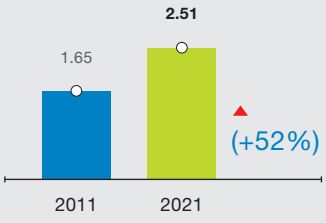
Total Length - Transmission (km)



Distribution Losses (Technical) (%)



Transmission Losses (%)



Note:

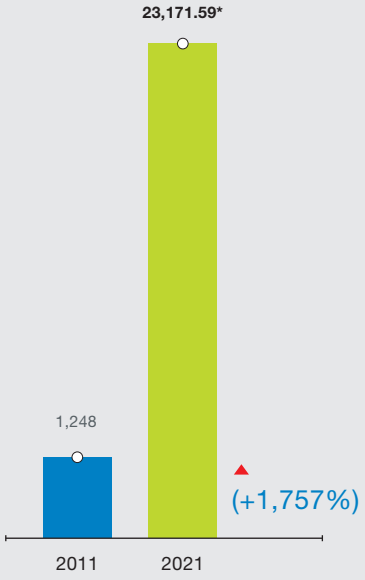
** This Sarawak electrification coverage data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

305-4, 305-5

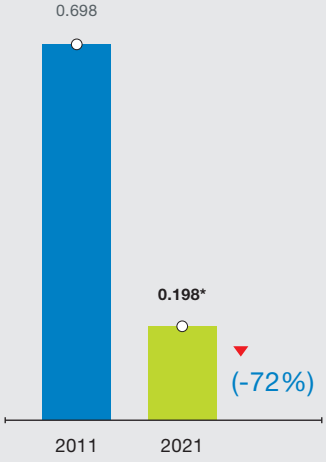
INTERNALISING THE GLOBAL SUSTAINABILITY AGENDA

13 - Climate Action

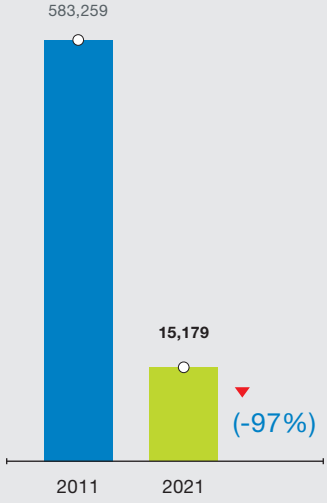
Renewable Energy Generated (GWh)



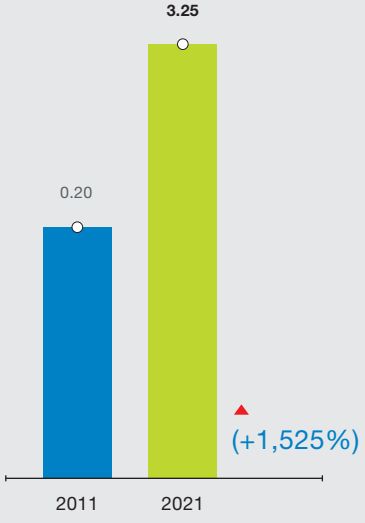
Main Grid Emissions Intensity (tCO_2eq/MWh)



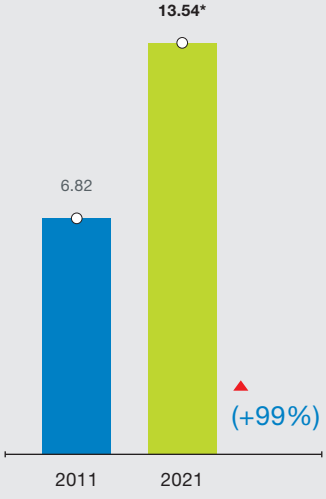
Total CO_2 Emissions Reduction (tCO_2eq) from Clean Development Mechanism Projects



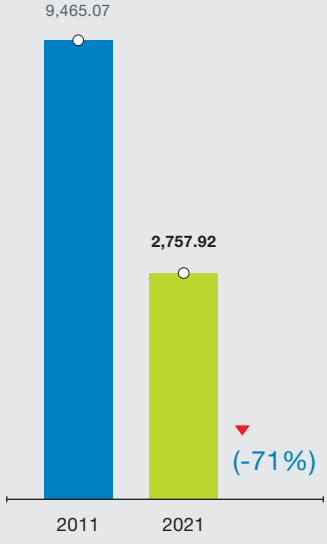
Renewable Energy to Non-renewable Energy Generated Ratio



Total Scheduled Waste Generation Intensity (t/GWh)



Total Fuel Consumption Intensity (MJ/MWh)



Note:

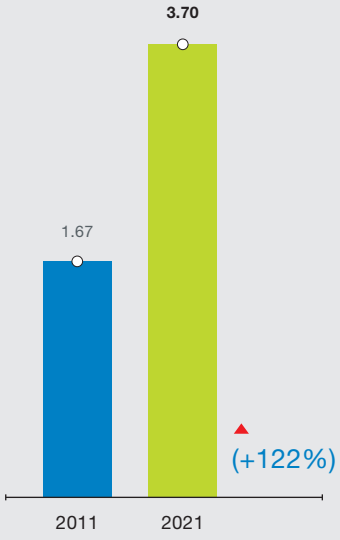
* *These net energy generated, main grid CO_2 emissions intensity and scheduled waste generation intensity data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

102-8, 204-1

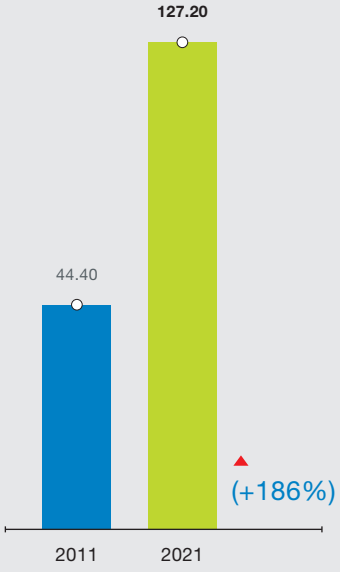
INTERNALISING THE GLOBAL SUSTAINABILITY AGENDA

8 - Decent Work & Economic Growth

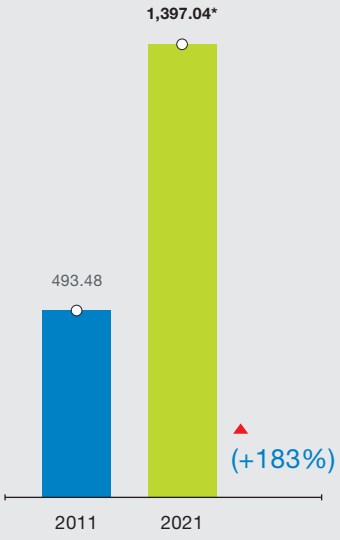
Electricity Sales/ GDP[1] (%)



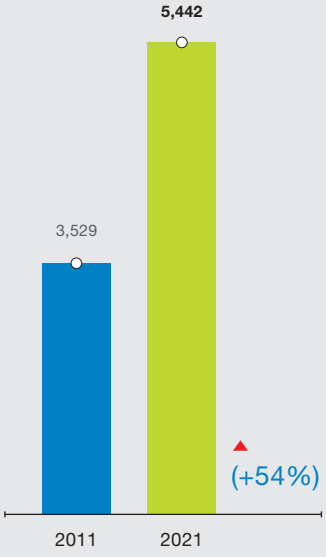
Tax Paid to Government (RM'Mil)



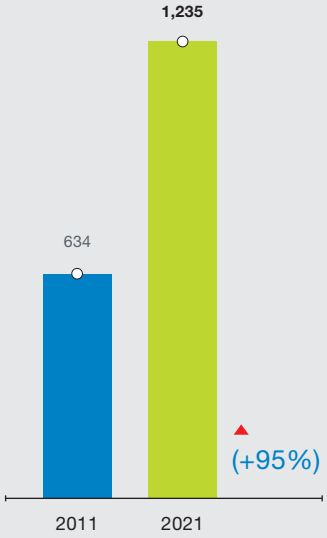
Tenders Awarded to Local Sarawakian Companies (RM'000)



Total Number of Employees

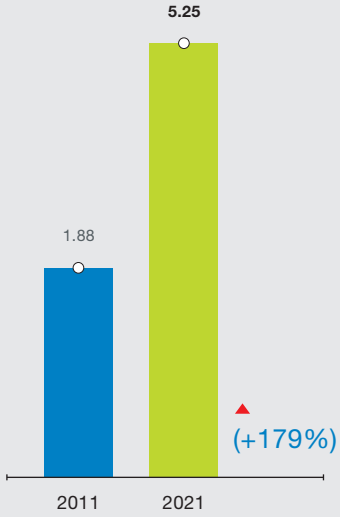


Total Number of Women in Our Workforce



Total Training Hours Provided

Electricity Sales/ Number of Employees (GWh/ Staff)



Notes:

[1] *GDP for State of Sarawak in 2021 based on current prices.*

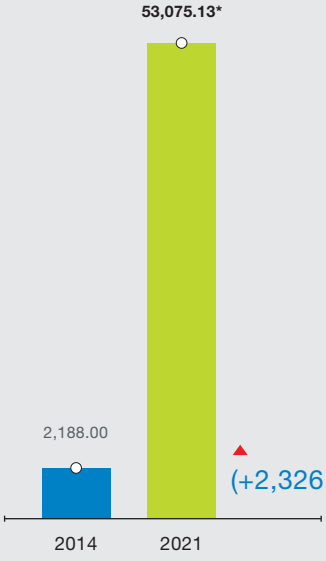
* *This total value of tenders awarded to local Sarawakian companies' data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

301-1, 304-1, 304-2

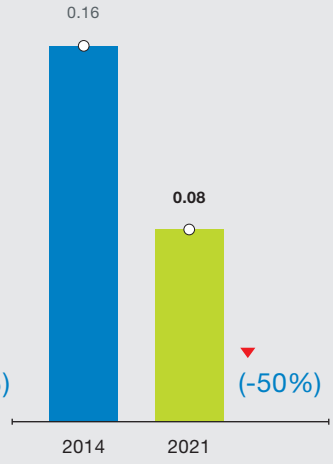
INTERNALISING THE GLOBAL SUSTAINABILITY AGENDA

6 - Clean Water and Sanitation

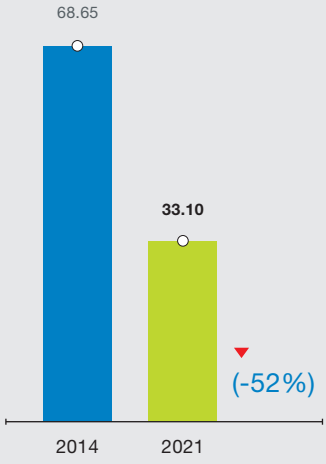
Water Volume Regulated by Hydropower Plants for Electricity Generation (million m^3)



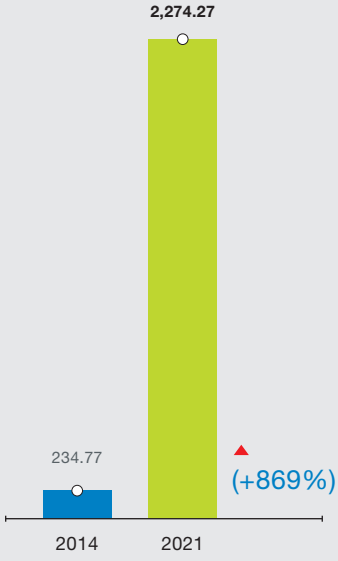
Water Intake Intensity by Thermal Plants by Source for Cooling Process – Municipal Water (m^3/MWh)



Water Intake Intensity by Thermal Plants by Source for Cooling Process – Sea Water or Other Natural Water Sources (m^3/MWh)



Water Volume Intensity Regulated by Hydropower Plants for Electricity Generation (m^3/MWh)



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

15 - Life on Land

- Supported the Heart of Borneo Initiative
- Baleh National Park gazetted
- Conducted various workshops on watershed management
- Nurtured the Flora Conservation Garden
- Enrichment Planting at Batang Ai Dam for Carbon Sequestration

17 - Partnerships for the Goals

- Partnership for conservation and protection of Heart of Borneo areas
- Collaboration with government agencies, NGOs such as WWF and universities in developing Integrated Catchment Management Policy, Procedures, Guidelines and Plan
- Collaboration with local universities on our Environmental Sustainability Programme
- Partnership with IHA, UNGC Network Malaysia & Brunei and GRI in championing Sustainability global agenda in local context

102-8, 103-1, 103-2, 301-1, 303-3

CREATING LONG-TERM VALUE

We continuously deliver returns and create positive impacts throughout our value chain by producing renewable energy with local resources. We strive to champion climate action and safeguard the interest of our stakeholders to achieve prosperity for Sarawak and sustainability for our business and communities, as well as the environment.

Input

POWERING LOW CARBON ECONOMY

Electricity Generated & Fuel Consumption by Type:

Hydro
23,171.59 GWh*
(77%)

Natural Gas
3,279.48 GWh*
(11%)

Coal
3,712.31 GWh*
(12%)

Hydro – Water Volume Regulated for Electricity Generation:
53,075.13 million m³*

Natural Gas
32,806,349.50 mmBtu*

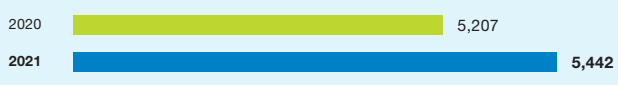
Coal
2,940,286.82 tonnes*

Thermal – Water Utilisation
1,021 million m³*
(Cooling process)

EMPOWERING OUR PEOPLE

Total Workforce (People):

+4.51%



Note:
* *These fuel consumption, net energy generated, annual water volume for electricity generation and total water withdrawn by source data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

CREATING LONG-TERM VALUE

Output

CONTRIBUTING TO ECONOMIC DEVELOPMENT

Operating Expenses Ratio
34%

Economic Value Retained
(RM Million)
RM2,441*

Payments to the Government
(RM Million)
RM127

Employee Remuneration
(RM Million)
RM596

Electricity Sales
28,590 GWh

SAFEGUARDING NATURAL RESOURCES

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

▼ 2% (Decreased from 2020)

GENERATING POSITIVE IMPACTS

Return on Assets
(%)
2.2

Total Assets
(RM Million)
RM37,697

Operating Costs
(RM Million)
RM2,073

Tenders Awarded to Local Sarawakian Companies
(RM Million)
RM1,397*

Sarawak's Rural Electrification Coverage
(%)
97%*

Benefitted at least
135,490 rural households since 2009

NURTURING OUR WORKFORCE

HUMAN CAPITAL DEVELOPMENT

Total Training Hours
166,574 hrs

Employee New Hires
163

Note:

* *These main grid CO_2 emissions intensity, economic value retained, total value of tenders awarded to local Sarawakian companies and rural electrification coverage data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

102-2, 102-12, 102-15, 103-2, 203-1, 305-4

GLOBAL TRENDS TOWARDS NET ZERO

VISION & GLOBAL TRENDS TOWARDS NET ZERO

In order to accelerate climate action, we aligned our emissions reduction efforts and low carbon economy initiatives with the latest climate action trends across all levels.

Global – Net Zero

- ✓ Pursue efforts to limit global temperature rise to 1.5°C above pre-industrial levels – reducing global CO_2 emissions by 45% by 2030 relative to the 2010 level and to net zero around mid-century
- ✓ Calls upon Parties to accelerate the development, deployment and dissemination of technologies, and the adoption of policies to:
  - Transition towards low-emission energy systems
  - Rapidly scale up the deployment of clean power generation and energy efficiency measures

ASEAN

- ✓ Communicating their respective Nationally Determined Contributions (NDC) to reflect the highest possible ambitions and facilitate the purpose of the contributions, which are in line with the respective UNFCCC decisions
- ✓ Promoting sustainable management of forests, including the implementation of UNFCCC decisions on reducing emissions from deforestation and forest degradation, as well as the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries

Malaysia

- ✓ Malaysia intends to reduce its economy-wide carbon intensity (against GDP) to 45% in 2030 compared to the 2005 level. The updated Nationally Determined Contribution (NDC) submitted to UNFCCC in July 2021 includes the following increased ambitions:
  - The 45% of carbon intensity reduction is unconditional;
  - This target is an increase of 10% from the earlier submission; and
  - The GHG coverage is expanded to seven greenhouse gases (GHG): Carbon dioxide (CO_2), Methane (CH_4), Nitrous oxide (N_2O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF_6) and Nitrogen trifluoride (NF_3).
- ✓ In the 12th Malaysia Plan, outlined selected key performance indicators that aligned with the Sustainable Development Goals (SDGs)
  - Aspires to become a Net Zero nation by 2050

Sarawak

Sarawak, in its Post COVID-19 Development Strategy 2030 (PCDS 2030), has highlighted its development targets and strategies towards its 2030 goals in prioritising environmental

Renewable Energy Sector
- ✓ Stimulate Sarawak's hydrogen economy by 2030
- ✓ Promote & increase private sector participation in renewable energy by 2030, e.g. Pilot Batang Ai floating solar project, & establish large scale solar (LLS) IPPs

Energy Generation & Usage
- ✓ Maintain at least 60% electricity generation mix from hydro

Decarbonisation
- ✓ 12.5 mil tonnes of CO_2 avoidance from renewable energy initiatives

Sarawak Energy

Sarawak Energy's efforts in alignment with the state, Malaysian, ASEAN and global commitment to the Paris Climate Agreement, the aim of which is to keep global

Renewable Energy Sector
- ✓ Sarawak Energy's Batang Ai 50 MW floating solar is the first major hybrid of hydro and solar in Sarawak
- ✓ Utilises floating solar farm technology targeted at minimising land usage and project footprint
- ✓ Aiming to have 4% large scale solar in Sarawak Energy's generation mix by 2030
- ✓ Sarawak Energy aims to attain sustainable growth and prosperity by becoming a Southeast Asian powerhouse to provide the region with affordable and reliable renewable energy
- ✓ Since 2016, we have been exporting predominantly renewable electricity to West Kalimantan (Indonesia) and in the near future, we will commence power export to Sabah. We eventually aim to materialise the Borneo Grid and become the 'Battery of ASEAN'

Energy Generation & Usage
- ✓ Sarawak Energy's electricity generation mix 2021 (77% from hydro)

Decarbonisation
- ✓ Sarawak Energy's Main Grid emissions intensity 2021 – 0.198 tCO_2eq/ MWh*, a 72% reduction from 2011
- ✓ In 2021, Sarawak Energy began preparations to have its emissions reduction target certified by SBTi in year 2022

Note:

** This main grid CO_2 emissions intensity data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

GLOBAL TRENDS TOWARDS NET ZERO

- Accelerate efforts to the phasedown of unabated coal power and phase-out of inefficient fossil fuel subsidies
- Provide targeted support to the most vulnerable, in line with national circumstances and in support of a just transition

✓ Nations reach new agreements for market mechanisms, supporting the transfer of emissions reductions between countries while incentivising the private sector to invest in climate-friendly solutions

✓ Welcoming cross-ASEAN pillar cooperation; among others, the development of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy)

- In fulfilling Malaysia's commitment to the Paris Agreement of the UNFCCC to reduce up to 45% GHG emissions intensity to GDP by 2030 based on emissions intensity in 2005, the focus will be on developing enabling instruments for climate action, including carbon pricing, such as carbon tax and the Emissions Trading Scheme
- 31% Renewable Energy of Total Installed Capacity by 2025
- The private sector will be encouraged to invest in advancing next generation vehicles, technologies and supporting infrastructure, such as energy-efficient, hydrogen-powered and electric vehicles and their charging stations
- Formulating a Comprehensive National Energy Policy – the prospect of future growth related to energy, particularly the potential of new energy from clean and sustainable sources including hydrogen, will be explored

sustainability and aligning its development path with Malaysia's commitment to the Paris Agreement and the Sustainable Development Goals (SDGs), among others:

Innovation

✓ 6% reduction of CO_2 emissions through digital solutions

Transport Sector

✓ Support growth of 300 MW RE generation for green hydrogen production
✓ Target reduction by 15% carbon emissions by year 2030
✓ Promote electric vehicles (i.e. battery & fuel cell EVs) by 2030 - reducing CO_2 footprint by displacing 0.6 million tonnes of CO_2 / year
✓ EV penetration target:
- 20% electric cars
- 50% e-bikes

warming well below 2°C, preferably at 1.5°C, compared to pre-industrial levels:

Innovation

✓ Sarawak Energy has embarked on a digital transformation and modernisation journey to enable the Company to achieve its ambition of becoming a digital utility by 2025 and advance us towards our Vision 2022 regional powerhouse aspirations. Five strategic pillars were identified to empower the Company's digitalisation journey, including:
- A robust and fit-for-purpose digital foundation
- Data as strategic assets
- A modernised, new way of working
- Smart business
- Staying ahead of the curve

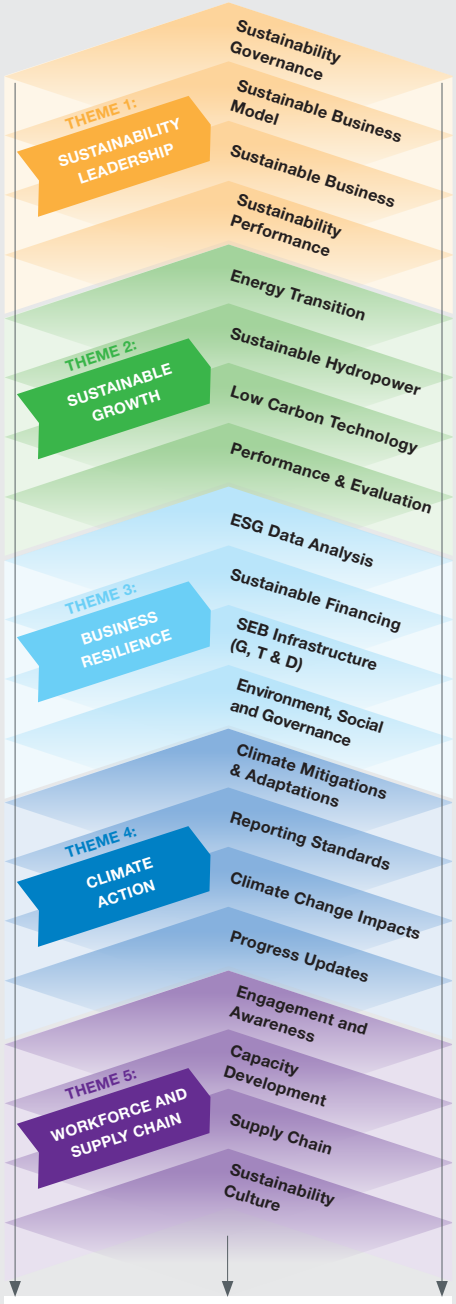
Transport Sector

✓ Sarawak Energy is the first company in Sarawak to incorporate electric and hydrogen fuel cell vehicles into its corporate fleet (as pilot projects)
✓ Sarawak Energy inked a memorandum of understanding with PETRONAS to jointly explore the potential of hydrogen as an energy source
✓ Shared ambition to scale up and venture into energy export with hydrogen as an energy carrier to meet global clean energy demand and position Sarawak as the hub for the hydrogen value chain

102-15

SARAWAK ENERGY'S SUSTAINABILITY STRATEGY & ROADMAP

In 2021, Sarawak Energy strengthened its sustainability journey, focusing on five key themes:

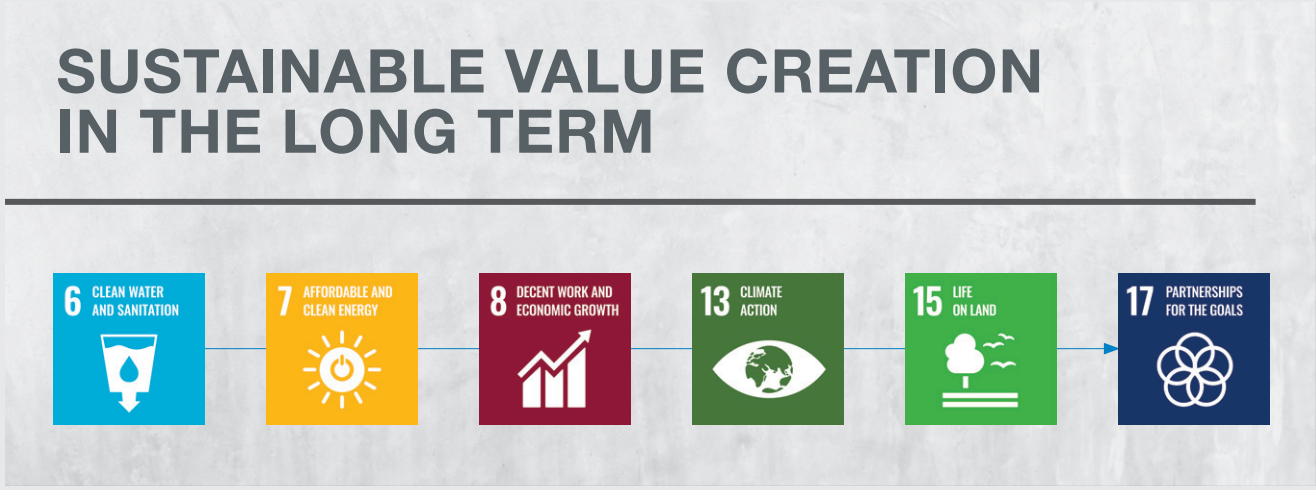


- Race to Net Zero
- Just Transition
- Low Carbon Economy
- Circular Economy
- Sustainable Finance Requirements (ESG)
- Digitalisation
- Sustainable Renewable Energy

CORPORATE SUSTAINABILITY PERFORMANCE

Menara Sarawak Energy.

SARAWAK ENERGY'S SUSTAINABILITY STRATEGY & ROADMAP



103-1, 305-1, 305-4, 305-5

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Murum HEP.

Emissions Intensity (Main Grid)	Emissions Intensity (Northern Grid)	Total CO_2 Emissions (Main Grid)	Total CO_2 Reduction from Clean Development Mechanism Projects
0.198 tCO_2eq/MWh*	0.600 tCO_2eq/MWh*	5.98 million tCO_2eq	15,179 tCO_2

Notes:

[1] Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.

** These main grid CO_2 emissions intensity and northern grid CO_2 emissions intensity data have been assured by a third party. Read the Assurance Report on pages 178-182.*

Climate change continues to be one of the major challenges faced by many industries due to extreme weather conditions that can disrupt business operations and cause major financial losses. As a responsible corporate organisation with sustainability at its core, Sarawak Energy strives to build business resilience through innovative solutions. Our venture into digitalisation and the use of hydropower as our source of renewable energy enables us to move closer to our targets for Sarawak's sustainability, economy and social development.

Our focus on hydropower as a renewable energy source has helped to provide clean, reliable and affordable energy for Sarawak. In 2021, the renewable energy share in Sarawak's generation mix continued to grow to 23,172 GWh* from 1,248 GWh in 2011. This helped to lower Sarawak's main grid CO_2 emissions intensity by 72%, which was 78% lower than the global average of 450 gCO_2eq/kWh.

Note:

** This net energy generated data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

103-2, 103-3, 305-4

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

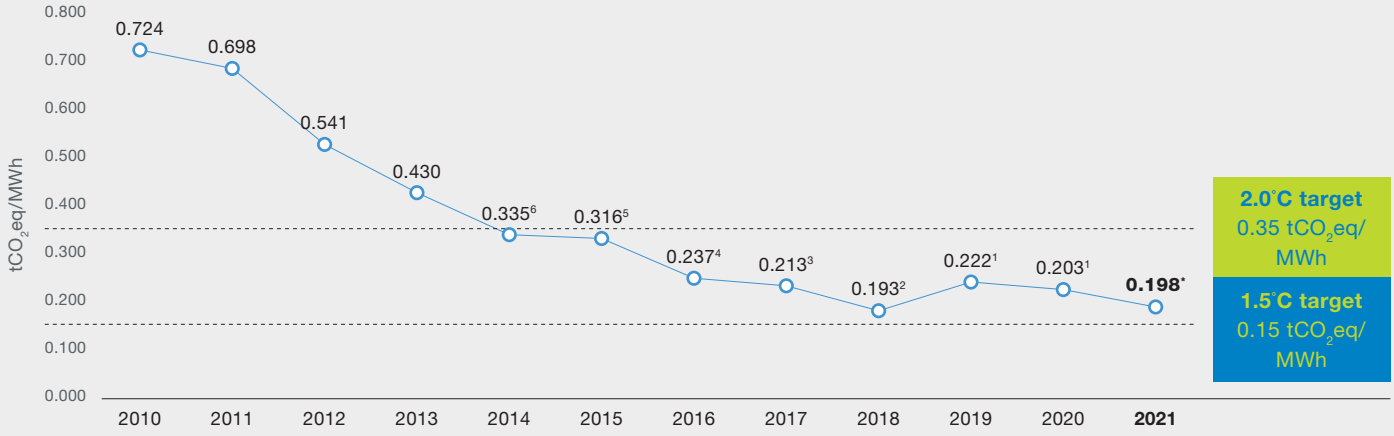
MEETING THE PARIS AGREEMENT

Sarawak Energy is committed to the Paris Agreement made at the United Nations Framework Convention on Climate Change, which aims to substantially limit global temperature rise to well below 2°C above pre-industrial levels.

Since 2014, our Scope 1 Main Grid CO_2 emissions intensity has already been achieved and is within the 2°C and 1.5°C targets in accordance with the Paris Agreement. Moving forward, we are committed to setting a science-based emissions reduction target across relevant scopes to further pursue efforts to meet the 1.5°C target by 2030.

We are proud to report that we were among the 1,045 global companies in 2021 that pledged to support the UN Global Compact's Business Ambition for 1.5°C. This is a significant step towards leading Malaysian industries in working towards net zero carbon emissions by 2050.

Scope 1 Main Grid CO_2 Emissions Intensity within the 2°C and 1.5°C Targets in Accordance with the Paris Agreement



Notes:

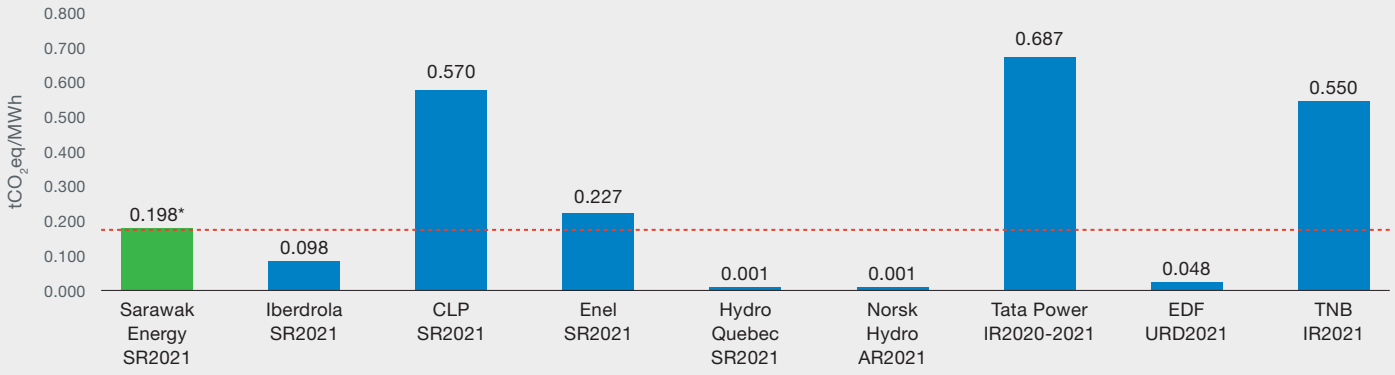
[1] *This main grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2020.*
[2] *This main grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2018.*
[3] *This main grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2017.*
[4] *This main grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2016.*
[5] *This main grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2015.*
[6] *This main grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2014.*
* *This main grid CO_2 emissions intensity data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

103-3, 305-1, 305-4

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

In the year under review, our total main grid emissions were 5.98 million tCO_2eq, which was a 7% increase from 2020, mainly due to the full operation of our Tanjung Kidurong Combined Cycle Power Plant in 2021. Our emissions intensity of 0.198 tCO_2eq/MWh* continues to be one of the lowest in comparison with other international power utility companies.

International Comparison of CO_2 Emissions Intensity among Power Utility Companies

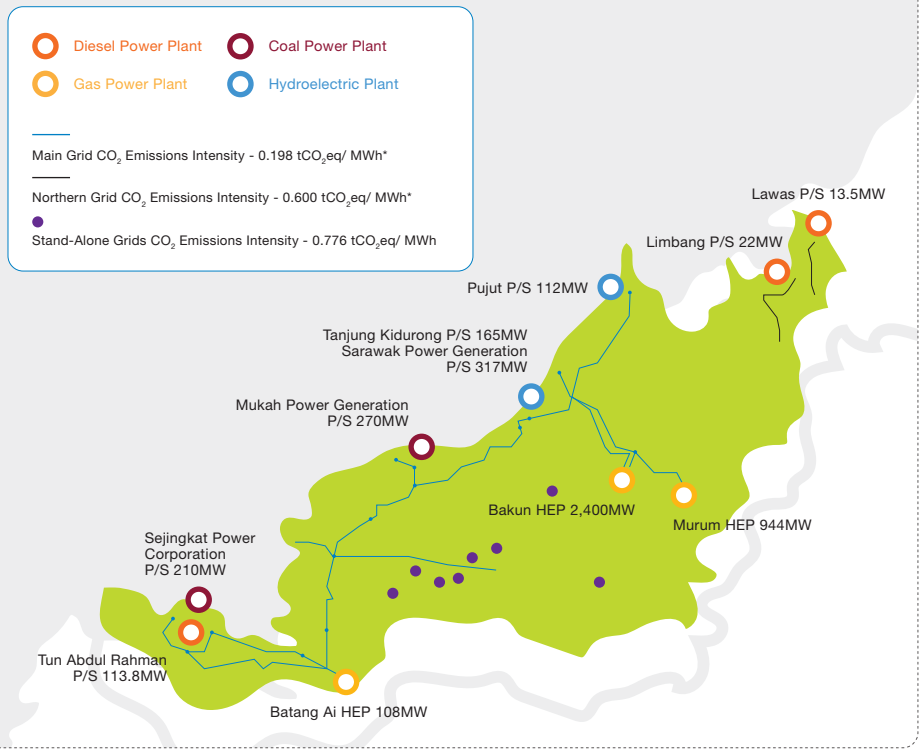


Notes:

1 Published Annual, Sustainability & Integrated Reports 2021.

** This main grid CO_2 emissions intensity data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

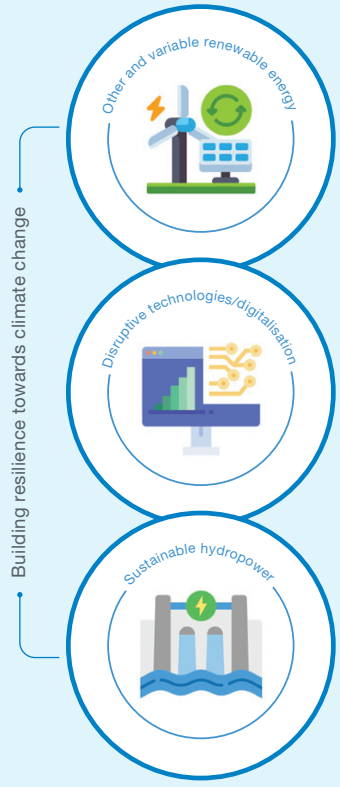
Sarawak Energy CO_2 Emissions Intensity Based on Grids



Note:

** These main grid CO_2 emissions intensity and northern grid CO_2 emissions intensity data have been assured by a third party. Read the Assurance Report on pages 178-182.*

BUILDING BUSINESS RESILIENCE



CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Renewable Energy Certificate

Sarawak Renewable Energy Certificate (REC) mechanism was launched in 2019 and began embarking on the REC journey with Tradable Instrument for Global Renewables (TIGR) registry for REC supply from Batang Ai Hydroelectric Plant to enable corporate purchases of certified renewable energy in Sarawak.

Since 2019, Sarawak Energy has been supporting business organisations from various industries including petrochemical, manufacturing and financial service in attaining the REC to bolster their sustainability journey. In 2021 alone, Sarawak Energy has committed a total of 245,424 RECs (MWh). The year under review also saw Sarawak Energy working closely with International Renewable Energy Certificate (I-REC) registry to provide REC from Murum Hydroelectricity Plant.

Aspiration for Sarawak REC Mechanism

With a strong commitment to providing a sustainable energy future for Sarawak, Sarawak Energy will continue to collaborate and work closely with REC registries and business organisations from all sectors to strengthen our REC mechanism in Sarawak. This is amid the aspiration for REC to catalyse renewable energy development through increased sustainability awareness and higher renewable energy usage among industry players. The support and participation of corporate organisations will contribute to the opening of more renewable energy plants, accelerating Sarawak's transition towards a low-carbon economy.

Residual Mix Emissions Rate

Sarawak's residual mix emissions rate in 2021 is shown in the table below. The rate was assessed using REC sales data collected from the REC tracking registry, Sarawak Energy's annual power generation data and emissions rates for the publication period.

5,976,874.06 tCO_2eq Main Grid	**30,162,881.89 MWh*** Net Generation	**0.201 tCO_2eq/MWh** Residual mix emissions rate
0.198 tCO_2eq/MWh* Emissions Rate	**449,911 MWh** Voluntary RE	

***Note**:*

1 The residual mix emissions rate is only applicable for the Sarawak main grid.

** These main grid CO_2 emissions intensity and net energy generated data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

DISRUPTIVE TECHNOLOGIES AND DIGITALISATION

Digitalising Sarawak Energy

As Sarawak's key provider of electricity, we have continuously sought out innovative solutions and new technologies to improve our operations and processes. Our transformation is vital, as times are changing with digitalisation at the forefront, reshaping the way we operate to serve a global digital economy. We are committed to learning and adopting new technologies to stay relevant and to increase our value to gain competitive advantage.

With an increased global focus on sustainability, economic, social, environmental and governance concerns, many changes have taken place in the business landscape. It has become necessary to invest in information and communications technology in today's business climate.

102-15, 103-2, 203-1

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Integrating technology into our business supply chain will yield multiple benefits, including:

- Increasing efficiency
- Optimising resource allocation
- Reducing overall costs

Sarawak Energy has embarked on a digital transformation journey to fulfil its ambition of becoming a digital utility by 2025 and advance us towards our Vision 2022 regional powerhouse aspirations.

Five strategic pillars were identified to empower the Company's digitalisation journey, including:

- A robust and fit-for-purpose digital foundation
- Data as our strategic assets
- A modernised, new way of working
- Smart business
- Staying ahead of the curve

To this end, we have designed new technologies, processes and initiatives that promote excellence in our six Key Focus Areas (KFAs), which hat will expedite system performance and transform our business and process automation across the organisation. These investments in digitalisation have enabled us to transform into a more lean, agile and efficient corporation.

Powering Up for Change

Our digital grid transformation is aligned with the Sarawak Government's five-year Sarawak Digital Economy Strategy, and it is a step towards becoming a digital leader in the utility industry.

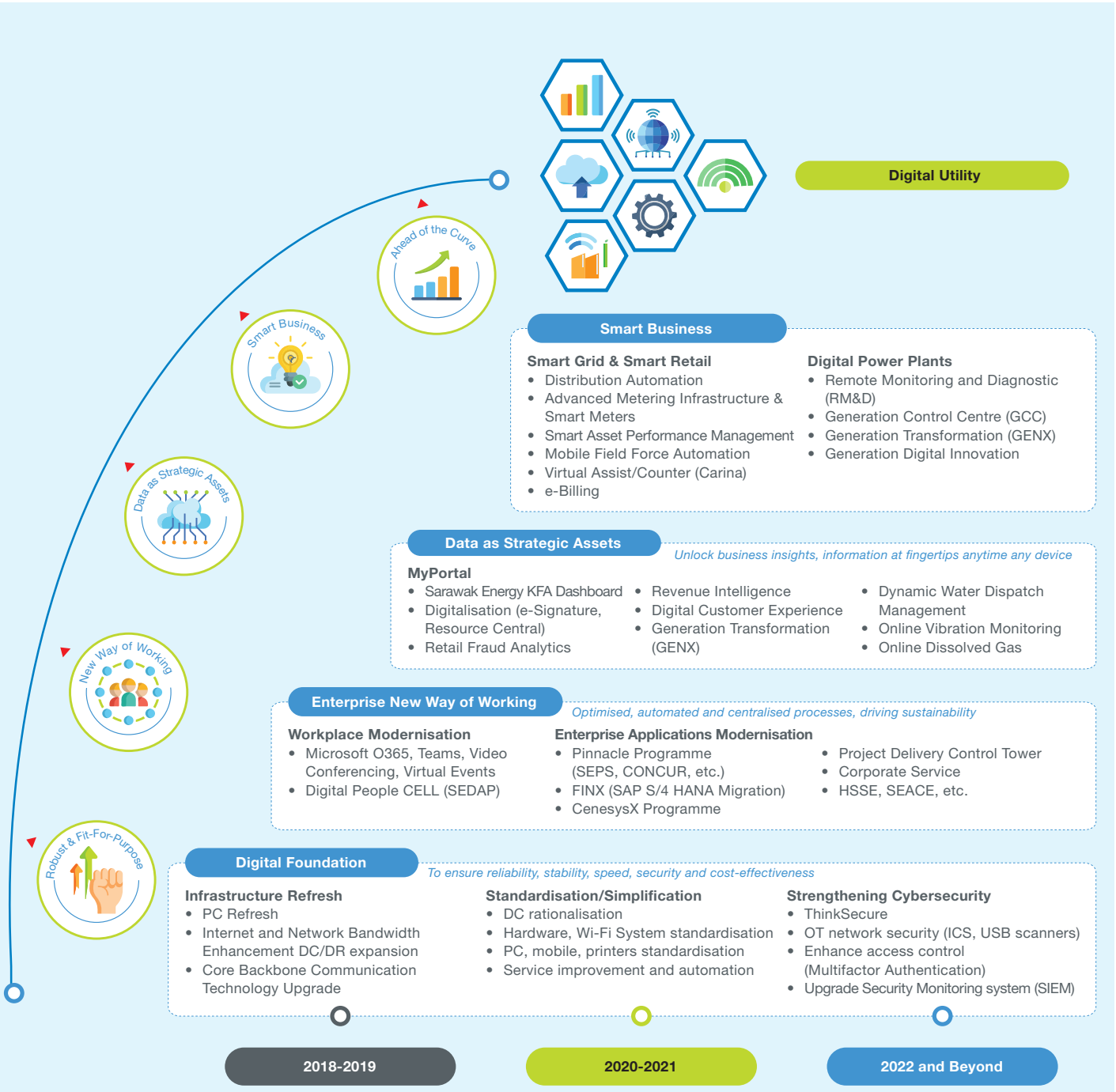
The following five trends are vital to Sarawak's grid transformation:

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

In response to these trends, we need to adopt a systematic approach in digitalising and modernising processes, technologies, skill sets and competencies throughout our core business and support functions. This led to the development and implementation of our Sarawak Energy Digitalisation Blueprint in 2018.

