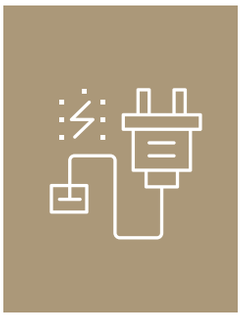
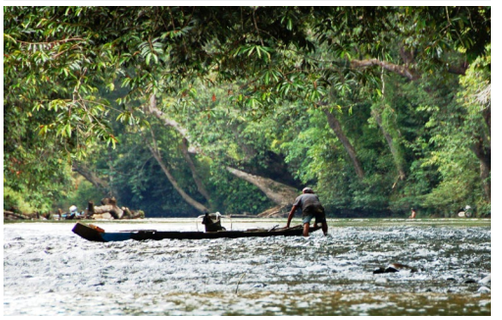
sarawak energy

MAKING AN IMPACT





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Making an Impact

Sarawak Energy Berhad is not just a utility company. We're a company that empowers people while taking care of the environment in which our communities live. We put smiles on the faces of indigenous communities living in remote Sarawak by providing them with non-grid power. We are committed to support the biodiversity conservation efforts of our rainforest in Sarawak. And we lead the region in generating energy that is clean, reliable, renewable as well as affordable. As we grow our business, we endeavour to make an impact on the millions of lives that we touch.

Sarawak Energy is a member of

UN Global Compact Network Malaysia

GRI GOLD Community Sarawak Energy 2016

iha international hydropower association

Feedback

This report also serves to encourage dialogue between ourselves and our stakeholders, especially our customers, suppliers and employees. We welcome your feedback, queries and suggestions on any aspect of our sustainability impacts and performance.

This report is printed on enviromentally friendly paper.

Please contact us at 082-388 388 or via email at sustainability@sarawakenergy.com.my

G4-18
G4-20
G4-21

About This Report

Our Sustainability Report 2016 is the third to be produced by Sarawak Energy Berhad. Although, as a non-public listed company, we are not obliged to produce a sustainability report, we have voluntarily embarked on this journey because we believe business must be part of the solution towards state, national and global sustainable development goals by meeting present needs while preparing for the future. It is not "business as usual" anymore. Sustainable, equitable growth is the only acceptable business model.

Our vision is to sustain and grow our business while reducing our environmental footprint and increasing our positive social impact via innovation. We strive to integrate a robust sustainability agenda into the heart of our corporate strategy, in line with the belief that appropriate management of sustainability issues is critical in realising our vision.

We are the only energy producer in Sarawak, serving of more than 2.6 million people in the state. While ensuring safe, secure and sustainable energy supply to the state, we also export to Kalimantan. We have the distinction of being the only energy producer in Malaysia with more than 70% of our electricity generation mix from a renewable source – hydro – hence are in a position to lead in the development of renewable and sustainable energy to realise our vision of becoming an regional powerhouse.

In this Sustainability Report, we provide clarity on what sustainability means to us and how we intend to safeguard the commercial viability of our business while creating value for stakeholders – namely our customers, employees, suppliers and the local communities – in non-financial ways.

In putting together this report, we recognise and understand the need for sustainable development at the global, national and state levels. We seek to embed a sustainability mindset, philosophy and practices in the way we manage our business. We embrace the United Nations' Sustainable Development Goals, a set of 17 targets that call for the cooperation of the public and private sectors and civil society to protect the planet, and ensure prosperity for all by the year 2030. In presenting our sustainability performance via key indicators, we have adhered to the Global Reporting Initiative (GRI) G4 Guidelines. Indicators disclosed meet the Core option in accordance to GRI G4 Guidelines. Data provided will indicate our performance in progressing towards our sustainability vision and goals.

Scope

This report covers our entire operations in Sarawak, including our subsidiaries. Unless otherwise stated, the data presented focus on the year 2016.

Feedback

As this report has been produced specifically for our stakeholders, we positively welcome your feedback on our content and level of disclosure. If you have any queries, comments or suggestions on any aspect of our sustainable operations – either disclosed or not – please communicate your views to us either through:

Phone: 082-388 388
Email: sustainability@sarawakenergy.com.my

SDG #07

AFFORDABLE AND CLEAN ENERGY

07 AFFORDABLE AND CLEAN ENERGY

Access to affordable, reliable, sustainable and modern energy

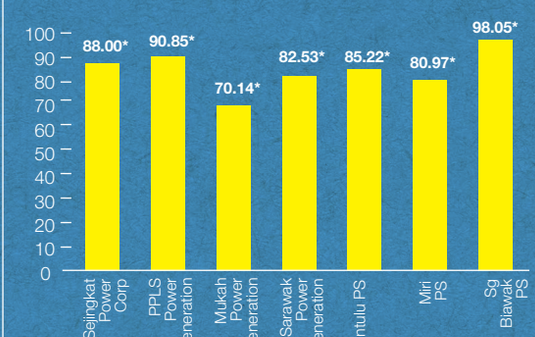
The United Nations' SDG 7 aims to ensure universal access to affordable, reliable and modern energy services, with an increased share of renewable energy in the global energy mix and doubling in energy efficiency rates.

We support this sustainable development goal through various initiatives.

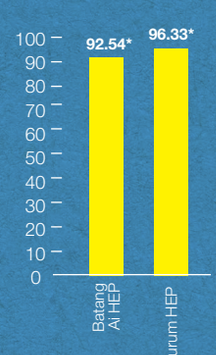
- From our rural electrification scheme, we have achieved 94% statewide coverage
- From our hydro plants, we have increased the share of renewable energy in our generation mix. The renewable energy share has increased by 1,186% since 2011
- Via operational efficiencies, we have maintained a consistently high level of plant availability
- Our main grid CO_2 emission intensity has reduced by 66% since 2011. In addition, our electricity tariff is the cheapest in Malaysia & Southeast Asia

OUR PERFORMANCE

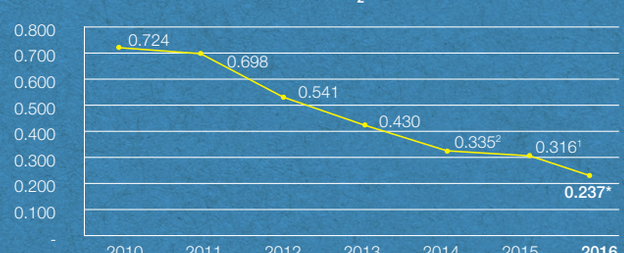
Average Plant Equivalent Availability Factor (for Thermal), %



Average Plant Availability Factor (for Hydro), %



Sarawak Energy Main Grid CO_2 Emission Intensity 2010 - 2016 (tCO_2eq/MWh)

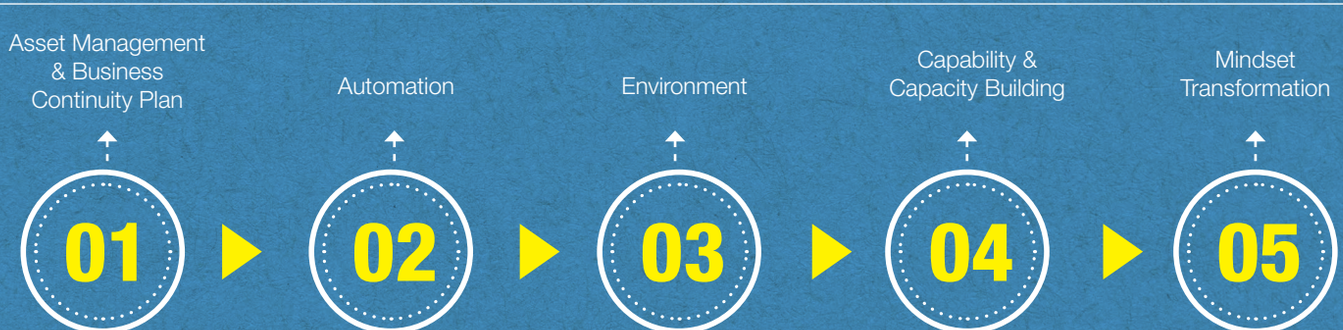


Our main grid emission intensity has reduced by

66%
since 2011

Average Electricity Tariff - 28 sen/kWh

HYDRO ENNOVATE (5 TO 10 YEARS)



Notes:

[1] *This grid carbon emission intensity data has been assured by a third party for Sustainability Report 2015.*

[2] *This grid carbon emission intensity data has been assured by a third party for Sustainability Report 2014.*

* *These grid carbon emission intensity, equivalent availability factor (thermal power plants), availability factor (hydro power plants) data have been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

SDG #07 Targets

- ✓ **By 2030,** ensure universal access to affordable, reliable and modern energy services
- ✓ **By 2030,** increase substantially the share of renewable energy in the global energy mix
- ✓ **By 2030,** double the global rate of improvement in energy efficiency
- ✓ **By 2030,** enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology

Artis Impression of Baleh Hydropower Project

OUR PERFORMANCE

Adding Value To Our Business

Sarawak's Electrification Coverage

94%

as at end 2016

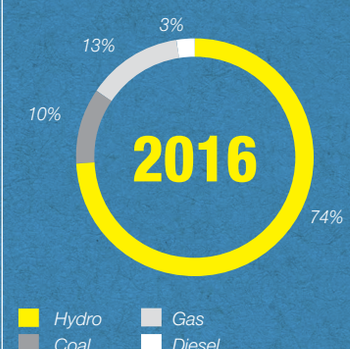
Benefitted at Least

101,000

rural households from 2009-2016

GRID GENERATION MIX

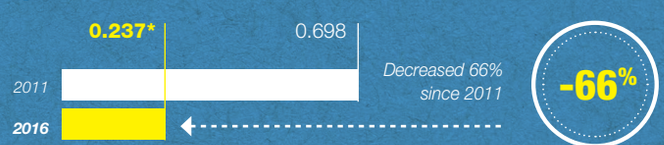
Grid Installed Capacity by Energy Source (Main Grid)



SCORECARD

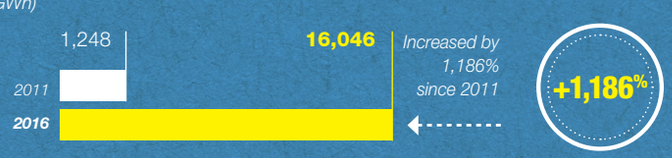
Emission Intensity - Main Grid

(tCO_2eq/MWh)



Renewable Energy Generated

(GWh)



EFFICIENT OPERATIONS ACROSS OUR VALUE CHAIN - KEY STRATEGIES

Generation	Transmission	Distribution	Retail	Reliable Power Supply
Maximise plant availability and reliability	Enhance system reliability	Reinforce existing network	Employ technology and streamline key processes to improve customer service	Efficient Operations
Improve operational performance	Optimise generation mix	In-sourcing of critical functions (e.g. response teams)	Effectively combat power theft	Reducing our Environmental Footprint
				Cost Saving

Train and retain technical personnel
Launch asset management programme

Note:

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-10, G4-EC1, G4-EC9, G4-EN18

SDG #08

DECENT WORK AND ECONOMIC GROWTH

Promoting inclusive and sustainable economic growth, employment and decent work

The United Nations' SDG 8 seeks to achieve economic growth that is driven by equitable work opportunities, targeting higher productivity through diversification and innovation; entrepreneurship, especially among micro, small and medium-sized enterprises; and encouraging the development of sustainable tourism. All this is to be achieved while protecting the environment.

Our policies reflect these aspirations as can be observed by the good balance of male and female representation among our employees, the training provided and focus on leadership development, as well as our comprehensive compensation package. We also support the employment of locals, give preferential treatment to local suppliers, and are conscious of driving economic development in an environmentally sound manner by shifting to renewable and clean energy as well as adopting environmental friendly technology in our power generation, as seen by the decrease in our main grid emission intensity.

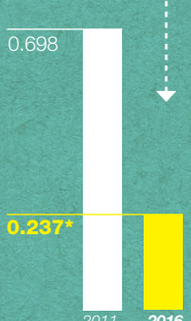
SCORECARD

Emission Intensity - Main Grid

(tCO_2eq/MWh)

-66%

Decreased 66% since 2011

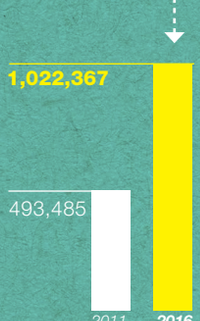


Tenders Awarded to Locals

(RM million)

+107%

Increased by 107% since 2011

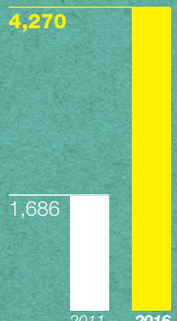


Revenue

(RM million)

+153%

Increased 153% since 2011



VALUE CREATION

Economic Value Retained

RM908.2*

million

Payments to Government

RM175.8

million

Economic Value Distributed

RM3.36

billion

Electricity Sales

20,627

GWh

NEW HIRES BY GENDER

Female

68

Male

190

TRAINING AND EDUCATION

Total Workforce

4,468

Male	Female
3,516	952

Note:

* *These grid carbon emission intensity and economic value retained data have been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

Our People

SDG #08 Targets

- ✓ Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors
- ✓ Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalisation and growth of micro-, small- and medium-sized enterprises, including through access to financial services
- ✓ Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
- ✓ By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value
- ✓ By 2020, substantially reduce the proportion of youth not in employment, education or training
- ✓ Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms
- ✓ Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment

Procurement Policy

We have a policy of supporting local suppliers, hence also the local economy. During the financial year, RM1,244.25 million worth of contracts were awarded to Malaysian companies, comprising 43% of the total. Of this, RM1,022.37 million worth of contracts were awarded to Sarawakian companies.

Customer Care Centre at Wisma Sesco

G4-EN8

SDG #06
CLEAN WATER AND SANITATION

Access to water and sanitation

The United Nations' SDG 6 seeks to ensure everybody throughout the world has access to safe and affordable drinking water. This is to be achieved via efforts to improve water quality and water use efficiency, supported by widespread use of integrated water resource management, protection of water ecosystems, and international cooperation as well as capacity building.

How We Support These Targets:

- We monitor rainfall, river water levels, inflow of water into our hydro plants, etc under a comprehensive Water Catchment Plan
- We train staff to enhance their water management skills
- We monitor the utilisation of water in our plants and ensure we use water efficiently, with minimum waste
- We adopt a closed-loop cooling system which avoids wastage

WATER RESOURCE MANAGEMENT

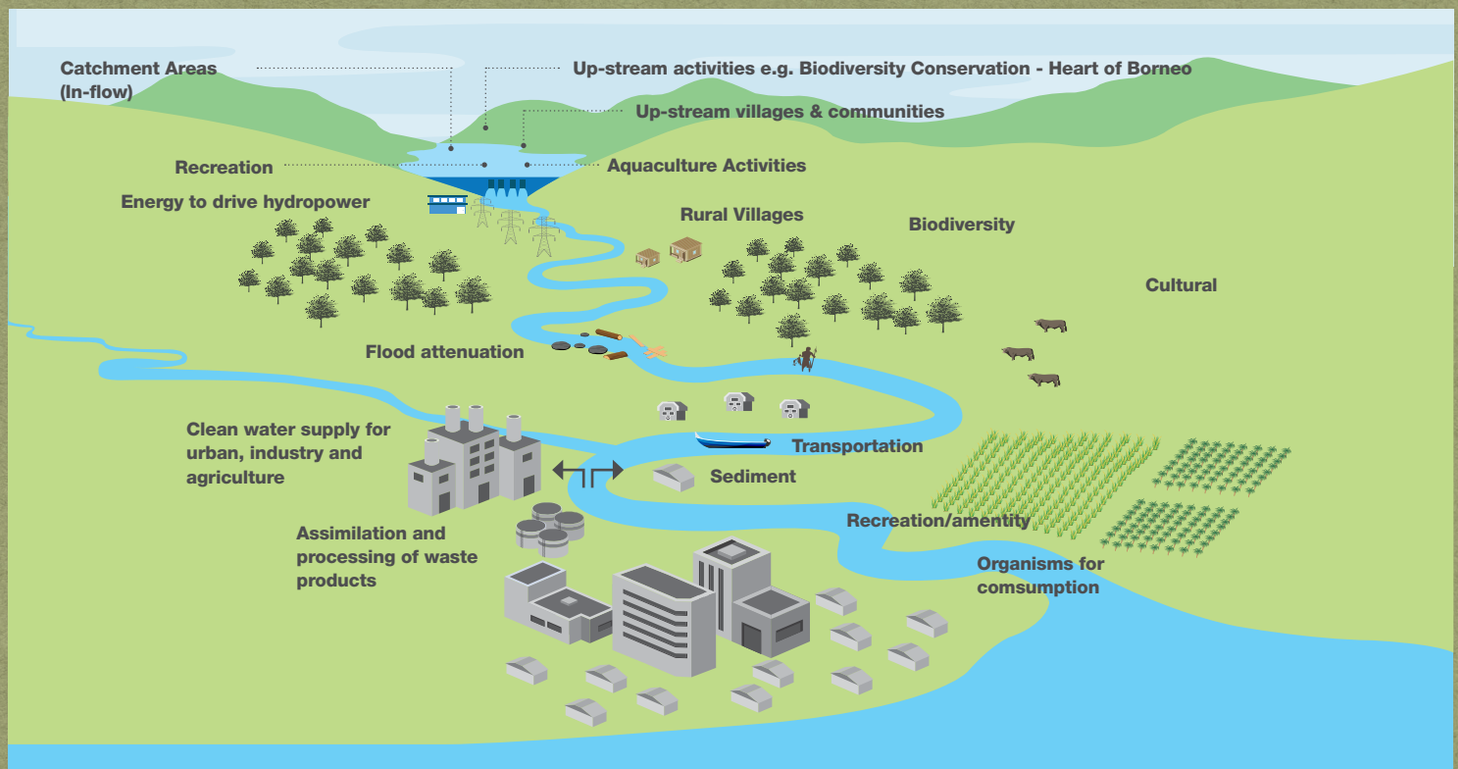
Total water withdrawal by source

PLANT TYPE	SOURCE	UNIT	TOTAL 2016
Coal Fired Power Plants	Municipal	meter cubic (m^3)	**2,525,529.00**
	Sea Water or other natural water source	meter cubic (m^3)	**812,784,320.00**
Gas Fired Power Plants	Municipal	meter cubic (m^3)	**132,442.00**
	Sea Water or other natural water source	meter cubic (m^3)	**249,789,230.68**
Diesel Fired Power Plants	Municipal	meter cubic (m^3)	**22,671.66**
	Sea Water or other natural water source	meter cubic (m^3)	**2,143,090.00**

Water Regulated for Our Hydropower Generation

BATANG AI HEP	MURUM HEP
· Annual rainfall 3,730 mm	· Annual rainfall 4,182 mm
· Annual inflow 3,802 Mm^3(annual inflow from catchment)	· Annual inflow 8,663 Mm^3 (annual inflow from catchment)
· Reservoir volume at Full supply level (FSL) – 2,700 Mm^3	· Reservoir volume at Full supply level (FSL) – 9,247 Mm^3

Integrated Catchment Management - The ability of the hydropower reservoir to store water and regulate its release directly contribute to the adaptation and mitigation measures toward the impact of climate change due to severe weather changes.