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Moving towards World-Class Operational Excellence to Become a Digital Utility by 2025



103-2, 203-1

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Accelerating Smart Business

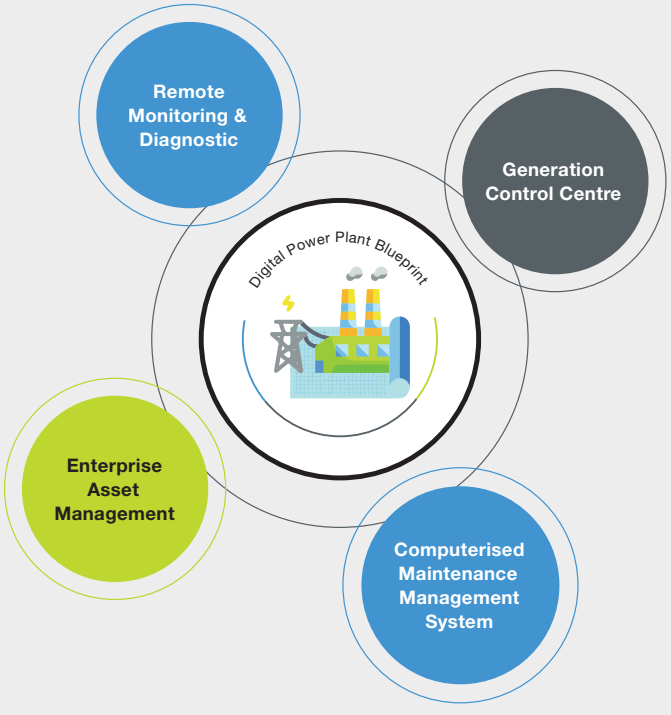
Improving the business requires us to transform our business operations through cutting-edge technologies to achieve reliability, affordability, sustainability and growth for Sarawak Energy's business and services.

As such, we have developed business digitalisation blueprints and roadmaps for each of our core businesses, including:

- Digital Power Plant
- Smart Grid
- Smart Retail

Digital Power Plant

- To be the best renewable energy powerhouse in the region, we have initiated Generation Operation Excellence through Generation Transformation by improving workforce and asset productivity while mitigating risks through innovative digital technologies
- This involves improving plant operating hours, studying plant operating data to understand and enhance plant performance and health and monitoring operational safety through new technologies



To achieve our Digital Power Plant goal, we will implement the following:

A Remote Monitoring & Diagnostic Centre (RM&D).

- **A Remote Monitoring & Diagnostic Centre (RM&D)**
  A one-stop centre that connects all power stations, powered by advance analytic tools and supported by Subject Matter Experts (SMEs) – enabling plants to reach peak performance by ensuring better reliability, efficiency, productivity and profitability
- **Generation Control Centre (GCC)**
  To unlock remote possibilities through new technologies. Control room operators will be able to easily manage plants remotely from one site and will enable workforce optimisation and greater agility
- **Enterprise Asset Management (EAM) System**
  To elevate our existing business processes by developing a digital asset management strategy that will ensure an asset's life cycle is in line with ISO55001 Asset Management standards
- **Computerised Maintenance Management System (CMMS)**
  To enable better decision-making via reporting and dashboarding with business intelligence tools

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Smart Grid

- The demand for renewable energy has increased, raising the complexity of grid operation. It is no longer cost-effective and efficient to manually operate, monitor and secure the network and our assets
- We are committed to modernising our grid and operations through digitalisation to develop a smart power grid that is safe and reliable

Smart Grid Focus

Monitoring & Control	Supply Reliability	Data Analytics	Security	Customer Empowerment & Satisfaction
SCADA, DMS/ ADMS	SAIDI, SAIFI	Smart Meter Coverage, Data Analytics Application	IT/OT Cybersecurity	Real-Time Data to Customers, Customer Satisfaction Feedback

By integrating smart grid technologies, we can:

- Ensure a safe, reliable grid and supply system
- Enhance operational safety and efficiency
- Protect our assets and achieve optimum asset performance
- Empower our customers

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

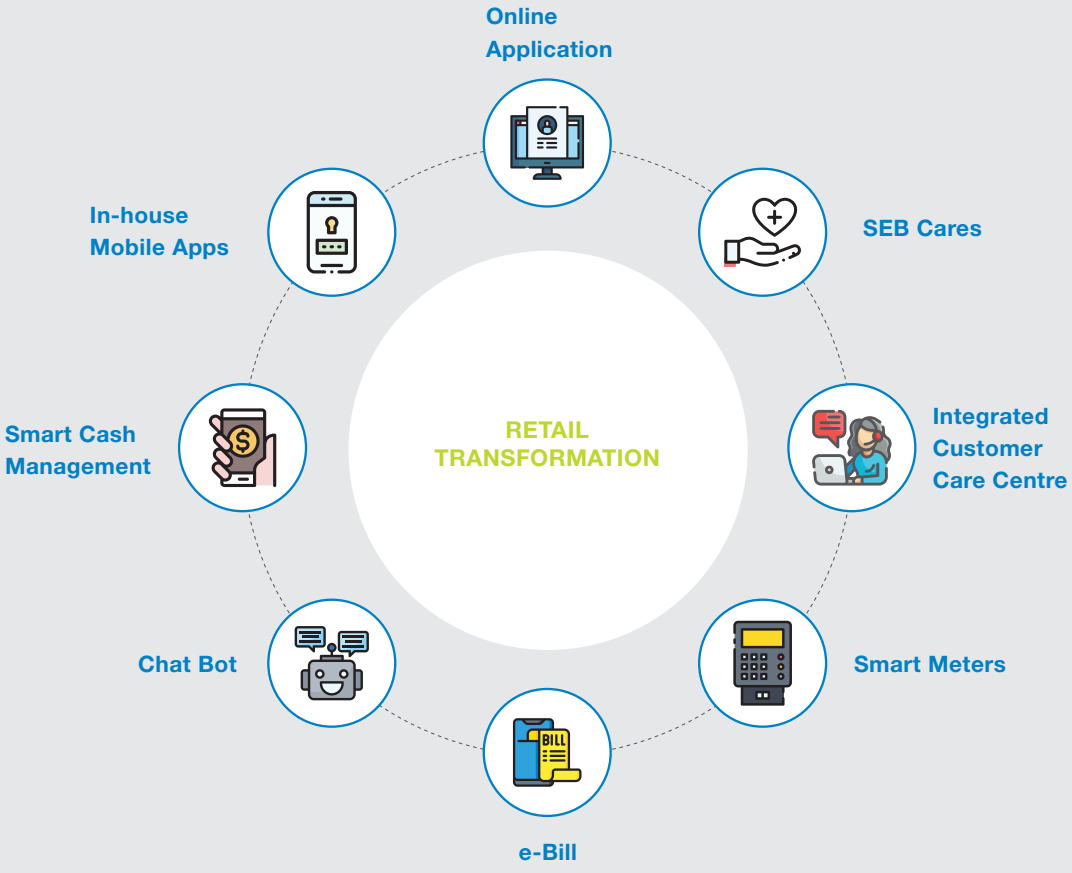
Benefits

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

103-2, 203-1

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Smart Retail



- Provides our valued customers with the best experience, as we have employed various technological innovations to enhance our retail services
- We are working towards providing automated customer service operations to deliver excellence and ease of use
- We have introduced our customer self-service mobile application SEB cares, online applications for electricity supply, self-service payment kiosks and e-billing

Smart Meters

- An advanced electronic device that allows two-way communication between the meter and the central system to record energy consumption and support outage detection
- Smart meters will be provided to about 70% of our customers located in Kuching by 2026, followed by customers in Miri, Sibu, Bintulu, Sri Aman, Betong, Sarikei, Mukah, Kapit and Limbang through to 2029
- Currently, around 5,500 smart meters have been supplied for free to our customers in Kuching, namely at Kampung Gita, Tabuan Jaya Baru and Tabuan Laru

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Supporting Sarawak's Digital Economy

- In support of Sarawak's Digital Economy agenda, we are moving towards the development of high-speed connectivity by leveraging our fibre optics infrastructure
- We are also working with the Sarawak Multimedia Authority (SMA) and Sarawak Digital Economy Corporation (SDEC) to maximise bandwidth and connectivity coverage across Sarawak through our 500 kV grid network, which will enable Sarawak to progress as a digital leader

Sarawak Energy Fibre Optic Network

Since 2020, Sarawak Energy has built up over 6,500 km of fibre optic connection, including Optical Ground Wire (OPGW), All Dielectric Self Supporting (ADSS) and Optical Underground (OPUG) fibres, with more than 6,000 transmission towers and 400,000 distribution poles.

Note:

* *Points of connection on the map are approximate.*

SUSTAINABLE HYDROPOWER AS AN ENERGY TRANSITION

As we progress in our sustainability journey, we strive to further align our hydropower projects and operations with the UN SDGs and the Hydropower Sustainability Assessment Protocol (HSAP). Sustainable hydropower is an opportunity for us to make a real commitment to change and impact our community for generations to come. It embodies long-term economic viability, the protection and management of natural resources, responsible environmental management and social accountability.

We are committed to incorporating sustainability best practices into the development and management of our hydropower projects, in alignment with international best practices, through good governance. We also ensure that our hydropower projects and operating facilities are embedded with the right principles in managing indigenous peoples. These include respecting their dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resources-based livelihoods.

To ensure our sustainability practices are implemented accordingly in all our HEPs, we have an internal assessment team, with its assessors ranging from being provisionally accredited to internally trained, that assesses the sustainability performance of our hydropower project development and practices. Established in 2014, the team is endorsed and approved by the Sarawak Energy Executive Management Committee.

102-12, 102-15, 103-2

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

SARAWAK ENERGY'S HSAP INTERNAL ASSESSMENT TEAM

- Comprises **33** members from the various departments:

11 are recognised as IHA's Provisionally Accredited Assessors

22 are certified users of the Hydropower Sustainability Assessment Tools (HST)

- These members aim to:
  - Become agents of change in their respective departments/ divisions in ensuring the continuity of embedding sustainability practices in Sarawak Energy's business processes
  - Conduct internal assessments for hydropower projects using the HST in preparation for an official assessment
  - Build internal capacity

HYDROPOWER SUSTAINABILITY ASSESSMENT TOOLS (HST)

We have adopted the globally recognised Hydropower Sustainability Assessment Tools (HST) that provide a holistic sustainability assessment of our hydropower project development and operations. This underscores our commitment to striving to develop our hydropower projects in a sustainable manner, by recognising the need for harmony between the economy, environment and even society, as well as to ensure that the sustainability risks of our projects are assessed and managed comprehensively.

The three complementary tools are:

Hydropower Sustainability Assessment Protocol (HSAP)

Hydropower Sustainability Guidelines on Good International industry Practice (HGIIP)

Hydropower Sustainability ESG Gap Analysis Tool (HESG)

- This is an extensive framework used to assess the sustainability of projects, covering a range of social, environmental and financial topics
- Key drivers of the implementation:
  - To demonstrate how we manage & address sustainability risks and opportunities
  - To meet investors' & lenders' expectations & requirements (access to finance)
  - To benchmark our performance against international best practices

HYDROPOWER SUSTAINABILITY ASSESSMENT PROTOCOL

The Hydropower Sustainability Assessment Protocol (HSAP) is a leading global assessment framework that provides a comprehensive sustainability assessment for hydropower projects to be assessed against economic, environmental and social areas, including technical aspects. The HSAP also includes 'cross-cutting issues' such as gender issues and human rights, which feature in multiple topics.

103-2, 304-2, 413-1

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

ENRICHMENT PLANTING AT BATANG AI DAM FOR CARBON SEQUESTRATION

In our commitment to environmental sustainability and to reduce our impacts on the environment, we executed a project at Batang Ai Dam in the year under review. The project was in partnership with Forest Department Sarawak (FDS) and was a collaborative effort in the form of a forest landscape restoration (FLR) project.

The objective was to restore the vegetation of degraded lands surrounding Batang Ai Dam to further improve the local environment and water catchment functions

Indigenous species of timber trees, fruit trees and non-timber forest species such as rattan were planted at selected areas, at the request of the local community

Through this project, an estimated 229,260 kg of CO_2 can be sequestered

Batang Ai HEP.

PROJECT OUTCOMES

6,000
Indigenous tree species planted and growing

6+ ha.
Of forest conserved and restored

7 longhouses
Received training on forestry

Indigenous Trees Planted
- Belian
- Gaharu
- Engkabeng
- Kapur
- Meranti

200+
People reached through Restoration Awareness Campaigns

4 Projects
Increased vital biodiversity or ecosystem services

100+
Young people learned about our environment and conservation

103-3

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

UNDERSTANDING OUR EMISSIONS COMING FROM OUR HYDROPOWER GENERATION PORTFOLIO

Power density is a predictor of emissions intensity. The recognised relationship between power density and emission intensity indicates that projects with a power density above 5 W/m^2 will exhibit emissions intensity below 100 gCO_2eq/kWh.

In predicting the net GHG emissions of the reservoirs, we assess, validate and report the carbon footprint of a reservoir using the G-res Tool- a web-based tool developed by International Hydropower Association (IHA) in collaboration with the UNESCO Chair for Global Environmental Change.

Our hydropower projects' power density are as shown in the table below:

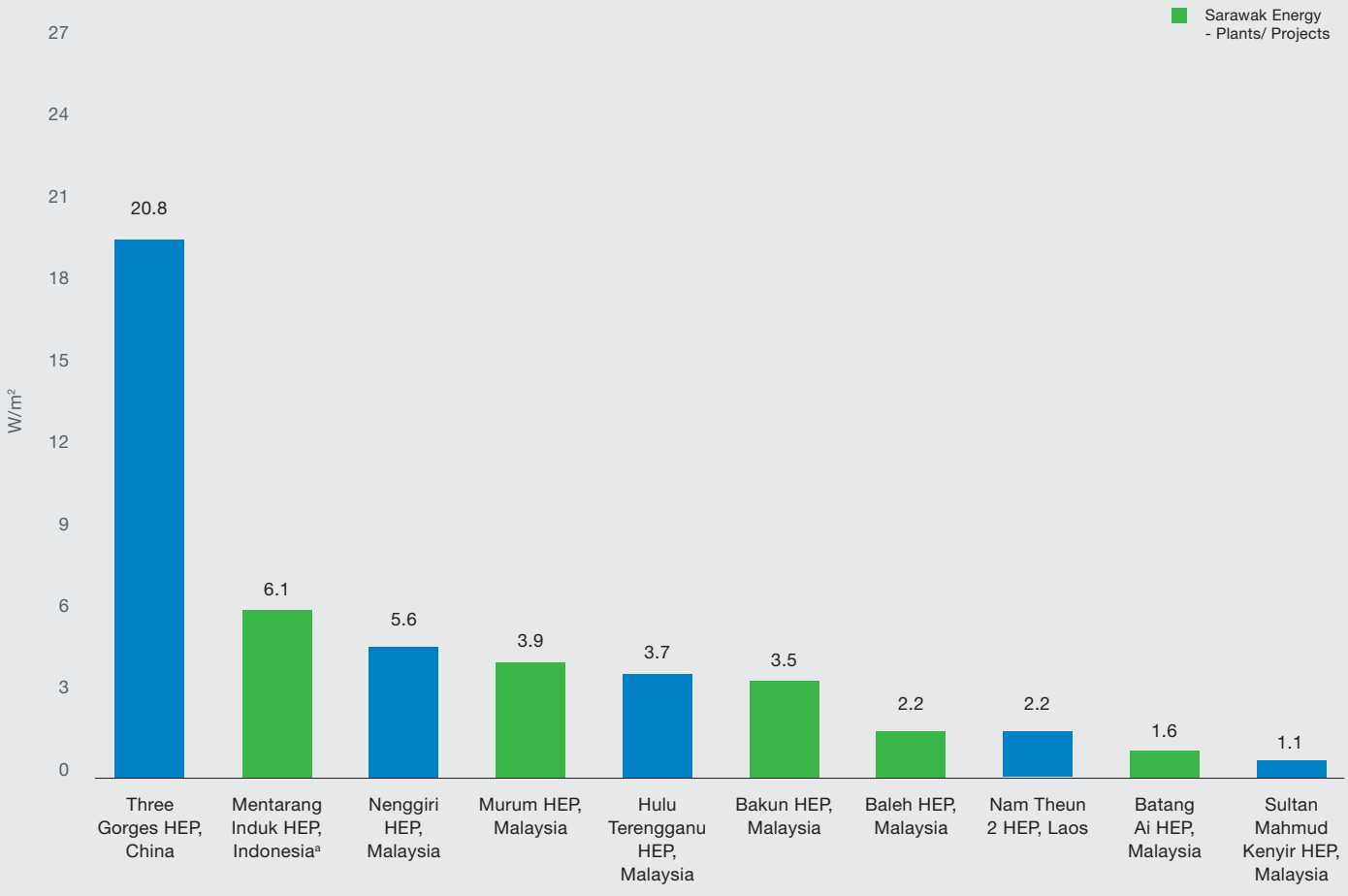
Hydropower Project	G-res ID	Power Density (W/m^2)	Allocated Emissions Intensity (gCO_2eq/KWh)
Batang Ai HEP	3.02155	1.6	176.5
Baleh HEP	3.112265	2.2	89.5
Bakun HEP	3.02158	3.5	39.9
Murum HEP	3.02157	3.9	29.4
Mentarang Induk HEP[a]	3.02156	6.1	30.6

Notes:

1. *The Power Density of a hydropower facility is the ratio of installed capacity to total reservoir surface area. Source: The GHG Reservoir Tool (G-res) User guide.*
2. *Allocated Emissions Intensity (gCO_2eq/KWh) - The life cycle emission rate of greenhouse gasses (CO_2 + CH_4) relative to the intensity of power production. Source: The GHG Reservoir Tool (G-res) User guide.*

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

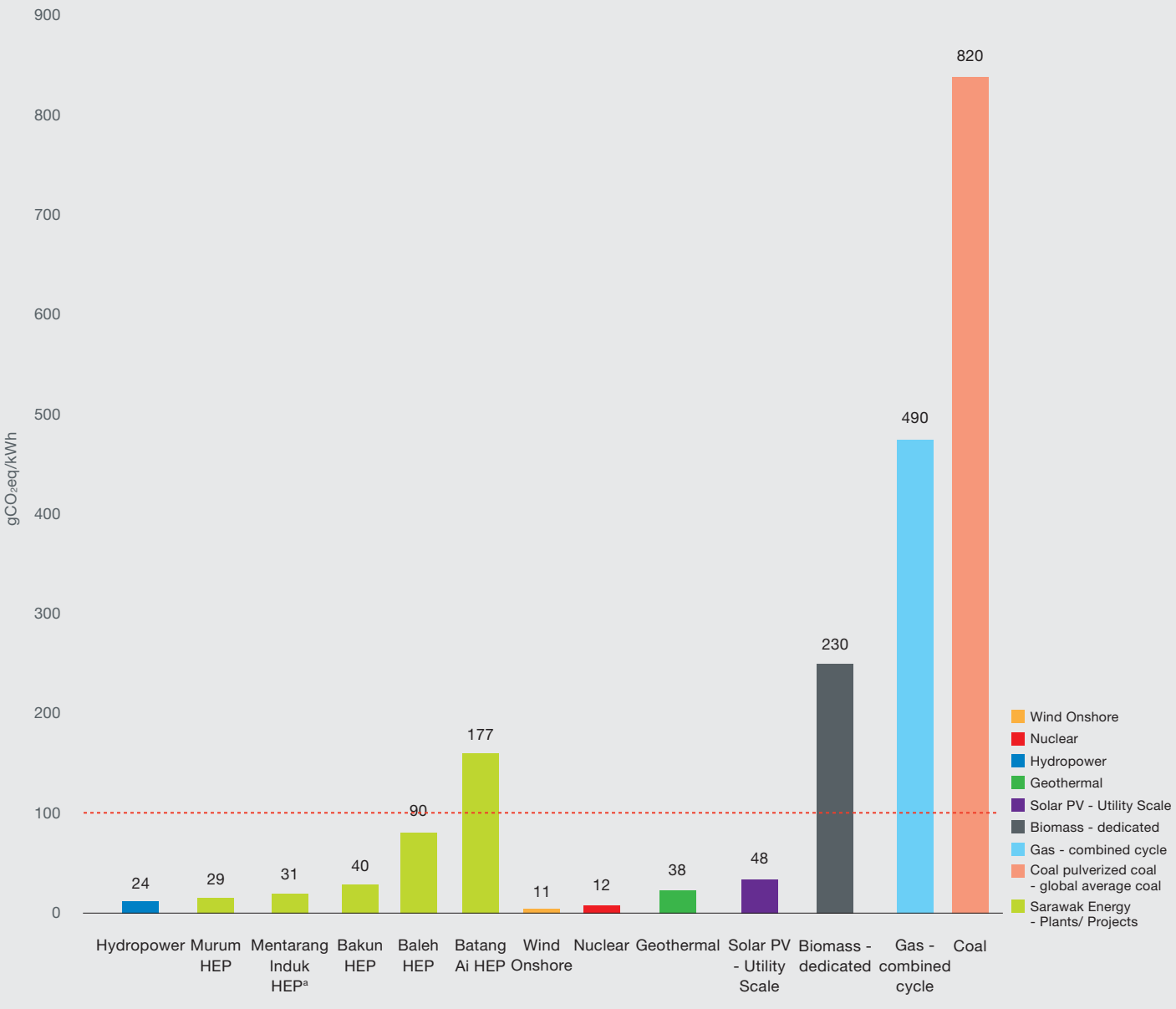
International Comparison of HEPs Power Density (W/m^2)



Source:
Published Materials and Reports.

CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

Comparison of Allocated Emissions Intensity (gCO_2eq/kWh) by Technologies - Median



Notes:

1. *Source: Hydropower Criteria – Development of Eligibility Criteria for the Climate Bonds Standard & Certification Scheme; Background Paper – March 2021 Ver 1.0.*
2. *Sources: IPCC (2014). IPCC Working Group III – Mitigation of Climate Change, Annex III: Technology - specific cost and performance parameters; IPCC (2014). IPCC Working Group III Mitigation of Climate Change, Annex II Metrics and Methodology.*
3. *Include albedo effect.*

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

103-1, 103-2

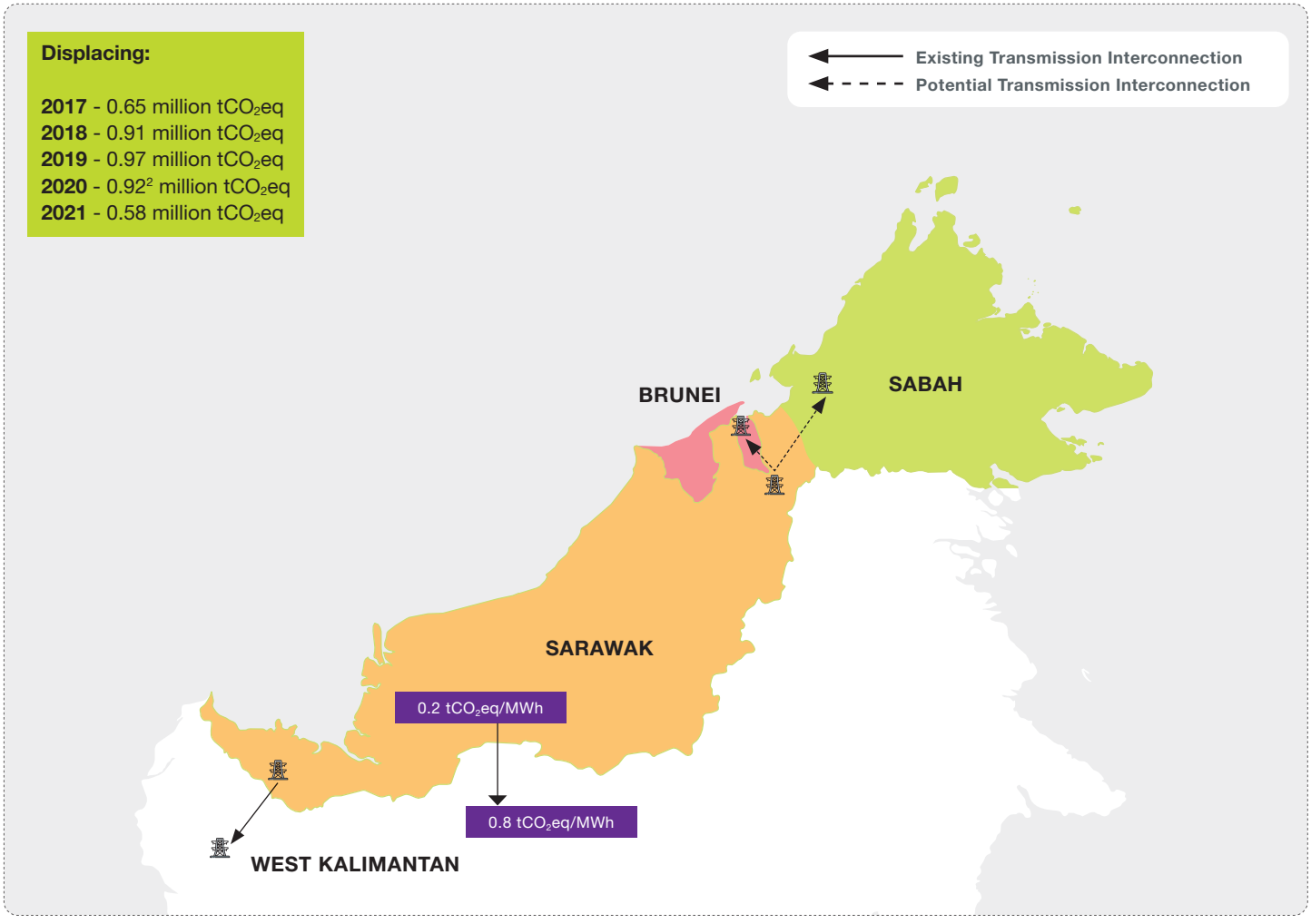
CLIMATE ACTION STEWARDSHIP THROUGH SUSTAINABLE SOLUTIONS

DECARBONISING BEYOND SARAWAK

We are committed to reducing the carbon emissions of our energy sources beyond Sarawak to contribute to the global efforts of slowing down global temperature rise to 1.5°C.

We began our mission in 2016 by building the Sarawak-West Kalimantan Interconnection, a cross-border HVAC link that connects the Mambong 275 kV substation in Sarawak to the Bengkayang 275 kV substation in West Kalimantan. As of 2021, we have exported an average of 190 MW to 200 MW of power to Indonesia's utility provider, Perusahaan Listrik Negara (PLN).

The development has enabled us to export 7,474 GWh of energy to West Kalimantan[1] and displaced 4.42 million tCO_2eq, equivalent to sequestering 12,460 ha of tropical forest.



Notes:

[1] *West Kalimantan grid – using conservative estimation based on diesel emission factor of 0.8 tCO_2eq/MWh (IPCC 2016).*

[2] *This CO_2 emissions displacement for year 2020 figure has been corrected from the Sarawak Energy Sustainability Report 2020.*

102-15, 103-2, 103-3, 305-1, 305-2, 305-3

OUR RESPONSE TO CLIMATE CHANGE

Scope 1 Emissions

Grid emissions
6,086,288.08 tCO_2eq^*

Company-owned vehicles
3,766.89 tCO_2eq

Scope 2 Emissions

Buildings and offices
11,991.48 tCO_2eq^*

Scope 3 Emissions[1]

Business air travel
252.42 tCO_2^*

Notes:

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

[1] Scope 3 emissions – Business air travel is calculated using ICAO Carbon Emissions Calculator as on 15 March 2022.

** These Scope 1 (grid emissions – main, northern and stand-alone), Scope 2 (buildings and offices) and Scope 3 (business air travel) data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

SARAWAK ENERGY AND THE TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Sarawak Energy continues to strengthen its strategy against climate-related risks as adverse effects of climate change worsen and impact daily lives as well as business operations. Impacts of rising global temperatures could affect our power infrastructure, power generation and power delivery, in addition to financial growth.

We are committed to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and have progressively incorporated climate action into our decision-making process and business activities. We aim to develop full-fledged TCFD recommendations around the four thematic areas that represent the core elements of how Sarawak Energy operates:

GOVERNANCE	STRATEGY	RISK MANAGEMENT	METRICS AND TARGETS
• Describing the Board's oversight of climate-related risks and opportunities • Describing management's role in assessing and managing risks and opportunities	• Describing the climate-related risks and opportunities the organisation has identified over the short, medium and long term • Describing the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning • Describing the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	• Describing the organisation's processes for identifying and assessing climate-related risks • Describing the organisation's processes for managing climate-related risks • Describing how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management	• Disclosing the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process • Disclosing Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks • Describing the targets used by the organisation to manage climate-related risks and opportunities and performance against the targets

102-18

OUR RESPONSE TO CLIMATE CHANGE

Governance

Sustainability governance is the foundation for effective sustainability management in a business organisation. It enables us to drive our sustainability strategy across Sarawak Energy and manage sustainability measures and initiatives while strengthening our value creation journey.

Our sustainability efforts are carried out by the Sustainability Division, which aims to embed the principles of sustainability into Sarawak Energy's objectives. The division's responsibilities include measuring and verifying Sarawak Energy's sustainability performance besides ensuring effective implementation of sustainability initiatives. In addition, the division develops, plans, implements and manages the entrenchment of sustainability practices (protocol, best practices and international standards into Sarawak Energy's business system. The division also oversees the alignment of Sarawak Energy's climate-related disclosures with recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) although the Company currently does not have a TCFD Steering Committee or a Board Committee that oversees climate change governance. The division will continue to spearhead the integration of sustainability practices into Sarawak Energy's hydropower projects by focusing on:

In 2022, Sarawak Energy strengthened its commitment towards its sustainability agenda by setting the development of its Sustainability Strategy, Policy and Roadmap as its corporate Key Performance Index (KPI). The Company also enhanced its Sustainability Governance structure for a more effective sustainability management.

Sustainability Division → **Corporate Services** → **Group Executive Committee** → **Sarawak Energy Board**

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

HSAP SPONSOR (Head of Corporate Services)

- Authorise responsibility for the internal assessment programme
- Act as a sponsor for proposals related to the internal assessment programme and embedding process
- Provide support in getting necessary resources for the internal assessment programme
- Provide a measurement of effectiveness of the management system to top management

HSAP FOCAL POINT OF CONTACT (Head of Sustainability)

- Manage the internal assessment exercise
- Manage, monitor and review the assessment and improvement programme
- Improve the competency of the internal IHA assessment team
- Keep appropriate assessment records to monitor and review the assessment programme
- Define audit objectives, scopes, criteria

LEAD ASSESSORS (Various Departments)

- Act as a reference point for other internal assessors
- Oversee the process of evidence collection and evaluate data to determine the extent of conformity
- Lead the closing meeting of the assessment and preparation of the assessment reports

INTERNAL ASSESSORS (Various Departments)

- Conduct assessments
- Ensure independent reviews of documents and processes to determine the extent of conformity with HSAP
- Prepare assessment reports

OUR RESPONSE TO CLIMATE CHANGE

Managing Climate Risks

As a leading power producer, we have an obligation to keep our stakeholders informed of our business decisions and climate-risk mitigation strategy to continue to light up Sarawak and the region. This year, we continue to disclose high-level strategic risks and opportunities presented by rising temperatures and rainfall that will impact our business operations and our stakeholders.

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				
1. Clear approach and planning towards GHG reduction, mitigation and adaptation 2. Fostering the adoption of low carbon technology (technical & policy) 3. Increasing the adoption of disruptive technologies	4. Improving the resilience of electricity infrastructure 5. Increasing the integration of other renewable energy sources with hydropower 6. Increasing other green generation 7. GHG mitigation and adaption beyond the power sector			

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

Strategy

Climate Action Strategy

We are guided by a comprehensive five-pronged strategy that covers five key areas across our operations to minimise climate-related risks in our transition to renewable energy to achieve a low carbon economy. The objective of our climate action strategy is to mitigate risks associated with physical impacts of climate change, rising temperatures, changes in weather patterns and the increase in the frequency and severity of extreme weather events.

STRATEGY	KEY AREAS
Developing a holistic approach and plan towards GHG mitigation and adaption 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	• State-wide flood modelling – adaptation to climate change • River Basin 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

***Table 2**: High-Level Strategy for Climate Action – GHG Mitigation & Adaptation for the Power Sector in Sarawak.*

102-15

OUR RESPONSE TO CLIMATE CHANGE

RISK MANAGEMENT

Climate Scenario Analysis

We further underscore our commitment to the TCFD recommendations by conducting a climate scenario analysis based on the World Bank's Climate Change Knowledge Portal. Comprising five climate scenarios, the analysis covered mean temperatures and average precipitation levels in five probable conditions and time periods (short and medium-short).

The analysis found that average air temperature and the amount of rainfall in Sarawak may increase between 2021 and 2030, while maximum sea levels are expected to rise, increasing the chances of floods. Sarawak is also projected to experience dry spells from 2045 to 2055[1].

Parameter	Observed (1970 - 2000)	Projected for 2030	Projected for 2050
Average Annual Temperature	24.8 - 26.2 ^{0}C	25.6 - 26.8 ^{0}C (0.6 to 0.8 ^{0}C increase)	26.4 - 27.5 ^{0}C (1.3 to 1.6 ^{0}C increase)
Average Annual Rainfall	3,551 - 3,907 mm	3,597 - 4,144 mm (1 to 6 % increase)	3,574 - 4,124 mm (1 to 5 % increase)

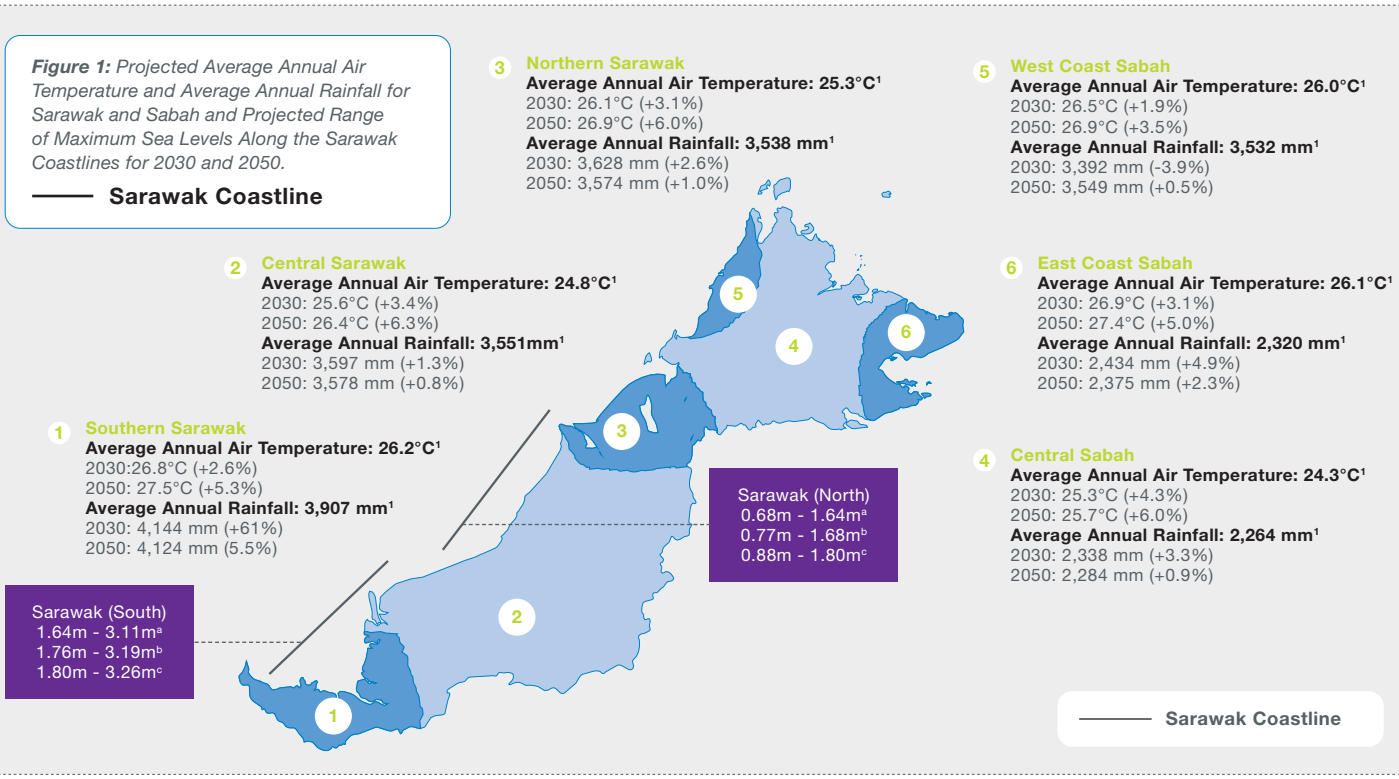
Parameter	Observed Rate (1993 - 2010)	Projected for 2030	Projected for 2050
Sea Level Rise	3.82 - 5.11 mm/year	0.04 - 0.12 m	0.15 - 0.22 m

Table 3: *Observed and Projected Climate Change and Sea Level Rise in Sarawak.*

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

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.*

Sarawak Coastline



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

OUR RESPONSE TO CLIMATE CHANGE

This year, our 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 selection of the latest Shared Socioeconomic Pathways (SSPs). SSPs aim to provide insight into future climates based on defined emissions, mitigation efforts and development paths.

Period / Scenario		2020 - 2039					2040 - 2059				
	Historical (Reference Period: **1995-2014**)	SSP 1 - 1.9	SSP 1 - 2.6	SSP 2 - 4.5	SSP 3 - 7.0	SSP 5 - 8.5	SSP 1 - 1.9	SSP 1 - 2.6	SSP 2 - 4.5	SSP 3 - 7.0	SSP 5 - 8.5
Mean Temp. (ºC)	25.64	26.17	26.23	26.24	26.23	26.23	26.23	26.50	26.74	26.88	27.14
Average Largest 1-Day Precipitation (mm)	59.81	62.48	59.65	59.36	61.87	61.44	62.38	61.39	62.50	64.74	72.33
Average Largest 5-Day Cumulative Rainfall (mm)	148.12	153.60	150.75	150.77	153.50	152.28	156.13	155.23	156.21	159.20	158.11

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.

Based on the climate scenario analysis, we set out the transitional physical risks and opportunities related to our assets and services across Generation, Transmission, Distribution and Retail in the short, medium and medium-to-long terms. The identified risks and opportunities are presented in the following table along with the impacts on our business strategy and financing planning.

Transition – Risks & Opportunities		
Timescale	**Short to Medium Term (1 - 5 years)**	
Type of Risks	**Transition Risks**	
Strategy Response		
RISKS & OPPORTUNITIES	**Corporate** • Enhancing carbon inventory (Scope 1, 2, 3)[1] for better access to relevant data in managing climate-related risks for effectively measuring and evaluating the climate-related risks • Quantifying the climate change impact risks • Enhancing carbon emissions reporting, structure and governance of climate-related risks and climate-related financial disclosure • 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** • 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	**IMPACTS ON BUSINESS STRATEGY AND FINANCIAL PLANNING**	• 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:

[1] *Guided by Task Force on Climate-related Financial Disclosures (TCFD) and Science Based Targets initiative (SBTi) standards & requirements.*

102-15, 103-2, 103-3, 305-1, 305-2, 305-3

OUR RESPONSE TO CLIMATE CHANGE

Physical – Risks & Opportunities	
Timescale	Long Term (> 5 years)
Type of Risks	Physical Risks

Strategy Response

RISKS & OPPORTUNITIES

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 of 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

Customer Services
- Shift in consumer preferences

PLANNING & RESPONSE

- 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

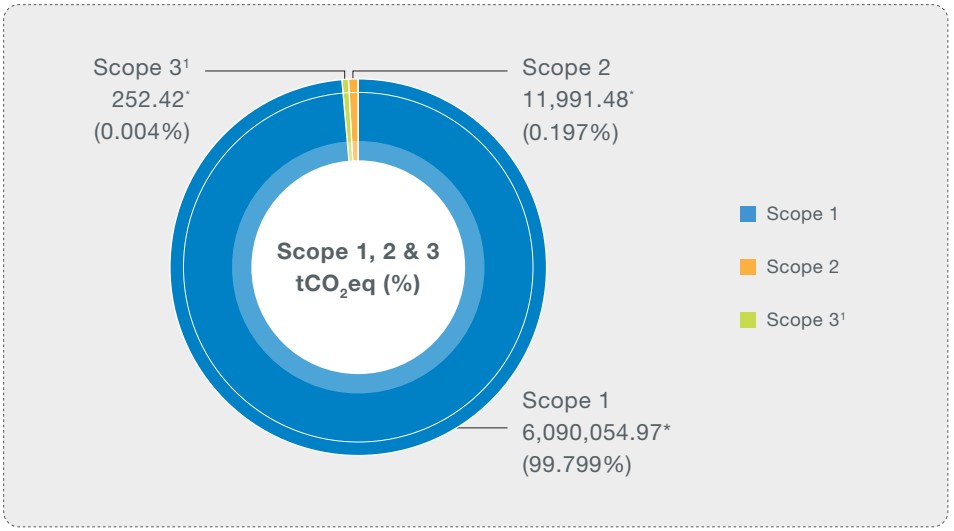
Table 5: *Climate-Related Physical Risks & Opportunities and Strategic Response.*

INDICATORS AND METRICS

Carbon Inventory

Sarawak Energy continues to strengthen its strategy against climate-related risks as adverse effects of climate change worsen and impact daily lives as well as business operations. Impacts of rising global temperatures could affect our power infrastructure, power generation and power delivery, in addition to financial growth.

We are committed to the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and have progressively incorporated climate action into our decision-making process and business activities. We aim to develop full-fledged TCFD recommendations around the four thematic areas that represent the core elements of how Sarawak Energy operates:



Notes:

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

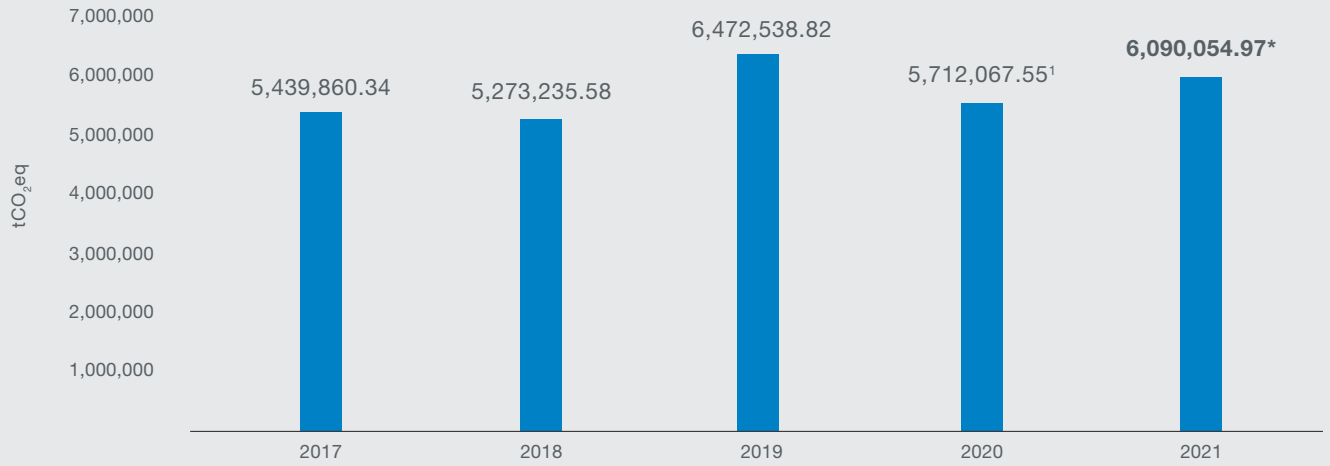
[1] Scope 3 emissions – Business air travel is calculated using ICAO Carbon Emissions Calculator as on 15 March 2022.

** These Scope 1 (grid emissions – main northern and stand-alone), Scope 2 (buildings and offices) and Scope 3 (business air travel) data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

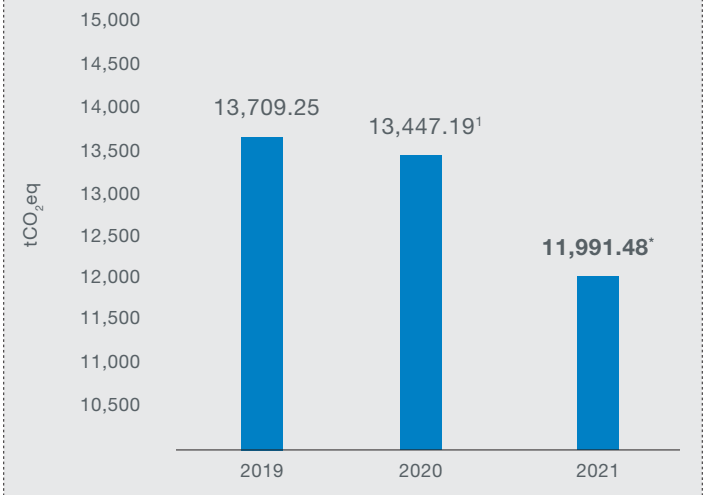
102-15, 103-2, 103-3, 305-1, 305-2, 305-3

OUR RESPONSE TO CLIMATE CHANGE

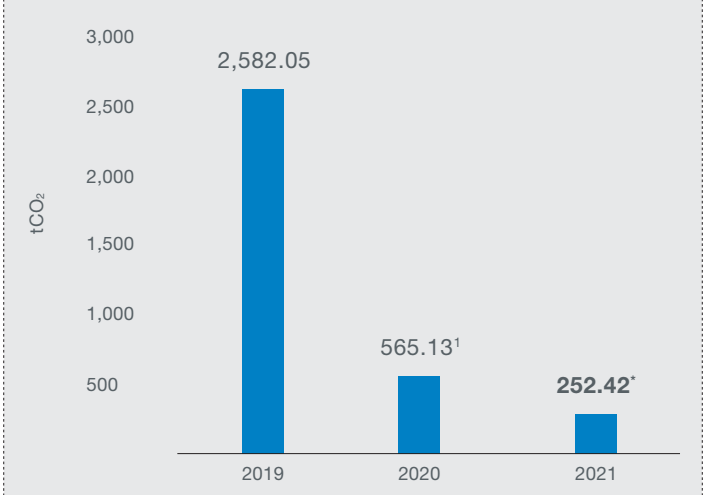
Scope 1 Emissions - Absolute Emissions



Scope 2 Emissions - Buildings and Offices



Scope 3 Emissions - Business Air Travel



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 15 March 2022.

3. Scope 2 and scope 3 emissions data monitoring started in 2019.

[1] These Scope 1 (grid emissions – main northern and stand-alone), Scope 2 (buildings and offices) and Scope 3 (business air travel) data have been assured by a third party for Sustainability Report 2020.

** These Scope 1 (grid emissions – main northern and stand-alone), Scope 2 (buildings and offices) and Scope 3 (business air travel) data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

102-15, 103-2, 103-3, 301-1, 303-3, 305-1, 305-2, 305-3, 306-1, 306-3

OUR RESPONSE TO CLIMATE CHANGE

Input

Fuel Consumption

Coal Consumption

2020	2,684,065.69 Tonne[1]
2021	2,940,286.82 Tonne*

Natural Gas Consumption

2020	33,066,287.95 MMBtu[1]
2021	32,806,349.50 MMBtu*

Diesel Consumption

2020	24,301,619.57 Litre[1]
2021	26,313,382.07 Litre*

Fuel Consumption Intensity

Coal Consumption Intensity

2020	1,531.23 MJ/MWh
2021	1,566.85 MJ/MWh

Natural Gas Consumption Intensity

2020	1,228.44 MJ/MWh
2021	1,115.95 MJ/MWh

Diesel Consumption Intensity

2020	82.23 MJ/MWh
2021	75.13 MJ/MWh

Total Fuel Consumption Intensity

2020	2,841.90 MJ/MWh
2021	2,757.92 MJ/MWh

Water Withdrawal Intensity by Source

Municipal Water Withdrawal Intensity

2020	0.08 M^3/MWh
2021	0.08 M^3/MWh

Sea Water or Other Natural Water Source Withdrawal Intensity

2020	23.87 M^3/MWh
2021	33.10 M^3/MWh

Water Regulated Intensity for Hydropower

Water Volume Regulated by Hydropower Plants for Electricity Generation

2020	2,275.56 M^3/MWh
2021	2,274.27 M^3/MWh

Scheduled Waste Generation

Type of Waste	Unit	2020	2021
Fly Ash	Tonne	78,183.21	**152,605.28**
Bottom Ash	Tonne	194,414.13	**243,874.85**
Others (Used Oil, Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	Tonne	320.27	**652.97**
Total Scheduled Waste Generation	Tonne	272,917.61[1]	**397,133.10***

OUR RESPONSE TO CLIMATE CHANGE

Output

Scope 1 Emissions

Main Grid	Northern Grid	Stand-alone Grid	Company-owned Vehicle	TOTAL
2020	2020	2020	2020	2020
5,600,892.97 tCO_2eq[1]	97,829.99 tCO_2eq[1]	9,176.85 tCO_2eq[1]	4,167.74 tCO_2eq	5,712,067.55 tCO_2eq
2021	**2021**	**2021**	**2021**	**2021**
5,976,874.06 tCO_2eq*	100,595.84 tCO_2eq*	8,818.18 tCO_2eq*	3,766.89 tCO_2eq	**6,090,054.97 tCO_2eq***

Scope 2 Emissions

Building Electricity Consumption (Offices & Substations)

2020

13,447.19 tCO_2eq[1]

2021

11,991.48 tCO_2eq*

Scope 3 Emissions

Business air travel

2020

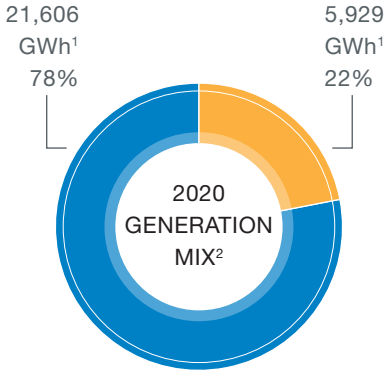
565.13 tCO_2[1]

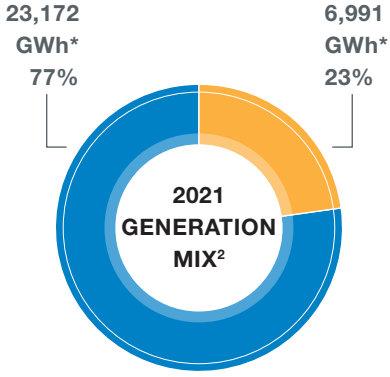
2021

252.42 tCO_2*

Scope 1 and Scope 2 Emissions Intensity	Unit	2020	2021
Scope 1 Emissions Intensity (normalised by gross energy)	tCO_2eq/MWh	0.201	**0.196**
Scope 1 Emissions Intensity (normalised by net energy)	tCO_2eq/MWh	0.206	**0.201**
Scope 2 Emissions Intensity (normalised by gross energy)	tCO_2eq/MWh	0.000474	**0.000387**
Scope 2 Emissions Intensity (normalised by net energy)	tCO_2eq/MWh	0.000485	**0.000395**

Scheduled Waste Generation			
Type of Waste	**Unit**	**2020**	**2021**
Fly Ash	Tonne/GWh	2.77	**5.20**
Bottom Ash	Tonne/GWh	6.90	**8.31**
Others (Used Oil, Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	Tonne/GWh	0.01	**0.02**
Total Scheduled Waste Generation Intensity	Tonne/GWh	9.69[1]	**13.54***





Non-renewable Energy Renewable Energy

Notes:

1. *Scope 3 emissions (business air travel) are calculated using ICAO Carbon Emissions Calculator as on 15 March 2022.*
2. *Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.*

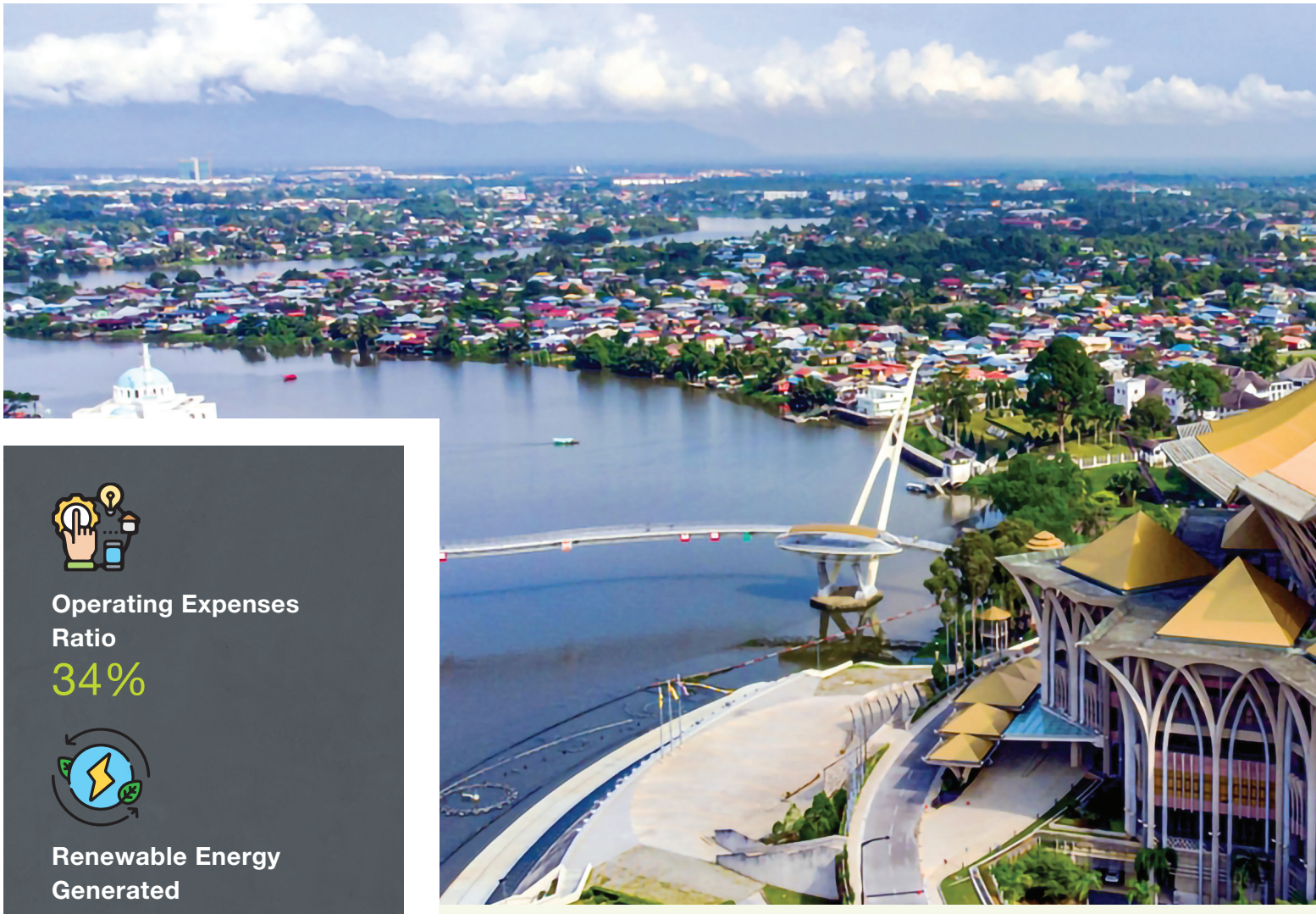
[1] *These fuel consumption, volume of waste generated, scheduled waste generation intensity and net energy generated data have been assured by a third party for Sustainability Report 2020.*

[2] *Net energy generation.*

* *These fuel consumption, Scope 1 (grid emissions – main, northern and stand-alone), Scope 2 (buildings and offices), Scope 3 (business air travel), volume of waste generated, scheduled waste generation intensity and net energy generated data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

201-1

EMBRACING LOW CARBON ECONOMY



View of Kuching City with Sarawak State Legislative Assembly Building.

Operating Expenses Ratio
34%

Renewable Energy Generated
23,172 GWh*

Economic Value Distributed
RM3,712 million

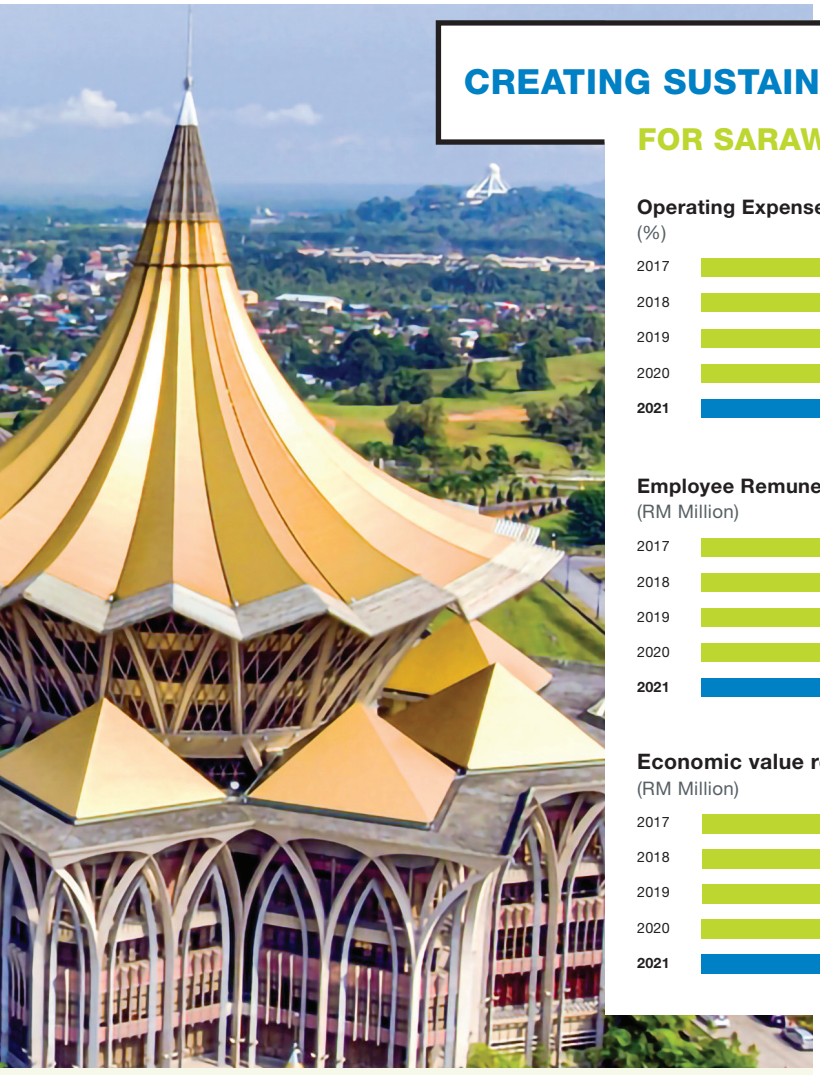
Note:
* *This net energy generated data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

Sarawak Energy aims to contribute to a low carbon future for all in Sarawak and in the region by engaging in greener business activities and leveraging renewable sources to produce cleaner and reliable energy.

Sarawak Energy's ability to generate sustainable economic activities across its supply chain continues to create positive impacts that benefit the state of Sarawak and its people.

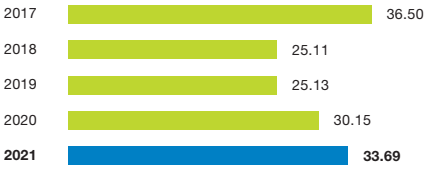
103-1, 103-2, 103-3, 201-1

EMBRACING LOW CARBON ECONOMY

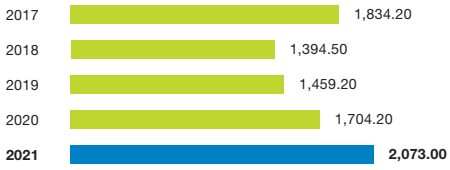


CREATING SUSTAINABLE VALUE FOR SARAWAK

Operating Expenses Ratio
(%)

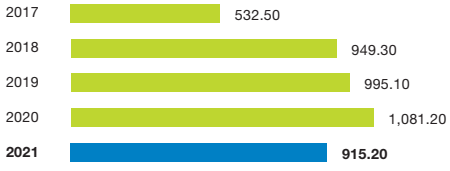


Operating Costs
(RM Million)

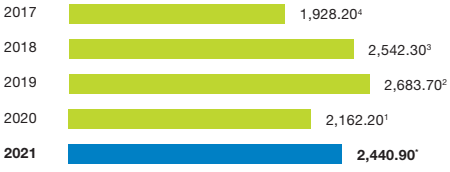


Employee Remuneration
(RM Million)

Interest Paid
(RM Million)



Economic value retained
(RM Million)



Notes:
1 *This economic value retained data has been assured by a third party for Sustainability Report 2020.*
2 *This economic value retained data has been assured by a third party for Sustainability Report 2019.*
3 *This economic value retained data has been assured by a third party for Sustainability Report 2018.*
4 *This economic value retained data has been assured by a third party for Sustainability Report 2017.*
* *This economic value retained data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

During the year, RM3.71 billion was distributed through operating costs, employee remuneration, interest paid and taxes. This resulted in RM2.44* billion in economic value retained compared to RM2.16[1] billion in 2020.

	2017	2018	2019	2020	2021
Economic Value Distributed (RM Million)					
Operating costs	1,834.20	1,394.50	1,459.20	1,704.20	**2,073.00**
Employee remuneration	494.40	527.80	547.00	541.30	**596.30**
Payment to capital providers					
Dividends paid	-	-	-	-	**-**
Interest paid	532.50	949.30	995.10	1,081.20	**915.20**
Payments to government					
Income taxes paid (net of refunds)	236.10	140.70	121.80	162.80	**127.20**
Economic value retained	1,928.20[4]	2,542.30[3]	2,683.70[2]	2,162.20[1]	**2,440.90***

Notes:
1 *This economic value retained data has been assured by a third party for Sustainability Report 2020.*
2 *This economic value retained data has been assured by a third party for Sustainability Report 2019.*
3 *This economic value retained data has been assured by a third party for Sustainability Report 2018.*
4 *This economic value retained data has been assured by a third party for Sustainability Report 2017.*
* *This economic value retained data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

203-2

EMBRACING LOW CARBON ECONOMY

Electricity Sales (GWh)

▲ 9.08% from 2020

Net Profit Margin Ratio

▲ 7.93% from 2020

Operating Expenses Ratio (%)

▲ 11.74% from 2020

Operating Costs (RM)

▲ 21.64% from 2020

Electricity Sales (RM) Per Sarawak GDP

4%

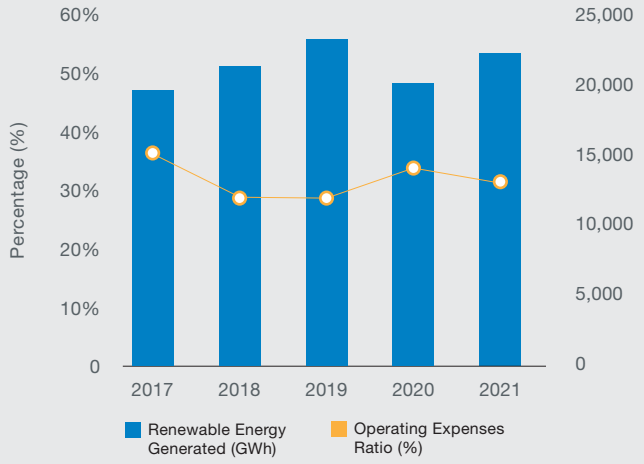
Electricity Consumption Per Capita

▲ 257.47% from 2011

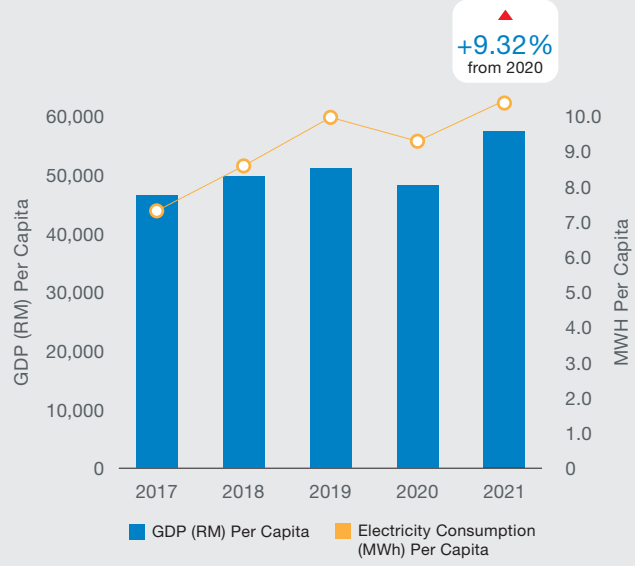
Total Electricity Sales

28,590 GWh

Renewable Energy Generated vs Operating Expenses Ratio 2017 - 2021



Electricity Intensity - Electricity Consumption Per Sarawak GDP 2017 - 2021



Sarawak's GDP grew by 18.84%[1] in 2021 compared to a 8.67% drop in 2020. This improvement is due to the government's move to transition the country to endemicity. The relaxing of COVID-19 countermeasures has led to a higher electricity consumption as businesses enter a recovery phase.

Renewable energy and hydropower continued to be the primary driver of Sarawak's economic growth and accounted for 76.82% of the power generated by the Company in 2021.

Note:

[1] Source: Department of Statistics Malaysia (DOSM).

EMBRACING LOW CARBON ECONOMY

SUPPORTING LOCAL BUSINESSES

As the primary energy provider in Sarawak, we are aware that we have a role in helping Sarawak achieve sustainable growth and boost local businesses. Supporting local suppliers and companies can potentially attract additional investment into the local economy and improve our relationship with the local communities.

In 2021, Sarawakian and Malaysian (non-Sarawakian) companies won the bulk of the Company's total projects, valued at RM1,818 million

Sarawakian firms garnered 59% of the projects, amounting to RM1,397.04 million*.

Our overall total value of projects appreciated in 2021 as we are looking to return to pre-COVID-19 profit levels and plan to expand and grow as the country transition to endemicity.

2020 vs 2021

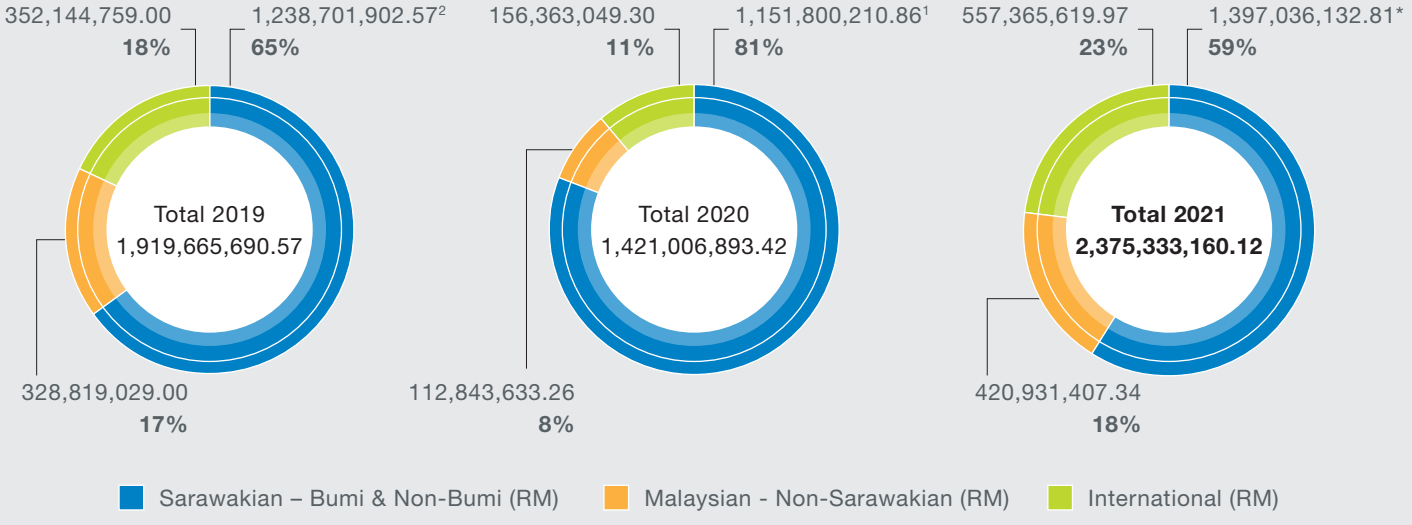
Status	2020	2021
Sarawakian	1,151,800,210.86[1]	**1,397,036,132.81***
Malaysian (Non-Sarawakian)	112,843,633.26	**420,931,407.34**
International	156,363,049.30	**557,365,619.97**
Overall Total	**1,421,006,893.42**	**2,375,333,160.12**

Notes:

[1] *This total value of tenders awarded to local Sarawakian companies' data has been assured by a third party for Sustainability Report 2020.*

* *This total value of tenders awarded to local Sarawakian companies' data has been assured by a third party. Read the Independent Assurance Report 178-182.*

Total Tenders Awarded by Category



Notes:

[1] *This total value of tenders awarded to local Sarawakian companies' data has been assured by a third party for Sustainability Report 2020.*

[2] *This total value of tenders awarded to local Sarawakian companies' data has been assured by a third party for Sustainability Report 2019.*

* *This total value of tenders awarded to local Sarawakian companies' data has been assured by a third party. Read the Independent Assurance Report 178-182.*

103-1

EMBRACING LOW CARBON ECONOMY

Ensuring access to affordable, reliable, sustainable and modern energy for all.

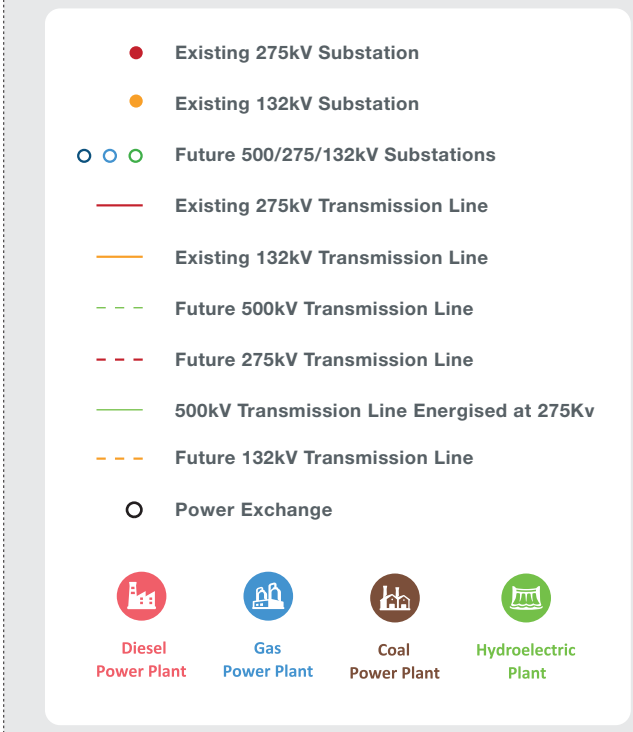
MEETING SARAWAK'S ENERGY NEEDS

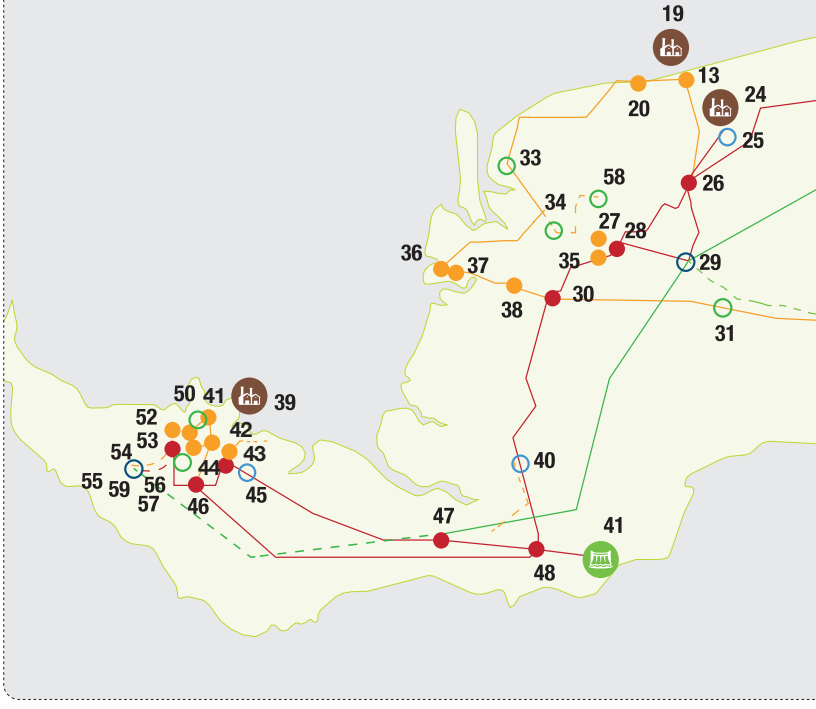
In 2021, energy demand from Sarawak Energy increased by 9% in comparison to 2020. This was attributable to the increase in power off-take from industrial customers recovery post COVID-19 and additional bulk power requirements. In addition, the increase in organic growth also attributed to the higher demand overall demand in the year. Given the current economic climate, Sarawak Energy expects demand to increase to ~5,100 MW by 2025.

The Company's total electricity sales by customer category for 2021 is as follows:

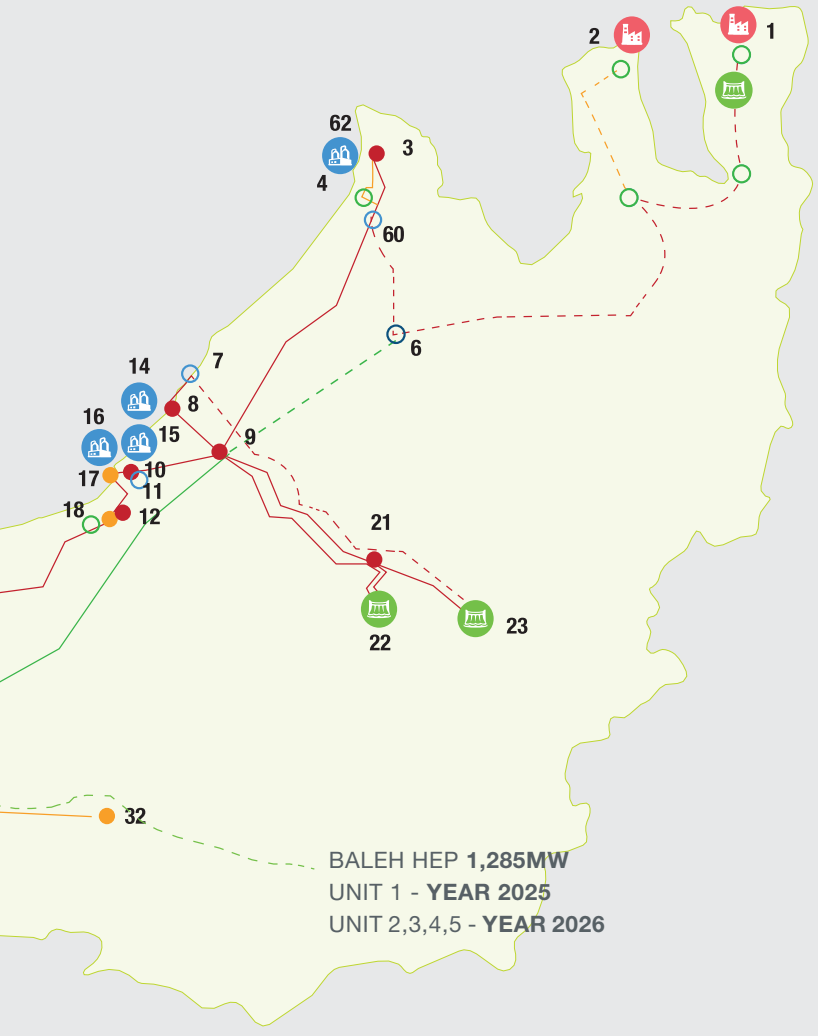
Electricity Sales (GWh) - by customer type	2017	2018	2019	2020	2021
Domestic	2,149	2,368	2,401	2,620	2.867
Commercial	2,575	2,857	2,767	2,584	2,620
Industrial	2,027	2,367	2,297	2,329	2,298
Public Lighting	88	110	104	109	109
Bulk Customers	16,836	18,123	19,620	18,569	20,696
Total Electricity Sales	**23,675**	**25,825**	**27,189**	**26,211**	**28,590**

Transmission Network 2021





EMBRACING LOW CARBON ECONOMY



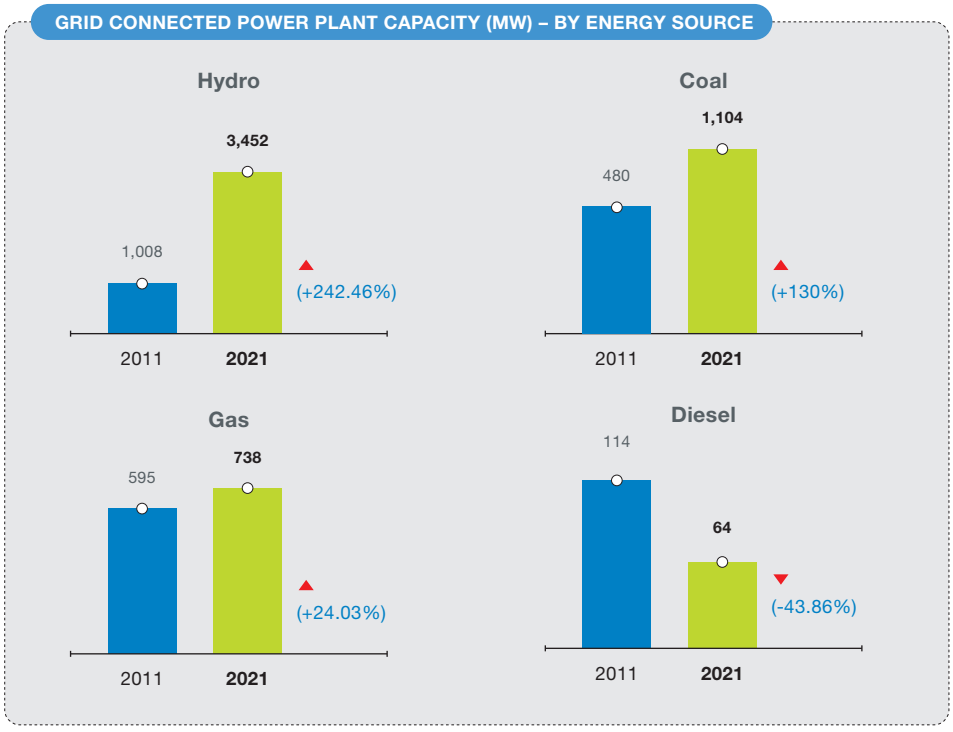
1 Lawas 275/33kV S/S
2 Limbang Town 275/33kV S/S
3 Tudan 275/132/33kV S/S
4 Eastwood 132/33kV S/S
5 Bunut 500/275/33kV S/S
6 Samalaju B 275/132/33kV S/S
7 Samalaju 275/132/33kV S/S
8 Similajau 500/275/33kV S/S
9 Bintulu 275/132kV S/S
10 Bintulu B 275/132kV S/S
11 Kemena 275/132/33kV S/S
12 Matadeng 132/33kV S/S
13 Bintulu OCGT P/S 165MW
14 Tanjung Kidurong CCGT P/S 421MW
15 Sarawak Power Generation P/S 317MW
16 Tanjung Kidurong 132/33/11kV S/S
17 Sibiyu 132/33/11kV S/S
18 Mukah Power Generation P/S 270MW
19 Petian 132/33kV S/S
20 Murum Junction 275/33kV S/S
21 Bakun HEP 2,400MW
22 Murum HEP 944MW
23 Balingian P/S 624MW
24 Balingian 275/33kV
25 Selangau 275/132/33kV S/S
26 Deshon 132/33kV S/S
27 Oya 275/132/33/11kV S/S
28 Mapai 500/275/33kV S/S
29 Kemantan 275/132/33/11kV S/S
30 Song 132/33/11kV S/S
31 Kapit 132/33/11kV S/S
32 Daro 132/33kV S/S
33 Sg Maaw 132/33kV S/S
34 Salim 132/33kV S/S
35 Tanjung Manis B 132/33kV S/S
36 Tanjung Manis 132/33/11kV S/S
37 Sarikei 132/33/11kV S/S
38 Sejingkat Power Corporation P/S 210MW
39 Serudit 275/132/33kV S/S
40 Batang Ai HEP 108MW
41 Muara Tabuan 132/33kV S/S
42 Samajaya 132/33kV S/S
43 Entinggan 275/132/33kV S/S
44 Entinggan B 275/132/33kV S/S
45 Mambong 275/132/33kV S/S
46 Lachau 275/33kV S/S
47 Engkilili 275/33/11KV S/S
48 Sejingkat 132/33kV S/S
49 Astana 132/33kV S/S
50 Mendu 132/33kV S/S
51 Matang 275/132/33kV S/S
52 Transmitting 132/33kV S/S
53 Tondong 500/275/33kV S/S
54 Semenggo 132/33kV S/S
55 Stakan 132/33kV S/S
56 Sungai Merah 132kV S/S
57 MJC 132/33kV S/S
58 Marudi Junction 275/132/33kV S/S
59 Miri OCGT P/S 102MW
60 Kota 2 HEP 11.1MW

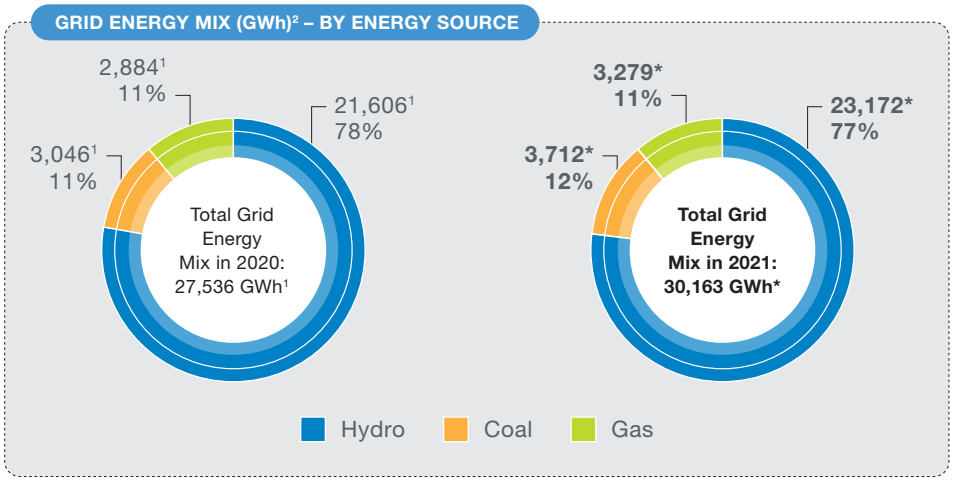
103-3, EU1, EU2, EU10, EU30

EMBRACING LOW CARBON ECONOMY

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

The Company's grid connected power plant capacity increased with total installed capacity at 5,358 MW in 2021. Firm capacity saw an increase to 4,300 MW compared to 4,227 MW in 2020.





Notes:

[1] This net energy generated data has been assured by a third party for Sustainability Report 2020.

[2] Net energy generation.

** This net energy generated data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

IMPROVING RELIABILITY AND RESILIENCE

Sarawak Energy prides itself on being a dependable supplier of energy, and has a proven record of steady, uninterrupted and strong power supply at the plant, transmission and distribution stages.

We continue to provide excellent service to our customers and have seen reliably improving metrics that have validated the efficacy of our initiatives over the past few years.

Hydropower Plant Average Availability Factor
95.09%

Coal-fired Power Plant Equivalent Availability Factor
84.61%

Gas-fired Power Plant Equivalent Availability Factor
81.59%

Diesel-fired Power Plant Equivalent Availability Factor[1]
86.08%

Notes:

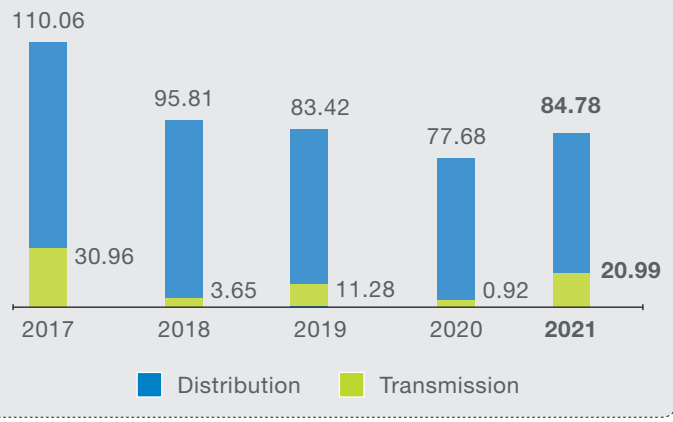
1. Equivalent Availability Factor (EAF) and Availability Factor (AF) using simple average.

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

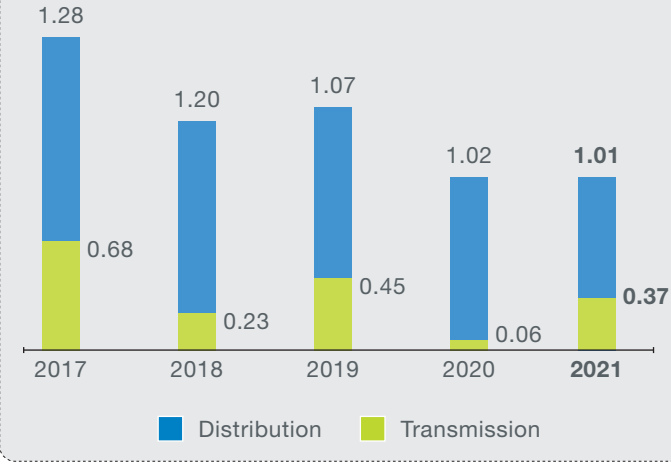
EMBRACING LOW CARBON ECONOMY

In December 2021, we commissioned 40 motorised Ring Main Units (RMU) to automate our distribution equipment during power outage. We identified 21 critical feeders for the motorised RMU project in Kuching.