SDG #06 Targets

- ✓ By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity while substantially reducing the number of people suffering from water scarcity
- ✓ By 2030, implement integrated water resource management at all levels, including through transboundary cooperation as appropriate
- ✓ By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes
- ✓ By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

OUR CONSERVATION AND CATCHMENT MANAGEMENT ACTION PLAN

- Awareness programmes (Global change) via workshops and seminars
- Inventory & data gathering
- Framework data sharing

- Medium & long-term programmes on Catchment Management via strategic partnership
- Framework on Catchment Management Procedures, Guidelines & Policy
- System for data sharing

- Supporting integrated catchment management
- Monitoring and continued improvement

SDG #13

CLIMATE ACTION

13 CLIMATE ACTION

Combatting climate change and its impacts

Climate change is addressed by the United Nations' SDG 13. Essentially this extols all nations to strengthen their resilience and adaptive capacity to climate-related impacts while integrating climate change measures into national policies, and enhancing institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.

Shifting our generation to renewable energy has significantly reduced our main Grid CO_2 emissions over the years. In addition, our reservoirs serve to mitigate some of the impacts of climate change, such as increased rainfall. By controlling the outflow of water to downstream areas, they prevent the occurrence and/or the intensity of floods.

We are staunch supporters of environmental protection and have taken various measures to combat climate change:

- We maintain an optimum grid energy mix which balances our environmental and economic considerations
- Improved efficiency of thermal power generation, eg at Bintulu Power Plant and adoption of environmentally friendly technology in new thermal power plants such as Balingian Coal Fired Power Plant, the first circulating fluidized bed (CFB) technology in Malaysia
- Supporting the conservation and biodiversity protection of catchment areas via continuous engagement with all stakeholders as well as gathering baseline information through R&D projects

These strategies and initiatives contribute to Malaysia Government's commitment to reduce the nation's carbon emission intensity as a percentage of GDP by 45% by the year 2030 from 2005 and the 11th Malaysia Plan on Green Economy which places emphasis on generating renewable, clean and affordable energy via hydropower.

SCORECARD

Emission Intensity - Main Grid

(tCO_2eq/MWh)

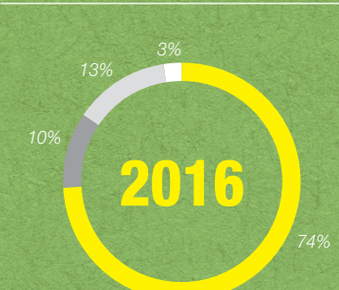
Emission Reductions

615,130 ton CO_2

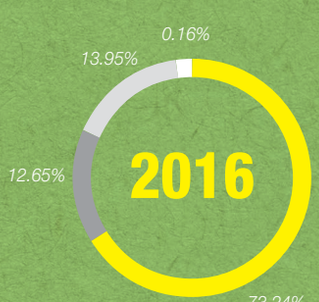
CO_2 Emission

5,203 ('000 ton CO_2)

GRID GENERATION MIX



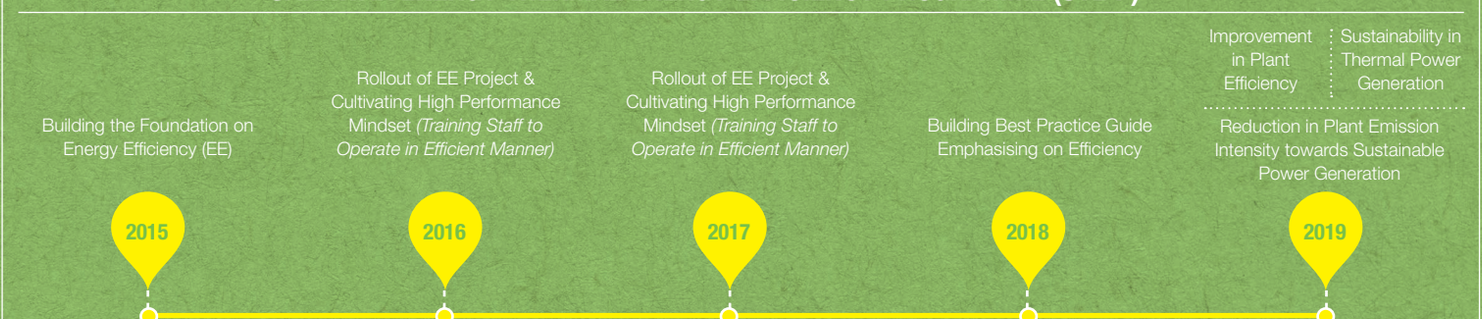
Grid Installed Capacity by Energy Source (Main Grid)



Grid Energy Mix (Main Grid)

- *Hydro*
- *Coal*
- *Gas*
- *Diesel*

SARAWAK ENERGY THERMAL ENERGY EFFICIENCY PROGRAMME (STE²P)



Note:

* *This grid carbon emission intensity data have been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

Balingian Coal Fired Power Plant (600MW) - the first coal fired power to utilise circulating fluidised bed (CFB) technology in Malaysia

SDG #13 Targets

- ✓ Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- ✓ Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Batang Ai Hidroelectric Plant

Contribute to the Malaysian Government's target of reducing the nation's carbon emission intensity by

45% **by the year 2030**

compared to the 2005 level *(United Nations Framework Convention on Climate Change, Paris, 2015)*

Bintulu Gas Fired Power Plant

SDG #15
LIFE ON LAND

Forest management and preserving our biodiversity

Under SDG 15, the United Nations targets the conservation and sustainable use of terrestrial land and inland freshwater ecosystems. This entails conserving biodiversity by protecting and preventing the extinction of endangered species, as well as efforts to halt poaching and trafficking of flora and fauna.

Various efforts undertaken by Sarawak Energy are geared towards the preservation of biodiversity.

- We support the Heart of Borneo Initiative which seeks to protect and conserve the biodiversity and ecology of water bodies in Sarawak
- We conduct various workshops on watershed management
- Proactive in supporting and contributing toward the development of state policy, procedures and guidelines for Integrated Catchment Management
- Conduct Environmental Sustainability Programmes to collect baseline information that guide hydropower project developments
- We have nurtured a Flora Conservation Garden in Murum

SDG #15 Targets

✓ By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species

✓ By 2020, promote the implementation of sustainable management of all types of forests, half deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

Common Sandpiper (Actitis hypoleucos)

Platycerium ridleyi

SDG #17

REVITALIZE GLOBAL PARTNERSHIPS FOR SUSTAINABLE DEVELOPMENT

17 PARTNERSHIPS FOR THE GOALS

SDG 17 calls for multi-stakeholder partnerships that mobilise shared knowledge, expertise, technology and financial resources to support the achievement of the sustainable development goals in all countries, in particular developing countries. At Sarawak Energy, we have formed many partnerships with local government authorities, local communities and NGOs to advance sustainable development.

We have been working in collaboration with government agencies, universities and Non-Governmental Organisations to improve the way we manage our business impacts.

- Partnership in conservation and protection of Heart of Borneo areas
- Collaboration with government agencies, NGOs such as WWF and universities in developing an Integrated Catchment Management Policy, Procedures, Guidelines and Plan
- Collaboration with local universities on our Environmental Sustainability Programme

SDG #17 Targets

✓ **Multi-stakeholder partnerships**

- Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilise and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries
- Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships

✓ **Data, monitoring and accountability**

- By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries

THE HEART OF BORNEO INITIATIVE

“The HoB Initiative is a unique Government-led and NGO-supported programme that was initiated by a joint declaration by the governments of Brunei, Indonesia and Malaysia in 2007. The aim of the initiative is to conserve the biodiversity of the Heart of Borneo for the benefit of the people who rely upon it through a network of protected areas, sustainable management of forests and other sustainable land uses.”

WWF-Malaysia's Dr. Sundari Ramakrishna (second left) presents a token of appreciation to Resource Planning and Environment Ministry permanent secretary Datu Sudarsono at an Integrated Watershed Management for Power Generation, Water Security and Environmental Sustainability Workshop (Development of a Pilot Study for Baleh Watershed)

Launching ceremony of Sarawak Heart of Borneo (HoB) 2016 Seminar

G4-4

Organisation Profile

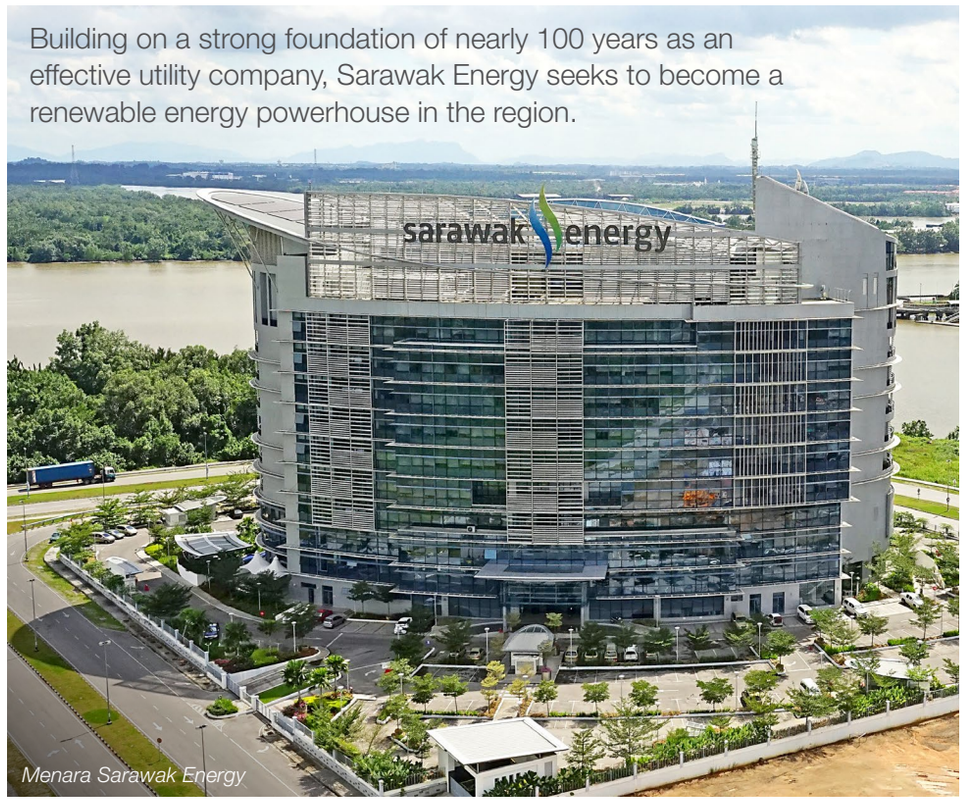
Our Vision

To achieve sustainable growth and prosperity for Sarawak by meeting the region's need for reliable, renewable energy