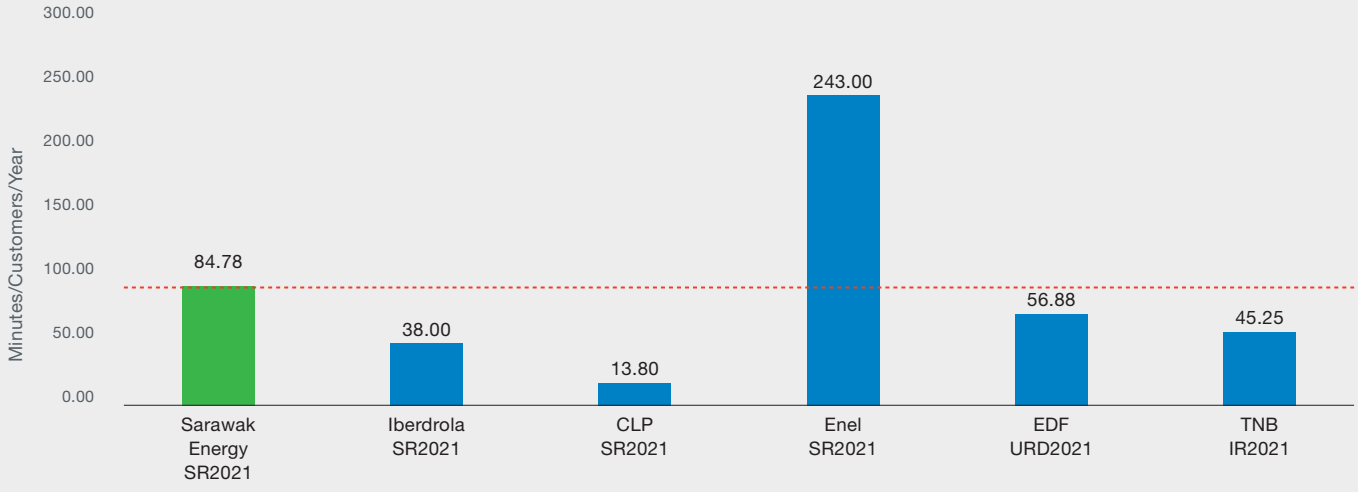
SAIDI (min per customer)



SAIFI (interruptions per customer)



International Comparison Of SAIDI for Power Utility Companies



103-2, 103-3, EU12

EMBRACING LOW CARBON ECONOMY

TRANSMISSION AND DISTRIBUTION LOSSES

Transmission and Distribution losses continued to be generally stable in the year under review due to our system efficiency improvement initiatives and enforcement activities to deter power theft. Our initiatives included upgrading and replacing transmission lines and transformers, introducing new injection points, installing energy-efficient amorphous transformers and reinstating capacitor banks.

Electricity theft related to cryptocurrency mining operation had mushroomed, mainly due to the increase in the value of cryptocurrency and the reduction in meter inspections following the MCO. This led to an increase in power theft, whereby non-technical losses rose to 4.14% in 2021 from 4.05% in 2020. Estimated monthly losses due to electricity theft amounted to RM1.1 million in 2021.

Cryptocurrency mining machine seized.

COMBATTING POWER THEFT IN 2021

31 enforcement operations were conducted

54 cryptocurrency mining operations were found to have tampered with the meter and wirings, or directly connected to the service line without meters

2,760 cryptocurrency mining rigs were seized by police in 39 raids

5 offenders were prosecuted in Miri and 1 in Kuching

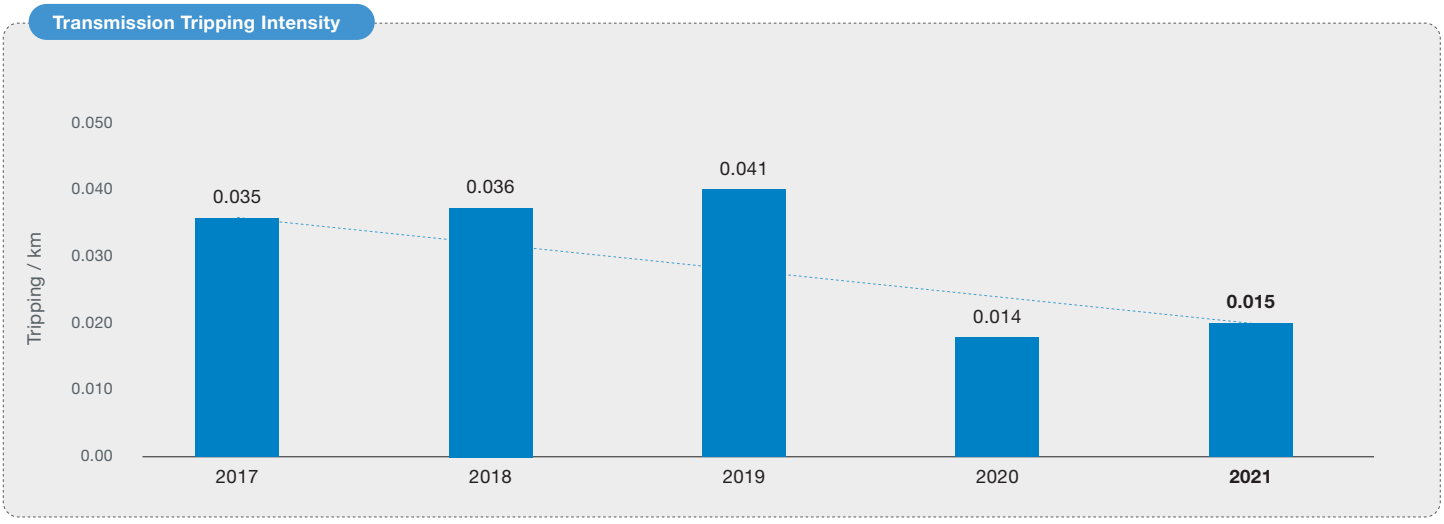
1,404 mining rigs were seized in 15 raids

We will continue to work closely with the local enforcement agencies, increase the knowledge of meter inspection teams across the region and collaborate with China Light Power (Hong Kong) on the research and development of a fraud analytics model to better identify and detect potential power theft.

	Year	2017	2018	2019	2020	2021
Number of Transmission Tripping	Substation	21	22	29	15	**12**
	Txm	56	58	69	53	**64**
	Total	77	80	98	68	**76**
Transmission Tripping Intensity (Tripping/km)		0.035	0.036	0.041	0.014	**0.015**

EU12, EU27

EMBRACING LOW CARBON ECONOMY



Transmission & Distribution Losses

Description	2017	2018	2019	2020	2021
Transmission Losses (%)	1.99	1.99	2.17	2.32	**2.51**
Distribution Losses (Technical) (%)	6.33	6.33	6.43	6.59	**6.47**
Distribution Losses (Non-Technical) (%)	3.80	4.47	4.41	4.05	**4.12**

The number of accounts disconnected in Kuching, Sibu, Sarikei, Bintulu, Miri, Limbang and Lawas continued to decline from 11,312 in 2020 to 8,808 in 2021. Following the receipt of RM12.68 million, a total of 7,267 accounts were reconnected and 8,695 accounts' electricity were restored within 24 hours after payments were made.

Year	< 24 Hours	24 Hours – 1 Week	> 1 Week
2017	15,721	2,679	1,170
2018	19,304	348	32
2019	14,841	397	24
2020	9,047	891	89
2021	**8,695**	**326**	**90**

Year	Total Account Disconnected	Total Amount Disconnected (RM)	Total Account Reconnected	Total Amount Reconnected (RM)
2017	28,586	75,414,881.61	19,576	60,091,606.54
2018	24,014	87,270,165.20	19,875	93,989,694.04
2019	19,253	90,094,268.16	15,309	55,427,122.74
2020	11,312	35,567,618.04	9,135	18,939,263.65
2021	**8,808**	**19,341,684.07**	**7,267**	**12,675,900.54**

103-2

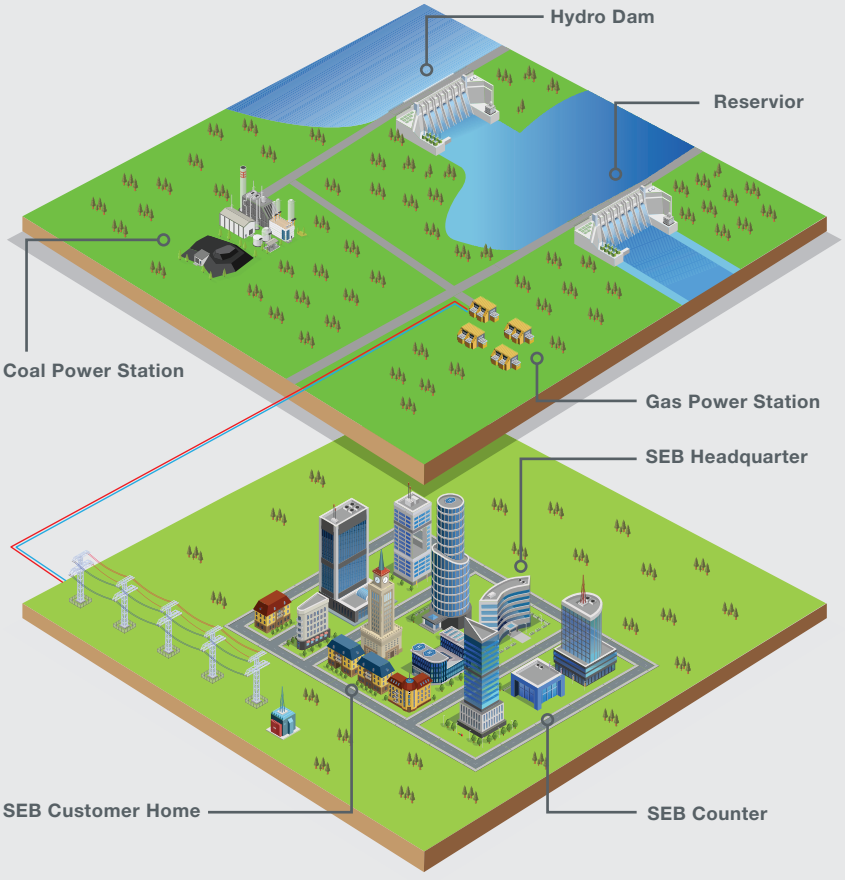
EMBRACING LOW CARBON ECONOMY

BUSINESS CONTINUITY MANAGEMENT

Sarawak Energy is guided by a Business Continuity Management (BCM) Framework, in line with local and international BCM standards. Developed in 2016, the framework will shore up our organisational agility by seeking effective solutions to safeguard stakeholder interest, the Company's reputation and value creation activities, apart from working closely with the authorities during crises or disasters. The framework is aligned with ISO 22301:2012, ISO22313:2012 and relevant Malaysian and international BCM standards and guidelines.

Sarawak Energy's BCM Policy Statement

Through our BCM Programme, Sarawak Energy is committed to maintaining and ensuring the continuity of our services in order to minimise the impact to its stakeholders in the event of any service disruptions



WHY BCM?

Customer and Stakeholders

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

Environment

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

Company's Reputation and Brand

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

Financial

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

EMBRACING LOW CARBON ECONOMY

OUR MILESTONES IN 2021

We continued to remain vigilant and ensure smooth business operations amid various disruptions by the pandemic. Each business function's BCM documents were reviewed and customised to navigate challenges from the pandemic. We continued to comply with COVID-19 Standard Operating Procedures and hold virtual sessions for all activities including Crisis Simulation Exercises, documentation review workshops and awareness and refresher training programmes.

BCM activities in 2021

- **29 April** – Virtual Crisis Simulation Exercise for Sejingkat Power Corp
- **7 July** – Virtual Crisis Simulation Exercise for Bakun HEP
- **28 October** – Virtual Crisis Simulation Exercise for Balingian Power Generation
- **4 & 23 February** – BCM Awareness Training for Human Resource Department
- **29 July** – Virtual Dam Safety Evacuation Plan (DSEP) Exercise Murum Bakun Hydro Cascade
- **18 & 19 November** – Batang Ai HEP Dam Safety Emergency Plan Workshop/Drill Exercise & BCM Virtual Desktop Walkthrough Exercise

DAM SAFETY AND EMERGENCY DRILLS

In 2021 Sarawak Energy hosted its usual Dam Safety Emergency drills to ensure that all of its personnel are up-to-date and well versed in all aspects of the safety drill and follow the proper protocols to avoid incidents and LTIs. The drills included safety and emergency exercises and stakeholder engagement sessions as below:

- Physical in-person training and Dam Safety Emergency Drill Exercises at the Batang Ai facility in November 2021
- A Virtual Dam Safety Emergency Drill Exercises at the Murum-Bakun facility in July 2021
- Stakeholder engagement sessions with the Kapit and Belaga Disaster Management Committees in September and October 2021
- Meetings with the Sarawak Utilities Ministry in December 2021

103-1, 103-2, 103-3

EMBRACING LOW CARBON ECONOMY

CUSTOMER SERVICE EXCELLENCE

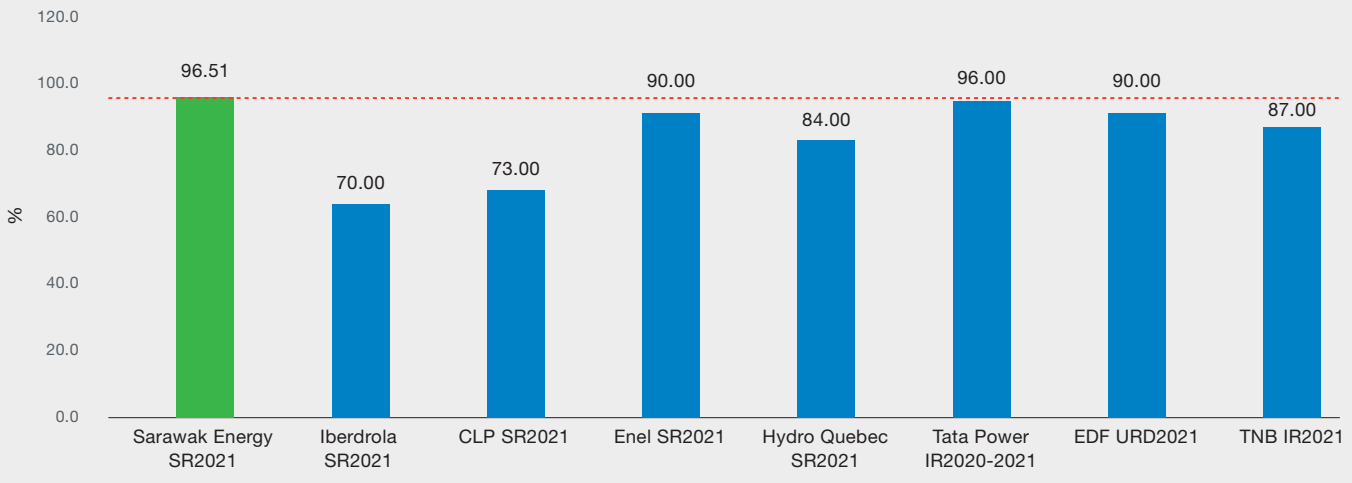
The COVID-19 pandemic and the country's current transition to the endemic phase created an opportunity for our customer service teams to find innovative solutions to provide better customer experience. We continued to encourage customers to use the Sarawak Energy Cares web and mobile platforms for billing and meter reading, payments, enquiries and reporting of technical issues. The advantage of the online systems is that it supports the states digital transformation initiatives and has improved sustainability features by reducing paper submissions.

In 2021, we took the opportunity to pivot to online systems and boost our efforts to improve our Customer Satisfaction Index (CSI) rating in 2021. We continued to leverage digital platforms to enhance customer experience apart from reaching out to our customers via social and mass media advertisements to raise awareness about our mobile app and online facilities.

Our Customer Care Centre (CCC), which serves as our frontline, remained open throughout the pandemic and will continue to serve our customers today. As a result, our Customer Satisfaction Index increased from 95.20% in 2020 to 96.51% in 2021.

Year	2017	2018	2019	2020	2021
Customer Satisfaction Index	80.57%	94.72%	95.08%	95.20%	**96.51%**

International Comparison of Customer Satisfaction Index for Power Utility Companies



103-1, 103-2

EMBRACING LOW CARBON ECONOMY

Striving for customer service excellence.

E-CUSTOMER EXPERIENCE (E-CX)

Our e-Customer Experience (e-CX) system for online submission of power supply applications provides seamless user experience and supports digital transformation in Sarawak by reducing paper submission. The system improves contactless experience and assists customers via its chatbot, Carina, on Sarawak Energy's corporate website and SEB Cares platform.

The e-CX, which was launched in 2020, aims to help jumpstart online applications for electricity supply. The e-CX targets to provide an online venue for more counter services such as Change of Name, Supply Upgrading/Downgrading and Requests for Meter Testing.

The eCX currently serves electrical consultants and internal wiring contractors, who submit bulk electricity supply applications. While customers are still adapting to the e-CX system, we have been monitoring users' feedback closely to improve and enhance the eCX system. We target for the full system, which will also benefit retail customers, to completed by the end of 2022. Moving forward, eCX will become an avenue for more counter services.

Benefits of e-CX

- Registration of consultants and contractors no longer require hardcopies of documents during profile registration and yearly renewal. The improved paperless system allows for faster reviews and approvals
- The submission of bulk applications as all parties are able to track the application progress, which has been largely automated and hassle-free

103-2, 103-3

EMBRACING LOW CARBON ECONOMY

PAYMENT KIOSKS

As part of our ongoing digitisation process, we have purchased 12 additional payment kiosks for rural stations in Bau, Lundu, Dalat and Kanowit, which will be installed and fully operational in 2022.

By the end of 2022, we will have 27 payment kiosks in various locations across the region. These kiosks are expected to:

- Reduce queueing times, improve service time at counters. There will be no need to queue to pay bills at the counter
- Make it easy for customers to make payments at any time even after office hours since the kiosks are accessible until 11pm every day
- Allow customers in rural areas to pay bills easily, they don't have to travel into town or have Internet access

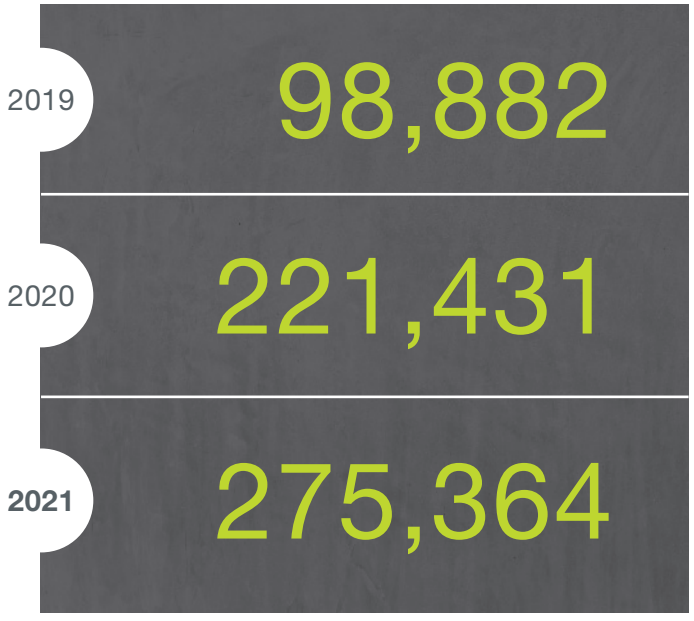
In addition, we rolled out the Sarawak Energy Appointment System rolled out in Kuching in Oct 2021 to allow customers to book an appointment online prior to visiting our branches. This cuts down on walk-ins and helps us comply with all COVID-19 countermeasures.

SARAWAK ENERGY MOBILE APP 'SEB CARES'

The SEB Cares mobile app has helped us to improve customers' payment performance and enhance user experience. We have also used the app to provide updates, notification of events and organise programmes. In 2021, the SEB Cares app was enhanced with features including:

- Express Payments which allow payments from the app for any contract account number, without the need to register the account under the user's profile and subscribe to e-Billing services.
- Payments made via SEB cares will be updated immediately into our SAP Billing system, immediately in real-time.

As a result of the pandemic, innovative updates have enhanced customer experience, allowing a surge of SEB Cares user registration in 2020 and 2021.



The app and online services have allowed Sarawak Energy to introduce a "Go Paperless Campaign in 2021", where customers who subscribe to the e-Bill service received a monthly rebate of RM2 for 12 months.

EMBRACING LOW CARBON ECONOMY

Mobile Field Force Automation (MFFA)

The MFFA tracks and monitors the response time of technical field crews and covers our operational teams in Kuching, Sibu, Bintulu and Miri. Implemented in 2016, the MFFA now includes auditing and performance monitoring and improvement.

The Company's plan for the system in 2022 includes:

- Introducing an offline mode to enable users to use the system in locations without internet connectivity
- Adding an electronic Permit to Work (PTW) system that controls hazardous work associated with high-risk activities, which allows users to issue and receive PTW electronically

Geographical Information System (GIS)

In 2021, we leveraged new internet-based digital tools to develop a GIS that helps us with mapping activities and network management.

- An Enterprise GIS was successfully deployed in November 2021 to host geospatial data from various departments across the organisation. To optimise the cost of implementation, we adopted a hybrid approach by consolidating commercial software and open-source software
- We have progressively moved from customer tracing to asset and feeder tracing in site data collection to navigate disruptions from the pandemic and keep our workers safe. With the deployment of the enterprise, regional GIS users are now connected to the centralised spatial data repository to ensure the upkeep of distribution network dataset, enabling our headquarters to receive the updated dataset near real time

Enterprise Management System

In 2021, we continued to enhance the Enterprise Asset Management (EAM) work order management and mobility system for end users. The EAM, which was fully extended to Rural Operations by December 2021, was improved in terms of:

- improving pole top inspection reports
- enabling a trigger function that acts as a notification when there is a significant increase in loads at the substation between reads, allowing us to detect illegal bitcoin mining operations and other instances of power theft
- dealing with the creation of Purchase Order once contract utilisation exceeds 80%
- allowing users to narrow down email recipients by station via EAM notification
- fixing the workflow bug to allow non-planners to approve work orders

Going forward, we will automate the computation of the Distribution System Reliability Indices to replace the current manual computation which is prone to human error.

301-1, 303-2, 303-3, 305-7

PRESERVING THE ENVIRONMENT

WATER MANAGEMENT

As a power producer, water plays an integral role to all our operations. Water is used both as a source of power for our hydroelectric plants and a key component for cooling our thermal power plants. We are committed to the sustainable use of water and invest in new technology to minimise our impact on natural water resources.

Hydropower

Water for Power Generation
53,075.13 million m³*

Total Annual Water Volume Intensity for Energy Generation
2,274.27 m³/MWh

Thermal

Water withdrawn (Cooling process)
1,021 million m³*

Seawater or Other Natural Water Source Withdrawal Intensity
33.10 m³/MWh

SO_x and NO_x Emissions Intensity (Main Grid)
SO_x : 2.85×10^{-5}
NO_x : 7.47×10^{-5}

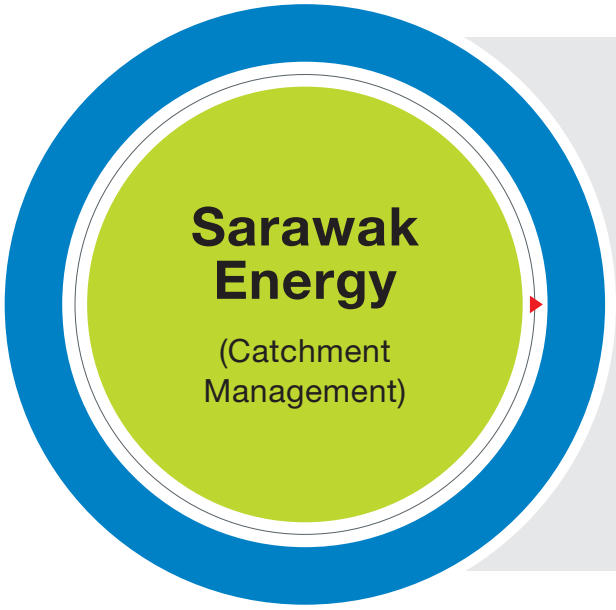
Note:
* *These total water withdrawn by source and annual water volume for electricity generation data have been assured by a third party. Read the Independent Assurance Report on 178-182.*

Enseluai Waterfall at Ulu Ai, Batang Ai.

PRESERVING THE ENVIRONMENT

SARAWAK ENERGY INTEGRATED CATCHMENT MANAGEMENT STRATEGY – SAFEGUARD UPSTREAM WATER RESOURCE

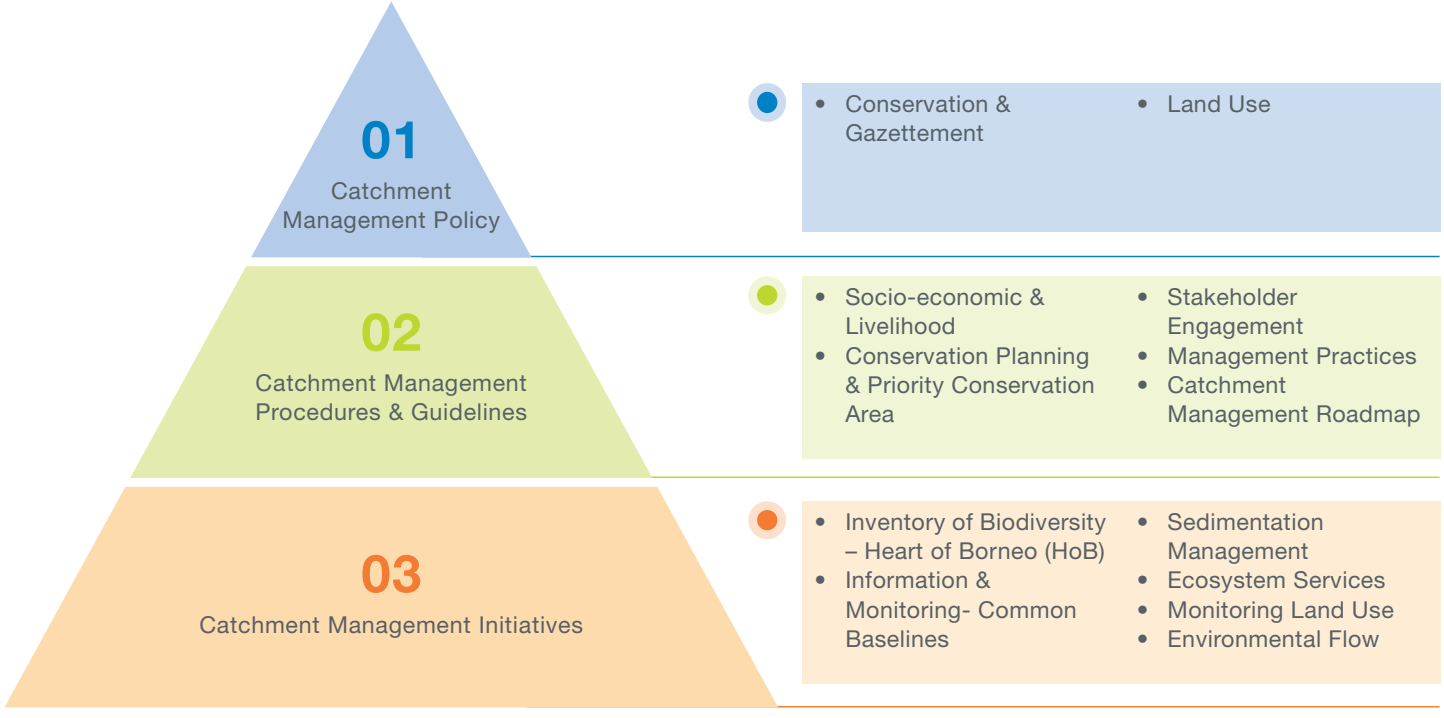
CATCHMENT MANAGEMENT POLICY, PROCEDURES AND GUIDELINES FOR HYDROPOWER



Management	Technical
Good Practices in Catchment Management	Water Resource, Hydrology & Sedimentation
Hydropower Sustainability Assessment Protocol (HSAP)	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



301-1

PRESERVING THE ENVIRONMENT

ANNUAL WATER VOLUME INTENSITY FOR ENERGY GENERATION

Hydro Plant	Data	Unit	2017	2018	2019	2020	2021
Batang Ai	Annual Inflow	million m^3	3,658.00	3,576.00	2,852.00	4,255.00	**3,651.00**
	Annual Water Volume for Energy Generation	million m^3	3,396.73[4]	3,646.50[3]	2,844.00[2]	3,974.38[1]	**3,617.61***
	Annual Energy Generated	GWh	442.32	481.00	391.00	518.00	**476.00**
Murum	Annual Inflow	million m^3	10,933.00	7,737.00	8,183.00	9,993.00	**9,660.00**
	Annual Water Volume for Energy Generation	million m^3	7,503.32	7,932.00	7,482.00	8,321.00	**8,321.00**
		million m^3 (including EPS)	7,567.19[4]	8,022.00[3]	7,532.00[2]	8,548.94[1]	**8,583.01***
	Annual Energy Generated	GWh	5,717.39	6,094.00	5,714.00	6,415.00	**6,484.00**
Bakun	Annual Inflow	million m^3	49,794.00	40,481.00	40,373.00	55,730.00	**49,894.00**
	Annual Water Volume for Energy Generation	million m^3	32,961.65[4]	36,148.11[3]	38,827.00[2]	36,965.72[1]	**40,874.51***
	Annual Energy Generated	GWh	13,078.27	14,482.00	15,544.00	14,803.00	**16,376.00**
Total Annual Water Volume for Energy Generation		million m^3	43,925.57[4]	47,816.61[3]	49,203.00[2]	49,489.05[1]	**53,075.13***
Total Annual Water Volume Intensity for Energy Generation (Hydro Main Grid Gross Energy)		m^3/MWh	2,266.64	2,273.42	2,271.48	2,275.56	**2,274.27**

Notes:

[1] *This annual water volume for electricity generation data has been assured by a third party for Sustainability Report 2020.*

[2] *This annual water volume for electricity generation data has been assured by a third party for Sustainability Report 2019.*

[3] *This annual water volume for electricity generation data has been assured by a third party for Sustainability Report 2018.*

[4] *This annual water volume for electricity generation data has been assured by a third party for Sustainability Report 2017.*

* *This annual water volume for electricity generation data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

PRESERVING THE ENVIRONMENT

In 2021, we established the following stations to improve our water management at Bakun HEP:

Installation of Bakun **Water Level Station** at Bakun Intake

The establishment of this new water level station enables us to collect more data within the basin and to make inflow forecasts and the simulation model for water level forecasting more reliable and accurate.

Installation of Bakun **Weather Station** at Bakun Intake

The weather station provides real-time data for monitoring purposes. Data measured includes atmospheric pressure, humidity, wind speed, wind direction and precipitation.

Bakun HEP.

103-2, 103-3, 303-1, 303-3

PRESERVING THE ENVIRONMENT

WATER WITHDRAWAL

In 2021, water withdrawal increased due to two power plants coming into full operation – the Balingian Coal Power Plant and the Tanjung Kidurong Combined Cycle Power Plant. The majority of water withdrawn continues to be from the sea and rivers as it is used for the cooling processes in our thermal power plants.

Plant Type	Source	Unit	2017	2018	2019	2020	2021
Coal	Municipal	m^3	2,457,930.00[4]	2,186,120.00[3]	2,204,029.00[2]	2,007,712.00[1]	**1,965,834.00***
	Seawater or other natural water sources	m^3	820,813,896.00[4]	739,325,453.18[3]	724,178,991.74[2]	569,688,758.40[1]	**528,585,158.70***
Combined & Open Cycle - Natural Gas	Municipal	m^3	157,777.00[4]	229,836.00[3]	353,319.00[2]	279,765.00[1]	**435,583.00***
	Seawater or other natural water sources	m^3	212,876,380.80[4]	227,489,565.60[3]	241,935,030.72[2]	104,047,121.52[1]	**491,928,176.88***
Diesel	Municipal	m^3	21,192.00[4]	13,952.50[3]	6,896.13[2]	1,731.51[1]	**4,417.00***
	Seawater or other natural water sources	m^3	1,171,360.00[4]	69,650.00[3]	-	-	**-**

Notes:

1 *This total water withdrawn by source data has been assured by a third party for Sustainability Report 2020.*

2 *This total water withdrawn by source data has been assured by a third party for Sustainability Report 2019.*

3 *This total water withdrawn by source data has been assured by a third party for Sustainability Report 2018.*

4 *This total water withdrawn by source data has been assured by a third party for Sustainability Report 2017.*

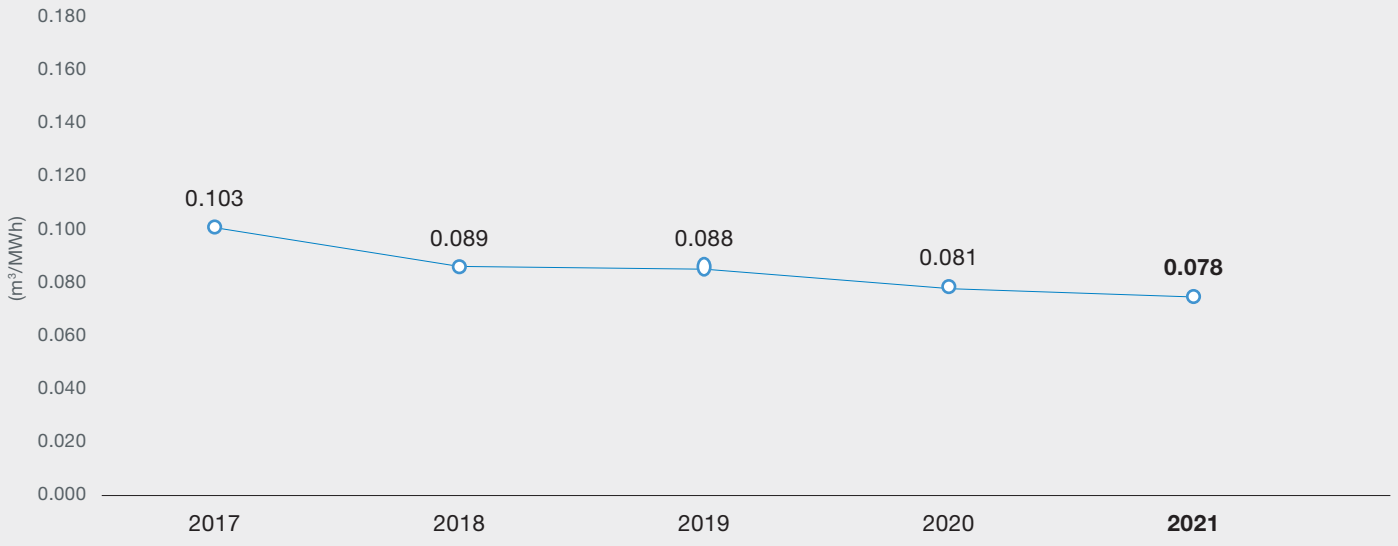
* *This total water withdrawn by source data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

WATER WITHDRAWAL INTENSITY BY SOURCE (THERMAL PLANTS)

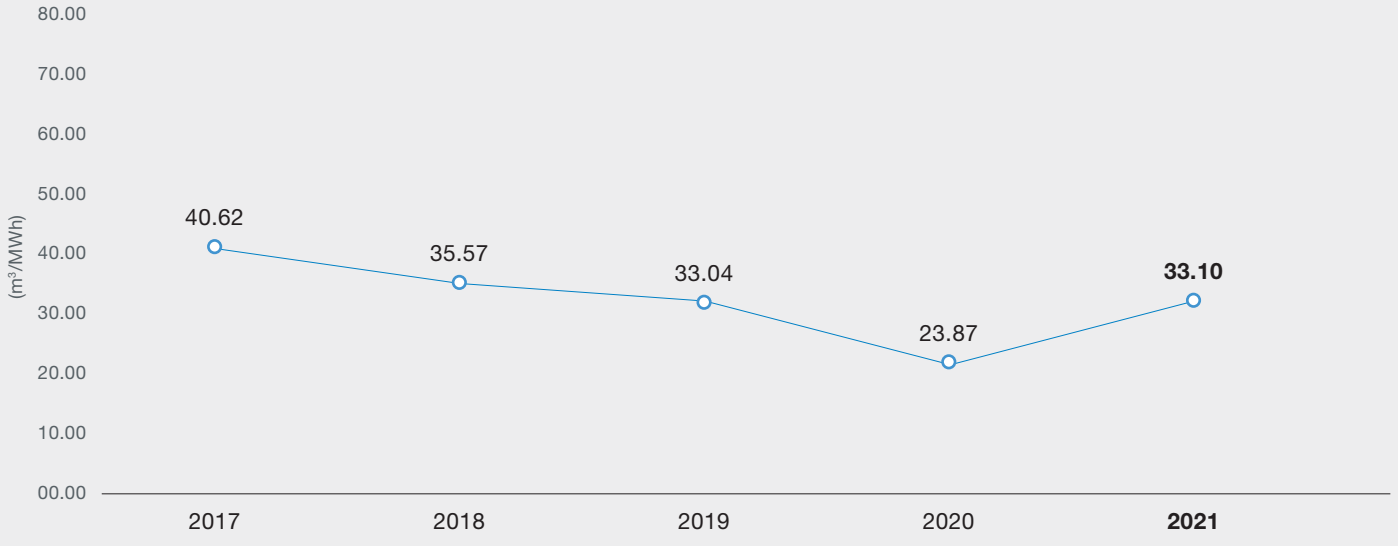
Water Withdrawal Intensity by Source	Unit	2017	2018	2019	2020	2021
Municipal Water Withdrawal Intensity	m^3/MWh	0.103	0.089	0.088	0.081	**0.078**
Sea Water or Other Natural Water Source Withdrawal Intensity	m^3/MWh	40.62	35.57	33.04	23.87	**33.10**

PRESERVING THE ENVIRONMENT

Municipal Water Withdrawal Intensity (m^3/MWh)



Seawater/Natural Water Source Withdrawal Intensity (m^3/MWh)



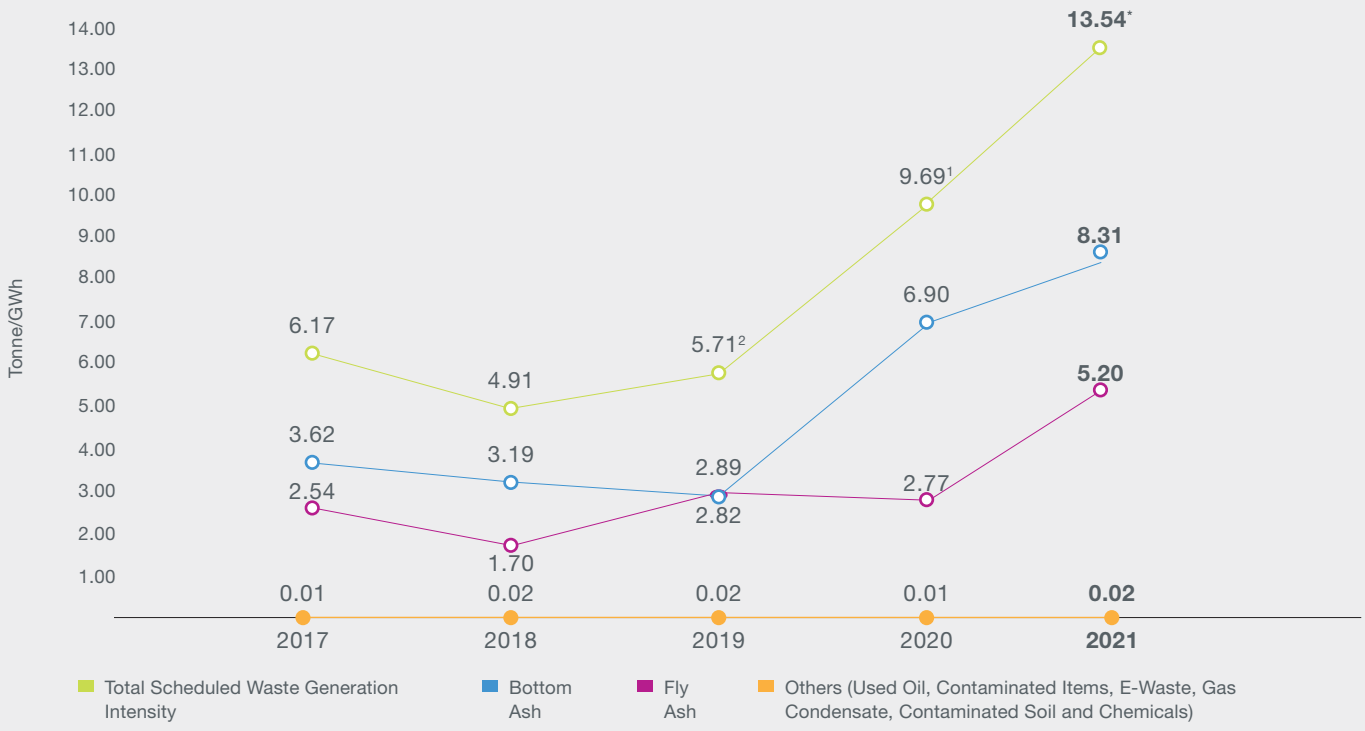
103-1, 103-2, 103-3, 305-7, 306-1, 306-2, 306-3, 307-1

PRESERVING THE ENVIRONMENT

SCHEDULED WASTE MANAGEMENT

We comply with the Environmental Quality (Scheduled Wastes) Regulation 2005 and ensure that our scheduled waste is responsibly disposed of. Monthly inventory reporting is implemented across our operations, and we have engaged external contractors to collect and responsibly dispose of our scheduled waste. Unfortunately, despite our best efforts, the Company was fined RM 2,000 in Long Lama Power Station and RM 4,000 in the Central Region Office for violating the Environmental Quality (Scheduled Wastes) Regulation 2005. Among the incidents were due to used battery stored exceedingly more than 180 days, no dedicated waste storage in place, exceeding the permitted storage limit, as well as absent of proper labelling. We have conducted the assessment, and all have been rectified accordingly.

Scheduled Waste Generation Intensity



Notes:

1 *This scheduled waste generation intensity data has been assured by a third party for Sustainability Report 2020.*

2 *This scheduled waste generation intensity data has been assured by a third party for Sustainability Report 2019.*

* *This scheduled waste generation intensity data has been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

Parameter / Year	Unit	2017	2018	2019	2020	2021
Total SO_x and No_x Emissions						
SO_x	Tonne	3,720.17	1,656.62	454.33	3.589.52	**858.73**
No_x	Tonne	1,893.59	1,046.51	2,307.27	5,433.16	**2,251.75**
SO_x and No_x Emissions Intensity						
SO_x	kg/kWh	0.00014894	0.00006212	0.00001673	0.00013139	**0.00002848**
No_x	kg/kWh	0.00007581	0.00003924	0.00008504	0.00019884	**0.00007466**

103-2, 103-3, 307-1

PRESERVING THE ENVIRONMENT

ENVIRONMENTAL COMPLIANCE

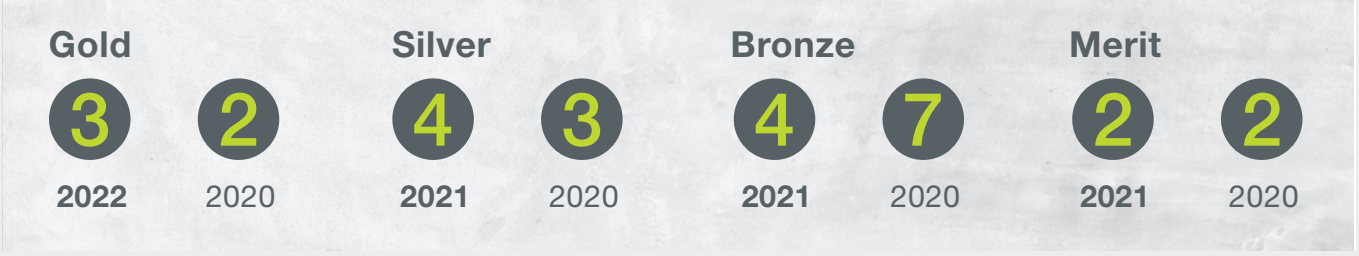
Sarawak Energy is committed to ensuring full compliance with all laws and regulations. Our Internal Environmental Compliance Audit (IECA) is a core part of our commitment to ensuring that we are operating in compliance with EIA conditions and other environmental regulations. It is a self-regulatory process undertaken internally to detect incidences of non-compliance and ensure corrective action and/or preventive measures are put in place prior to any inspections by a third-party of regulatory authority. The IECA is applied to all our 11 major projects that require EIA/EMP approval and is conducted quarterly for the substation, transmission line, coal mining, Balingian operator village and Tanjung Kidurong Combined Cycle Power Plant projects and yearly for Baleh HEP.

In 2021, all 11 Sarawak Energy projects (construction stage) recorded zero penalties/fines from Federal or State environmental authorities.

Contractor EIA Compliance Award (CECA) 2020

Since 2017, Sarawak Energy has been encouraging environmental excellence among our contractors through the CECA. The awards have helped increase motivation and commitment towards environmental compliance, resulting in improved environmental performance. A total of 14 contractors undertaking thermal, hydro, transmission lines and substations projects were assessed, with 13 making the cut.

No. of Companies



ENVIRONMENTAL TRAINING

Our operations require specific skills and knowledge on environmental management and regulations. To ensure environmental excellence across our operations, we provide regular training on various environmental management topics relevant to our operations.

- Industrial Effluent Treatment System (IETS) & Sewage Treatment System (STS): Design and Operation Requirements (virtual)
- Air Pollution Control System (APCS) and Fuel Burning Equipment (FBE): Design and Operation Requirements (virtual)
- Erosion and Sediment Control (ESC) Reviewer's Training (virtual)
- Refresher Environmental Training 2021
- Erosion and Sediment Control Plan (ESCP) Reviewer's Training (virtual)
- Corporate HSSE Week: Emerging Water Pollutants Talk
- Corporate HSSE Week: Wildlife Protection Talk

102-12, 103-2

PRESERVING THE ENVIRONMENT

BIODIVERSITY CONSERVATION

Sarawak Energy continues to invest in the conservation of important flora and fauna in Sarawak. A key step taken in 2021 was the establishment of a Biodiversity Conservation Committee (BCC), which aims to streamline biodiversity conservation efforts across Sarawak Energy and build capability to undertake research and conservation measures in line with Sarawak Energy's objectives, international best practices i.e. HSAP[1], HESG[2], ESMS[3] and the UN Sustainable Development Goals (SDG) Indicators. BCC also advocates and recommends policies to relevant government stakeholders and promotes environmental and social innovation aligned with International Best Practice and Sarawak's aspiration. The BCC is chaired by various heads of departments and reports directly to the Group Executive Committee and meets on a quarterly basis.

Notes:

1 *Hydropower Sustainability Assessment Protocol*
2 *Hydropower Sustainability ESG Gap Analysis Tool*
3 *Environmental and Social Management System*

Group Executive Committee

▲

Biodiversity Conservation Committee

Chairman : SVP HSSE

Secretariat : EIA & Environment

Head of HSE

Head of Research & Development

Head of Sustainability

Asset Owner : Head or nominees of SEB Power, SESCO,SER

Head of Project Delivery or nominees

The BCC's objectives are:

To streamline biodiversity conservation efforts across the organisation towards environmental excellence

To maximise positive impacts and minimise negative impacts of our projects and business on biodiversity through conservation measures

To build internal capability and explore new and relevant biodiversity research areas as a foundation of biodiversity conservation measures

To advocate, develop, implement, and monitor biodiversity conservation measures in line with the regulatory requirements and international best practices with benchmarked international organisations such as IUCN, etc.

The BCC's key priorities are:

1. Biodiversity Conservation Policy & Governance
2. Biodiversity Knowledge Creation & Management
3. Protection & Conservation of Biodiversity
4. Conservation Education & Public Awareness (CEPA)
5. Partnership & Collaboration in Biodiversity Conservation

PRESERVING THE ENVIRONMENT

Murum Plant Conservation Garden Island

- Established a partnership with Sarawak Forestry Corporation in 2015 to maintain a conservation garden for various important plant species
- **210** additional plants in 2021
- Plant survival rate is about **81.4%** since the establishment of Murum Conservation Garden in 2015
- **1,288** plants recorded in 2021

Types of plants	No. of plants as of Dec 2020	Target no. to plant in 2021	Actual no. planted in 2021	Current total
Trees				
Gaharu (*Aquilaria spp.*)	286	30	30	313
Ensurai (*Dipterocarpus oblongifolius*)	125	50	90	210
Tongkat Ali (*Eurycoma longifolia*)	83	20	35	108
Orchids (*Orchidae*)	260	10	10	270
Non-trees				
Ethno-botanical plants	134	20	20	154
Bamboo	213	20	25	233
TOTAL	**1,101**	**150**	**210**	**1,288**

Figure 1: *Total No. of Plant Planted at Murum Conservation Garden.*

Giant Orchid (Orchidae).

Tongkat Ali (Eurycoma longifolia).

103-2, 103-3, 304-1, 304-2

PRESERVING THE ENVIRONMENT

Sungai Lekasi Tagang System at Tegulang Murum

- Local community undertake regular fish stock assessments and manage the tagang (controlled fishing) system
- Sarawak Energy has been working together with Department of Agriculture towards in empowering local community with relevant skills and knowledge in ensuring the success of the project. Regular fish stock assessment exercise, Ensurai tree planting and skill training with the community has been conducted throughout the years
- In light of this, the community has developed the sense of ownership and able to self-operate/manage the tagang system. Fish stock assessment for 2021 conducted on internally together with tagang committee members. The data for 2021 is shown below

Fish Stock Assessment 2021					
Species	Average Length (cm)		Average Weight (gm)		Growth Rate (%) Based on 2020 Weight
	2020	2021	2020	2021	
Semah	35.60	**45.6**	440.00	**765.00**	**73.86%**
Kulong	28.30	**41.3**	162.30	**418.30**	**157.70%**
Adong	20.60	**29.6**	99.60	**220.30**	**145.80%**
Boeng	18.30	**22.6**	53.60	**210.00**	**137.10%**

Fish measurement by committee for stock assessment.

Feeding fish by Sg. Lekasi Tagang System Committee.

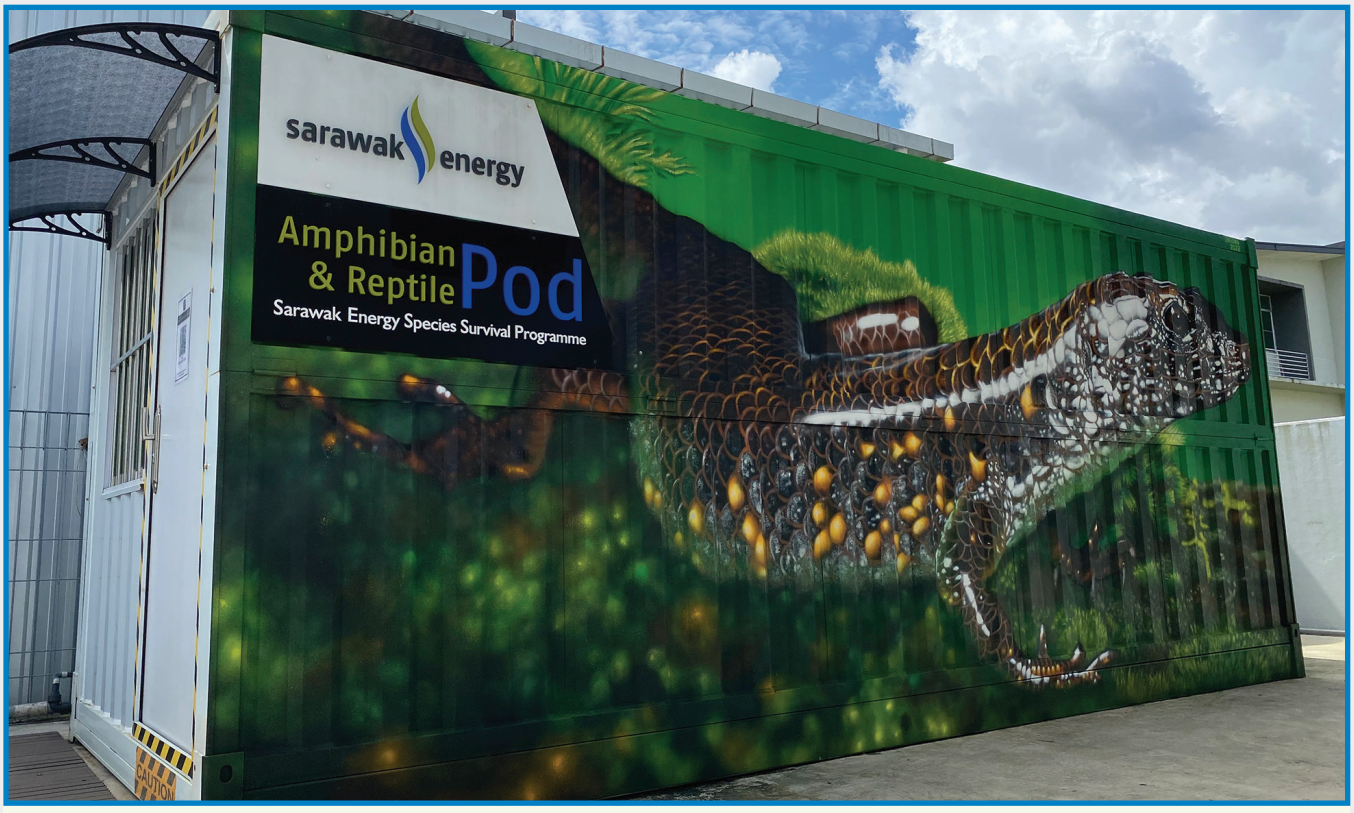
PRESERVING THE ENVIRONMENT

Fish Conservation Project at Sungai Murum

- Project aims to enhance native fish species such as Empurau, Semah, Tengadak and Baung
- In 2021, the 2nd phase of the project included enhancing the security of the conservation area by installing an entrance gate, signages and lightings along the access road to the riverbank and at the floating cage as well as improving the netting structure, fish food, transportation, and maintenance of the conservation project

Amphibian and Reptile Pod

- In 2021, our Conservation Ecology unit established the Amphibian and Reptile Pod. The Amphibian and Reptile Pod is an Ex-situ conservation facility for amphibians and reptiles and is part of our Species Survival Programme, stemming from the Sarawak Energy Hydro Environmental Sciences Research Blueprint
- The Amphibian and Reptile Pod aims to:
  - Implement international good practices in mitigating impacted species as recommended in the Hydropower Sustainability Assessment Protocol (HSAP)
  - Establish an ex-situ conservation husbandry facility for amphibians and reptiles of Baleh HEP area
  - Rescue and establish sustainable assurance colonies of the impacted amphibian and reptile species of Baleh HEP area



The Amphibian and Reptile Pod located at Sarawak Energy Research and Development Laboratory, with mural wall painting featuring an exclusive species named after our organisation, Tropidophorus sebi, the Baleh Water Skink.

PRESERVING THE ENVIRONMENT

ENVIRONMENTAL

Sarawak Energy Ecolution Challenge 2021

Held from
30 April to 31 October 2021

214
employees participated

A series of five challenges involving **repurposing, recycling, photography, plogging and chilli-planting**

Winners were from **SEB Power Department, Transmission Department and HSSE Department** respectively

PRESERVING THE ENVIRONMENT

AWARENESS

Sarawak Energy Digitalised Waste Management 3R programme

Launching of Sarawak Energy Digitalised Waste Management 3R Programme.

Rolled out on **1 November** in collaboration with **iCycle Services Sdn. Bhd.**

Aims to **improve waste management** and **recycling practices** and **enables tracking** and **monitoring of recycling activities**.

Recycling facilities set up in **Menara Sarawak Energy, Wisma SESCO, Sarawak Energy Recreation Centre, Sarawak Energy Learning Centre, Western Region Office, SESCO Central Store, Sejingkat Power Plant, Saradise Customer Service Counter** and **Kota Samarahan Retail Office.**

Sarawak Energy Go Green Music Vibes Video Competition 2021

Held between **6 August** and **15 September 2021** in conjunction with **Sarawak Energy HSSE Excellence Week 2021.**

Secondary school students had the opportunity to record a video of themselves performing a song using 'green' instruments made from recycled or used materials.

The champion for 2021 was **Tingketong Breeze** from **SMK Bandar Samariang,** followed by two groups from **SMK Tun Ahmad Zaidi - Friends of Environment (FOE)** and **Leleng Band.**

102-8, 103-2, 103-3, 203-1, 203-2, 403-9, EU26

CREATING VALUE FOR STAKEHOLDERS

Total Training Hours
166,574

Total Electrification Coverage in 2021 (%)
98.6*

Lost Time Injury Frequency Rate (Corporate)
0.279*

Total Number of Employees
5,442

CSR Spending (RM Million)
7.50

Note:
* *These lost time injury frequency rate and Sarawak electrification coverage data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

Our people are our greatest asset.

DEVELOPING THE EMPLOYEES OF SARAWAK ENERGY

In fulfilling our role as a responsible corporate organisation that supplies energy to people in Sarawak, we are committed to investing in our workforce. In 2021, Sarawak Energy continued to show its care and commitment for the health, wellbeing, and safety of its valued employees, especially during the COVID-19 pandemic.

Providing Opportunities for All

Despite the difficulties we faced during the pandemic, Sarawak Energy continued to grow from strength to strength. We increased the numbers of our diverse workforce from 5,381 in 2020 to 5,442 in 2021.

CREATING VALUE FOR STAKEHOLDERS

The following are statistics of our employees in the year under review:

Employee Breakdown by Gender for Year 2021

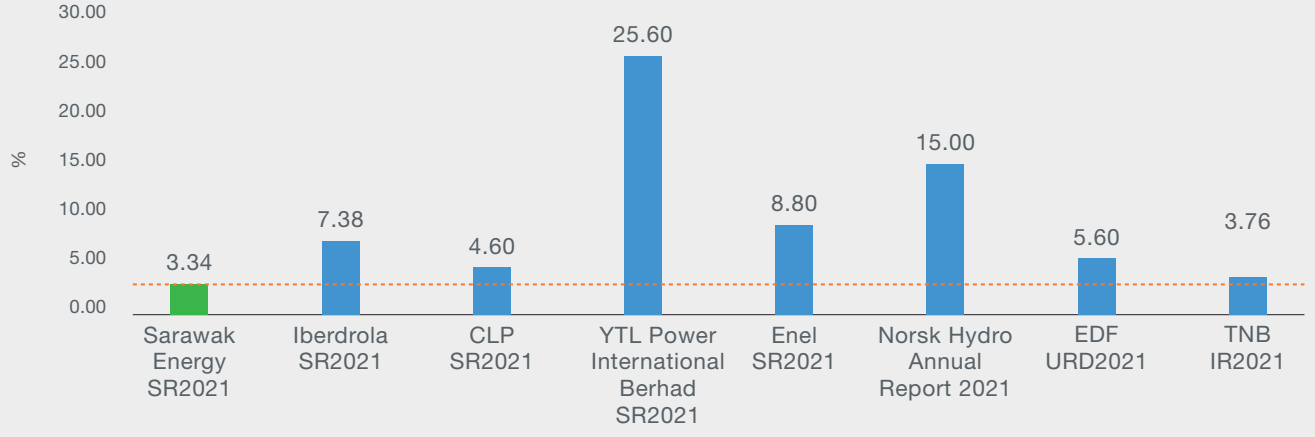
Men	By Position	Women
6	Board of Directors	0
13	GEC	2
24	HoD/Top Management	10
190	Senior Management	84
775	Middle Management	529
3,205	Non-executive	610

In the year under review, we employed 163 new employees, of whom 42 were women and 121 were men. A detailed breakdown of new hires and staff turnover by gender and age can be found on pages 183 to 232 of the GRI Content Index.

New hires
163
(mostly below 30 years old)

Turnover
182

International Comparison of Turnover Rate for Power Utility Companies



103-1, 103-3, 404-1

CREATING VALUE FOR STAKEHOLDERS

TRAINING & EDUCATION

The total hours of training during the year increased by about 218%. In 2021, we recorded 166,574 training hours compared to 52,308 hours in 2020. Despite disruptions from the pandemic, SEB has continuously nurtured its employees through learning development. This is in addition to our employees' proactive approach of enrolling themselves in related online programmes to enhance their skills in their daily tasks. For instance, 51,555 hours (66% of total learning hours) in 2020 and 156,783.61 hours (91% of total learning hours) in 2021 were from our employees' own initiative. The total and average hours of training by employee category and gender are shown in the following table:

Year	2020	2021
Total Number of Employees by Category		
Management	54	**49**
Executive	1,468	**1,578**
Non-executive	3,864	**3,815**
Total Hours of Training by Category		
Management	1,505.80	**1,971.82**
Executive	40,945.16	**87,115.35**
Non-executive	35,652.10	**77,486.69**
Average Hours of Training by Category		
Management	27.89	**40.24**
Executive	27.89	**55.21**
Non-executive	9.23	**20.31**

AVERAGE HOURS OF TRAINING BY CATEGORY AND BY GENDER

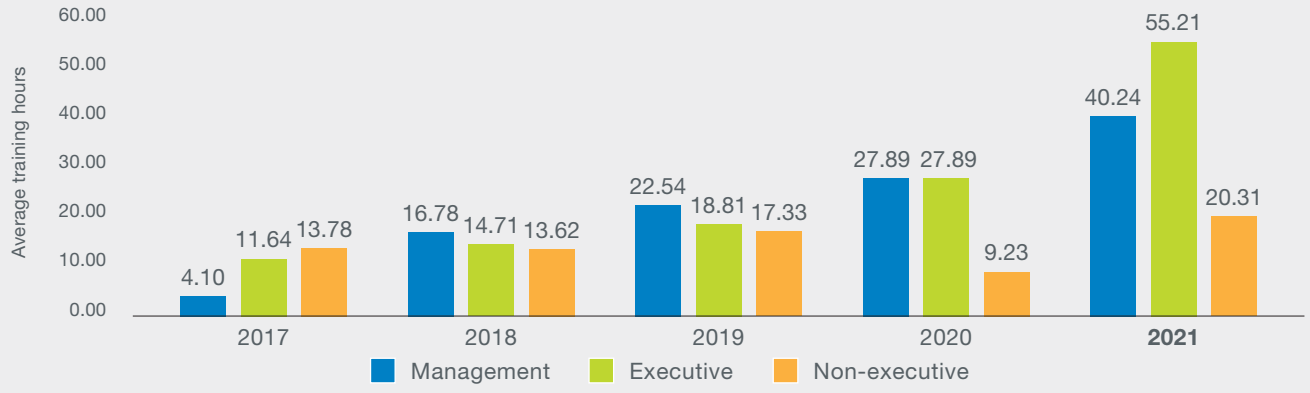
Year	2020		2021	
	Male	Female	Male	Female
Total Number of Employees by Category				
Management	42	12	**37**	**12**
Executive	907	561	**965**	**613**
Non-executive	3,237	627	**3,205**	**610**
Total Hours of Training by Category				
Management	1,019.80	486.00	**1,335.60**	**636.22**
Executive	24,021.30	16,923.86	**52,708.67**	**34,406.68**
Non-executive	30,697.05	4,955.05	**61,341.71**	**16,144.98**
Average Hours of Training by Category				
Management	24.28	40.50	**36.10**	**53.02**
Executive	26.48	30.17	**54.62**	**56.13**
Non-executive	9.48	7.90	**19.14**	**26.47**

Notes:

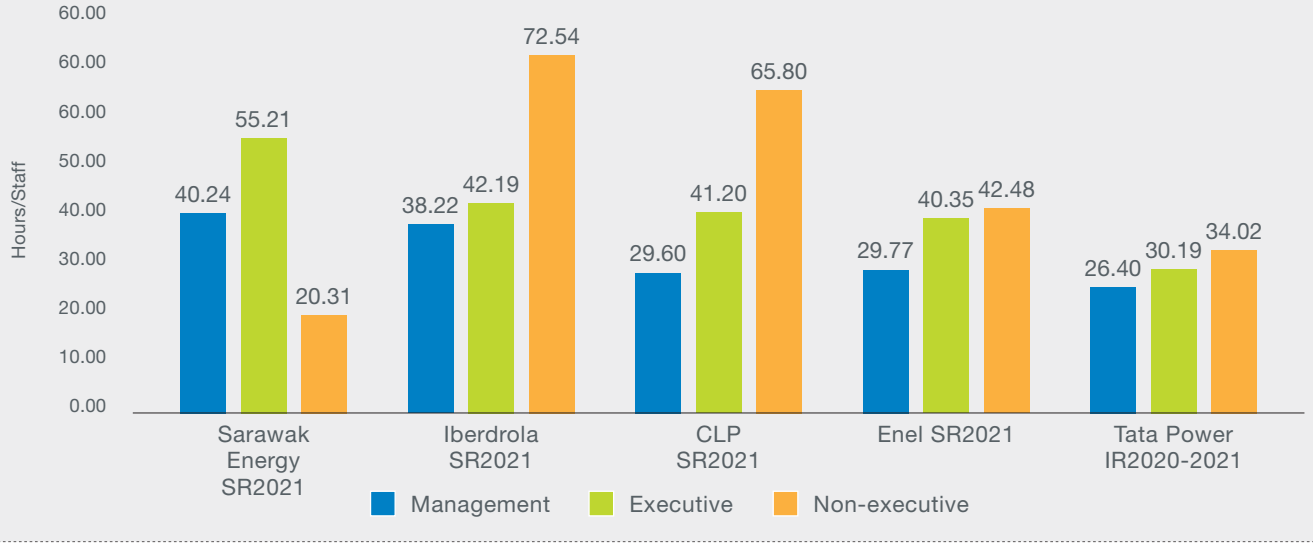
1. *Year 2020 data was revised to reflect additional learning hours recaptured during internal L&D learning data cleansing exercise in Year 2021.*
2. *Year 2021 data includes formal learning programmes, knowledge sharing and learning activities.*

CREATING VALUE FOR STAKEHOLDERS

Average Hours Overall Training Course by Category



International Comparison of Average Training Hours for Power Utility Companies



103-1, 103-2, 403-1, 403-4, 403-7, 403-10

CREATING VALUE FOR STAKEHOLDERS

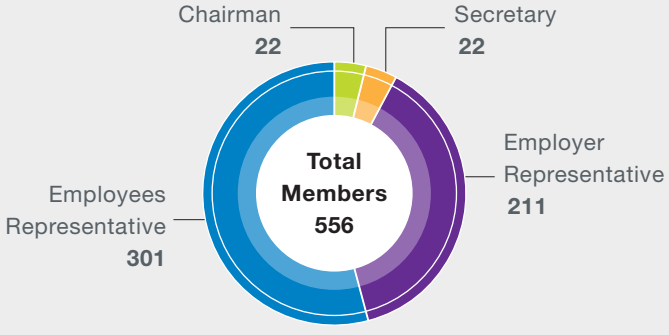
OCCUPATIONAL HEALTH & SAFETY

The health and safety of our people at Sarawak Energy remains our priority, as we continue to protect our people, contractors and other external stakeholders from harm. We strive to provide a safe and conducive working environment by ensuring protective measures and safe practices to prevent risks and reduce work-related accidents, injuries and illnesses.

Health & Safety Governance

- The Health, Safety, Security and Environment (HSSE) of Sarawak Energy is regulated by the Group Executive Committee (GEC) HSSE Council, directed by our GCEO
- The GEC HSSE Council holds the highest authority in decision-making on HSE matters
- The health and safety of each workplace is governed by an Environment, Occupational Safety & Health Committee (EOSH) in each division, which is overseen by a chairman, a secretary and includes employer and employee representatives
- The structure follows the Occupational Safety and Health (Safety and Health Committee) Regulations 1996, Part II, regulation 5
- All our 10 regional offices and nine power stations including Kuching Central Store Centre, Sarawak Energy Resources, the Project Delivery Department, and the new business unit SE(RES), the Sarawak Energy (Rural Electrification Scheme) Project – have an EOSH Committee to supervise and manage daily HSE matters across our operations

The number of members in our Environment, Occupational Safety & Health Committees remained at 556 as in the previous year:



The functions and roles of Committee members are according to the Occupational Safety and Health (Safety & Health Committee) Regulations 1996, Part III (Functions of Safety and Health Committee) under regulation 11, which specifies that the safety and health committee shall:

(a) Provide support in the development of safety and health rules and procedures at work
(b) Review the effectiveness of safety and health programmes
(c) Conduct studies on the tendencies of any accident, dangerous occurrence, occupational poisoning or occupational disease which occurs at the place of work. The findings should be immediately reported to the employer to address any unsafe or unhealthy conditions or practices at workplace, with recommendations for remedial action
(d) Review the safety and health policies at the place of work regularly and make recommendations to the employer on the revision of any policies

Other functions include:

- Inspection of place of work (regulation 12)
- Investigation into any accident (regulation 13)

The EOSH Committees meet as and when necessary but not less than once every three months.

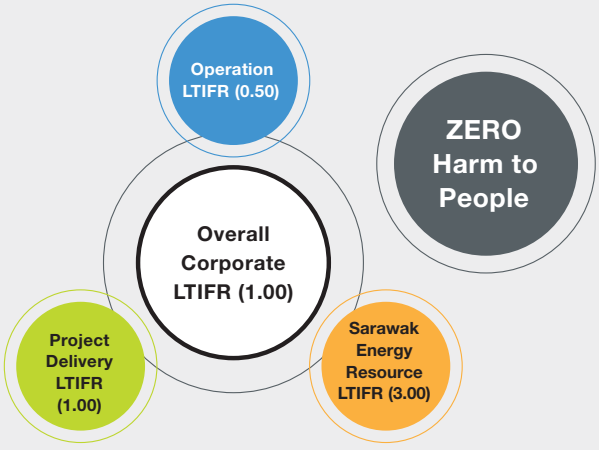
The management level comprises the Corporate Environment & Occupational Safety and Health (CEOSH) Committee, who meets twice a year. The Committee:

- Is chaired by the GCEO and co-chaired by the HSSE Vice-President
- Consists of key personnel representing the various business units to discuss HSSE issues relating to the Company and employees
- Discusses yearly HSSE programmes and KPIs with all EOSH Committee chairmen and secretaries to achieve HSSE Excellent target

CREATING VALUE FOR STAKEHOLDERS

Our Commitment Towards Zero Injuries & Fatalities

Corporate KPI Safety Performance 2021 (Fatality & LTIFR - Lost Time Injury Frequency Rate)



Lost Time Injury Frequency Rate (LTIFR) is the number of lost time injuries per million hours worked and is the standard safety measure for most industries. Our LTIFR is measured in three categories, which represent the overall cooperate LTIFR result for the Group:

- Operation – includes the Company's overall operations from Corporate Functions (HR, HSSE, Finance, etc.) to core business operations and projects from Generation (thermal & hydropower), Distribution, Transmission, Retail and SE(RES)
- Sarawak Energy Resources – covers coal mining operations
- Project Delivery – refers to any ongoing project

- In 2021, we continued to make advances on our LTIFR due to our commitment to upholding occupational safety and health
- We achieved an overall corporate LTIFR result of 0.279* (excluding fatalities), which surpasses our set target of 1.0
- Total man-hours increased to 28,642,709* hours in 2021 from 27,640,459 hours[1] in 2020 due to more workers have been vaccinated and more work activities can be done
- The most significant decline was in Project Delivery with man-hours dropping from 7,595,258 hours[1] in 2020 to 6,950,773* hours in 2021

We continue to maintain our target of Goal Zero in 2021 and beyond. However, we regret to report that there was one fatality involving our sub-contractor's worker in the year under review. Moving forward, we will continue to enforce compliance with the highest levels of safety standards to prevent further loss of life.

Notes:

[1] This total man-hours data has been assured by a third party for Sustainability Report 2020.

** These lost time injury frequency rate and total man-hours data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

Corporate KPI Safety Result 2021 (Fatality & LTIFR - Lost Time Injury Frequency Rate)

Category	Operation	SER	Project Delivery Department	Corporate
Total man hours (Employees only)	11,692,435*	89,708*	752,110*	12,534,254*
Total man hours (Contractors only)	8,339,759*	1,570,033*	6,198,663*	16,108,455*
Total man hours (Employees & Contractors)	20,032,195*	1,659,741*	6,950,773*	28,642,709*
Total LTI (without fatality)	7*	0*	1*	8*
LTIFR (without fatality)	0.349*	0.000*	0.144*	0.279*
No. of Fatalities	1	0	0	1

Note:

** These lost time injury frequency rate, total lost time injury cases and total man-hours data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

103-2, 103-3, 403-4, 403-6, 403-9

CREATING VALUE FOR STAKEHOLDERS

Rate of fatalities as a result of work-related injury

Category	Employees only	Contractors only
Number of fatalities	0	1
Number of hours worked	12,534,254*	16,108,455*
Hours worked rate	1,000,000	1,000,000
Rate of fatalities	0.00	0.062

Rate of high-consequence work-related injuries (excluding fatalities)

Category	Employees only	Contractors only
Number of LTI (excluding fatalities)	7*	1*
Number of hours worked	12,534,254*	16,108,455*
Hours worked rate	1,000,000	1,000,000
Rate of high-consequence work-related injuries (excluding fatalities)	0.558	0.062

Note:

* *These total lost time injury cases and total man-hours data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

Ensuring Occupational Health & Safety

Health and safety awareness campaigns and activities are organised regularly to educate employees and contractors and to embed the Company's HSE values in the slogan 'Saving Lives, Raising Standards, and Nurturing Culture'.

Despite disruptions from the pandemic, we implemented several initiatives in 2021 to promote HSE awareness among our employees, contractors and the surrounding communities. We also achieved meaningful milestones and won awards for our efforts to uphold the health and safety of our stakeholders while conserving the environment.

Occupational Health & Safety Activities in 2021

Virtual Sarawak Energy HSSE Excellence Week 2021 - Opening & Closing Ceremony

- On 25 October 2021, the GCEO Datuk Haji Sharbini Suhaili officiated the opening ceremony of our HSSE Excellence Week 2021 themed 'Saving Lives, Raising Standards, Nurturing Culture'
- The event also included educational talks and exciting activities such as HSSE quizzes and games
- This was followed by an HSSE transformation journey video in which Datu Haji Sharbini; Marconi Madai, SVP for HSSE; Ir. Robin Tigai, GM for HSE and Shirin Jai Abdul Rashid, GM for Corporate Security highlighted milestones in our HSSE journey
- Sarawak Energy HSSE Excellence Week 2021 concluded to encourage all staff to be HSSE ambassadors and commit themselves to zero harm, zero intrusion and healthy living targets
- The programme ended with a series of videos by in-house HSSE talents that advocated for HSSE excellence

KFA-HSSE Excellence Contractor Transformation (CTP) Award 2020

The CTP Award 2020 was held on 30 June 2021 to recognise contractors' contributions in cultivating HSSE excellence in our projects. The event involved the enrolment of 36 contractors (two from SER and eight from DPE) and is in line with the Department of Occupational Safety & Health Master Plan 2016-2020 to establish HSE self-regulatory culture among contractors.

HSSE Week 2021 – Power Plants & Regional Offices

- Celebrated annually in all Sarawak Energy power plants and regional offices to promote the importance of Health, Safety, Security & Environment at work, while raising awareness among staff and contractors on the theme 'Saving Lives, Raising Standards & Nurturing Culture'
- Activities included in the programme were: HSE talks, training for first aiders, firefighting training, blood donation, HSE quiz and an exhibition to highlight HSE procedures and practices

CREATING VALUE FOR STAKEHOLDERS

Learning from TNB's Tenaga Safety Culture Experience

- On 19 February 2021, the HSSE team partnered with TNB to organise a sharing session on TNB's Tenaga Safety Culture
- Discussions included the challenges of TNB and methodologies applied in implementing Tenaga Safety Culture, allowing participants to gain knowledge on more strategies to cultivate a generative HSE culture in Sarawak Energy

HSSE Management Walkabout to Rural Offices

- HSSE management had a walkabout session accompanied by regional managers to interact as well as gain feedback on HSE implementations
- Several issues such as HSE Culture, safety practices, safe work procedures, contractors' management and challenges with Rural Electrification (RE) in their project were brought up, and findings were reported to the HSSE management group to address areas that need improvements

Routine Audit & Inspection

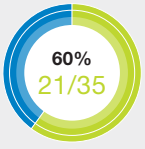
To ensure all levels of the Company's operations comply with the highest HSE standards, regular HSE audits and inspections are carried out at our Regions, Power Stations, Rural Stations and Mining sites. Apart from that, we also carried out:

- Contractor OSH audit and inspection
- Plant Shutdown Switching Request (PSSR) Inspection
- ISO 45001 Audit
- MSOSH Audit
- Best Station Award Audit

Keeping Our Communities Safe

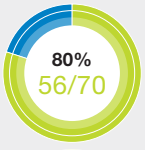
Year 2021 was a challenging year for us due to the COVID-19 pandemic, which greatly affected our safety awareness engagements with the public especially for those residing in the longhouses and to the government authorities.

However, we managed to achieve the set annual target and conducted briefings with the Government authorities, oil palm estates, public contractors and Pan Borneo Contractors.

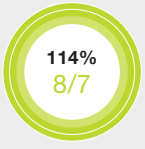


Longhouses/Villages
Total : 481 participants

Annual contractors + Sub Contractors
Total : 2,150 participants



Gov. Authorities/ Oil Palm Estates/ Pan Borneo & Public Contractors
Total : 822 participants



Local Lorry/ Excavator Association
Total : 303 participants

Electricity Safety Awareness Talk to Telekom Malaysia Staff & Contractors

- To educate TM staff and contractors on our OHL systems, installation, technical support, etc.
- Conducted 5 session: two in Kuching on 21 to 23 July 2021 and 1 session each for Sibu, Bintulu and Miri on 15, 21 & 26 July 2021

Safety Awareness Talk to Villagers/Longhouses

- To ensure electricity safety awareness embedded among villages and strict adherence to SOP and guidelines for COVID-19

Safety Briefing to our Annual Contractors & Sub-Contractors, Public Contractors, Palm Oil Estates, Pan Borneo Contractors

- To ensure annual and public contractors comply with our HSE requirements and to prevent any injuries, risks and fatalities

Engagement Programme with Government Agencies

- A collaboration with DOSH and BOMBA offices for our equipment's Certificate of Fitness (CF) and premise for Fire Certificate renewal application to ensure we are complying to legal requirements
- A meeting was conducted with related government agencies to discuss and seek advice on operational issues
- A few government agencies such as DOSH conducted compliance visits to our premises where we briefed them on our operational practices on health and safety

Electrical Safety Awareness for Lorry Associations

- The Ministry of Transport Sarawak and Sarawak Energy organised an Electrical Safety Awareness for Lorry Associations on 26 November 2021
- This engagement was to ensure that all lorry drivers are aware of safety precautions when working near overhead lines

103-2, 103-3, 403-2, 403-4, 403-5, 403-6

CREATING VALUE FOR STAKEHOLDERS

Project Delivery

In Project Delivery, we prioritise clear HSSE ownership and accountability for all stakeholders involved in projects to instil a generative HSSE culture.

In 2021, with PD projects at various phases, the PD HSSE strengthened its risk management by:

- Identifying all risks and hazards, assessing them thoroughly, developing comprehensive, preventive and mitigative measures and implementing them effectively to reduce the risks to all levels
- Ensuring adequate resources were made available, including competent personnel, equipment, machinery and materials to ensure the safe and smooth execution of projects
- Continuing to build HSE capability internally to support the project
- Continuing to learn from the findings of inspection, audit and incident, as well as shared lessons learnt for continuous improvement

To further enhance HSSE compliance and sustainability in Project Delivery, a series of programmes and campaigns were conducted throughout 2021, including HSSE training, HSSE Campaign, HSSE milestone celebration, and participation in HSSE Award.

Awareness Training on Safe Use of safety body harness at Limbang Town 275/33/11kV substation project.

SER HSE Activities in 2021

Development Guidelines on Occupational Safety & Health in Coal Mining Malaysia

- Sarawak Energy Resources (SER), subsidiaries and contractors participated in the development of Guidelines on Occupational Safety and Health in Coal Mining Malaysia throughout the year
- The OSH Guidelines were provided by the Department of Occupational Safety and Health (DOSH) Sarawak, with the first meeting held on 31 March 2021, where programme committee members were appointed, which included technical and non-technical representatives from the coal mining industry in Sarawak

Awards

- Sarawak Energy was awarded for maintaining its efforts in health and safety during the 39th Occupational Safety & Health Virtual Awards organised by the Malaysian Society for Occupational Safety & Health (MSOSH) on 25 November 2021
- We received a total of 12 awards, demonstrating our commitment towards implementing high standards in health and safety, on par with other developed and large corporations
- In 2022, we hope to see our team participate yet again to achieve this external recognition to achieve our targets for zero fatality and LTI

CREATING VALUE FOR STAKEHOLDERS

ISO 45001:2018: Occupational Health and Safety & ISO 14001:2015 – Environmental Management Systems for Balingian Energy Materials (BEM) & Global Energy Materials (GEM)

Sarawak Energy Resources certification programme for ISO 45001:2018 – Occupational Health & Safety and ISO 14001:2015 – Environmental Management Systems in Bailingian Energy Minerals (BEM) and Global Energy Minerals (GEM) was executed in four stages:

- Stage 1 – Planning (completed in 2020)
- Stage 2 – Readiness & Documentation (completed in 2020)
- Stage 3 – Implementation – Internal Audit Stage 1 & 2 and Management Review Meeting (started in early 2021)
- Stage 4 – Certification (in 2022)

In the year under review, stage one and two has been successfully completed for ISO certification 2021 and we will continue to see the completion of the rest of the stages

Development of Sarawak Energy Resources Golden Mining Rules (GMR)

In October 2021, Sarawak Energy Resources Golding Mining Rules (GMR) was released to emphasise safety rules for all employees, subsidiaries, affiliates, contractors and sub-contractors engaged by the Company

GMR works hand in hand together with Sarawak Energy Life Saving Rules (SELSR), focusing on coal mining operations. Some of the rules included are:

- To save lives, prevent injuries and fatalities in coal mining operations through a working culture of compliance towards GMR
- Driving a Generative HSE Culture among employees and contractors to ensure their own safety and the safety of those around them
- For all employees and contractors to embed the three Sarawak Energy HSE Culture's core behaviours: Assess, Comply & Empower (ACE) in their hearts and minds

1

Gold Merit Award

Department: Murum

7

Gold Class 1

Departments: Bakun, Batang Ai, MPG, BPG, Miri, Limbang, Sri Aman

2

Gold Class 2

Departments: Sibu & Miri

2

Silver Awards

Departments: Bintulu & Kuching

103-1, 103-2, 103-3, 203-1, EU26

LIGHTING UP SARAWAK

We strive to ensure that the whole state is electrified and continue to make good progress in increasing rural electrification coverage.

As at end-2021, we provided electricity to 98.6%* of Sarawak with rural electrification coverage increasing from 95.3%[1] in 2020 to 96.5%*.

Year	2017	2018	2019	2020	2021
Sarawak Electricity Coverage (%)	95.5	96.0	97.0[1]	98.01[1]	**98.6***
Urban (%)	100	100	100	100	**100**
Rural (%)	89.8	91.0	93.0[1]	95.3[1]	**96.5***

Notes:

[1] *These Sarawak electrification coverage and rural electrification coverage data have been assured by a third party for Sustainability Report 2020.*

* *These Sarawak electrification coverage and rural electrification coverage data have been assured by a third party. Read the Independent Assurance Report on pages 178-182.*

In the year under review, we continued to advance the rural electrification agenda under the State Government's RM2.37 billion Projek Rakyat initiative and our own Rural Electrification Scheme (RES), Hybrid programme and Sarawak Alternative Rural Electrification Scheme (SARES). Following the 6,610 rural households electrified in 2020, Sarawak Energy was able to bring 6,037 more rural households in 2021 into the fold. Of the 6,037 households, 4,010 were connected to the grid while the remainder were connected through off-grid solutions.

Rh Kana, Ulu Tekalit, Song District in Kapit Division.

Sarawak Energy also expanded its solar hybrid system with total capacity of 8,650kW in 2021 compared to 8,618kW in 2020 following the completion of the Nanga Bebangan and Nanga Meluan hybrid stations in 2021.

LIGHTING UP SARAWAK

Grid/ Non-Grid	Year	2017	2018	2019	2020	2021
Grid	Rural Electrification Scheme (RES)	5,409	3,990	5,239	3,186	**4,010**
Non-Grid	Hybrid	966	270	483	70	**115**
	SARES	1,124	1,448	3,122	3,354	**1,912**
	TOTAL	**7,499**	**5,748**	**8,844**	**6,610**	**6,037**

SARES Solar Project

Solar panel cleaning and basic maintenance training for the local communities.

Year	2016 - 2017 Phase 1	2017 - 2018 Phase 2	2018 - 2019 Phase 3	2019 - 2020 Phase 4	2020 - 2021 Phase 5
Installed Capacity (kW)	1,434.87	1,619.69	1,990.65	3,128.82	4,022.00
Villages	58	59	75	85	131
Door	1,369	1,601	1,968	3,027	4,065

103-1, 103-2, 103-3, 203-1, 203-2, 413-1

DEVELOPING A SUSTAINABLE COMMUNITY

Building a thriving community is part of our sustainability journey as we seek to make Sarawak prosper and leave no one behind. In 2021, we contributed RM7.5 million in corporate social responsibility through programmes and strategic partnerships that were aimed at enriching and empowering the vulnerable.