Our Mission

- Pursue opportunities for growth by fully developing the Sarawak Government's SCORE agenda
- Ensure our own safety and the safety of others with a commitment to do "no harm to anyone at any time"
- Provide a reliable supply of clean, competitively priced energy to support the economic and social development of Sarawak and our partners in the region
- Operate as a business based on principles that reward our owners and employees and delight our customers
- Honour the trust placed in us by the people of Sarawak by acknowledging and respecting them and contributing to their well-being
- Set and achieve high ethical and corporate standards that are a source of pride for our employees
- Develop our people, leadership and teamwork to build an agile, open, corporate and customer-focused culture that responds to challenges and the need for change with innovation and cooperation
- Harness and utilise natural resources in a sustainable and responsible way
- Achieve operational excellence through a commitment to continual improvement and best practices

Building on a strong foundation of nearly 100 years as an effective utility company, Sarawak Energy seeks to become a renewable energy powerhouse in the region.



Menara Sarawak Energy

About Us

Sarawak Energy Berhad is a state-owned integrated energy utility. As the only energy provider in the state, we have over the years expanded our capacity along the entire value chain of energy supply, from generation to transmission and distribution, to power the lives of Sarawakians and support the state's economic development.

Currently, Sarawak Energy is increasing our capacity to meet the needs of a growing number of customers, domestic, commercial, industries and Sarawak Corridor of Renewable Energy (SCORE).

Leveraging the state's abundance of hydropower potential, about 74% of energy generated by Sarawak Energy is from hydropower. We have built and are currently managing two hydropower plants – Batang Ai and Murum – and off-take the entire energy generated from Bakun Hydropower Plant through a Power Purchase Agreement (PPA) signed in 2011. In addition, we operate nine thermal power stations – three coal-based, three using a combination of natural gas and diesel, and three diesel-based – all three hydrocarbon fuels derived from the resource-rich state itself.

In 2016, Sarawak Energy became an exporter of energy. Following the addition of 944MW of capacity from the newly commissioned Murum hydroelectric plant, we are able to generate sufficient energy to supply West Kalimantan, Indonesia. This is aligned with our vision to become a renewable energy powerhouse in the region.

G4-4

Organisation Profile

In recent years, we have been harnessing renewable energy to support growth, in alignment with national economic policies such as the 11th Malaysia Plan[1] while contributing to global agenda such as the UN Sustainable Development Goals:

Relevant SDGs to Our Business - Think Global, Act Local

Note:

[1] *A comprehensive outline of Government development policies and strategies also referred to as Malaysia's 5-year plan.*

G4-4
G4-7
G4-9
G4-13
G4-17

Organisation Profile

Board of Directors

Our Board Members - leading Sarawak Energy towards a sustainable future by providing insight and oversight on both risks and opportunities in Sustainability Issues.

YBhg. Datuk Amar Abdul Hamed bin Sepawi
Chairman
Non-Independent
Non-Executive Director

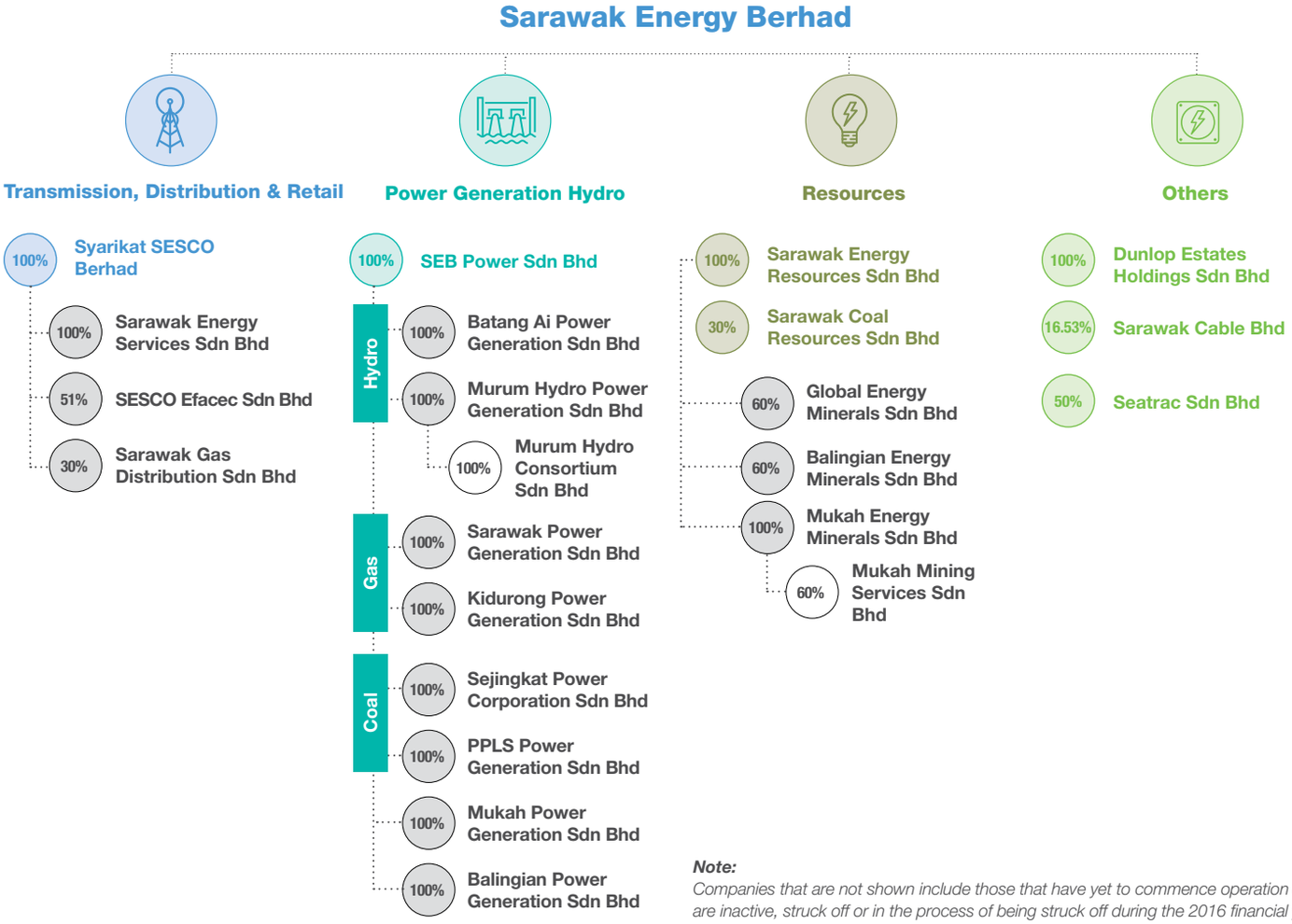
YB Tan Sri Datuk Amar Haji Mohamad Morshidi bin Haji Abdul Ghani
Non-Independent
Non-Executive Director

YBhg. Tan Sri Dato Sri Mohd Hassan bin Marican
Independent
Non-Executive Director

YBhg. Datuk Fong Joo Chung
Non-Independent
Non-Executive Director

YBhg. Dato' Haji Idris bin Haji Buang
Non-Independent
Non-Executive Director

Our Corporate Structure



Note:
Companies that are not shown include those that have yet to commence operation or that are inactive, struck off or in the process of being struck off during the 2016 financial year.

G4-DMA
G4-4
G4-8
EU10

Organisation Profile

Our Customers

As of end 2016, we were supplying 663,573 customers, of whom 21,128 (or 3.2%) are provided non-grid electricity. The customers include domestic, commercial, industrial and public lighting. We also sell power to power intensive industries which are having Power Purchase Agreements (PPA) with Sarawak Energy as well as export to West Kalimantan via Power Exchange Agreement (PEA).

Our rapid growth has been made possible by a well-trained and dedicated workforce of 4,468 employees

Tokuyama (Malaysia) Sdn Bhd

Energy demand has increased substantially since the implementation of SCORE. As at end 2016, a total of 2,501MW has been committed to power intensive industries and export customer via PPA/PEA. The five major customers who are already in operations are Press Metal Group, OM Materials (Sarawak), Tokuyama, Pertama Ferroalloys and Sakura Ferroalloys. The most recent customer, Malaysian Phosphate Additives (Sarawak) Sdn Bhd signed its PPA on 3rd February 2016.