Our community programmes are anchored on four pillars:

Education and Young People

Environmental Management and Conservation

Culture and Heritage

Community Development and Entrepreneurship

Education and Young People

SUPPORT FOR THE STUDENTS OF SARAWAK

Sarawak Energy remains committed to supporting students all across Sarawak whether through the provision of financial aid or other types of assistance. We are also focused on assisting project-affected communities, where our hydroelectric power plants are located to ensure the continued growth and development of the communities.

Since 2015, Sarawak Energy has set up four collaborative partnerships with Bakun Charitable Trust for the following Education Funds:

i. Education Fund for the Penan Communities in Belaga District including Murum Resettlement
ii. Education Fund for Batang Ai Communities
iii. Education Fund for Bakun Resettlement Scheme
iv. Education Fund for Baleh

This Fund is dedicated to supporting the educational needs of project-affected communities to pursue tertiary education to improve their social and economic status through better employability. Additionally, it provides educational incentives to encourage academic excellence for primary and secondary students from the area and financial aid for further studies at higher learning institutions. The fund is also utilised for educational development programmes and the improvement of learning facilities. Sarawak Energy committed a total of RM800,000 to an annual revolving fund for all four education funds.

In the year under review, we organised the programmes below:

Initiative	Beneficiary School(s) & Programmes' Objective(s)
Sarawak Energy supported an educational programme for secondary schools in Selangau and Mukah together with the Selangau & Mukah District Education Office. The programme was conducted virtually from Oct 16 to 30 2021	• 678 students from SMK Ulu Balingian, SMK Mukah, SMK Three Rivers and SMK St. Patrick • Provided guidance and examination preparatory techniques for students sitting for their SPM examination in 2022

DEVELOPING A SUSTAINABLE COMMUNITY

Initiative	Beneficiary School(s) & Programmes' Objective(s)
School aid support, transportation and other support	• More than 400 primary school students from SK Tegulang and SK Metalun, Murum • School aid support in the form of school uniforms, bags, stationery, exercise books and shoes. Sarawak Energy also provided transport to the longhouses at Tegulang and Metalun for teachers for them to hand out homework and teaching materials to students during the pandemic
SMK Bakun Adopt-A-School Programme	• SMK Bakun • Initiated in 2016 to enhance the academic and extracurricular performance of students at the Bakun Resettlement Scheme. In addition, Sarawak Energy provided financial support to improve school facilities and hostels
School Beautification Programme for SK Lusong Laku, Murum	• Benefitted 25 Penan preschool children at SK Lusong Laku, Murum, teachers and parents from the upstream Murum community • Refurbished the preschool classroom by painting, cleaning, and clearing works in the school compound. New study tables and chairs were contributed to the school to provide a conducive and safe learning environment for the school children

STRATEGIC PARTNERSHIPS

In addition to our own efforts, we forge strategic partnerships with organisations who are like-minded and committed to seeing the children of Sarawak succeed in education.

No Child Left Behind initiative in collaboration with Engineers Without Borders Sarawak (EWBS)

The No Child Left Behind initiative provided children in five orphanage homes in Sarawak with 30 affordable and reliable computers for online learning. The orphanage homes that benefited were Laman Kaseh, Rumah Kanak-Kanak Toh Puan Hajah Norkiah, Majlis Kebajikan Kanak-Kanak Sarawak, PERYATIM and The Salvation Army Children's Home.

Collaboration with AIESEC in Curtin University on Project Speak Up Borneo 9.0

Note:
AIESEC - Association internationale des étudiants en sciences économiques et commerciales
(English: International Association of Students in Economics and Business

Sarawak Energy collaborated with AIESEC in Curtin University for Project Speak Up Borneo 9.0 which aims to empower students by developing their English proficiency and enhancing personal development. The programme was conducted for 52 students from 4 schools.

103-2, 103-3, 203-1, 203-2, 413-1

DEVELOPING A SUSTAINABLE COMMUNITY

Environmental Management and Conservation

RIVER CLEAN-UP ACTIVITY

Around 50 volunteers comprising Sarawak Rivers Board (SRB) officers, Sarawak Energy and Bakun's lakeside community of Uma Balui Long Kebuho Naha Jaley participated in a gotong-royong exercise to clear floating debris at Long Kebuho, about 80km upstream from Bakun Hydroelectric Plant (HEP). The clearing of floating debris would make it easier for villagers who live and commute via boats upstream on the lake and through upriver tributaries.

FISH CONSERVATION PROJECT

Sarawak Energy continued to support the Fish Conservation Project at Sungai Murum. The project was launched in 2020 and aims to conserve and replenish native fish populations such as Empurau, Semah, Tengadak and Baung. It also monitors downstream water quality using the fish as a bio-indicator and provides biological assessment of fish growth and survival along Sungai Murum. In 2021, Sarawak Energy implemented the second phase of the project which includes:

- Enhancing the security of the conservation area by installing an entrance gate, signages and lighting along the access road to the riverbank and at the floating cage
- Improvement of netting structure, fish food, transportation, and maintenance of the conservation project

Culture and Heritage

HANDICRAFT TRAINING

A total of 15 artisans from the Bakun and Murum Resettlement were given training on sewing techniques for rattan handicraft products in December 2021 to widen their skillsets to enable them to produce value-added indigenous handicraft products and also improve their sources of income. Sarawak Energy organised the programme with the training conducted by a professional trainer from the Malaysian Handicraft Development Corporation (MHDC).

Artisans from Bakun and Murum resettled community at the handicraft skills development training.

ANNUAL MURUM BATU TUNGUN BLESSING CEREMONY

The Murum Batu Tungun Blessing Ceremony took place on November 30, 2021 according to Bungan rites. This continues an annual tradition that Sarawak Energy has organised together with the Murum Penan Development Committee since 2008. Community leaders from seven longhouses from Murum Resettlement Scheme and the host community attended the ceremony.

CONSERVING CULTURAL HERITAGE

Sarawak Energy consistently upholds local culture and heritage, going the extra mile to ensure that elements of Sarawak's unique cultural identify are preserved and conserved for future generations.

DEVELOPING A SUSTAINABLE COMMUNITY

Indigenous Iban artisans, specialising in pua kumbu, from Rumah Gare in Nanga Kain, Baleh.

PUA KUMBU VIDEO DOCUMENTARY

In the year under review, we produced a video documentary together with the artisans of Rh Garie in Kapit to highlight the 'pua kumbu' sacred cloth weaving rituals. The long-form documentary showcased the techniques, traditions and indigenous beliefs practiced by the community of weavers.

Sarawak Energy plans to incorporate the documentary as a foundation for 'pua kumbu' training as part of its Baleh Handicraft Development Project, where artisans from 54 Baleh Hydroelectric Project affected communities will be engaged to participate in this project. The training aims to transfer the knowledge and skills of traditional 'pua kumbu' weaving to the younger generation.

Rh Garie, located on the right bank of Sungai Kain, a tributary of the Baleh River in Kapit, is home to Borneo's most celebrated dream weavers. Bangie Embol of Rh Garie, a UNESCO-recognised master weaver, is the central narrator of the documentary.

CULTURAL HERITAGE CONSERVATION AT FORT SYLVIA IN KAPIT

In collaboration with The Tun Jugah Foundation, Sarawak Energy organised community workshops on textile weaving, traditional beadwork and documentation of Iban oral traditions by cultural experts and practitioners within the Iban community in Kapit. Apart from encouraging knowledge transfer by the older generation and assisting capacity building within the community, these initiatives address the threat of extinction that many indigenous cultures face today, as stated by the United Nations Department of Economic and Social Affairs of Indigenous Peoples.

103-2, 103-3, 203-2, 413-1

DEVELOPING A SUSTAINABLE COMMUNITY

Community Development and Entrepreneurship

Initiative	Outcome
Contribution of RT-PCR Machine to the Kapit Community to enhance COVID-19 testing capacity	• The contribution enhanced the capacity of daily PCR swab testing from 200 to more than 400 samples and part of Sarawak Energy's CSR contribution to increase the early detection of positive cases capacity, which will help flatten the COVID-19 curve in the Kapit division
Psychological Screening and Intervention Programme for employees of Sarawak General Hospital	• The programme established proactive measures to evaluate mental well-being of medical staff during the pandemic. Proper intervention measures, counselling and support will be given to those who require help and ensures the healthcare community stays mentally healthy and fit to continue their much-needed service at the front lines
Fire Safety Awareness & Prevention Programme for Murum & Bakun Community	• Residents of the Tegulang, Metalun and Bakun longhouses attended the programme where Sarawak Energy also contributed almost 400 units of new fire extinguishers to the residents

ANNUAL MURUM BATU TUNGUN BLESSING CEREMONY

The Murum Batu Tungun Blessing Ceremony took place on November 30, 2021 according to Bungan rites. This continues an annual tradition that Sarawak Energy has organised together with the Murum Penan Development Committee since 2008. Community leaders from seven longhouses from Murum Resettlement Scheme and the host community attended the ceremony.

CONSERVING CULTURAL HERITAGE

Sarawak Energy consistently upholds local culture and heritage, going the extra mile to ensure that elements of Sarawak's unique cultural identify are preserved and conserved for future generations.

CREATING EMPLOYMENT OPPORTUNITIES

In demonstrating our commitment to uplifting project-affected communities, we are pleased to report that ten youths from the Baleh project-affected community (PAC) who completed Sarawak Energy's Baleh Skills Training Programme are now part of China Gezhouba Group Company's (CGGC) workforce. The ten completed their one-year Welding Technology Course (3G Plus and 6G Advance) at the Centre of Technical Excellence Sarawak in June 2020. In addition, out of the cohort of youths from Baleh studying at the Fajar International College in Miri, three graduates were employed by CGGC as Safety Officers and Document Controllers. Four more Baleh youth are still undergoing the 28-month diploma programme at Fajar and are expected to complete their studies in November 2022.

The Baleh Youth Skills Training Programme was established in 2016 to increase local participation in the workforce. To date, 704 youths from Baleh and Kapit have completed the Programme in various fields such as welding technology, occupational safety and health, entrepreneurship, human resource management, heavy vehicle drivers, painting, metal blasting, and ringing and slinging fields.

RELIEF ASSISTANCE

Throughout the year, Sarawak Energy was quick to respond to the needs of our communities who were affected by the pandemic, floods or fire. We provided help to the communities of:

Rh. Simon, Bui Panjai

Delivered aid to Rh. Simon anak Kiai which is one of our Batang Ai Host Community Longhouses

Uma Lesong Sg. Batu Keling, Ulu Balui

Delivery of food and essential supplies to 32 households affected by fire at Uma Lesong at Sg. Batu Keling, Ulu Balui.

Uma Seping Kajang, Long Koyang, Sg Belaga

Delivered food and essentially supplies to 13 households affected by fire

Nanga Antawau, Baleh

Delivered food and clean drinking water to 192 households, five schools and a clinic, all affected by floods

Contributed cash assistance to 257 employees affected by the floods that inundated Sarawak in January 2021

102-56

INDEPENDENT THIRD PARTY ASSURANCE STATEMENT

LRQA Independent Assurance Statement

Relating to Sarawak Energy Berhad's Mandatory Key Performance Indicators for Sustainability Reporting in 2021

This Assurance Statement has been prepared for Sarawak Energy Berhad (SEB) in accordance with our contract.

Terms of Engagement

LRQA was commissioned by Sarawak Energy Berhad (SEB) to provide independent assurance of its chosen key performance indicators from SEB Sustainability Report 2021 ("the Report") in accordance with our contract with them against the assurance criteria below to a limited level of assurance and materiality of the professional judgement of the verifier that considers 5% threshold using ISO 14064 - Part 3 for greenhouse gas emissions and LRQA's verification procedure for non GHG data. LRQA's verification procedure is based on current best practise and is in accordance with ISAE 3000 and ISAE 3410.

Our assurance engagement covered SEB's operations and activities in calendar year 2021 related to Power Generation in Sarawak region of Malaysia. SEB generates power in Main Grid through a mix of coal, gas and hydro and in Northern Grid using diesel. Our engagement specifically covered the following requirements:

- Verifying conformance with:
  - SEB's reporting methodologies for the selected datasets.
- Reviewing whether the Report has taken account of The Global Sustainability Standards Board (GSSB) Global Reporting Initiative (GRI) Standards and particularly Sections:
  - 101: Foundation (2016)
  - 305-4: GHG Emissions Intensity (2016)
  - 306-3: Waste Generated (2020)
  - 303-3a: Total Water Withdrawal (2018)
  - 301-1: Materials Used by Weight or Volume (2016)
  - 201-1: Direct Economic Value Generated and Distributed (2016)
  - 204-1a: Procurement Practices – Proportion of Spending on Local Suppliers (2016)
  - 403-9a. ii., v.; 403-9b. ii., v.: Occupational Health and Safety – Work-related Injuries (2018)
  - G4 Sector Disclosures – Electric Utilities EU26
  - 305-2a., c., e., g.: Energy Indirect (Scope 2) GHG Emissions (2016)
  - 305-3a., b., g.: Other Indirect (Scope 3) GHG Emissions (2016)
- Evaluating the accuracy and reliability of data and information for only the selected indicators and sub-indicators listed below:
  a. Main Grid Emission Intensity (tCO_2eq/MWh)
     - Fuel Consumption (Tonne, Litre, MMBtu)
     - Main Grid Net Energy Generated (MWh)
     - Net Calorific Value (kJ/kg, MJ/Litre, MJ/Nm^3)
  b. Northern Grid Emission Intensity (tCO_2eq/MWh)
     - Fuel Consumption (Litre)
     - Northern Grid Net Energy Generated (MWh)
     - Net Calorific Value (MJ/Litre)
  c. Scheduled Waste Generation Intensity (MT/GWh)
     - Volume of Waste Generated (MT)
     - Gross Electricity Generated (GWh)
  d. Total Water Withdrawal by Source from Main Grid Connected Power Plants (m^3)

INDEPENDENT THIRD PARTY ASSURANCE STATEMENT

- Municipal Water (m^3)
- Natural Water (m^3)
- Operating Hours

e. Annual Water Volume for Electricity Generation from Main Grid Connected Hydropower Plants (million m^3)
- Operating Hours for Annual Water Volume for Electricity Generation

f. Economic Value Retained (Million RM)

g. Total Value of Tenders Awarded to Local Sarawakian Companies (RM)
- Operations (RM)
- Capital Works (RM)

h. Lost Time Injury Frequency Rate (LTIFR) (Lost Time Injuries per Million Man Hours)
- Total Lost Time Injury Cases
- Total Man Hours

i. Sarawak Electrification Coverage (%)
- Rural Electrification Coverage (%)

j. Scope 2 Emissions from Buildings and Office (tCO_2eq)

k. Scope 3 Emissions from Business Air Travel (tCO_2)

Aside from the Scope 3 emissions mentioned above, our assurance engagement excluded the data and information of SEB's suppliers, contractors and any third-parties mentioned in the report. Our assurance engagement also excluded materiality assessment.

LRQA's responsibility is only to SEB. LRQA disclaims any liability or responsibility to others as explained in the end footnote. SEB's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Report and for maintaining effective internal controls over the systems from which the Report is derived. Ultimately, the Report has been approved by, and remains the responsibility of SEB.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that SEB has not, in all material respects:

- Met the requirements of the criteria listed above; and
- Disclosed accurate and reliable performance data and information as summarized in Table 1 below.

The opinion expressed is formed on the basis of a limited level of assurance[1] and at the materiality of the professional judgement of the verifier.

LRQA's Approach

LRQA's assurance engagements are carried out in accordance with our verification procedure. The following tasks were undertaken as part of the evidence gathering process for this assurance engagement:

- performing a risk assessment and developing a Verification Plan and Sampling Plan;
- reviewing 2021 data and records at an aggregated level;
- interviewing relevant employees of the organization responsible for managing data and records including those related to GHG emissions;

[1] The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

102-56

INDEPENDENT THIRD PARTY ASSURANCE STATEMENT

- assessing SEB's data management systems to confirm they are designed to prevent significant errors, omissions or misstatements in the Report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal quality control; and
- reviewing a small sample of original data for KPIs identified as highest risk during the risk assessment.

Observations

Further observations and findings, made during the assurance engagement, are:

- Ensure calibration records of the energy meters that record electricity dispatch and auxiliary consumption from the Main Grid and Northern Grid are maintained; and
- For LTIFR, initiate measure of actual work hours rather than current planned hours that does not account for public holidays and vacation/ sick time.

LRQA's Standards, Competence and Independence

LRQA implements and maintains a comprehensive management system that meets accreditation requirements for ISO 14065 Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition and ISO/IEC 17021 Conformity assessment – Requirements for bodies providing audit and certification of management systems that are at least as demanding as the requirements of the International Standard on Quality Control 1 and comply with the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

The verification is the only work undertaken by LRQA for SEB and as such does not compromise our independence or impartiality.

Signed

Dated: 08 July 2022

Ketan Deshmukh
Lead Verifier
On behalf of LRQA Limited
LRQA reference: KLR00000592/ 4744534

Derek Markolf
Technical Reviewer

INDEPENDENT THIRD PARTY ASSURANCE STATEMENT

Table 1. Summary of SEB Key Data for Calendar Year 2021:

Key Performance Indicators and Sub-Indicators	Value	Units
a. Main Grid Emission Intensity	0.198	tCO_2eq/MWh
• Fuel Consumption		
• Coal	2,940,286.82	Tonne
• Diesel	26,313,382.07	Litre
• Natural Gas	32,806,349.50	MMBtu
• Net Energy Generated	30,162,881.89	MWh
• Net Calorific Value		
• Coal	16,528.30	kJ/kg
• Diesel	35.95	MJ/ Litre
• Natural Gas	38.91	MJ/ Nm^3
b. Northern Grid Emission Intensity	0.600	tCO_2eq/MWh
• Fuel consumption - Diesel	39,435,748	Litre
• Net Energy Generated	167,770.63	MWh
• Net Calorific value of Diesel	35.10	MJ/Litre
a. Scheduled Waste Generation Intensity	13.54	Tonne/GWh
• Volume of Waste Generated	397,133.10	Tonne
• Gross Electricity Generated	29,333.67	GWh
b. Total Water Withdrawal by Source from Main Grid Connected Power Plants		
• Municipal Water (3rd Party Water)	2,405,834	m^3
• Seawater	1,016,326,648	m^3
• Surface Water (River Water)	4,186,688	m^3
• Operating Hours	55,700	Hours (for all units)
c. Annual Water Volume for Electricity Generation from Main Grid Connected Hydropower Plants	53,075.13	million m^3
• Operating Hours	127,396.35	Hours (for all units)
d. Economic Value Retained	2,440.90	Million RM
e. Total Value of Tenders Awarded to Local Sarawakian Companies	1,397,036,132.81	RM
• Operations	1,061,052,945.37	RM
• Capital Works	335,983,187.44	RM
f. Loss Time Injury Frequency Rate (LTIFR) (excluding fatalities)	0.279	LTIs/million man hrs
• Employees Only	0.558	LTIs/million man hrs

102-56

INDEPENDENT THIRD PARTY ASSURANCE STATEMENT

• Contractors Only	0.062	LTIs/million man hrs
• Total Loss Time Injury Cases (excluding fatalities)	8	Number of injuries
• Employees Only	7	Number of injuries
• Contractors Only	1	Number of injuries
• Total Man Hours	28,642,709	Man hours
• Employees Only	12,534,254	Man hours
• Contractors Only	16,108,455	Man hours
g. Sarawak Electrification Coverage (%)	98.62	%
• Rural Electrification Coverage (%)	96.54	%
h. Scope 2 – Buildings & Offices	11,991.48	tCO_2eq
i. Scope 3 – Business Air Travel	252.42	tCO_2

102-56

INDEPENDENT THIRD PARTY ASSURANCE STATEMENT

• Contractors Only	0.062	LTIs/million man hrs
• Total Loss Time Injury Cases (excluding fatalities)	8	Number of injuries
• Employees Only	7	Number of injuries
• Contractors Only	1	Number of injuries
• Total Man Hours	28,642,709	Man hours
• Employees Only	12,534,254	Man hours
• Contractors Only	16,108,455	Man hours
g. Sarawak Electrification Coverage (%)	98.62	%
• Rural Electrification Coverage (%)	96.54	%
h. Scope 2 – Buildings & Offices	11,991.48	tCO_2eq
i. Scope 3 – Business Air Travel	252.42	tCO_2

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td colspan="6">GRI 101: Foundation 2016</td></tr>
<tr><td colspan="6">General Disclosures</td></tr>
<tr><td colspan="6">GRI 102: General Disclosures 2016</td></tr>
<tr><td colspan="6">Organisational Profile</td></tr>
<tr><td>102-1</td><td>Name of the organisation</td><td>Sarawak Energy Berhad (Sarawak Energy or the Company)</td><td></td><td></td><td></td></tr>
<tr><td>102-2</td><td>Activities, brands, products, and services</td><td>About Sarawak Energy, p. 3 – 6;
Chairman's Statement, p. 18 – 21;
Group Chief Executive Officer's Statement, p. 24 – 29;
Our Corporate Structure, p. 38;
Global Trends Towards Net Zero, p. 102</td><td></td><td></td><td></td></tr>
<tr><td>102-3</td><td>Location of headquarters</td><td>Menara Sarawak Energy, No. 1, The Isthmus, 93050 Kuching, Sarawak.</td><td></td><td></td><td></td></tr>
<tr><td>102-4</td><td>Location of operations</td><td>Sarawak, Malaysia</td><td></td><td></td><td></td></tr>
<tr><td>102-5</td><td>Ownership and legal form</td><td>The principal activity of the Company is that of an investment holding company and information on the Company's structure can be found on p. 38</td><td></td><td></td><td></td></tr>
<tr><td>102-6</td><td>Markets served</td><td>In general, the Company serves two types of customers:
a) Organic – domestic, commercial, industrial and public lighting;
b) Bulk – SCORE customers and interconnection

About Sarawak Energy, p. 3 - 5;
Renewable Energy for Sarawak & Beyond, p. 8;
Energy for Sarawak, p. 10;
Chairman's Statement, p. 18;
Group Chief Executive Officer's Statement, p. 24</td><td></td><td></td><td></td></tr>
<tr><td>102-7</td><td>Scale of the organisation</td><td>About Sarawak Energy, p. 3 - 5;
Group Chief Executive Officer's Statement, p. 24;
Our Corporate Structure, p. 38</td><td></td><td></td><td></td></tr>
<tr><td>102-8</td><td>Information on employees and other workers</td><td><table><tr><th>Year</th><th colspan="2">2020</th><th colspan="2">2021</th></tr><tr><th>Gender</th><th>Male</th><th>Female</th><th>Male</th><th>Female</th></tr><tr><td>Permanent</td><td>3,961</td><td>1,156</td><td>3,958</td><td>1,182</td></tr><tr><td>Contract</td><td>220</td><td>44</td><td>249</td><td>53</td></tr></table>
About Sarawak Energy, p. 3;
Group Chief Executive Officer's Statement, p. 24;
Our People, p. 66;
Internalising the Global Sustainability Agenda, p. 98;
Creating Long-Term Value, p. 100;
Creating Value for Stakeholders, p. 160 - 161</td><td></td><td>No 8 - Promote inclusive and sustainable economic growth, employment and decent work for all</td><td></td></tr>
<tr><td>102-9</td><td>Supply chain</td><td>About Sarawak Energy, p. 3;
Renewable Energy for Sarawak & Beyond, p. 8;
Energy for Sarawak, p. 10</td><td></td><td></td><td></td></tr>
</table>

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
102-10	Significant changes to the organisation and its supply chain	About Sarawak Energy, p. 4 - 6; Chairman's Statement, p. 22; Group Chief Executive Officer's Statement, p. 24; Our Corporate Structure, p. 38			
102-11	Precautionary Principle or approach	Energy for Sarawak, p. 11; Chairman's Statement, p. 18 - 22; Group Chief Executive Officer's Statement, p. 27 - 29			
102-12	External initiatives	The following is a list of externally developed economic, environmental and social charters, principles or other initiatives to which the Company subscribes to or endorses: • Hydropower Sustainability Assessment Protocol (HSAP) • United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) • Global Reporting Initiative (GRI) • Equator Principles • International Finance Corporation (IFC) • UN Global Compact (UNGC) • World Commission on Dams • ISO14001 • OSHA About This Report, p. 2 – 3; About Sarawak Energy, p. 5; Renewable Energy for Sarawak & Beyond, p. 8 - 9; Energy for Sarawak, p. 11; Chairman's Statement, p. 19 & 21; Delivering Sustainable Growth, p. 78 – 79; Global Trends Towards Net Zero, p. 102 – 103; Sarawak Energy's Sustainability Strategy & Roadmap, p. 105; Climate Action Stewardship Through Sustainable Solutions, p. 115 – 116; Preserving the Environment, p. 154 & 157; Developing a Sustainable Community, p. 175			
102-13	Membership of associations	As part of the Company's commitment towards sustainability, Sarawak Energy signed a "Sustainability Partnership" with the International Hydropower Association (IHA) in early 2011, which requires the company to use the Hydropower Sustainability Assessment Protocol as a tool to assess its performance against criteria concerning the project management of social, economic and environmental issues, as well as putting into place adequate and appropriate mitigation measures. Sarawak Energy is a GRI Community Member and also on the Board of Advisory for the The Global Compact Network Malaysia & Brunei Trust. About This Report, p. 3			

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Strategy					
102-14	Statement from the most senior decision-maker	Chairman's Statement, p. 18 - 23			
102-15	Key impacts, risks, and opportunities	Energy for Sarawak, p. 11; Chairman's Statement, p. 19 - 20; Group Chief Executive Officer's Statement, p. 25 – 26 & 29; Management Discussion & Analysis, p. 31; Chief Financial Officer's Statement, p. 34; Statement on Risk Management and Internal Control, p. 55 – 56 & p. 58 - 59; Our Strategic Roadmap, p. 60 - 61; Delivering Sustainable Growth, p. 80; Global Trends Towards Net Zero, p. 102 – 105; Climate Action Stewardship Through Sustainable Solutions, p. 109 – 110 & p. 115 - 116; Our Response to Climate Change, p. 121 & p. 123 – 129			
Ethics And Integrity					
102-16	Values, principles, standards, and norms of behavior	About Sarawak Energy, p. 7; Chairman's Statement, p. 18; Statement of Corporate Governance, p. 48 & 54; Our People, p. 66 & p. 72 – 73; Delivering Sustainable Growth, p. 78 – 79		No 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
Governance					
102-18	Governance structure	Group Organisation Structure, p. 39; Our Response to Climate Change, p. 122			
Stakeholder Engagement					
102-40	List of stakeholder groups	About This Report, p. 2			
102-41	Collective bargaining agreements	Terms as agreed in Collective Agreement are extended to all nonexecutive staff under Sarawak Energy Group (except for Bakun HEP – parented staff).		No 8 - Promote inclusive and sustainable economic growth, employment and decent work for all	
102-42	Identifying and selecting stakeholders	About This Report, p. 2; Materiality Issues, p. 95			
102-43	Approach to stakeholder engagement	2021 Year in Review, p. 15; Report Card 2021, p. 63 – 64; Our People, p. 72 – 73; Delivering Sustainable Growth, p. 78; Materiality Issues, p. 95			
102-44	Key topics and concerns raised	Materiality Issues, p. 95			

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Reporting Practice					
102-45	Entities included in the consolidated financial statements	Our Corporate Structure, p. 38			
102-46	Defining report content and topic Boundaries	About This Report, p. 2			
102-47	List of material topics	Materiality Issues, p. 95			
102-48	Restatements of information	No restatements have been made.			
102-49	Changes in reporting	Materiality Issues, p. 95			
102-50	Reporting period	From 1 January 2021 until 31 December 2021. About This Report, p. 2			
102-51	Date of most recent report	The Company's 2020 Sustainability Report published on 8 March 2022.			
102-52	Reporting cycle	The Company plans to publish its Sustainability Report on an annual basis.			
102-53	Contact point for questions regarding the report	General questions regarding this report can be addressed to Corporate Communication Department and Sustainability Division at: Menara Sarawak Energy, Level 8, No. 1, The Isthmus, 93050 Kuching, Sarawak. Tel: 082-388 388 (ext. 8164/ 8165) About This Report, p. 2			
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option About This Report, p. 2			
102-55	GRI content index	See p. 183 - 232			
102-56	External assurance	Disclosures within this year's edition of the Sarawak Energy Sustainability Report that are subjected to external assurance are: (p. 178 – 182) • Main Grid CO_2 Emission Intensity • Northern Grid CO_2 Emission Intensity • Scheduled Waste Generation Intensity • Annual Water Volume for Electricity Generation • Total Water Withdrawal by Source • Economic Value Retained • Total Value of Tenders Awarded to Local Sarawakian Companies • Loss Time Injury Frequency Rate (LTIFR) • Sarawak Electrification Coverage • Scope 2 - Buildings & offices • Scope 3 - Business air travel	Yes		

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Material Topics					
Economic Performance					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Embracing Low Carbon Economy, p. 131			
103-2	The management approach and its components	Embracing Low Carbon Economy, p. 131			
103-3	Evaluation of the management approach	Embracing Low Carbon Economy, p. 131			
GRI 201: Economic Performance 2016					
201-1	Direct economic value generated and distributed	Embracing Low Carbon Economy, p. 130 – 131	Yes	No 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
Indirect Economic Impacts					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Renewable Energy for Sarawak & Beyond, p. 8; Powering Our Community, p. 86 - 87			
103-2	The management approach and its components	Energy for Sarawak, p. 13 - 14; 2021 Year in Review, p. 15 - 17; Chairman's Statement, p. 18 - 22; Group Chief Executive Officer's Statement, p. 26; Management Discussion & Analysis, p. 30 – 31; Delivering Sustainable Growth, p. 78 – 79 & p. 81 - 83; Powering Our Community, p. 86 - 87 & 90; Global Trends Towards Net Zero, p. 102 – 103; Climate Action Stewardship Through Sustainable Solutions, p. 110 – 112 & p. 114 – 115; Embracing Low Carbon Economy, p. 140 - 141; Creating Value for Stakeholders, p. 160, 170, p. 172 – 174 & p. 176 - 177			
103-3	Evaluation of the management approach	Creating Value for Stakeholders, p. 160, 170 – 174 & 176			

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td colspan="6">GRI 203: Indirect Economic Impacts 2016</td></tr>
<tr><td>203-1</td><td>Infrastructure investments and services supported</td><td>Average Tariff (cent/kWh) (Year 2017 – 2021) by Customer Type
<table><tr><th></th><th>Year 2017</th><th>Year 2018</th><th>Year 2019</th><th>Year 2020</th><th>Year 2021</th></tr><tr><td>Average Organic</td><td>28.04</td><td>27.96</td><td>28.22</td><td>28.22</td><td>28.30</td></tr><tr><td>Domestic</td><td>28.21</td><td>28.27</td><td>28.47</td><td>28.81</td><td>28.96</td></tr><tr><td>Commercial</td><td>30.54</td><td>30.50</td><td>30.65</td><td>30.70</td><td>30.59</td></tr><tr><td>Public Lighting</td><td>47.18</td><td>47.17</td><td>47.20</td><td>47.27</td><td>47.28</td></tr><tr><td>Industrial</td><td>23.86</td><td>23.69</td><td>24.16</td><td>23.89</td><td>23.96</td></tr></table>Renewable Energy for Sarawak & Beyond, p. 8;
Energy for Sarawak, p. 10, p. 12 – 13;
2021 Year in Review, p. 14 - 15;
Chairman's Statement, p. 21 – 22;
Group Chief Executive Officer's Statement, p. 26;
Management Discussion & Analysis, p. 30 – 31;
Delivering Sustainable Growth, p. 78 – 79 & p. 81 – 83;
Global Trends Towards Net Zero, p. 102 – 103;
Climate Action Stewardship Through Sustainable Solutions, p. 110 – 112 & p. 114 – 115;
Creating Value for Stakeholders, p. 160 & 170 - 174</td><td></td><td>No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all

No 9 – Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

No 11 - Make cities and human settlements inclusive, safe, resilient and sustainable</td><td></td></tr>
<tr><td>203-2</td><td>Significant indirect economic impacts</td><td>2021 Year in Review, p. 15;
Chairman's Statement, p. 22;
Powering Our Community, p. 86 & 90;
Embracing Low Carbon Economy, p. 132;
Creating Value for Stakeholders, p. 160, p. 172 – 174 & p. 176 - 177</td><td></td><td>No 1 – End poverty in all its forms everywhere

No 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

No 10 – Reduce inequality within and among countries

No 17 – Strengthen the means of implementation and revitalize the global partnership for sustainable development</td><td></td></tr>
</table>

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td colspan="6">Procurement Practices</td></tr>
<tr><td colspan="6">GRI 103: Management Approach 2016</td></tr>
<tr><td>103-1</td><td>Explanation of the material topic and its Boundary</td><td>Embracing Low Carbon Economy, p. 133</td><td></td><td></td><td></td></tr>
<tr><td>103-2</td><td>The management approach and its components</td><td>2021 Year in Review, p. 15;
Embracing Low Carbon Economy, p. 133</td><td></td><td></td><td></td></tr>
<tr><td>103-3</td><td>Evaluation of the management approach</td><td>2021 Year in Review, p. 15;
Creating Long-Term Value, p. 101;
Embracing Low Carbon Economy, p. 133</td><td></td><td></td><td></td></tr>
<tr><td colspan="6">GRI 204: Procurement Practices 2016</td></tr>
<tr><td>204-1</td><td>Proportion of spending on local suppliers</td><td>
<table>
<tr><th>Tenders Awarded</th><th>Year</th><th colspan="3">Status</th></tr>
<tr><th></th><th></th><th>Sarawakian</th><th>Malaysia (Non-Sarawakian)</th><th>International</th></tr>
<tr><td rowspan="5">Capital Works</td><td>2021</td><td>335,983,187.44*</td><td>226,103,506.14</td><td>528,705,566.15</td></tr>
<tr><td>2020</td><td>114,555,097.49[1]</td><td>44,542,098.60</td><td>117,782,423.00</td></tr>
<tr><td>2019</td><td>416,366,166.99[2]</td><td>274,575,584.00</td><td>299,412,243.00</td></tr>
<tr><td>2018</td><td>625,917,773.91[3]</td><td>266,245,214.38</td><td>1,095,210,392,28</td></tr>
<tr><td>2017</td><td>1,620,376,421.35[4]</td><td>501,190,506.73</td><td>2,884,065,817.05</td></tr>
<tr><td rowspan="5">Operations and Maintenance</td><td>2021</td><td>1,061,052,945.37*</td><td>194,827,901.20</td><td>28,660,053.82</td></tr>
<tr><td>2020</td><td>1,037,245,113.37[1]</td><td>68,301,534.66</td><td>38,580,626.30</td></tr>
<tr><td>2019</td><td>822,335,735.58[2]</td><td>54,243,444.92</td><td>52,732,516.13</td></tr>
<tr><td>2018</td><td>564,066,169.62[3]</td><td>26,039,763.67</td><td>30,992,905.85</td></tr>
<tr><td>2017</td><td>424,381,685.99[4]</td><td>60,255,353.33</td><td>67,673,539.04</td></tr>
</table>
Notes:
[1] This total value of tenders awarded to local Sarawakian companies data has been assured by a third party for Sustainability Report 2020.
[2] This total value of tenders awarded to local Sarawakian companies data has been assured by a third party for Sustainability Report 2019.
[3] This total value of tenders awarded to local Sarawakian companies data has been assured by a third party for Sustainability Report 2018.
[4] This total value of tenders awarded to local Sarawakian companies data has been assured by a third party for Sustainability Report 2017.
* This total value of tenders awarded to local Sarawakian companies data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.
2021 Year in Review, p. 15;
Sustainability Key Highlights, p. 94;
Internalising the Global Sustainability Agenda, p. 98;
Creating Long-Term Value, p. 101;
Embracing Low Carbon Economy, p. 133</td><td></td><td>No 12 - Ensure sustainable consumption and production patterns</td><td></td></tr>
<tr><td colspan="6">Materials</td></tr>
<tr><td colspan="6">GRI 103: Management Approach 2016</td></tr>
<tr><td>103-1</td><td>Explanation of the material topic and its Boundary</td><td>Creating Long-Term Value, p. 100</td><td></td><td></td><td></td></tr>
<tr><td>103-2</td><td>The management approach and its components</td><td>Creating Long-Term Value, p. 100;
Our Response to Climate Change, p. 128 – 129</td><td></td><td></td><td></td></tr>
<tr><td>103-3</td><td>Evaluation of the management approach</td><td>Our Response to Climate Change, p. 128 – 129</td><td></td><td></td><td></td></tr>
</table>

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
GRI 301: Materials 2016					
301-1	Materials used by weight or volume	Internalising the Global Sustainability Agenda, p. 99; Creating Long-Term Value, p. 100; Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 146 & 148	Yes	No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all No 12 - Ensure sustainable consumption and production patterns	TCFD

Category: Non-Renewable Materials Used (2017 - 2021)

Plant Type	Volume (Year 2017)	Volume (Year 2018)	Volume (Year 2019)	Volume (Year 2020)	Volume (Year 2021)	Unit
Coal	2,228,768.01[4]	2,038,842.21[3]	3,064,825.62[2]	2,684,065.69[1]	2,940,286.82*	Tonne
Diesel[a]	15,675,168.40[4]	20,393,035.80[3]	12,584,999.55[2]	24,301,619.57[1]	26,313,382.07*	Litre
Natural Gas	34,262,495.10[4]	35,891,301.46[3]	36,756,369.74[2]	33,066,287.95[1]	32,806,349.50*	mmbtu

Note:
[a] *Diesel – excluding Limbang & Lawas*

Category: Renewable Materials

Major Plant	Year	Annual Inflow (million m³) (annual inflow from catchment)	Annual water volume for energy generation (million m³)	Annual energy generated (GWh)	Annual water consumption (million m³) (Spillway discharge)
Batang Ai	2021	3,651	3,618*	476	-
	2020	4,255	3,974[1]	518	-
	2019	2,852	2,844[2]	391	-
	2018	3,576	3,647[3]	481	-
	2017	3,658	3,397[4]	442	-
Murum	2021	9,660	8,583*	6,484	1,159
	2020	9,993	8,549[1]	6,415	1,446
	2019	8,183	7,532[2]	5,714	-
	2018	7,737	8,022[3]	6,094	432
	2017	10,933	7,567[4]	5,717	3,588
Bakun	2021	49,894	40,875*	16,376	10,436
	2020	55,730	36,966[1]	14,803	15,589
	2019	40,373	38,827[2]	15,544	-
	2018	40,481	36,148[3]	14,482	4,761
	2017	49,794	32,962[4]	13,078	16,948

Notes:
[1] *This annual water volume for electricity generation data and fuel consumption have been assured by a third party for Sustainability Report 2020.*
[2] *This annual water volume for electricity generation data and fuel consumption have been assured by a third party for Sustainability Report 2019.*
[3] *This annual water volume for electricity generation data and fuel consumption have been assured by a third party for Sustainability Report 2018.*
[4] *This annual water volume for electricity generation data has been assured by a third party for Sustainability Report 2017.*
* *This annual water volume for electricity generation data and fuel consumption have been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

Water and Effluents					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Creating Long-Term Value, p. 100; Preserving the Environment, p. 147			
103-2	The management approach and its components	Creating Long-Term Value, p. 100; Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 147 & p. 149 - 150			
103-3	Evaluation of the management approach	Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 150 - 151			

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
GRI 303: Water and Effluents 2018					
303-1	Interactions with water as a shared resource	Preserving the Environment, p. 147 & 150		No 6 - Ensure availability and sustainable management of water and sanitation for all	
303-2	Management of water discharge related impacts	Preserving the Environment, p. 146		No 6 - Ensure availability and sustainable management of water and sanitation for all	
303-3	Water withdrawal	Creating Long-Term Value, p. 100; Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 146 & 150	Yes	No 6 - Ensure availability and sustainable management of water and sanitation for all	

Major Plant	Source	2017	2018	2019	2020	2021
		meter cubic (m^3)				
Plant Type: Coal						
Sejingkat Power Corp + PPLS	Municipal	1,603,264.00[4]	1,386,373.00[3]	1,140,932.00[2]	1,265,838.00[1]	1,133,445.00*
	Sea water or other natural water source	366,695,496.00[4]	353,454,413.18[3]	331,568,280.00[2]	348,383,088.00[1]	305,121,492.00*
Mukah Power Generation	Municipal	854,666.00[4]	803,362.00[3]	1,063,097.00[2]	741,874.00[1]	814,465.00*
	Sea water or other natural water source	454,118,400.00[4]	410,793,379.20[3]	392,610,711.74[2]	219,655,670.40[1]	219,276,979.20*
Balingian Power Generation	Municipal	-	-	-	N/A[1]	17,924.00*
	Sea water or other natural water source	-	-	-	1,650,000.00[1]	4,186,687.50*
Plant Type: Combined Cycle - Natural Gas						
SPG + Bintulu SESCO	Municipal	145,623.00[4]	220,611.00[3]	329,516.00[2]	250,223.00[1]	275,082.00*
	Sea water or other natural water source	212,876,380.80[4]	227,489,565.60[3]	241,935,030.72[2]	104,047,121.52[1]	87,860,036.88*
KPG	Municipal	-	-	-	-	112,863.00*
	Sea water or other natural water source	-	-	-		- 404,068,140.00*
Plant Type: Open Cycle - Natural Gas						
Miri SESCO	Municipal	12,154.00[4]	9,225.00[3]	23,803.00[2]	29,542.00[1]	47,638.00*
	Sea water or other natural water source	N/A[4]	N/A[3]	N/A[2]	N/A[1]	N/A*
Plant Type: Diesel						
Sg Biawak SESCO	Municipal	21,192.00[4]	13,952.50[3]	6,896.13[2]	1,731.51[1]	4,417.00*
	Sea water or other natural water source	1,171,360.00[4]	69,650.00[3]	-[2]	-[1]	-*
Non Grid - Limbang	Municipal	19.44	22,992.00	40,859.00	41,251.00	43,936.00
Non Grid - Lawas	Municipal	299.00	656.00	2,837.00	3,700.00	4,220.00

Notes:

[1] *This total water withdrawal by source data has been assured by a third party for Sustainability Report 2020.*

[2] *This total water withdrawal by source data has been assured by a third party for Sustainability Report 2019.*

[3] *This total water withdrawal by source data has been assured by a third party for Sustainability Report 2018.*

[4] *This total water withdrawal by source data has been assured by a third party for Sustainability Report 2017.*

* *This total water withdrawal by source data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Biodiversity					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Preserving the Environment, p. 147			
103-2	The management approach and its components	Climate Action Stewardship Through Sustainable Solutions, p. 117; Preserving the Environment, p. 147 & p. 154 – 157			
103-3	Evaluation of the management approach	Preserving the Environment, p. 155 - 157			
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	Internalising the Global Sustainability Agenda, p. 99; Preserving the Environment, p. 147 & p. 155 - 157		No 6 - Ensure availability and sustainable management of water and sanitation for all No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
304-2	Significant impacts of activities, products, and services on biodiversity	Internalising the Global Sustainability Agenda, p. 99; Climate Action Stewardship Through Sustainable Solutions, p. 117; Preserving the Environment, p. 147 & p. 155 - 157		No 6 - Ensure availability and sustainable management of water and sanitation for all No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
Emissions					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Climate Action Stewardship Through Sustainable Solutions, p. 106 & 120			
103-2	The management approach and its components	Renewable Energy for Sarawak & Beyond, p. 9; Global Trends Towards Net Zero, p. 102; Climate Action Stewardship Through Sustainable Solutions, p. 107, 109 & 120; Our Response to Climate Change, p. 121 & 126 - 129; Preserving the Environment, p. 152			
103-3	Evaluation of the management approach	Creating Long-Term Value, p. 101; Climate Action Stewardship Through Sustainable Solutions, p. 107 - 108 & p. 118 - 119; Our Response to Climate Change, p. 121 & 126 - 129; Preserving the Environment, p. 152			

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
GRI 305: Emissions 2016					
305-1	Direct (Scope 1) GHG emissions	Renewable Energy for Sarawak & Beyond, p. 9; Climate Action Stewardship Through Sustainable Solutions, p. 106 & 108; Our Response to Climate Change, p. 121 & 126 - 129	Yes	No 3 – Ensure healthy lives and promote wellbeing for all at all ages No 12 – Ensure sustainable consumption and production patterns No 13 – Take urgent action to combat climate change and its impacts No 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	TCFD

Gross direct (Scope 1) GHG emissions in metric tonne of CO_2 equivalent

Grid	Total Emissions (tCO_2) (2017)	Total Emissions (tCO_2) (2018)	Total Emissions (tCO_2eq) (2019)	Total Emissions (tCO_2eq) (2020)	Total Emissions (tCO_2eq) (2021)
Main	5,325,836.68	5,151,395.75	6,348,254.39[2]	5,600,892.97[1]	5,976,874.06*
Northern	98,042.77	102,837.43	104,477.64[2]	97,829.99[1]	100,595.84*
Stand-Alone	11,033.58	13,812.44	14,453.34[2]	9,176.85[1]	8,818.18*
Company-owned Vehicles	4,947.31	5,189.96	5,353.45	4,167.74	3,766.89
Total tCO_2eq Emissions	**5,439,860.34**	**5,273,235.58**	**6,472,538.82**	**5,712,067.55**	**6,090,054.97**

Total CO_2 Emissions (Main Grid)

POWER STATION (MAIN GRID)	2017 (tCO_2)	2018 (tCO_2)	2019 (tCO_2eq)	2020 (tCO_2eq)	2021 (tCO_2eq)
Sejingkat Power Corp.	916,769.06	854,293.99	679,890.56	671,849.96	462,019.95
PPLS Power Generation	848,625.75	707,251.87	697,347.40	650,276.32	605,853.28
Mukah Power Sdn. Bhd.	1,658,355.86	1,609,253.91	1,585,818.75	871,167.29	895,037.02
Balingian Power Generation	-	-	1,423,412.27	1,605,680.74	2,234,823.71
Sarawak Power Generation	825,960.98	950,543.09	950,462.21	749,873.97	600,125.08
Kidurong Power Generation	-	-	-	103,455.03	668,870.02
Bintulu PS	526,667.34	545,729.43	520,329.19	520,956.75	167,782.04
Miri PS	533,748.96	483,172.32	488,542.53	427,168.65	341,586.19
Sg Biawak PS	15,708.73	1,151.14	2,451.47	464.25	776.76
Total tCO_2eq Emissions (Main Grid)	**5,325,836.68**	**5,151,395.75**	**6,348,254.39[1]**	**5,600.892.97[1]**	**5,976,874.06***

Total CO_2 Emissions (Northern Grid)

POWER STATION (NORTHERN GRID)	2017 (tCO_2)	2018 (tCO_2)	2019 (tCO_2eq)	2020 (tCO_2eq)	2021 (tCO_2eq)
Limbang PS	61,989.99	64,433.37	63,744.59	64,646.28	67,682.00
Lawas PS	36,052.77	38,404.06	40,733.05	33,183.71	32,913.84
Total tCO_2eq Emissions (Northern Grid)	**98,042.76**	**102,837.43**	**104,477.64[1]**	**97,829.99[1]**	**100,595.84***

Notes:

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

[1] This Scope 1 (grid emissions - main, northern and stand-alone) data has been assured by a third party for Sustainability Report 2020.

** This Scope 1 (grid emissions - main, northern and stand-alone) data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
		Total Overall Stand-alone Grid CO_2 Emissions (Whole Sarawak)	Yes		TCFD

POWER STATION (STAND-ALONE GRID)	2017 (tCO_2)	2018 (tCO_2)	2019 (tCO_2eq)	2020 (tCO_2eq)	2021 (tCO_2eq)
Kapit PS	30.09	119.98	0.00	0.00	-
Belaga PS	3,505.23	3,632.72	3,700.81	3,859.01	3,603.22
Song PS	0.00	3,066.06	4,742.08	0.00	-
Ng Mujong PS	218.59	221.73	157.66	0.00	-
Ng Ngungun PS	1,118.42	748.49	0.00	0.00	-
Ng Jagau PS	226.73	233.08	236.12	253.84	298.84
Ng Entawau PS	295.67	303.40	280.15	289.32	292.80
Mulu PS	2,033.42	1,671.70	1,524.01	1,005.82	896.63
Long Lama PS	2,762.67	2,933.86	2,927.26	2,848.51	2,759.08
Banting PS	264.05	288.33	298.80	297.26	287.88
Paloh PS	578.71	593.11	586.46	623.1	679.72
Kg Bruit PS	0.00	0.00	0.00	0.00	-
Kg Saai PS	0.00	0.00	0.00	0.00	-
Bakun - Sg Asap PS	0.00	0.00	0.00	0.00	-
Total tCO_2eq Emissions (Stand-Alone Grid)	**11,033.58**	**13,812.44**	**14,453.35**	**9,176.86**	**8,818.18***

Notes:
1. *Emissions in CO_2eq include Direct Scope 1 emissions from CO_2, CH_4 and N_2O.*
[1] *This Scope 1 (grid emissions - main, northern and stand-alone) data has been assured by a third party for Sustainability Report 2020.*
* *This Scope 1 (grid emissions - main, northern and stand-alone) data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

Total Net Energy Generated for Main Grids

Plant Type	POWER STATION	2017	2018	2019	2020	2021
Coal	Sejingkat Power Corp.	684,111.00	593,489.90[3]	505,914.49[2]	494,902.10[1]	330,743.60*
Coal	PPLS Power Generation	673,687.00	614,127.50[3]	518,672.85[2]	516,329.80[1]	500,261.90*
Coal	Mukah Power Sdn. Bhd.	1,494,404.00	1,401,963.65[3]	1,343,966.90[2]	770,626.40[1]	776,398.80*
Coal	Balingian Power Generation	-	-	1,421,724.40[2]	1,263,976.37[1]	2,104,908.50*
BTU-Combined Cycle	Sarawak Power Generation	1,738,199.00	2,023,026.02[3]	2,106,253.75[2]	1,594,561.40[1]	1,073,279.19*
BTU-Combined Cycle	Kidurong Power Generation	-	-	-	212,114.57[1]	1,626,879.19*
BTU-Open Cycle	Bintulu PS	614,311.00	661,306.76[3]	615,465.59[2]	608,672.49[1]	204,363.70*
Miri-Open Cycle	Miri PS	516,563.00	487,506.50[3]	535,371.43[2]	468,368.98[1]	374,955.17*
Diesel-Standby	Sg Biawak PS	16,183.00	-567.91[3]	887.78[2]	-787.57[1]	-494.26*
Total MWh		**5,737,458.00**	**5,780,852.42[3]**	**7,048,257.18[2]**	**5,928,764.54[1]**	**6,991,295.79***

Total Net Energy Generated for Main Grids

Plant Type	Plant	2017	2018	2019	2020	2021
Hydropower	Batang Ai	442,324.00	480,586.75[3]	386,993.39[2]	517,434.53[1]	475,024.49*
Hydropower	Bakun	13,078,267.00	14,351,890.00[3]	15,424,402.00[2]	14,680,879.00[1]	16,239,095.00*
Hydropower	Murum	5,717,385.00	6,053,056.70[3]	5,688,832.30[2]	6,406,413.20[1]	6,456,371.70*
Hydropower	Lundu PS	2,618.21	2,852.54[3]	3,024.10[2]	1,637.74[1]	1,094.91*
Total MWh		**19,240,594.21**	**20,888,385.98[3]**	**21,503,251.79[2]**	**21,606,364.48[1]**	**23,171,586.10***

Notes:
[1] *This net energy generated data has been assured by a third party for Sustainability Report 2020.*
[2] *This net energy generated data has been assured by a third party for Sustainability Report 2019.*
[3] *This net energy generated data has been assured by a third party for Sustainability Report 2018.*
* *This net energy generated data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD

Total Net Energy Generated for Stand-Alone Grids

Yes

TCFD

Plant Type	Plant	2017	2018	2019	2020	2021
Diesel	Kapit PS	-	96.78	-	-	-
Diesel	Belaga PS	3,969.62	4,238.20	4,256.13	4,519.19[1]	4,914.29*
Diesel	Song PS	-	3,816.98	6,222.96	-	-
Diesel	Ng Mujong PS	244.37	250.40	177.63	-	-
Diesel	Ng Ngungun PS	1,292.73	858.68	-	-	-
Diesel	Ng Jagau PS	210.12	210.37	218.24	232.60[1]	256.19*
Diesel	Ng Entawau PS	319.70	343.93	328.64	340.59[1]	342.67*
Diesel	Mulu PS	2,110.91	1,877.34	1,641.00	1,056.89[1]	948.10*
Diesel	Long Lama PS	3,283.94	3,519.90	3,628.99	3,778.73[1]	3,768.35*
Diesel	Banting PS	293.73	319.15	342.47	335.12[1]	340.40*
Diesel	Paloh PS	633.83	662.52	699.00	735.61[1]	796.90*
Diesel	Kg Bruit PS	-	-	-	-	-
Diesel	Kg Saai PS	-	-	-	-	-
Diesel	Bakun - Sg Asap PS	-	-	-	-	-
Total MWh		**12,358.95**	**16,194.25**	**17,515.05**	**10,998.73[1]**	**11,366.90***

Total Net Energy Generated (Northern Grids)

Plant Type	Plant	2017	2018	2019	2020	2021
Diesel	Limbang PS	84,837.18	87,494.23[3]	90,569.93[2]	91,660.87[1]	93,756.55*
Diesel	Lawas PS	48,472.29	52,043.58[3]	57,466.64[2]	46,662.14[1]	44,838.54*
Total MWh		**133,309.47**	**139,537.81[3]**	**148,036.58[2]**	**138,323.01[1]**	**138,595.09***

Plant Type	Plant	2017	2018	2019	2020	2021
Mini Hydro	Lawas M/H (Kalamuku)	2,378.72	2,549.86[3]	2,012.81[2]	1,603.95[1]	786.20*
Mini Hydro	Lawas M/H (Sg.Kota)	8,916.80	8,508.60[3]	5,843.57[2]	21,118.39[1]	28,389.34*
Mini Hydro	Sg. Kejin	-	-	-	-	-
Total MWh		**11,295.52**	**11,058.46[3]**	**7,856.38[2]**	**22,722.34[1]**	**29,175.54***

Note:

[1] *This net energy generated data has been assured by a third party for Sustainability Report 2020.*

[2] *This net energy generated data has been assured by a third party for Sustainability Report 2019.*

[3] *This net energy generated data has been assured by a third party for Sustainability Report 2018.*

* *This net energy generated data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

Data assumptions:

1. *Fuel consumption, fuel Calorific Value & fuel Specific Density (for CO_2 emissions calculations) data obtained from OpX*
2. *Net Energy Generated for main grid connected power plants (using OpX data) – Request for both grid Thermal & Hydro (Batang Ai, Bakun & Murum)*
3. *Net Energy Generated for non-grid connected power plants (using Rural Operation data) – Request for both non grid Thermal & Mini hydro (Sg. Kejin)*

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
305-2	Energy indirect (Scope 2) GHG emissions	Our Response to Climate Change, p. 121 & 126 - 129	Yes	No 3 – Ensure healthy lives and promote wellbeing for all at all ages No 12 – Ensure sustainable consumption and production patterns No 13 – Take urgent action to combat climate change and its impacts No 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	TCFD

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
305-3	Other indirect (Scope 3) GHG emissions	Our Response to Climate Change, p. 121 & 126 - 129	Yes	No 3 – Ensure healthy lives and promote wellbeing for all at all ages No 12 – Ensure sustainable consumption and production patterns No 13 – Take urgent action to combat climate change and its impacts No 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	TCFD

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td>305-4</td><td>GHG emissions intensity</td><td>Renewable Energy for Sarawak & Beyond, p. 9;
Sustainability Key Highlights, p. 94;
Internalising the Global Sustainability Agenda, p. 97;
Creating Long-Term Value, p. 101;
Global Trends Towards Net Zero, p. 102;
Climate Action Stewardship Through Sustainable Solutions, p. 106 - 109;
Our Response to Climate Change, p. 129

<table>
<tr><th>Scope 1 Emissions Intensity</th><th>Unit</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td>Normalized by Gross Energy</td><td>tCO_2eq/MWh</td><td>0.212</td><td>0.193</td><td>0.220</td><td>0.201</td><td>0.196</td></tr>
<tr><td>Normalized by Net Energy</td><td>tCO_2eq/MWh</td><td>0.216</td><td>0.196</td><td>0.225</td><td>0.206</td><td>0.201</td></tr>
</table>

Note:
1. Scope 1 emissions intensity normalised by gross and net energy include main, northern and stand-alone grid and company-owned vehicles.

<table>
<tr><th>Scope 2 Emissions Intensity</th><th>Unit</th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td>Normalized by Gross Energy</td><td>tCO_2eq/MWh</td><td>0.000466</td><td>0.000474</td><td>0.000387</td></tr>
<tr><td>Normalized by Net Energy</td><td>tCO_2eq/MWh</td><td>0.000477</td><td>0.000485</td><td>0.000395</td></tr>
</table>

Note:
Scope 2 emissions intensity normalised by gross and net energy include buildings and offices.</td><td>Yes</td><td>No 3 – Ensure healthy lives and promote wellbeing for all at all ages

No 12 – Ensure sustainable consumption and production patterns

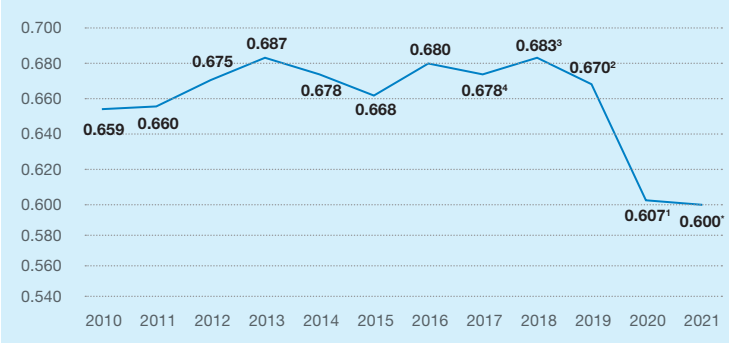
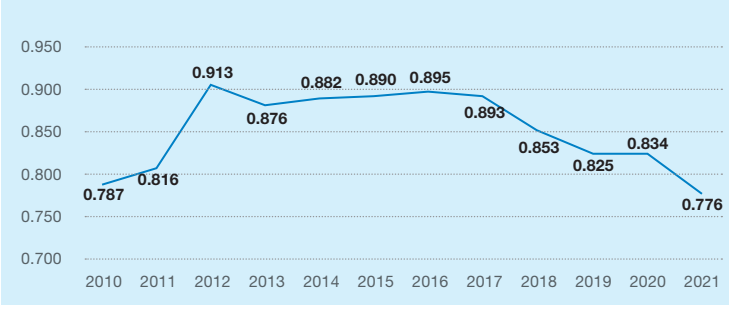
No 13 – Take urgent action to combat climate change and its impacts

No 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development

No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</td><td>TCFD</td></tr>
</table>

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
305-4	GHG emissions intensity	**Sarawak Energy Northern Grid CO_2 Emissions Intensity 2010 - 2021 (tCO_2eq/MWh)**  ***Notes:*** [1] *This northern grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2020.* [2] *This northern grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2019.* [3] *This northern grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2018.* [4] *This northern grid CO_2 emissions intensity data has been assured by a third party for Sustainability Report 2017.* * *This northern grid CO_2 emissions intensity data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.* **Sarawak Energy CO_2 Intensity for Stand-alone Grids 2010 - 2021 (tCO_2eq/MWh)** 	Yes	No 3 – Ensure healthy lives and promote wellbeing for all at all ages No 12 – Ensure sustainable consumption and production patterns No 13 – Take urgent action to combat climate change and its impacts No 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	TCFD

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
		Plants CO_2 Intensity (tCO_2eq/MWh) - Main Grid	Yes		TCFD

Year	Plant (Main Grid)	Total CO_2 Emissions (tCO_2eq)	Gross Energy Generated from Thermal (MWh)	CO_2 Intensity (tCO_2eq/ MWh)
2017	Sejingkat Power Corp	916,769.06	727,761.85	1.260
	PPLS	848,625.75	767,523.86	1.106
	MPG	1,658,355.86	1,666,942.34	0.995
	SPG	825,960.98	1,772,772.00	0.466
	Bintulu SESCO	526,667.34	621,355.60	0.848
	Miri SESCO	533,748.96	523,907.27	1.019
	Sg Biawak SESCO	15,708.73	18,255.47	0.860
2018	Sejingkat Power Corp	854,293.99	673,672.50	1.268
	PPLS	707,251.87	675,296.00	1.047
	MPG	1,609,253.91	1,573,521.05	1.023
	SPG	950,543.09	2,059,519.80	0.462
	Bintulu SESCO	545,729.43	670,339.06	0.814
	Miri SESCO	483,172.32	493,843.86	0.978
	Sg Biawak SESCO	1,151.14	1,044.31	1.102
2019	Sejingkat Power Corp	679,890.56	553,289.86	1.229
	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
	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
	Sg Biawak SESCO	2,451.47	2,127.20	1.152
2020	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
	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
	Sg Biawak SESCO	464.25	330.20	1.406
2021	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
	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
	Sg Biawak SESCO	776.76	621.70	1.249

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
305-5	Reduction of GHG emissions	Internalising the Global Sustainability Agenda, p. 97; Climate Action Stewardship Through Sustainable Solutions, p. 106	Yes	No 13 – Take urgent action to combat climate change and its impacts No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	TCFD

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Preserving the Environment, p. 146 & 152	Yes	No 3 - Ensure healthy lives and promote well-being for all at all ages No 12 - Ensure sustainable consumption and production patterns No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development No 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	TCFD

Year	Plant (Main Grid)	Gross Energy Generated from Thermal (kWh)	Total SOx Emissions (kg)	Total NOx Emissions (kg)	SOx Intensity ($kgSO_x$/kWh)	NOx Intensity ($kgNO_x$/kWh)
2017	Sejingkat Power Corp	727,761,852.00	1,267,457.84	250.19	1.74×10^{-3}	3.44×10^{-7}
	PPLS	767,523,858.00	763,044.42	225.21	9.94×10^{-4}	2.93×10^{-7}
	MPG	1,666,942,336.00	1,528,744.32	641.9	9.17×10^{-4}	3.85×10^{-7}
	SPG	1,772,772,000.00	3,299.93	1,841,892.01	1.86×10^{-6}	1.04×10^{-3}
	Bintulu SESCO	621,355,600.00	152,755.93	858.34	2.46×10^{-4}	1.38×10^{-6}
	Miri SESCO	523,907,270.00	4,446.65	49,716.17	8.49×10^{-6}	9.49×10^{-5}
	Sg Biawak SESCO	18,255,470.00	417.42	2.54	2.29×10^{-5}	1.39×10^{-7}
2018	Sejingkat Power Corp	673,672,500.00	614,470.31	259.67	9.12×10^{-4}	3.85×10^{-7}
	PPLS	675,296,000.00	479,441.87	234.42	7.10×10^{-4}	3.47×10^{-7}
	MPG	1,573,521,047.00	495,377.29	402.41	3.15×10^{-4}	2.56×10^{-7}
	SPG	2,059,519,800.00	35,473.30	1,036,442.01	1.72×10^{-5}	5.03×10^{-4}
	Bintulu SESCO	670,339,060.00	31,551.82	979.77	4.71×10^{-5}	1.46×10^{-6}
	Miri SESCO	493,843,860.00	306.44	8,190.26	6.21×10^{-7}	1.66×10^{-5}
	Sg Biawak SESCO	1,044,310.00	0.00	0.00	0.00	0.00
2019	Sejingkat Power Corp	553,289,860.00	89,848.99	16.42	1.62×10^{-4}	2.97×10^{-8}
	PPLS	637,196,850.00	91,591.63	440.51	1.44×10^{-4}	6.91×10^{-7}
	MPG	1,515,106,278.00	251,154.40	669.96	1.66×10^{-4}	4.42×10^{-7}
	SPG	2,145,919,000.00	8,765.45	2,305,925.09	4.08×10^{-6}	1.07×10^{-3}
	Bintulu SESCO	625,274,140.00	12,003.51	130.25	1.92×10^{-5}	2.08×10^{-7}
	Miri SESCO	541,988,300.00	965.92	83.38	1.78×10^{-6}	1.54×10^{-7}
	Sg Biawak SESCO	2,127,200.00	0.00	0.00	0.00	0.00
2020	Sejingkat Power Corp	505,307,390.00	378,491.95	359,136.25	7.49×10^{-4}	7.11×10^{-4}
	PPLS	634,529,000.00	735,016.78	904,654.39	1.16×10^{-3}	1.43×10^{-3}
	MPG	858,735,070.00	1,021,298.63	1,134,177.51	1.19×10^{-3}	1.32×10^{-3}
	BPG	1,532,546,582.00	416,981.70	363,580.35	2.72×10^{-4}	2.37×10^{-4}
	SPG	1,628,610,510.00	14,055.59	1,178,960.42	8.63×10^{-6}	7.24×10^{-4}
	Bintulu SESCO	616,612,830.00	1,023,678.72	1,384,977.34	1.66×10^{-3}	2.25×10^{-3}
	Miri SESCO	474,195,110.00	0.00	107,678.46	0.00	2.27×10^{-4}
	Sg Biawak SESCO	330,200.00	0.00	0.00	0.00	0.00
2021	Sejingkat Power Corp	372,898,690.00	81,348.10	69,304.95	2.18×10^{-4}	1.86×10^{-4}
	PPLS	560,269,000.00	141,190.26	111,777.62	2.52×10^{-4}	2.00×10^{-4}
	MPG	861,797,571.00	215,766.98	343,351.40	2.50×10^{-4}	3.98×10^{-4}
	BPG	2,326,198,955.00	309,364.12	54,820.72	1.33×10^{-4}	2.36×10^{-5}
	SPG	1,101,259,000.00	21,690.53	1,238,778.14	1.97×10^{-5}	1.12×10^{-3}
	KID1	1,682,655,190.54	10,102.91	16,182.00	6.00×10^{-6}	9.62×10^{-6}
	Bintulu SESCO	207,738,650.00	77,778.18	137,827.00	3.74×10^{-4}	6.63×10^{-4}
	Miri SESCO	380,266,890.00	1,488.01	279,706.00	0.00	7.36×10^{-4}
	Sg Biawak SESCO	621,700.00	0.00	0.00	0.00	0.00

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Waste					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Preserving the Environment, p. 152			
103-2	The management approach and its components	Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 152			
103-3	Evaluation of the management approach	Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 152			
GRI 306: Waste 2020					
306-1	Waste generation and significant waste-related impacts	Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 152		No 12 - Ensure sustainable consumption and production patterns	
306-2	Management of significant waste related impacts	Preserving the Environment, p. 152		No 12 - Ensure sustainable consumption and production patterns	
306-3	Waste generated	Our Response to Climate Change, p. 128 – 129; Preserving the Environment, p. 152	Yes	No 12 - Ensure sustainable consumption and production patterns	

Waste Volume Generated from Hydro Power Plants by Waste Category (Tonne)

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne) 2017	2018	2019[2]	2020[1]	2021*
Hydro	Bakun HEP	Used lubricating oil	SW 305	Turbine bearing and crane motor	8.20	1.40	19.80	0.20	0.00
		Used hyraulic oil	SW 306	Power intake and governor	0.00	37.60	28.40	12.60	16.30
		Spent mineral oil -water emulsion	SW 307	Dewatering pit - oil spill due to excursion from unit	3.80	6.00	11.80	1.38	2.25
				SUM	**12.00**	**45.00**	**60.00**	**14.18**	**18.55**
		Contaminated rags	SW 410	Maintenance activities	0.00	0.03	0.30	0.74	0.66
		Contaminated oil filter	SW 410	Maintenance activities	0.00	0.00	0.01	0.00	0.39
		Empty contaminated container	SW 409	Maintenance activities	0.00	0.00	0.02	0.36	0.07
				SUM	**0.00**	**0.03**	**0.33**	**1.10**	**1.12**
		Used florescent tube and bulbs	SW 109	Powerhouse and residential area	0.08	0.01	0.22	0.04	0.13
		Waste of batteries containing cadmium and nickel or mercury or lithium	SW 103	Battery room / UPS room	0.00	0.00	0.34	0.00	0.10
		Electrical and electronic waste	SW 110	Powerhouse and residential area	0.00	0.00	0.82	0.28	0.37
				SUM	**0.08**	**0.01**	**1.38**	**0.31**	**0.59**
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.00

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Hydro Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Hydro	Murum HEP	Used lubricating oil	SW 305	Diesel genset	0.80	0.33	1.12	0.22	1.05
		Used hyraulic oil	SW 306	For hydraulic system, e.g., intake gate	1.00	2.30	31.69	25.00	169.45
		Oil water emulsion	SW 307	Lub oil contaminated with water through process (dewatering pit, lube oil contaminated with water during operation ie leak heat exchange tube)	0.20	0.37	3.58	9.20	70.61
		Dirty diesel	SW 311	Cleaning of bolts and nuts and parts of the turbine	0.70	0.00	0.03	0.00	0.00
		Used transformer oil	SW 327	-	0.00	0.00	0.00	0.00	0.00
				SUM	**2.70**	**3.00**	**36.42**	**34.42**	**241.10**
		Discarded Oxidant Media	SW 104	-	3.00	2.29	0.24	0.00	0.00
		Discarded media of air circulation unit (carb)	SW 104	-	0.00	0.56		0.00	0.00
		Discarded paint cans	SW 409	-	0.00	0.03	0.02	0.09	0.03
		Container contaminated with SW	SW 409	-	0.10	0.31	0.74	0.05	0.00
		Used oil filter	SW 410	-	0.08	0.08	0.11	0.05	0.12
		Empty spray can	SW 409	-	0.00	0.00	0.01	0.01	0.01
		Contaminated rags	SW 410	-	0.05	0.49	1.15	0.56	1.35
				SUM	**3.23**	**3.76**	**2.26**	**0.77**	**1.51**
		Discarded Light Bulb/ Tube	SW 109	Building maintenance	0.00	0.08	0.04	0.00	0.04
		Discarded Lead Acid Battery	SW 102	From Genset and DC Supply System	0.00	0.00	0.00	0.00	0.12
		E-Waste	SW 110	Electrical device	0.00	0.08	0.02	0.02	0.17
		Discarded of Battery	SW 103	From DC supply	0.00	0.05	0.04	0.00	0.14
				SUM	**0.00**	**0.21**	**0.09**	**0.02**	**0.47**
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	0.67
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.67**

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Hydro Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Hydro	Murum HEP	Spent sodium hydroxide	SW 206	-	0.00	0.05	0.00	0.00	0.00
		Spent of hydrochloric acid	SW 206	-	0.00	0.04	0.00	0.00	0.00
		Mixture of SW and non-SW (Paints, plant maintainence)	SW 422	-	0.05	0.00	0.03	0.00	0.04
		Obsolete labolatory chemical	SW 430	-	0.00	0.03	0.00	0.00	0.00
				SUM	**0.05**	**0.13**	**0.03**	**0.00**	**0.04**
Hydro	Btg Ai HEP	Used lubricating oil	SW 305	Maintenance activities	1.08	7.74	8.60	5.23	6.65
		Used transformer oil	SW 327	Transformer oil maintenance	0.28	0.79	22.11	23.00	11.00
		Used transformer oil	SW 306	TRansformer oil maintenance	0.00	0.00	0.00	0.00	34.00
				SUM	**1.36**	**8.53**	**30.71**	**28.23**	**51.65**
		Disposed drums contaminated with chemicals	SW 409	-	0.00	0.40	0.00	0.24	0.25
		Disposed containers contaminated with chemicals	SW 409	-	0.00	0.32	2.13	0.12	0.11
		Contaminated rags	SW410	Maintenance activities	0.40	0.83	3.62	0.55	0.80
				SUM	**0.40**	**1.54**	**5.75**	**0.91**	**1.16**
		Discarded bulb	SW 109	-	0.00	0.17	0.30	0.56	0.50
				SUM	**0.00**	**0.17**	**0.30**	**0.56**	**0.50**
		Contaminated soil	SW 408	-	0.00	0.58	0.00	0.35	0.30
				SUM	**0.00**	**0.58**	**0.00**	**0.35**	**0.30**
		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**

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Coal	SPC	Used lubricating oil	SW 305	Machinery maintenance	13.04	14.54	24.19	4.39	10.94
		Used hydraulic oil	SW 306	Machinery maintenance	20.84	34.31	9.65	6.28	5.57
				SUM	**33.88**	**48.85**	**33.83**	**10.67**	**16.52**
		Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled wastes	SW 409	-	3.86	3.59	4.00	2.41	2.09
		Contaminated rags	SW 410	Items used for maintenance work	12.55	20.68	18.05	14.79	2.92
				SUM	**16.41**	**24.27**	**22.05**	**17.20**	**5.01**
		Waste of lead acid batteries in whole or crushed form	SW 102	Machinery maintenance	0.76	0.26	0.27	0.21	0.26
		Waste of batteries containing cadmium and nickel or mercury or lithium	SW 103	Machinery maintenance	0.11	0.01	0.02	0.01	0.01
		E-waste	SW 110	Electrical & electronic maintenance	0.41	0.58	0.51	0.13	0.04
		Disposed fluorescent bulb	SW 109	Electrical & electronic maintenance	0.00	0.00	0.00	0.00	0.04
				SUM	**1.29**	**0.85**	**0.80**	**0.35**	**0.35**
		Contaminated soil, debris or matter resulting from cleaning-up of a spill of chemical, mineral oil or scheduled wastes	SW 408	-	2.99	2.68	3.73	3.70	5.02
				SUM	**2.99**	**2.68**	**3.73**	**3.70**	**5.02**
		Chemicals that are discarded or off-specification	SW 429	-	0.00	0.25	1.74	1.72	0.47
				SUM	**0.00**	**0.25**	**1.74**	**1.72**	**0.47**
		Fly Ash (Dry/fly ash is last produced in July 2017. Thus, smaller amount than 2016 total generation)	SW 104	Plant operation	1,391.00	0.00	0.00	3,529.47	5,515.16
		Bottom Ash (Wet/bottom)	SW 104	Plant operation	86,340.52	0.00	0.00	63,652.00	48,827.28
		Wet Ash (Wet and dry ashes stored in ash pond)	SW 104	Plant operation	0.00	79,264.08	70,589.01	-	-
			Fly Ash	**SUM**	**1,391.00**	**0.00**	**0.00**	**3,529.47**	**5,515.16**
			Bottom Ash	**SUM**	**86,340.52**	**79,264.08**	**70,589.01**	**63,652.00**	**48,827.28**

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Coal	MPG	Used lubricating oil	SW 305	From machine/ equipment during shutdown	16.53	39.79	11.44	21.18	3.70
		Used hydraulic oil	SW 306	Hydraulic system (e.g., for the torch system)	0.00	0.52	0.52	0.35	0.17
				SUM	**16.53**	**40.31**	**11.95**	**21.53**	**3.87**
		Contaminated empty drum	SW 409	From machine/ equipment during shutdown & service	1.17	2.76	0.00	0.78	0.76
		Contaminated rags	SW 410	Service & cleaning oil spillage	1.98	0.48	0.14	0.43	0.06
				SUM	**3.15**	**3.24**	**0.14**	**1.21**	**0.82**
		Used batteries	SW 102	From equipment,electrical & electronic part, for genset, double AA, torchlight, for testing equipment, auxilary equipment	0.00	0.29	0.00	0.00	0.12
		E-waste	SW 110	From machine/ equipment, lap top part, part of electrical (panel)	0.09	0.03	0.51	0.15	0.00
				SUM	**0.09**	**0.33**	**0.51**	**0.15**	**0.12**
		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	0.00	0.05	0.01	0.08	0.00
				SUM	**0.00**	**0.05**	**0.01**	**0.08**	**0.00**
		Fly Ash	SW 104	Plant operation	63,761.64	46,552.92	80,394.56	7,686.03	27,024.77
		Boiler Bottom Ash Hopper	SW 204	Plant operation	6,382.54	7,989.88	8,047.50	5,099.19	2,705.17
			Fly Ash	**SUM**	**63,761.64**	**46,552.92**	**80,394.56**	**7,686.03**	**27,024.77**
			Bottom Ash	**SUM**	**6,382.54**	**7,989.88**	**8,047.50**	**5,099.19**	**2,705.17**

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Coal	BPG	Used lubricating oil	SW305	Machinery maintenance	-	-	-	1.90	5.05
		Used hydraulic oil	SW306	Machinery maintenance	-	-	-	0.00	0.00
		Oily residue from automotive workshop, service station, oil or grease interceptor	SW312	Machinery maintenance & operation	-	-	-	0.07	0.25
				SUM	**-**	**-**	**-**	**1.97**	**5.30**
		Disposed containers, bags or equipment contaminated with chemicals, pesticides, mineral oil or scheduled wastes	SW409	-	-	-	-	2.70	1.64
		Contaminated rags	SW410	Items used for maintenance work	-	-	-	0.54	1.12
				SUM	**-**	**-**	**-**	**3.24**	**2.75**
		Waste of lead acid batteries in whole or crushed form	SW102	Machinery maintenance	-	-	-	0.00	0.11
		Waste of batteries containing cadmium and nickel or mercury or lithium	SW103	Machinery maintenance	-	-	-	0.00	0.01
		E-waste	SW110	Electrical & electronic maintenance	-	-	-	0.00	0.28
				SUM	**-**	**-**	**-**	**0.00**	**0.40**
		Contaminated soil, debris or matter resulting from cleaning-up of a spill of chemical, mineral oil or scheduled wastes	SW408	-	-	-	-	7.00	0.00
				SUM	**-**	**-**	**-**	**7.00**	**0.00**
		Chemicals that are discarded or off-specification	SW429	-	-	-	-	0.00	2.95
				SUM	**-**	**-**	**-**	**0.00**	**2.95**
		Fly Ash (Dry/fly ash is last produced in July 2017. Thus, smaller amount than 2016 total generation)	SW 104	Plant operation	-	-	-	66,967.71	120,065.35
		Bottom Ash (Wet/bottom)	SW 104	Plant operation	-	-	-	11,817.83	12,111.00
		Wet Ash (Wet and dry ashes stored in ash pond)	SW 104	Plant operation	-	-	-	113,845.11	180,231.40
			Fly Ash	**SUM**	**-**	**-**	**-**	**66,967.71**	**120,065.35**
			Bottom Ash	**SUM**	**-**	**-**	**-**	**125,662.94**	**192,342.40**

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Natural Gas	Bintulu PS	Used lubricating oil	SW 305	Maintenance	28.20	32.90	28.20	35.20	40.50
		Dirty Diesel	SW 421	Diesel engine, sometimes used for engine cleaning.	1.40	2.60	2.60	3.97	2.60
				SUM	**29.60**	**35.50**	**30.80**	**39.17**	**43.10**
		Used Paint Can	SW 409	Maintenance	0.00	0.20	0.80	0.46	0.01
		Used WD-40 Spray Cans	SW 409	Maintenance	0.00	0.00	0.00	0.00	0.05
		Used Chemical Bottle	SW 409	Maintenance	0.00	0.10	0.80	0.08	0.02
		Contaminated rags	SW 410	Maintenance	0.50	2.60	4.21	0.20	3.50
		Used oil filter	SW 410	Maintenance	0.80	3.60	5.40	3.28	2.20
		Spent Silica Gel	SW 429	Maintenance	0.00	1.70	2.10	1.43	0.61
		Spent Resin	SW 429	Maintenance	0.00	0.00	0.00	0.00	14.60
				SUM	**1.30**	**8.20**	**13.31**	**5.45**	**20.99**
		Used Cadmium Batteries	SW 103	From control system in MCR, gas turbine	8.50	5.09	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	0.00	0.00	0.11	0.21	0.03
		E-waste	SW 110	Building Maintenance	0.00	0.00	0.00	0.36	0.05
				SUM	**8.50**	**5.09**	**0.11**	**0.57**	**0.07**
		Contaminated soil disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	7.70
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**7.70**
		Mixed Chemicals	SW 429	Maintenance	0.00	0.00	0.20	0.06	0.00
		Sludge from Interceptor	SW 312	Maintenance	0.00	0.00	0.00	0.00	19.60
		Sludge containing metal	SW 204	Maintenance	0.00	0.00	3.00	0.00	57.20
		Sludge containing lead	SW 204	Maintenance	0.00	0.00	0.00	0.00	0.00
				SUM	**0.00**	**0.00**	**3.20**	**0.06**	**76.80**
		Gas condensate	SW 421	-	4.35	9.83	0.00	0.00	0.00
				SUM	**4.35**	**9.83**	**0.00**	**0.00**	**0.00**

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Natural Gas	Miri PS	Used lubricating oil	SW 305	-	2.80	10.60	2.20	2.20	11.60
		Used transformer oil	SW 306	-	26.00	8.80	0.40	2.60	0.80
		Oil-water emulsion (dirty diesel, cleaning of engine, operation of gen set)	SW 307	-	0.00	0.00	0.00	0.00	0.80
		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, by products yang dikumpul)	SW 421	-	1.00	1.00	0.60	0.40	2.80
				SUM	**29.80**	**20.40**	**3.20**	**5.20**	**16.00**
		Contaminated drum	SW 409	-	0.36	0.20	0.04	0.03	0.06
		Contaminated rags	SW 410	-	1.60	1.30	0.70	0.80	1.50
		Used oil filter	SW 410	-	0.40	0.30	0.60	0.40	1.50
				SUM	**2.36**	**1.80**	**1.34**	**1.23**	**3.06**
		Used battery (gen set, acid battery)	SW 103	-	0.00	1.95	1.90	0.00	0.00
		Fluorescent tube lighting	SW 109	-	0.00	0.01	0.20	0.00	0.40
				SUM	**0.00**	**1.96**	**2.10**	**0.00**	**0.40**
		Contaminated soil disposed (if applicable)	SW 409	-	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	0.00
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
		Gas condensate	SW 421	-	4.00	5.80	3.40	2.40	0.60
				SUM	**4.00**	**5.80**	**3.40**	**2.40**	**0.60**

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne)				
					2017	2018	2019[2]	2020[1]	2021*
Diesel	Sg Biawak PS	Used lubricating oil	SW 305	From diesel engine (flushing of lube separators)	53.63	17.40	88.95	2.22	2.23
		Used hydraulic oil	SW 306	From transformer	0.00	0.00	17.81	0.00	0.00
				SUM	**53.63**	**17.40**	**106.75**	**2.22**	**2.23**
		Uncured Resin waste	SW 325	Termination insulation of transformer	0.00	0.10	0.00	0.00	0.00
		Contaminated empty drum	SW 409	-	1.54	1.00	0.18	0.00	0.00
		Discarded chemical bottles	SW 409	Laboratory	0.00	0.01	0.00	0.04	0.00
		Contaminated rags	SW 410	Cleaning of Diesel engine	0.30	0.05	0.01	0.03	0.00
		Used oil filter	SW 410	Diesel engine lube oil filter	0.02	0.00	0.00	0.00	0.00
				SUM	**1.86**	**1.16**	**0.19**	**0.07**	**0.00**
		Used battery acid plumbum	SW 102	From diesel fire pump (for starting)	0.14	0.08	0.00	0.00	0.02
		Waste containing mercury or its compound	SW 109	Flouresent tubes	0.00	0.05	0.04	0.00	0.00
				SUM	**0.14**	**0.13**	**0.04**	**0.00**	**0.02**
		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**
		Non-Halogenated organic solvent	SW 322	Laboratory	0.00	0.08	0.02	0.02	0.00
				SUM	**0.00**	**0.08**	**0.02**	**0.02**	**0.00**
Diesel	Limbang PS	Used lubricating oil	SW 305	Machinery maintenance	30.60	54.60	42.60	56.80	66.00
		Dirty Diesel	SW 421	Machinery maintenance	24.20	32.60	22.80	30.40	14.20
				SUM	**54.80**	**87.20**	**65.40**	**87.20**	**80.20**
		Contaminated Used Drum	SW 409	Machinery maintainance	1.06	4.42	2.24	1.84	2.03
		Contaminated Used Paint Can	SW 409	Machinery maintainance	0.05	0.40	0.40	0.15	0.00
		Contaminated rags	SW 410	Machinery maintainance	0.90	1.50	1.30	1.80	1.90
		Used oil filter	SW 410	Machinery maintainance	0.60	0.20	0.10	0.07	0.63
				SUM	**2.61**	**6.52**	**4.04**	**3.86**	**4.56**
		Lead Acid Battery	SW 102	From machine/ equipment (Fork lift, dari fire hydrant pump)	0.00	0.50	0.00	0.00	0.00
		Unused Air Conditioner (e-waste)	SW 110	From machine/ equipment	0.02	0.20	0.00	0.00	0.00
				SUM	**0.02**	**0.70**	**0.00**	**0.00**	**0.00**
		Contaminated Soil	SW 408	Machinery maintainance	0.00	0.10	0.00	0.00	0.00
				SUM	**0.00**	**0.10**	**0.00**	**0.00**	**0.00**
		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**

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
306-3	Waste generated	**Waste Volume Generated from Coal, Gas and Diesel Fired Power Plants by Waste Category (Tonne)**	Yes	No 12 - Ensure sustainable consumption and production patterns	