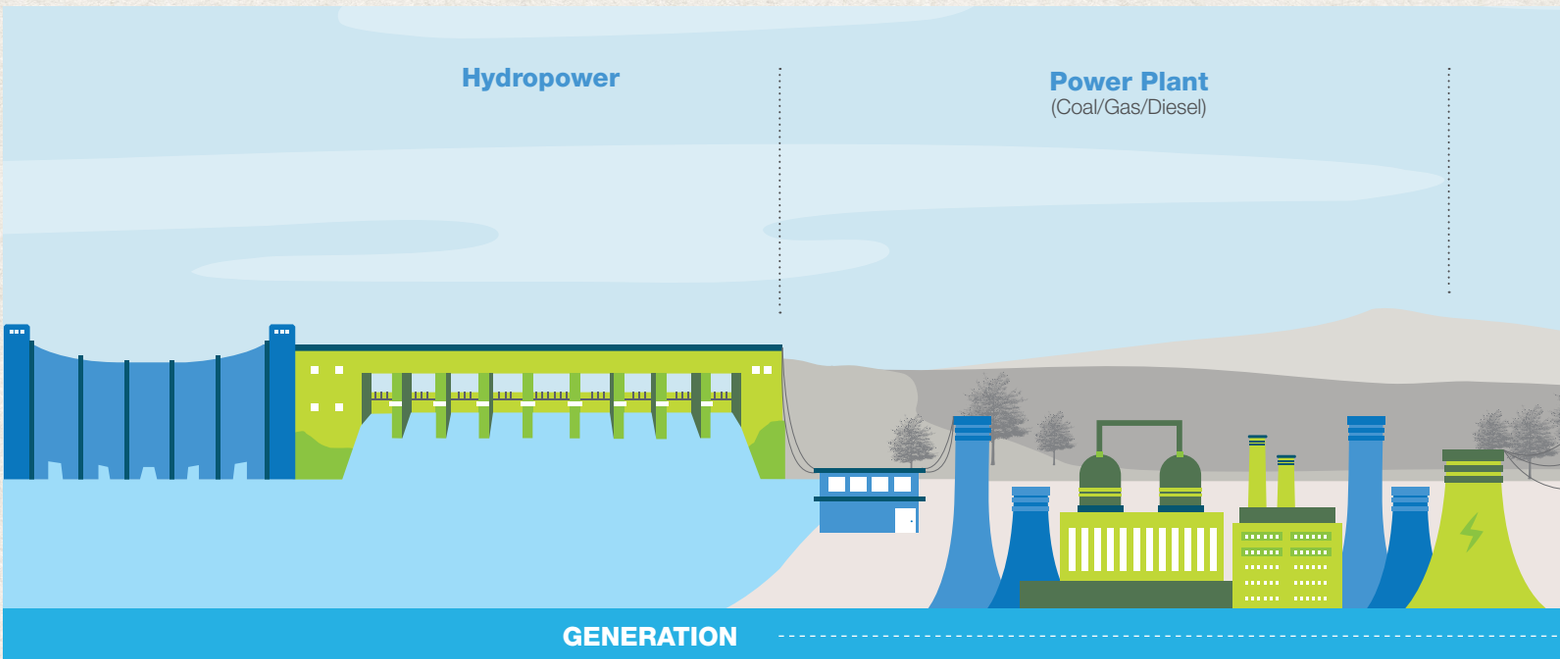
Total peak demand for Sarawak Energy has grown to 3,315MW in 2016. This is partly contributed by the selling of power to PLN since January 2016. Projections indicate that by 2020, Sarawak Energy's demand will increase to 4,100MW.

Electricity Sales (GWh) - by customer type	**2016**
Domestic	2,102
Commercial	2,512
Industrial*	15,252
Public Lighting	77
Export	684
Total Electricity Sales	**20,627**

** incl power intensive industries*

G4-4
G4-12

Organisation Profile



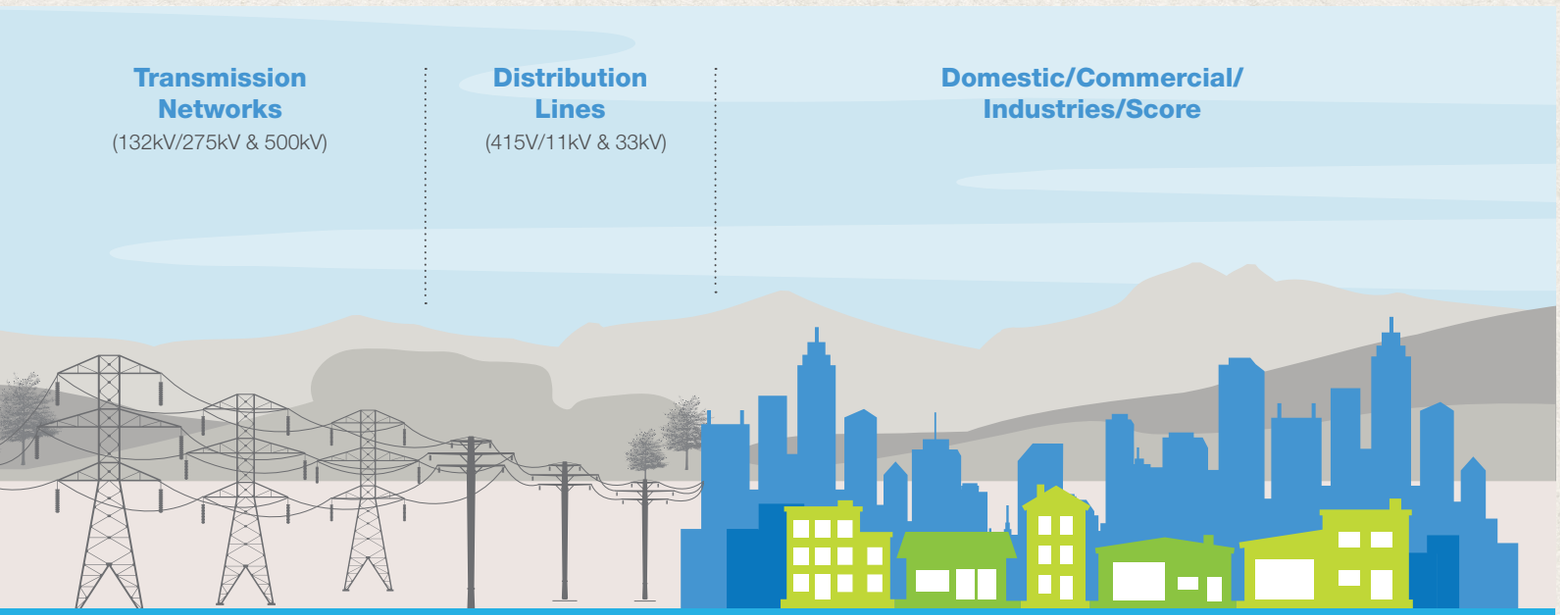
Power is generated by three hydroelectric plants - Batang Ai, Murum and Bakun - which contribute a total of 3,452MW of capacity - and seven thermal plants with a total capacity of 1,189MW.

Our Services

Our business comprises three core activities, namely the generation of electricity, and its transmission and distribution to our domestic, commercial industrial and SCORE customers. We are currently developing our biggest transmission project which is the 500kV transmission backbone to strengthen our power system reliability, and minimise the risk of power interruptions in the south of Sarawak by providing additional transmission capacity. In partnership with the state government we also provide electricity to rural areas, where possible connecting communities to the grid and in other cases installing independent localised sources of energy such as micro-hydro and solar hybrid.

G4-4
G4-12

Organisation Profile



Sarawak State Grid is operated by our Grid System Operator.

Our Distribution Department is responsible for maintaining an efficient network to supply our customers throughout the state.

Our Retail arm is our interface with our more than 600,000 customers throughout the state.

Our Value Chain

GENERATION

- Main Grid connected capacity comprises 74% hydro, 13% gas, 10% gas, 3% diesel
- Capacity to increase to 5,300MW by 2020

TRANSMISSION

- Sarawak State Grid comprises 1,743.9km of transmission lines
- 509km Backbone Transmission Grid (500kV) to be completed by 4Q 2018

DISTRIBUTION

- Our distribution system is divided into 3 main regions namely Western, Central and Northern
- Distribution lines comprise 33kV, 11kV and 415V lines
- Total Distance Distribution Line System: 1,082.53km

RETAIL

- Number of Customer
  1. SCORE: 13
  2. Domestic: 556,086
  3. Commercial: 96,759
  4. Industry: 1,043

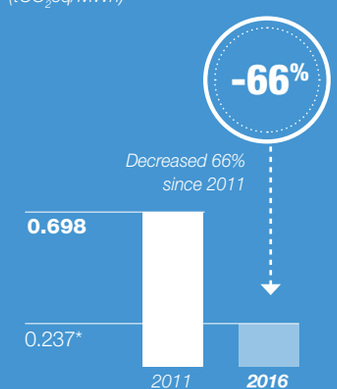
G4-DMA
G4-4
G4-EN18
EU1

Organisation Profile

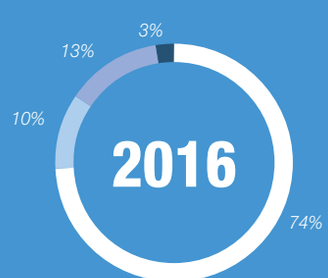
Generation

Emission Intensity - Main Grid

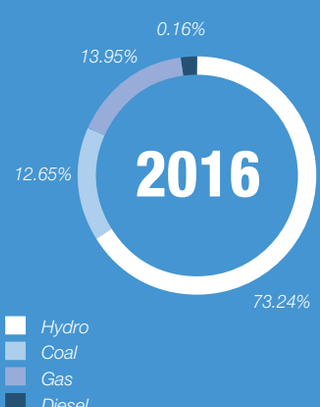
(tCO_2eq/MWh)



Grid Installed Capacity by Energy Source (Main Grid)



Grid Energy Mix (Main Grid)



The grid generation capacity has increased from 1,300MW in 2010 to more than 4,600MW in 2016.

Our hydropower plants in Batang Ai, Murum and Bakun contribute 3,452MW to our generation mix. This is further supplemented by 1,189MW from our thermal plants, which utilise 100% indigenous fuel.

Meanwhile, we are developing a 2 x 312MW Balingian Coal-Fired Power Plant in Mukah Division, and new combined cycle power plants in Kidurong (Bintulu). Construction of the Balingian plant commenced in May 2014 and is expected to be commissioned in 2018.

We have also received the green light from the state government to build the 1,285MW Baleh hydroelectric dam. The dam is to be developed in the upper Rejang basin of the Kapit Division which is also home to Bakun and Murum dams. Construction work began in October 2016 and the dam is anticipated to be commissioned in 2025.

Main Grid Connected Capacity and percentage contribution of the different energy sources – 2016

Main Grid Connected Capacity (MW)	Installed 2016	% Contribution
Hydro	3,452	74
Coal	480	10
Gas	595	13
Diesel	114	3
Total Main Grid Connected Capacity (MW)	**4,641**	

Main Grid Energy Mix 2016	Net Generation GWh	Generation Mix %
Hydro	16,046	73.24
Coal	2,772	12.65
Gas	3,057	13.95
Diesel	34	0.16

Note:

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-DMA
G4-4
EU1
EU4
EU28
EU29

Organisation Profile

Transmission

SAIDI *(minutes per customer)*

117

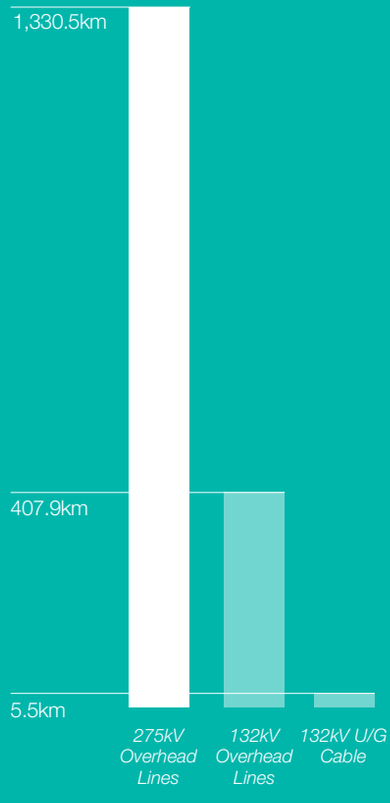
SAIFI *(interruptions per customer)*

0.60

Number of Transmission Tripping *(2016)*

76

Range of Voltage Levels



Transmission Network

Energy generated at our plants is transmitted through the Sarawak State Grid, operated by our Grid System Operator. The department is responsible for the state's entire power system including power generation, scheduling and dispatch. This includes the maintenance and operation of the network to ensure reliable electricity supply.

The grid currently comprises a total of 1,743.9km of transmission lines, of which 1,330.5km are 275kV overhead lines. The remaining 413.4km consists of 132kV lines comprising 407.9km of overhead lines and 5.5km of underground lines. To strengthen the reliability of supply, in 2013, we started developing a 509km second backbone 500kV transmission line.

The Backbone Transmission Grid is to run parallel to the current 275kV transmission grid, stretching from Similajau to Tondong in Kuching division. The entire project is expected to be completed by the fourth quarter of 2018. This project will strengthen the state power system's reliability and resolve existing or anticipated constraints, doubling the capacity of the transmission network and massively increasing system reliability. The state transmission grid will also be extended to Lawas District, an important border zone poised for rapid economic growth.

G4-DMA
G4-4
EU28
EU29

Organisation Profile

Distribution

SAIDI *(minutes per customer)*

125

SAIFI *(interruptions per customer)*

1.47

Petanak 33/11kV Substation

Our Distribution Department is responsible for maintaining the reliability and efficiency of our distribution network in supplying electricity to our customers throughout the state. This includes overseeing data collection, providing policy and technical specifications, and undertaking maintenance and installation planning. The department comprises the Western, Central and Northern segments which focus on meeting the needs of customers in the relevant areas. These regional operations are also responsible for connecting new customers – from small businesses to large industries – to the state grid.

Distribution Lines

	2016					
	33kV Distribution		11kV Distribution		415V Distribution	
Region	O/H (km)	U/G (km)	O/H (km)	U/G (km)	O/H (km)	U/G (km)
WR Kuching	0.00	111.54	70.06	89.03	122.98	104.98
WR Sri Aman	53.80	1.71	76.76	2.94	37.63	0.67
CR Sarikei	0.18	0.00	0.00	1.14	8.39	5.75
CR Sibu	49.03	15.49	31.55	18.24	34.56	28.08
NR Bintulu	3.55	3.67	0.00	11.45	18.75	7.04
NR Miri	2.32	12.49	21.80	5.16	43.15	3.12
NR Limbang	39.60	6.50	29.91	4.30	5.20	0.00
Total	**148.48**	**151.40**	**230.08**	**132.26**	**270.67**	**149.64**

G4-4

Organisation Profile

Retail

Grid and Non-Grid No. of Customers (2016)

663,573

No. of Customers

Score

13

Domestic

556,086

Commercial

96,759

Industry

1,043

Customer Satisfaction Index *(2016)*

77.42%

71.99% *Increased 8% since 2011*

Kuching City Waterfront with Sarawak State Legislative Assembly Building

Customer Service Centre at Wisma Sesco

Maintenance technician inspecting power plant equipment at Sejingkat Power Corporation

Our Retail arm is our interface with our more than 600,000 customers throughout the state. It encompasses two Customer Care Centres – in Kuching and Miri – which operate 24 hours a day, seven days a week, to handle all customer enquiries including those on technical matters. The system is equipped with state-of-the-art technology to handle high call volumes (especially during outages), and has an intelligent queuing call back feature, broadcast announcement and a data monitoring system that allows us to continuously improve our services.

For customer convenience, the Retail department has developed an extensive network for payments and account management. This includes partnerships with other utilities, banks and retail outlets as well as online portals.

G4-1
G4-EN18

Chairman's Foreword

In the energy sector, focus on sustainability is imperative, in view of the fact that the energy sector is the foundation for economic development. Energy utilities globally invest considerable time and resources to ensure the sustainability of their business by exploring alternative sources of fuel such as renewable energy and investing in the efficient delivery of energy.

YBHG. DATUK AMAR ABDUL HAMED BIN SEPAWI
Chairman

"To us, sustainability is about more than meeting the needs of our customers. It is about how we can challenge the status quo and a business-as-usual mindset to deliver business solutions toward sustainable development."

Company Revenue
RM
4,270
million

Electricity Sales (RM)
4%
of State GDP[1]

Renewable Energy Generated
16,046.5
GWh

Emission Intensity - Main Grid
0.237*
tCO_2eq/MWh

Access to Electricity
(for Sarawak)
94%
in 2016

Notes:
[1] *State of Sarawak Gross Domestic Product (GDP) for 2016 at 2010 price.*
* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-1
G4-EC9

Chairman's Foreword

The world as we know it could not be sustained without energy. It is fundamental to almost everything we do, and drives the wheels of economic development. Given that the world's energy needs will necessarily grow, there is an increasing urgency to secure its sustainable supply. This, as we have begun to understand, relies on the discovery of renewable and clean sources of energy.

In Malaysia itself, the government from as far back as the 80s made every effort to reduce an over-dependence on oil, and indicated the need to explore the potential of renewable forms of energy to fuel the nation's sustainable growth.

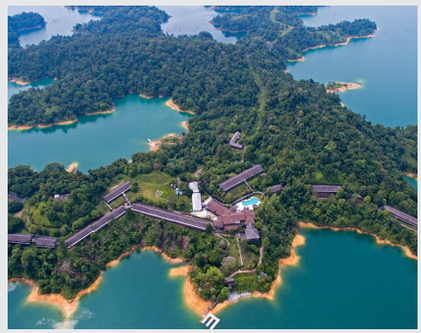
Here in Sarawak, we are extremely fortunate to have an abundance of hydropower potential, due to our geographical landscape. Sarawak Energy has been tapping into this clean, renewable source of energy to fulfil the state's economic development needs. With increasing contribution of hydropower to our fuel generation mix, we have been able to reduce our carbon emissions by 66% since 2011.

Over and above securing sufficient fuel for energy, as the sole energy provider in Sarawak we have the added responsibility of ensuring universal supply in the state, and the capacity to meet future needs as Sarawak continues to develop. I am proud to say that, as a result of various rural electrification initiatives, we have been able to broaden our statewide coverage from 79% in 2009 to 94% in 2016.

More than ensure security of supply, however, we are entrenching our sustainability by creating value for our stakeholders. To us, this means fulfilling our commercial obligations as well as sustainability development principles through social and environmental inclusiveness in the way we do business.

Manage for value

Our Hydropower Business



Aiman Batang Ai Resort & Retreat surrounded Batang Ai HEP reservoir

Economic Value Retained

RM908.2* million

Tenders Awarded to Local Companies

RM1,022.37 million

We are dependent on various stakeholders for our license to operate, and are committed to protecting their well-being as we enhance our operations. Key among these stakeholders are our customers, employees and various local communities impacted by our activities. A number of platforms have been established enabling us to engage with these stakeholders, understand their needs and work towards fulfilling them. This has led to some strong relationships based on trust which we value and will continue to reinforce.

Of various programmes we run with our local communities, I am especially proud of our efforts to empower the Penan community through literacy and education. Together with the Bakun Charitable Trust, we have set up an annual revolving fund of RM200,000 for education aid to Penans in Belaga, inclusive of those who have been resettled from Murum. We also carry out literacy programmes in longhouses to help the children learn to read, write and do maths. In addition, we provide skills and technical training for youth from the Baram community to enhance their livelihood.