Plant Type	Plant Name	Types of Waste	Waste Code	Source/Remark	Waste Quantity by Year (Tonne) 2017	2018	2019[2]	2020[1]	2021*
Diesel	Lawas PS	Used lubricating oil	SW 305	-	6.40	11.00	11.57	20.20	30.00
		Dirty Diesel	SW 421	-	8.39	14.20	12.49	0.00	0.00
		Oily Residue from Station Interceptor	SW 312	-	0.00	0.00	0.00	0.00	3.00
				SUM	**14.78**	**25.20**	**24.06**	**20.20**	**33.00**
		Contaminated empty drum	SW 409	-	0.00	1.12	1.05	0.65	0.18
		Contaminated rags	SW 410	-	0.41	1.60	1.98	1.40	0.80
				SUM	**0.41**	**2.72**	**3.03**	**2.05**	**0.98**
		E-waste disposed (if applicable)	-	-	0.00	0.00	0.00	0.00	1.86
				SUM	**0.00**	**0.00**	**0.00**	**0.00**	**1.86**
		Contaminated soil	SW 108	-	0.98	0.00	0.00	0.00	0.20
				SUM	**0.98**	**0.00**	**0.00**	**0.00**	**0.20**
		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	Waste Quantity by Year (Tonne) 2017	2018	2019	2020	2021
Hydro	Used Oil	16.06	56.53	127.13	76.83	311.30
	Contaminated Items	3.63	5.33	8.34	2.77	3.79
	E-Waste	0.08	0.38	1.77	0.89	1.56
	Contaminated Soil	0.00	0.58	0.00	0.35	0.97
	Chemicals	0.05	0.14	0.73	0.91	0.04
	Total	**19.82**	**62.96**	**137.982**	**81.751**	**317.65***
Thermal	Used Oil	233.01	274.86	276.00	188.16	200.21
	Fly Ash	65,152.64	46,552.92	80,394.56	78,183.21	152,605.28
	Bottom Ash	92,723.06	87,253.96	78,636.51	194,414.13	243,874.85
	Others (Contaminated Items, E-Waste, Gas Condensate, Contaminated Soil and Chemicals)	50.45	75.75	59.74	50.36	135.10
	Total	**158,159.16**	**134,157.49**			
	Grand Total	**158,178.98**	**134,220.46**	**159,504.78[2]**	**272,917.61[1]**	**397,133.10***

Notes:

[1] *This scheduled waste generation intensity data has been assured by a third party for Sustainability Report 2020.*

[2] *This scheduled waste generation intensity data has been assured by a third party for Sustainability Report 2019.*

* *This scheduled waste generation intensity data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Environmental Compliance					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Preserving the Environment, p. 152			
103-2	The management approach and its components	2021 Year in Review, p. 14; Preserving the Environment, p. 152 - 153			
103-3	Evaluation of the management approach	Key Focus Areas' Targets, p. 65; Preserving the Environment, p. 152 - 153			
GRI 307: Environmental Compliance 2016					
307-1	Non-compliance with environmental laws and regulations	2021 Year in Review, p. 14; Key Focus Areas' Targets, p. 65; Preserving the Environment, p. 152 - 153 1. The company was fined RM 2,000 for violating Environmental Quality (Scheduled Wastes) Regulation 2005 in Long Lama Power Station 2. The company was fined RM 4,000 for 4 violations under Environmental Quality (Scheduled Wastes) Regulation 2005 in Central Region Office		No 16 – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
Employment					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Creating Value for Stakeholders, p. 161			
103-2	The management approach and its components	Our People, p. 66			
103-3	Evaluation of the management approach	Creating Long-Term Value, p. 101			

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
401-1	New employee hires and employee turnover	Creating Long-Term Value, p. 101; Creating Value for Stakeholders; p. 161 **New Hires and Turnover by Gender and Age**		No 5 – Achieve gender equality and empower all women and girls No 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	

New Hires (by Gender)	2017			2018			2019			2020			2021		
	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL
Total number	278	70	348	227	77	304	258	110	368	275	75	350	121	42	163
By age, in numbers															
Up to 30 years old	244	59	303	158	58	216	159	67	226	222	53	275	89	31	120
Between 31 and 50 years old	20	10	30	51	17	68	99	43	142	45	22	67	29	11	40
Over 50 years old	14	1	15	18	2	20				8	0	8	3	0	3

Staff Turnover (by Gender)	2017			2018			2019			2020			2021		
	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL
Total number	95	42	137	128	32	160	147	26	173	146	30	176	155	27	182
By age, in numbers															
Up to 30 years old	28	21	49	18	19	37	76	23	99	18	10	28	13	6	19
Between 31 and 50 years old	19	8	27	21	7	28				22	6	28	28	11	39
Over 50 years old	48	13	61	89	6	95	71	3	74	106	14	120	114	10	124

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD

New Hires and Turnover by Gender and Age

New Hires (by Company)	2017			2018			2019			2020			2021		
	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL
Total number	278	70	348	227	77	304	258	110	368	275	75	350	121	42	163
By company, in numbers															
Sarawak Energy Berhad	254	61		227	77	304	258	110	368	275	75	350	121	42	163
Sejingkat Power	-	-													
Mukah Power	-	-													
SESCO Headquarters	1	4													
SESCO Kuching	10	1													
SESCO Sri Aman	0	2													
SESCO Sarikei	2	1													
SESCO Sibu	2	2													
SESCO Bintulu	-	-													
SESCO Miri	3	2													
Balingian Power Generation	1	2													
SarawakHidro Sdn Bhd	0	0													

Staff Turnover (by Company)	2017			2018			2019			2020			2021		
	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL	Men	Women	TOTAL
Total number	95	42	137	128	32	160	147	26	173	146	30	176	155	27	182
By company, in numbers															
Sarawak Energy Berhad	13	8		16	15		34	12	46	35	11	46	37	11	48
Sejingkat Power	2	0		3			11		11				4	0	4
Mukah Power	2	0		2			3		3				2	0	2
SESCO Headquarters	45	17		52	8		37	10	47	37	8	45	40	6	46
SESCO Kuching	11	9		18	2		14	1	15	36	4	40	34	6	40
SESCO Sri Aman	0	0		6			3		3						
SESCO Sarikei	2	0		2	1		11		11	4	1	5	7	0	7
SESCO Sibu	7	4		12	2		14		14	9	1	10	17	1	18
SESCO Bintulu	4	0		7	2		7	1	8	5	0	5	3	2	5
SESCO Miri	8	4		10	2		12	1	13	14	4	18	5	1	6
Balingian Power Generation	1	0		-	-			1	1				1	0	1
SarawakHidro Power Sdn. Bhd.	0	0		40	15		1		1	2	0	2	3	0	3
Bakun Hydro Power Generation										4	1	5	2	0	2

% Turnover rate 2017 = 2.77%
% Turnover rate 2018 = 3.19%
% Turnover rate 2019 = 3.32%
% Turnover rate 2020 = 3.27%
% Turnover rate 2021 = 3.34%

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td>401-2</td><td>Benefits provided to full-time employees that are not provided to temporary or part-time employees</td><td>
<table>
<tr><th>Types of Leave</th><th>Description</th><th>Remarks</th></tr>
<tr><td>Annual</td><td>Service below 10 years = 20 days per annum

Service 10 years and above = 25 days per annum</td><td>All employees received same entitlement irrespective of salary grade</td></tr>
<tr><td>Maternity</td><td>90 calendar days</td><td>Limited to 5 surviving children</td></tr>
<tr><td>Nursing</td><td>Maximum 60 calendar days</td><td>Unpaid</td></tr>
<tr><td>Paternity</td><td>7 continuous calendar days</td><td>Limited to 5 occasions</td></tr>
<tr><td>Hajj</td><td>40 calendar days</td><td>Granted only once; should serve for not less than 5 continuous years</td></tr>
<tr><td>Unrecorded</td><td>30 working days per annum - maximum</td><td>For the purpose of:
• Armed Forces Training
• Sporting & Cultural Activities
• Koperasi SESCO
• Examination
• Deepavali – 1 day
• Charity
• Pilgrimage</td></tr>
<tr><td>Study</td><td>Subject to terms and conditions as determined by the Company</td><td></td></tr>
<tr><td>Compassionate</td><td>Up to 4 working days</td><td>For purpose of attending the funeral
of any one of the following relatives:
• Spouse
• Children who are natural, lawfully adopted or stepchildren
• Parents
• Parents in-law
• Children's Spouse</td></tr>
<tr><td>Overtime</td><td>Maximum of 15 working days
or 120 hours per year</td><td>For executive group E1-E4 only and valid per current year</td></tr>
<tr><td>Sick</td><td>Non-hospitalized = 22 days
Hospitalized = 60 days</td><td>Aggregate 60 days paid leave per annum</td></tr>
<tr><td>Prolonged Illness</td><td>• On full salary for a maximum period of 6 consecutive months
• On half salary for a further period of 6 consecutive months
• Unpaid prolonged illness leave for a further period of 6 consecutive months</td><td></td></tr>
<tr><td>Blood donors privilege</td><td>1 day</td><td></td></tr>
</table>
Loan & Subsidy Benefits
<table>
<tr><th>Type of Loan & Subsidies</th><th>Entitlement (RM)</th><th>Remarks</th></tr>
<tr><td>Housing (Interest Subsidy)</td><td>400,000.00</td><td>Same entitlement irrespective of salary grade</td></tr>
<tr><td>Car (Interest Subsidy)</td><td>50,000.00 - 130,000.00</td><td>Entitlement based on Employee Grade</td></tr>
<tr><td>Motorcycle Loan</td><td>7,000.00</td><td>All Staff</td></tr>
<tr><td>House Moving Expenses Subsidy</td><td>1,500.00</td><td>Same entitlement irrespective of salary grade</td></tr>
</table>
Welfare
Funeral Financial Assistance
<table>
<tr><th>Deceased Person</th><th>Rate (RM)</th><th>Remarks</th></tr>
<tr><td>Serving Employee, Spouse & Children < 21 years old, Parents</td><td>3,000.00</td><td></td></tr>
<tr><td>Retiree</td><td>3,000.00</td><td>Employees joined employment on or after 1st September 2019 are not entitled</td></tr>
</table>
</td><td></td><td>No 8 – Promote inclusive and sustainable economic growth, employment and decent work for all</td><td></td></tr>
</table>

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td>401-2</td><td>Benefits provided to full-time employees that are not provided to temporary or part-time employees</td><td>Other Benefits
<table><tr><th>Reimbursement</th><th>Subsidy Rate (RM)</th></tr><tr><td>Dental & Optical</td><td>750 per year and per family</td></tr><tr><td>Healthy Living Allowance[1]</td><td>500 per year and per family</td></tr><tr><td>Mobile Phone Reimbursement Subsidy[2]</td><td>Ranging from RM1,800 to RM5,800 based on employee grade</td></tr><tr><td>Mobile Phone Bill Subsidy[2]</td><td>RM60 per month</td></tr></table>Notes:
[1] Effective 1st August 2021, Healthy Living Reimbursement converted to one-off payment allowance.
[2] New reimbursement benefit added on 1st October 2021.</td><td></td><td>No 8 – Promote inclusive and sustainable economic growth, employment and decent work for all</td><td></td></tr>
<tr><td colspan="6">Occupational Health and Safety</td></tr>
<tr><td colspan="6">GRI 103: Management Approach 2016</td></tr>
<tr><td>103-1</td><td>Explanation of the material topic and its Boundary</td><td>Creating Value for Stakeholders, p. 164 & 169</td><td></td><td></td><td></td></tr>
<tr><td>103-2</td><td>The management approach and its components</td><td>2021 Year in Review, p. 14 – 15;
Group Chief Executive Officer's Statement, p. 26;
Management Discussion & Analysis, p. 32 - 33;
Our People, p. 72;
A Safe and Healthy Workplace, p. 73 - 77;
Creating Value for Stakeholders, p. 160, p. 164 - 169</td><td></td><td></td><td></td></tr>
<tr><td>103-3</td><td>Evaluation of the management approach</td><td>2021 Year in Review, p. 15;
Key Focus Areas' Targets, p. 65;
A Safe and Healthy Workplace, p. 76 - 77;
Creating Value for Stakeholders, p. 160 & p. 165 - 169</td><td></td><td></td><td></td></tr>
<tr><td colspan="6">GRI 403: Occupational Health and Safety 2018</td></tr>
<tr><td>403-1</td><td>Occupational health and safety management system</td><td>A Safe and Healthy Workplace, p. 74;
Creating Value for Stakeholders, p. 164</td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>403-2</td><td>Hazard identification, risk assessment, and incident investigation</td><td>A Safe and Healthy Workplace, p. 74;
Creating Value for Stakeholders, p. 168</td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>403-3</td><td>Occupational health services</td><td>Creating Value for Stakeholders, p. 167</td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
</table>

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td>403-4</td><td>Worker participation, consultation, and communication on occupational health and safety</td><td>2021 Year in Review, p. 14;
A Safe and Healthy Workplace, p. 74 – 75;
Creating Value for Stakeholders, p. 164 & p. 166 – 169

Environment & Occupational Health & Safety (EOSH) Members in 2020 & 2021:
<table><tr><th>Members</th><th>Year 2020</th><th>Year 2021</th></tr><tr><td>Chairman</td><td>22</td><td>22</td></tr><tr><td>Secretary</td><td>22</td><td>22</td></tr><tr><td>Employer Representative</td><td>211</td><td>211</td></tr><tr><td>Employees Representative</td><td>301</td><td>301</td></tr></table></td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>403-5</td><td>Worker training on occupational health and safety</td><td>2021 Year in Review, p. 14;
Creating Value for Stakeholders, p. 168</td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>403-6</td><td>Promotion of worker health</td><td>2021 Year in Review, p. 14 - 15;
Group Chief Executive Officer's Statement, p. 26;
Key Focus Areas' Targets, p. 65;
Our People, p. 72;
A Safe and Healthy Workplace, p. 73 & 75;
Creating Value for Stakeholders, p. 166 - 169</td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>403-7</td><td>Prevention and mitigation of occupational health and safety impacts directly linked by business relationships</td><td>Creating Value for Stakeholders, p. 164 – 165, 167 & 169</td><td></td><td>No 3 - Ensure healthy lives and promote well-being for all at all ages

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
</table>

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
403-9	Work-related injuries	Management Discussion & Analysis, p. 32; Key Focus Areas' Targets, p. 65; Creating Value for Stakeholders, p. 160 & p. 165 - 166		No 3 - Ensure healthy lives and promote well-being for all at all ages No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
403-10	Work-related ill health	Creating Value for Stakeholders, p. 164		No 3 - Ensure healthy lives and promote well-being for all at all ages No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
Training and Education					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Creating Value for Stakeholders, p. 162			
103-2	The management approach and its components	2021 Year in Review, p. 15; Our People, p. 67 - 72			
103-3	Evaluation of the management approach	2021 Year in Review, p. 15; Key Focus Areas' Targets, p. 65; Our People, p. 70; Creating Value for Stakeholders, p. 162 - 163			

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td colspan="6">GRI 404: Training and Education 2016</td></tr>
<tr><td>404-1</td><td>Average hours of training per year per employee</td><td>Creating Value for Stakeholders, p. 162 - 163

Total and Average of Hours of Training Recorded by Category and Gender for 2017 - 2021
<table>
<tr><th>Year</th><th></th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td rowspan="3">Total Number of Employees by Category</td><td>Management</td><td>216</td><td>476</td><td>145</td><td>54</td><td>49</td></tr>
<tr><td>Executive</td><td>2550</td><td>2,140</td><td>1,538</td><td>1,468</td><td>1,578</td></tr>
<tr><td>Non-executive</td><td>5144</td><td>5,427</td><td>3,338</td><td>3,864</td><td>3,815</td></tr>
<tr><td rowspan="3">Total Hours of Training by Category</td><td>Management</td><td>886.00</td><td>7,987.00</td><td>3,269.00</td><td>1,506</td><td>1,972</td></tr>
<tr><td>Executive</td><td>29,672.00</td><td>31,479.00</td><td>28,932.00</td><td>40,945</td><td>87,115</td></tr>
<tr><td>Non-executive</td><td>70,879.50</td><td>73,919.50</td><td>57,864.00</td><td>35,652</td><td>77,487</td></tr>
<tr><td rowspan="3">Average Hours of Training by Category</td><td>Management</td><td>4.10</td><td>16.78</td><td>22.54</td><td>27.89</td><td>40.24</td></tr>
<tr><td>Executive</td><td>11.64</td><td>14.71</td><td>18.81</td><td>27.89</td><td>55.21</td></tr>
<tr><td>Non-executive</td><td>13.78</td><td>13.62</td><td>17.33</td><td>9.23</td><td>20.31</td></tr>
</table>
Note:
[1] Year 2020 data was revised to reflect additional learning hours recaptured during internal L&D learning data cleansing exercise in Year 2021</td><td></td><td>No 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

No 5 - Achieve gender equality and empower all women and girls

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>404-2</td><td>Programs for upgrading employee skills and transition assistance programs</td><td>2021 Year in Review, p. 15;
Our People, p. 67 - 72</td><td></td><td>No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td>404-3</td><td>Percentage of employees receiving regular performance and career development reviews</td><td>100%

Key Focus Areas' Targets, p. 65</td><td></td><td>No 5 - Achieve gender equality and empower all women and girls

No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td><td></td></tr>
<tr><td colspan="6">Indigenous Rights</td></tr>
<tr><td colspan="6">GRI 103: Management Approach 2016</td></tr>
<tr><td>103-1</td><td>Explanation of the material topic and its Boundary</td><td>Climate Action Stewardship Through Sustainable Solutions, p. 115</td><td></td><td></td><td></td></tr>
<tr><td>103-2</td><td>The management approach and its components</td><td>Powering Our Community, p. 86;
Climate Action Stewardship Through Sustainable Solutions, p. 115 - 116</td><td></td><td></td><td></td></tr>
<tr><td>103-3</td><td>Evaluation of the management approach</td><td>Climate Action Stewardship Through Sustainable Solutions, p. 115</td><td></td><td></td><td></td></tr>
</table>

102-55

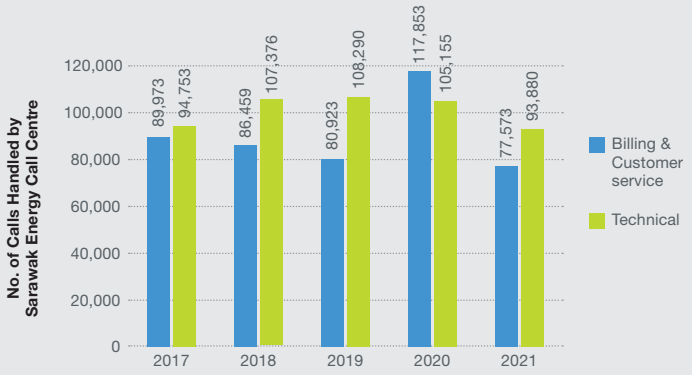
GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
GRI 411: Rights of Indigenous People 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.**		No 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
Local Communities					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Powering Our Community, p. 86 - 87; Developing a Sustainable Community, p. 172			
103-2	The management approach and its components	Powering Our Community, p. 86 - 90; Climate Action Stewardship Through Sustainable Solutions, p. 117; Developing a Sustainable Community, p. 172 - 177			
103-3	Evaluation of the management approach	Developing a Sustainable Community, p. 172 - 176			
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.** Powering Our Community, p. 86 - 90; Climate Action Stewardship Through Sustainable Solutions, p. 117; Developing a Sustainable Community, p. 172 – 177		No 16 - Promote peaceful and inclusive societies for sustainable provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
Customer Privacy					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Statement on Risk Management and Internal Control, p. 55; Embracing Low Carbon Economy, p. 142 - 143			
103-2	The management approach and its components	Statement on Risk Management and Internal Control, p. 55 – 59; Embracing Low Carbon Economy, p. 142 - 145			
103-3	Evaluation of the management approach	Statement on Risk Management and Internal Control, p. 55 – 56 & p. 58 – 59; Embracing Low Carbon Economy, p. 142 & 144			

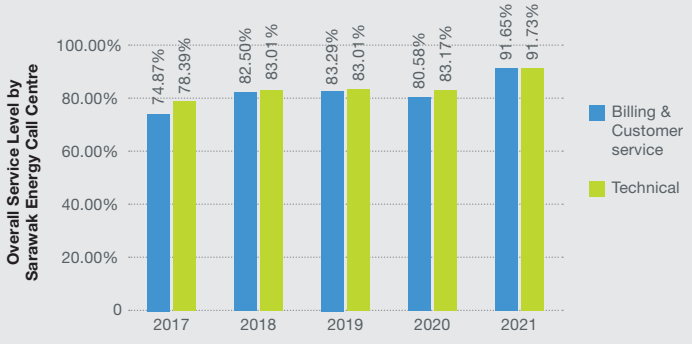
GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
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 2021. **Number of Calls Handled by Sarawak Energy Call Centre and Overall Service Level by Sarawak Energy Call Centre**		No 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	

Customer Service - No. of Calls Handled by Sarawak Energy Call Centre 2017 - 2021



Customer Service - Overall Service Level by Sarawak Energy Call Centre 2017- 2021



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.*

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Sosioeconomic Compliance					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Statement on Risk Management and Internal Control, p. 55			
103-2	The management approach and its components	Statement on Risk Management and Internal Control, p. 55 - 59			
103-3	Evaluation of the management approach	Statement on Risk Management and Internal Control, p. 55 – 56 & p. 58 - 59			
GRI 419: Sosioeconomic Compliance 2016					
419-1	Non-compliance with laws and regulations in the social and economic area	During the year under review, Sarawak Energy did not incur any fines for non-compliance with: i. Products and services on information and labeling ii. Marketing communications including advertising, promotions and sponsorships		No 16 - Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
ELECTRIC UTILITIES SECTOR DISCLOSURES					
Organisational Profile					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	About Sarawak Energy, p. 3			
103-2	The management approach and its components	Our Response to Climate Change, p. 129			
103-3	Evaluation of the management approach	Our Response to Climate Change, p. 129			

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Sector Disclosure: Organisational Profile					
EU1	Installed Capacity, Broken Down by Primary Energy Source and by Regulatory Regime	Embracing Low Carbon Economy, p. 136		No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	**TCFD**
EU2	Net Energy Output Broken Down by Primary Energy Source and by Regulatory Regime	Our Response to Climate Change, p. 129; Embracing Low Carbon Economy, p. 136	Yes	No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development	TCFD
EU3	Number of Residential, Industrial, Institutional and Commercial Customer Accounts	About Sarawak Energy, p. 3			

Major Grid Generation by Plants (GWh), by Energy Source	2017	2018	2019	2020	2021
Hydro					
Batang Ai HEP	442.32	480.59[2]	386.99[1]	517.43[1]	475.02*
Bakun HEP	13,078.27	14,351.89[2]	15,424.40[1]	14,680.88[1]	16,239.10*
Murum HEP	5,717.39	6,053.06[2]	5,688.83[1]	6,406.41[1]	6,456.37*
Lundu PS	2.62	2.85[2]	3.02[1]	1.64[1]	1.10*
Coal					
Sejingkat Power Corp.	684.11	593.49[2]	505.91[1]	494.90[1]	330.74*
PPLS Power Generation	673.69	614.13[2]	518.67[1]	516.33[1]	500.26*
Mukah Power Generation Sdn. Bhd.	1,494.40	1,401.96[2]	1,343.97[1]	770.63[1]	776.40*
Balingian Power Generation	-	-	1,421.72[1]	1,263.98[1]	2,104.91*
Gas					
Miri PS	516.56	487.51[2]	535.37[1]	468.37[1]	375.00*
Bintulu PS	614.31	661.31[2]	615.47[1]	608.67[1]	204.36*
Sarawak Power Generation	1,738.20	2,023.03[2]	2,106.25[1]	1,594.56[1]	1,073.28*
Kidurong Power Generation	-	-	-	212.11[1]	1,626.88*
Diesel					
Sg Biawak PS	16.18	-0.57[2]	0.89[1]	-0.79[1]	-0.49*
TOTAL ENERGY GENERATED	**24,978.05**	**26,669.24[2]**	**28,551.51[1]**	**27,535.13[1]**	**30,162.88***

Notes:

[1] *This net energy generated data has been assured by a third party for Sustainability Report 2020.*

[2] *This net energy generated data has been assured by a third party for Sustainability Report 2018.*

* *This net energy generated data has been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

Grid / Non Grid No. of Customers Ending 2021

Grid	Tariff	No. of Active Customers' Account	No. of Inactive Customers' Account	Total No. of Customers' Account
Grid	C1	100,321	6,907	107,228
Grid	C2	19	1	20
Grid	C3	37	1	38
Grid	DOM	596,299	22,461	618,760
Grid	I1	933	22	955
Grid	I2	32	4	36
Grid	I3	83	3	86
Grid	I4	15	0	15
Grid	PL	11,713	282	11,995
Non Grid	C1	4,160	200	4,360
Non Grid	DOM	20,956	898	21,854
Non Grid	I1	24	0	24
Non Grid	PL	304	3	307
Grand Total		**734,896**	**30,782**	**765,678**

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr><td>EU4</td><td>Length of Above and Underground Transmission and Distribution Lines by Regulatory Regime</td><td>Internalising the Global Sustainability Agenda, p. 96
Distribution Lines
<table>
<tr><th rowspan="3">Region</th><th colspan="6">Total Length of Distribution Lines in 2021</th></tr>
<tr><th colspan="2">33kV Distribution</th><th colspan="2">11kV Distribution</th><th colspan="2">415V Distribution</th></tr>
<tr><th>O/H (km)</th><th>U/G (km)</th><th>O/H (km)</th><th>U/G (km)</th><th>O/H (km)</th><th>U/G (km)</th></tr>
<tr><td>WR Kuching</td><td>1,164.65</td><td>837.13</td><td>2,264.02</td><td>1,959.15</td><td>5,508.30</td><td>1,759.23</td></tr>
<tr><td>WR Sri Aman</td><td>869.66</td><td>67.72</td><td>1,592.52</td><td>183.64</td><td>1,456.78</td><td>102.53</td></tr>
<tr><td>CR Sarikei</td><td>349.13</td><td>74.35</td><td>673.5</td><td>109.54</td><td>1,349.45</td><td>136.69</td></tr>
<tr><td>CR Sibu</td><td>1,198.45</td><td>364.34</td><td>1,507.66</td><td>967.30</td><td>3,311.17</td><td>846.46</td></tr>
<tr><td>NR Bintulu</td><td>768.00</td><td>235.97</td><td>217.78</td><td>374.10</td><td>610.52</td><td>240.74</td></tr>
<tr><td>NR Miri</td><td>438.43</td><td>609.10</td><td>783.65</td><td>642.73</td><td>2,984.22</td><td>668.27</td></tr>
<tr><td>NR Limbang</td><td>109.77</td><td>20.60</td><td>691.29</td><td>80.16</td><td>578.24</td><td>40.04</td></tr>
<tr><td>Total</td><td>4,898.08</td><td>2,209.20</td><td>7,730.41</td><td>4,316.61</td><td>15,798.68</td><td>3,793.95</td></tr>
</table>
Transmission Lines
<table>
<tr><th></th><th colspan="4">Total Length of Transmission Lines in 2021</th></tr>
<tr><th></th><th>500kV energized at 275kV</th><th>275kV</th><th>132kV</th><th>Total</th></tr>
<tr><td>Overhead (km)</td><td>753.00</td><td>3,103.22</td><td>1,153.36</td><td>5,009.58</td></tr>
<tr><td>Underground (km)</td><td>0</td><td>0</td><td>23.47</td><td>23.47</td></tr>
<tr><td>Total (km)</td><td>753.00</td><td>3,103.22</td><td>1,176.83</td><td>5,033.05</td></tr>
</table></td><td></td><td>No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all</td><td></td></tr>
<tr><td colspan="6">Availability and Reliability</td></tr>
<tr><td colspan="6">GRI 103: Management Approach 2016</td></tr>
<tr><td>103-1</td><td>Explanation of the material topic and its Boundary</td><td>Embracing Low Carbon Economy, p. 134</td><td></td><td></td><td></td></tr>
<tr><td>103-2</td><td>The management approach and its components</td><td>Renewable Energy for Sarawak & Beyond, p. 9</td><td></td><td></td><td></td></tr>
<tr><td>103-3</td><td>Evaluation of the management approach</td><td>Embracing Low Carbon Economy, p. 136</td><td></td><td></td><td></td></tr>
<tr><td colspan="6">Sector Disclosure: Availability & Reliability</td></tr>
<tr><td>EU10</td><td>Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime</td><td>Renewable Energy for Sarawak & Beyond, p. 9 – 10;
Embracing Low Carbon Economy, p. 136</td><td></td><td>No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all</td><td></td></tr>
</table>

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Sector Disclosure: Organisational Profile					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Group Chief Executive Officer's Statement, p. 26			
103-2	The management approach and its components	2021 Year in Review, p. 15; Climate Action Stewardship Through Sustainable Solutions, p. 112 - 113; Embracing Low Carbon Economy, p. 138			
103-3	Evaluation of the management approach	2021 Year in Review, p. 15; Group Chief Executive Officer's Statement, p. 26; Report Card 2021, p. 63; Key Focus Areas' Targets, p. 65; Embracing Low Carbon Economy, p. 138			
Sector Disclosure: System Efficiency					
EU11	Average generation efficiency of thermal plants by energy source and by regulatory			No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all No 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all No 12 – Ensure sustainable consumption and production patterns No 13 – Take urgent action to combat climate change and its impacts No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development	

Plant Type	Major Plant	Total Average Energy Efficiency[1] (%) – Year 2017	Total Average Energy Efficiency[1] (%) – Year 2018	Total Average Energy Efficiency[1] (%) – Year 2019	Total Average Energy Efficiency[1] (%) – Year 2020	Total Average Energy Efficiency[1] (%) – Year 2021
Coal	Sejingkat Power Corp	26.42%	26.39%	27.25%	25.11%	26.83%
Coal	PPLS	30.19%	31.80%	30.72%	32.62%	22.00%
Coal	MPG	33.49%	32.70%	31.90%	33.01%	32.19%
Coal	BPG	-	-	35.58%	31.85%	35.22%
Combined Cycle - Natural Gas	SPG	38.22%	38.59%	40.25%	38.68%	32.72%
Combined Cycle - Natural Gas	KID1	-	-	-	-	44.78%
Open Cycle - Natural Gas	Bintulu SESCO	20.94%	21.70%	21.22%	21.03%	21.85%
Open Cycle - Natural Gas	Miri SESCO	20.89%	21.89%	21.28%	21.44%	21.79%
Diesel - Standby	Sg Biawak SESCO	31.19%	24.05%	22.14%	17.86%[2]	20.48%[2]
Diesel - Non Grid	Limbang SESCO	37.08%	34.88%	34.69%	34.58%	33.81%
Diesel - Non Grid	Lawas SESCO	36.30%	34.69%	34.40%	34.37%	33.31%

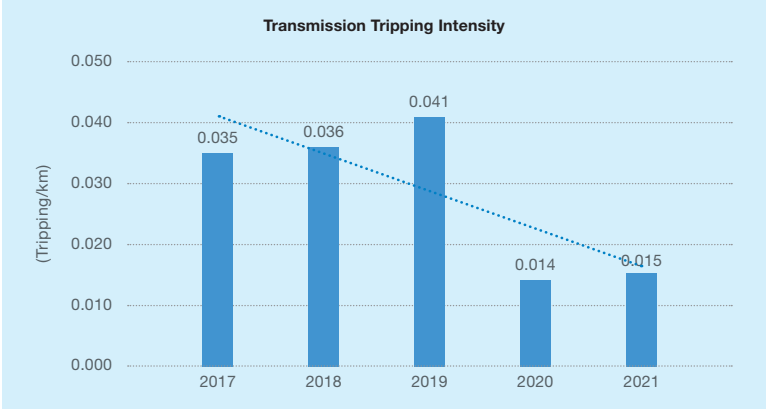
Notes:
[1] *Total average energy efficiency for Sarawak Energy thermal power plants connected to Main and Northern grids.*
[2] *Plant on standby mode*

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

<table>
<tr><th>Disclosure Number</th><th>Disclosure Title</th><th>Page/Direct Reference</th><th>External Assurance</th><th>SDG linkage to Disclosure</th><th>TCFD</th></tr>
<tr>
<td>EU12</td>
<td>Transmission and distribution losses as a percentage of total energy</td>
<td>2021 Year in Review, p. 15;
Report Card 2021, p. 63;
Key Focus Areas' Targets, p. 65;
Internalising the Global Sustainability Agenda, p. 96;
Embracing Low Carbon Economy, p. 138 - 139

Total Number of Transmission Tripping and Tripping Intensity at Transmission (Year 2017 – 2021)

Total Distance of Distribution and Transmission lines:
<table>
<tr><th>Total Distance</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td>Distribution - 33kV, 11kV, 415kV (km)</td><td>34,421.06</td><td>35,095.00</td><td>35,948.05</td><td>37,174.33</td><td>38,746.93</td></tr>
<tr><td>Transmission (km)</td><td>2,187.59</td><td>2,224.80</td><td>2,404.76</td><td>4,707.46</td><td>5,033.05</td></tr>
<tr><td>TOTAL</td><td>36,608.65</td><td>37,319.80</td><td>38,352.81</td><td>41,881.79</td><td>43,779.98</td></tr>
</table>
Total Number of Transmission Tripping and Tripping Intensity at Transmission:
<table>
<tr><th>Total Distance</th><th>Year</th><th>2017</th><th>2018</th><th>2019</th><th>2020</th><th>2021</th></tr>
<tr><td rowspan="3">Number of Transmission Tripping</td><td>Substation</td><td>21</td><td>22</td><td>29</td><td>15</td><td>12</td></tr>
<tr><td>Transmission</td><td>56</td><td>58</td><td>69</td><td>53</td><td>64</td></tr>
<tr><td>Total</td><td>77</td><td>80</td><td>98</td><td>68</td><td>76</td></tr>
<tr><td colspan="2">Transmission Tripping Intensity (Tripping/km)</td><td>0.035</td><td>0.036</td><td>0.041</td><td>0.014</td><td>0.015</td></tr>
</table>


</td>
<td></td>
<td>No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all

No 8 – Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

No 12 – Ensure sustainable consumption and production patterns

No 13 – Take urgent action to combat climate change and its impacts

No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development</td>
<td></td>
</tr>
</table>

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Access					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	About Sarawak Energy, p. 3; Renewable Energy for Sarawak & Beyond, p. 8; Lighting Up Sarawak, p. 170			
103-2	The management approach and its components	About Sarawak Energy, p. 5; Renewable Energy for Sarawak & Beyond, p. 8; Energy for Sarawak, p. 13; 2021 Year in Review, p. 15; Group Chief Executive Officer's Statement, p. 25; Management Discussion & Analysis, p. 30 - 31; Delivering Sustainable Growth, p. 82; Creating Value for Stakeholders, p. 160; Lighting Up Sarawak, p. 170			
103-3	Evaluation of the management approach	2021 Year in Review, p. 15; Report Card 2021, p. 62 - 63; Key Focus Areas' Targets, p. 65; Creating Long-Term Value, p. 101; Internalising the Global Sustainability Agenda, p. 136; Embracing Low Carbon Economy, p. 137; Creating Value for Stakeholders, p. 160; Lighting Up Sarawak, p. 170			

Total Number of DRMS (Distribution Remote Monitoring System)

Year	2020	2021
Description	**Total Number Installed**	**Total Number Installed**
DRMS Sub	695	1,092
RTU	705	1,142

Sensor	Telemetry Points	Telemetry Points
Photobeam	1	1
Street Light Aux. Cont.	41	53
Street Light Supply	84	104
Battery Charger Supply	-	37
Battery Room Door	-	33
Air Conditioner	-	8
Zone Substation	-	11
Mobile Sub Door	-	10
Substation Building	27	-
Pillar Door	846	1,321
EFI	561	852
Transformer Loss of Supply	747	1,319
Main Gate	16	16
Total Points	**2,325**	**3,765**

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
Sector Disclosure: Access					
EU26	Percentage of population unserved in licensed distribution or service areas	About Sarawak Energy, p. 3 & 5; Renewable Energy for Sarawak & Beyond, p. 8; 2021 Year in Review, p. 15; Group Chief Executive Officer's Statement, p. 25; Management Discussion & Analysis, p. 30 - 31; Delivering Sustainable Growth, p. 82; Internalising the Global Sustainability Agenda, p. 96; Creating Long-Term Value, p. 101; Creating Value for Stakeholders, p. 160; Lighting Up Sarawak, p. 170 • State electrification coverage – 98.62%* • Rural electrification coverage – 96.54%* (135,490 of rural households electrified since 2009)	Yes	No 1 – End poverty in all its forms everywhere No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	

NEW HOUSEHOLDS CONNECTED

YEAR	2017	2018	2019	2020	2021
Normal Rural Electrification Scheme (RES)	5,409	3,990	5,239	3,186	4,010
Hybrid Programmes	966	270	483	70	115
SARES	1,124	1,448	3,122	3,354	1,912
TOTAL	**7,499**	**5,748**	**8,844**	**6,610**	**6,037**

Note:

* *These Sarawak electrification coverage and rural electrification coverage data have been assured by a third party. Read the Independent Assurance Report on pages 178 - 182.*

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
EU27	Number of residential disconnections for non-payments, broken down by duration of disconnection and by regulatory regime	Embracing Low Carbon Economy, p. 139		No 1 – End poverty in all its forms everywhere No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	
EU28	Power outage frequency	2021 Year in Review, p. 15; Management Discussion & Analysis, p. 31; Report Card 2021, p. 63; Key Focus Areas' Targets, p. 65; Embracing Low Carbon Economy, p. 137		No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	
EU29	Average power outage duration	Energy for Sarawak, p. 13; 2021 Year in Review, p. 15; Management Discussion & Analysis, p. 31; Report Card 2021, p. 63; Key Focus Areas' Targets, p. 65; Sustainability Key Highlights, p. 94; Internalising the Global Sustainability Agenda, p. 96; Embracing Low Carbon Economy, p. 137		No 1 - End poverty in all its forms everywhere No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all	
EU30	Average plant availability factor by energy source and by regulatory regime	Management Discussion & Analysis, p. 31; Report Card 2021, p. 62; Key Focus Areas' Targets, p. 65; Internalising the Global Sustainability Agenda, p. 96; Embracing Low Carbon Economy, p. 136 **Average plant equivalent availability factor (%) and Forced Outage (Hours) by energy source (Thermal Power Plants)**		No 1 - End poverty in all its forms everywhere No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	

		Year 2017		Year 2018		Year 2019		Year 2020		Year 2021	
Plant Type	Major Plant	Equivalent Availability (%)	Forced Outage (Hours)	Equivalent Availability (%)	Forced Outage (Hours)	Equivalent Availability (%)	Forced Outage (Hours)	Equivalent Availability (%)	Forced Outage (Hours)	Equivalent Availability (%)	Forced Outage (Hours)
Plant Type	Major Plant										
Coal	Sejingkat Power Corp	85.91	62.01	88.45	340.77	73.32	3,998.2	82.88	1,187.65	83.32	1,573.05
Coal	PPLS	90.48	217.8	88.63	433.95	89.56	1,191.7	90.34	400.93	95.36	44.48
Coal	MPG	80.63	784.57	79.33	547.42	75.43	519.98	87.73	220.67	86.36	452.72
Coal	BPG	-	-	-		41.48	5.88	97.04	182.72	73.41	1,053.22
Combined Cycle – Natural Gas	SPG	71.88	1,050.09	88.61	87.63	88.25	252.24	72.04	282.87	61.55	877.16
Open Cycle – Natural Gas	Bintulu SESCO	87.58	963.93	91.17	196.93	91.1	642.26	87.04	237.44	95.02	1,458.72
Combined Cycle – Natural Gas	Kidurong Power Generation	-	-	-	-	-	-	-	-	87.48	1,835.77
Open Cycle – Natural Gas	Miri SESCO	75.47	1,365.65	77.96	712.03	93.48	273.45	88.81	2,108.05	82.32	5,446.14
Diesel – Standby	Sg Biawak SESCO	92.24	992.93	87.12	4,106.3	99.06	32.29	98.79	0.00	89.34	0.00
Diesel – Non Grid	Limbang SESCO	97.87	145.5	95.08	1336	97.05	221	97.48	120.00	86.87	10,627.00
Diesel – Non Grid	Lawas SESCO	72.30	29	76.26	0	74.57	1,560	95.59	114.00	82.02	137.00

102-55

GRI CONTENT INDEX FOR 'IN ACCORDANCE' – CORE

Disclosure Number	Disclosure Title	Page/Direct Reference	External Assurance	SDG linkage to Disclosure	TCFD
EU30	Average plant availability factor by energy source and by regulatory regime			No 1 - End poverty in all its forms everywhere No 7 – Ensure access to affordable, reliable, sustainable and modern energy for all	

		Year 2017		Year 2018		Year 2019		Year 2020		Year 2021	
Plant Type	Major Plant	Availability (%)	Forced Outage (Hours)	Availability (%)	Forced Outage (Hours)	Availability (%)	Forced Outage (Hours)	Availability (%)	Forced Outage (Hours)	Availability (%)	Forced Outage (Hours)
Hydro	Batang Ai HEP	94.8	35.97	92.1	3.9	83.83	172.22	91.40	122.04	95.89	19.04
Hydro	Murum HEP	95.19	48.24	96.08	170.94	85.09	1076.91	94.85	250.51	93.69	295.29
Hydro	Bakun HEP	93.56	1,662.82	92.23	23.37	97.13	482.17	94.84%	284.22	95.68	278.59

Notes:

1. *Sarawak Energy Thermal Power Plants is using Equivalent Availability Factor (EAF).*
2. *Sarawak Energy Hydro operation is using Availability Factor (AF).*

Research and Development					
GRI 103: Management Approach 2016					
103-1	Explanation of the material topic and its Boundary	Delivering Sustainable Growth, p. 83			
103-2	The management approach and its components	Delivering Sustainable Growth, p. 80 & p. 83 - 85			
103-3	Evaluation of the management approach	Delivering Sustainable Growth, p. 83			
Sector Disclosure: Research & Development					
(Former EU8)	Research and development activity and expenditure aimed at providing reliability electricity and promoting sustainable development	Delivering Sustainable Growth, p. 83 - 85		No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all No 9 - Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation No 17 - Strengthen the means of implementation and revitalize the global partnership for sustainable development	

Research and Development Projects for 2021

Name of Project	Approved Budget (RM)
Semadang_Microgrid project	3,974,996.00
New Laboratory	962,000.00
Grid Connected Energy Storage System	364,565.30
Solar-Hydrogen in rural electrification	996,451.00
Gasification Plant at Paloh PowerStation	90,000.00
Fall Protection System Menara SE Rooftop	243,267.87
Transformer Oil & Lubricating Oil Laboratory	320,000.00
Refurbishment of Kalamuku MH - E&M Works	295,760.00
Development of AI Robotic System	80,000.00
Hydro Env Sci Research Programmes	58,085.00
GHG Monitoring of HEPs (CP)	31,915.00
Integration of |Smart and Low-Cost Sensor	100,000.00
New Software-CFD	55,000.00
Covered Conductor Pilot Project	50,084.70
Refurbishment of Sg Kejin Mini Hydro (CP)	332,041.07
Modelling and Simulation tools for DER	620,000.00
Lightning Research Study on 275kV TL	360,000.00
PV and Micro hydro integration for Rh Bada	15,000.00
Energy Efficiency and Energy Management Initiatives	275,000.00
Waterpower prototype & research programme	150,000.00
TOTAL	**9,374,165.94**

Menara Sarawak Energy
No. 1, The Isthmus, 93050 Kuching, Sarawak, Malaysia.
General Line: +6 082-388 388
Fax: +6 082-341 063
Corporate Enquiries: corpcomm@sarawakenergy.com
Sustainability Enquiries: sustainability@sarawakenergy.com

Follow us on

Sarawak Energy Berhad

@1SarawakEnergy

www.sarawakenergy.com