Although we have reduced our carbon footprint significantly with greater use of hydropower, we are conscious of the need to minimise as far as possible the impact of our hydropower project development by adopting the practices as stipulated in the Hydropower Sustainability Assessment Protocol (HSAP). Sarawak Energy is the first power utility with our own internal hydropower sustainability assessment team to ensure we protect Sarawak's rich biodiversity, especially in areas where we operate.

In terms of energy efficiency, we are continuously looking for ways to improve the performance of existing power plants, and invest in the latest environmental technologies for our new and proposed power plants. To protect the indigenous flora and fauna of Sarawak, we support the Heart of Borneo programme and are maintaining a high level of biodiversity in the Murum dam catchment area. These are just two among a number of initiatives being undertaken with government agencies, non-governmental organisations and local communities to help preserve the ecosystem for the benefit of all stakeholders.

Although we have been expanding our sustainability efforts, we recognise more can be done, and are committed to intensifying our actions going forward. As part of our plans, we intend to deepen our stakeholder engagement. For this reason, we appreciate your feedback on our sustainability report, not only on the contents but also on how we can serve your needs and expectations better. We are driven by a genuine desire to *Make an Impact* on our stakeholders. And we look forward to hearing from you.

Note:

* *This economic value retained data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-1
G4-20
G4-56

Sustainability Driven by Leadership

I am pleased to present Sarawak Energy's Sustainability Report 2016, which serves as a measurement of our sustainable performance as we aspire to become a leader in sustainability within the region's utility industry.

SHARBINI SUHAILI
Group Chief Executive Officer

" In recent years, we have strived to incorporate the sustainability agenda at the heart of our corporate strategy. This is in line with our belief that appropriate management of our sustainability issues is critical to our vision of achieving sustainable growth and prosperity for Sarawak by meeting the region's needs for reliable, renewable energy. "

33%
Increase in year-on-year revenue

26%
Increase in Renewable Energy Installed Capacity from 2014

Electricity sales
20,627
GWh

Total Workforce
4,468
employees

Total Hours of Training
149,582
hours

Total Employee Remuneration
RM
372.1
million

G4-1
G4-14
G4-20
G4-56

Sustainability Driven by Leadership

Sarawak Energy has grown from strength to strength throughout our more than 70-year history. From a simple energy provider, we have transformed into an integrated energy development corporation over the last 10 years and are now preparing to take our journey to the next logical step, namely to become an ASEAN powerhouse, providing our neighbours with clean, primarily renewable energy driven from hydro sources.

Our growth to date has been founded on an understanding of sustainable development. As we expand beyond state and national borders, our commitment to the principles of sustainability will be even more critical to ensure we continue to have a positive impact on our communities.

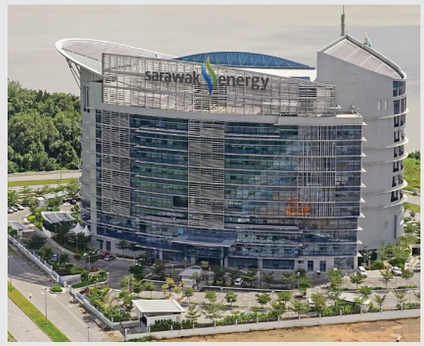
This commitment is reflected in the way in which we continuously enhance our sustainability benchmarking, and adopt best international practice as well as guidelines as these evolve. This year, for example, we have mapped our business operations and other activities against the United Nations' Sustainability Development Goals (SDGs). We believe it is important for us to think globally but act locally to manage both risks and opportunities to create value for our business and our stakeholders, as well as to formulate effective strategies to keep improving our business performance.

We are continuously implementing new policies and procedures to entrench our sustainability. In 2016, for example, we launched a new Operations Asset Management Policy and have installed the latest Enterprise Asset Management (EAM) software, which will go live by end 2017. This is set to further enhance our systems reliability, resulting in even better System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) performance.

We have also continued to make progress in rolling out a Business Continuity Management (BCM) framework. I am especially pleased to share that a Command Centre and BCM Secretariat/Corporate Communication Rooms have been set up in Menara Sarawak Energy and will be functional soon. This forms part of efforts to ensure uninterrupted power to our customers to the best of our ability.

Manage for value

Our Hydropower Business



Sarawak Energy Head Quarters

2016 performance

Electricity sales increased by

+6,589 GWh

Revenue increased by

+RM1,052 million

Universal coverage of electricity continues to be a major concern at Sarawak Energy, and we have signed a Memorandum of Understanding (MoU) with the Ministry of Rural and Regional Development (MRRD) to further extend the grid in the state and install hybrid projects in remote areas, under a new Sarawak Alternative Rural Electrification Scheme (SARES). As a result of efforts such as these, the electrification coverage in Sarawak has improved from 79% in 2009 to 94% in 2016.

Even more heartening for us is to increase our generation in an energy efficient manner, as reflected by our main grid carbon emissions intensity. From 0.541 tonnes of CO_2 equivalent per MWh (tCO_2eq/MWh) in 2012, our carbon emissions intensity has decreased to 0.237* tCO_2eq/MWh in 2016. While reducing our carbon emissions through greater energy efficiency, we are also contributing to global knowledge of GHG emissions from water bodies. We are currently collaborating with a team from the Université du Québec à Montréal (UQAM) to research GHG emissions in one of our reservoirs.

These efforts, and more, are detailed in this sustainability report. The publication of an annual sustainability report in itself is an extension of our strong commitment to sustainability, which has been endorsed and led by our Board.

Continuing with our pursuit of excellence, we plan to revisit and redevelop Sarawak Energy's corporate practices, processes and culture. We have introduced five key focus areas – encompassing Operational Excellence, Project Delivery Excellence, HSE Excellence, Talent Management Excellence and High-Performance Culture – under a new corporate initiative, called Sarawak Energy Excellence 2020, which will be rolled out in 2017.

This new programme will guide us in our quest to provide reliable, clean and affordable energy to all our customers – domestically in urban and rural areas as well as to our commercial, industrial, SCORE and export customers. It will also help us maintain hydropower as the primary source of energy in our generation mix while enabling us to develop our thermal resources to ensure energy security.

There is still much we can, and have to do to entrench Sarawak Energy as a key energy player in the region. Driven by internal strategies, and supported by our sustainable policies, however, we are confident of achieving our goal in a manner that will promote the well-being of our stakeholders and especially our local communities.

Note:

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

Our Materiality Issues

Materiality Matrix

Environment

- Water
- Biodiversity
- Emissions

Social

- Local Community Welfare
- Employee Training & Development

Economic

- Procurement
- Operational Efficiencies
- Research and Development
- Economic Performance

Social

1. Indigenous Rights
2. Customer Privacy
3. Occupational Health & Safety
4. Compliance (PR)***
5. Employment
6. Training & Education
7. Local Communities
8. Access**
9. Disaster/ Emergency Planning Response**
10. Grievance Mechanisms for Impacts on Society
11. Customer Health & Safety
12. Product & Service Labelling
13. Supplier Assessment for Labour Practices
14. Labour/ Management Relations
15. Labour Practice Grievance Mechanisms
16. Human Rights Grievance Mechanisms
17. Non-discrimination
18. Public Policy

Economic

19. Indirect Economic Impacts
20. Procurement Practices
21. System Efficiency**
22. Availability & Reliability**
23. Research & Development**
24. Economic Performance
25. Demand Side Management**
26. Market Presence

Environment

27. Materials
28. Compliance (EN)***
29. Water
30. Biodiversity
31. Emissions
32. Effluent & Waste
33. Energy
34. Environment Grievance Mechanisms

Notes:

** *Sector Specific Disclosure*
*** *EN - Environment Compliance*
*** *PR - Product Responsibility Compliance*

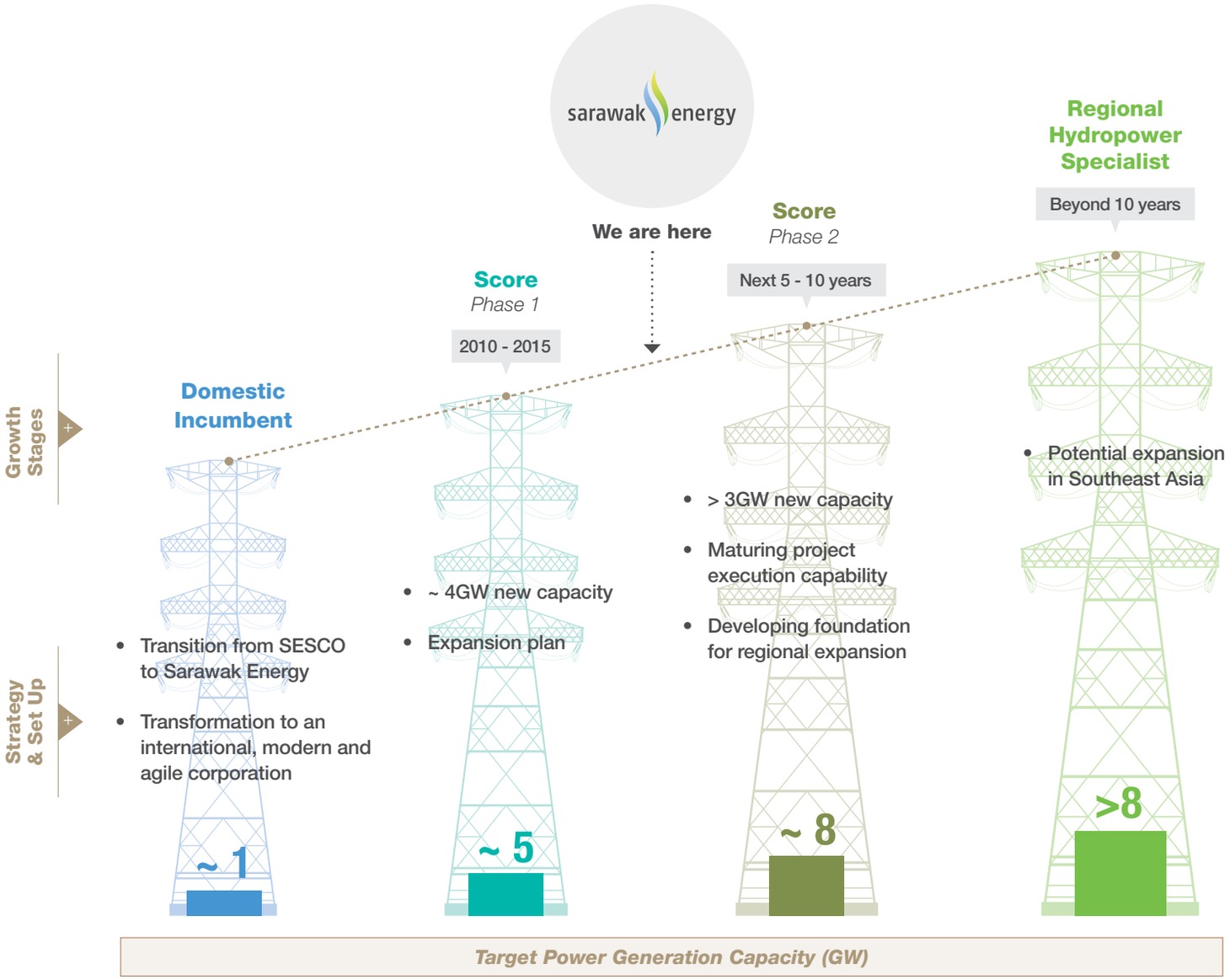
G4-2

Strategy Statement

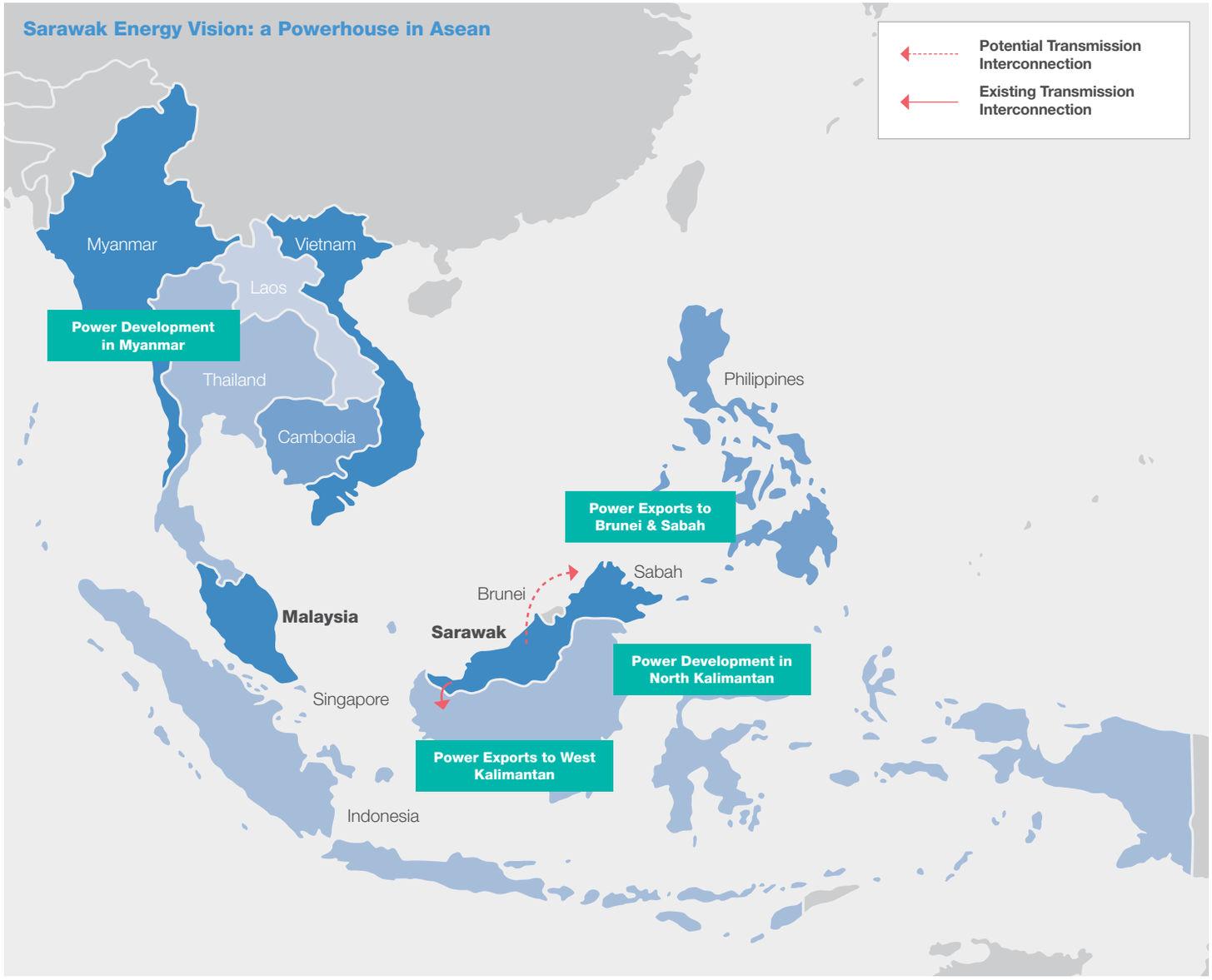
Sarawak Energy Vision

Sarawak Energy's vision is to achieve sustainable growth and prosperity for Sarawak by meeting the need for reliable, renewable energy. We also target to become a regional hydropower specialist, expanding our presence in Southeast Asia by 2025.

By 2018 our journey towards this goal will see us adding a total of 4GW in new capacity as we focus on implementing phase one of the development of the Sarawak Corridor of Renewable Energy (SCORE). Over the next 5 to 10 years, we target to add at least 3GW of new capacity, maturing our project execution capability and building the foundation for regional expansion.



Strategy Statement



Development means the process of growing, changing and progressing.

These goals are in line with our aspiration to transform from a traditional local utility into a modern international and agile corporation driven by a strong corporate ethos. This is supported by nurturing a new mindset in which sustainability is integrated into the fabric of our operations.

In an effort to manage our rapid corporate growth, we have expanded our workforce by over 2,000 employees in the past four years. We provide our team of more than 4,300 employees with the opportunity to connect with a network of power industry professionals from around the world. As a result, Sarawak Energy is on track to grow the state's power output by more than sixfold, from approximately 5,000GWh per year in 2009 to approximately 30,000GWh per year in 2020.

G4-2

Strategy Statement

Corporate Long-Term Strategies

Our long-term strategies are guided by our vision to achieve sustainable growth and prosperity for Sarawak by meeting the region's need for reliable, renewable energy. In line with this, we have identified four (4) strategic themes and thirteen (13) key strategies revolving around managing the business and stakeholders.

Managing The Business

A — Sustainable Growth Via SCORE Agenda Delivered With Adequate Financing

- 01 Engage and sign up SCORE customers to match production
- 02 Deliver projects with quality, on time and within budget
- 03 Secure upstream resource supply
- 04 Secure financing without state support

B — Reliable Energy For Customers Through Efficient Operations

- 05 **Generation:** Maximise plant availability and efficiency
- 06 **Transmission and Distribution:** Improve system reliability and reduce technical losses
- 07 **Retail:** Enhance revenue management and customer service

Managing Stakeholders

C — Building Organisational Capacity

- 08 Build competencies and manage talent across the whole organisation
- 09 Enhance organisational health and performance-driven culture
- 10 Promote safety of staff and contractors

D — Socially-Responsible, Model Corporate Citizen

- 11 Support improvements in the life and well-being of communities
- 12 Enhance and embody positive corporate reputation
- 13 Support progress of Sarawak state development

Sustainability in Managing Our Core Operations

Energy has been the driving force of world economic growth, providing day-to-day necessities for people across the world through generation, transmission, distribution and retailing of electricity. Due to the nature of electricity systems, demand for electricity at any given moment must be met by consistent and reliable supply. Inability to meet demand will lead to a huge loss of income to electricity producers as well as to consumers.

Strategy Statement


Sarawak Energy Load Dispatch Centre

As part of our strategic objective to provide reliable and affordable energy to our customers, we have embarked on a journey in operational excellence through optimisation to improve efficiency while ensuring availability across our value chain.

Efficient Operations Across Our Value Chain - Key Strategies

Generation	Transmission	Distribution	Retail	Reliable Power Supply
Maximise plant availability and reliability Improve operational performance	Enhance system reliability Optimise generation mix	Reinforce existing network In-sourcing of critical functions (e.g. response teams)	Employ technology and streamline key processes to improve customer service Effectively combat power theft	Efficient Operations Reducing our Environmental Footprint Cost Saving

Train and retain technical personnel
Launch asset management programme

G4-2

Strategy Statement

Generation

As the only power supplier in Sarawak, we have a responsibility to ensure sufficient capacity to meet demand from customers throughout the state at any time. Hence, although there is an abundance of hydro potential for electricity generation, we are balancing this with the state's reserves of coal and gas to protect the security of supply. Our balanced generation mix supports current as well as future generation needs.

Thermal Generation

We have a long-term programme to ensure the availability and reliability of our thermal power plants focusing on: 1) a comprehensive asset management and preventive maintenance plan; and 2) investments in higher-efficiency, cleaner energy (e.g. combined cycle gas turbine plants). Our Thermal Asset Management Plan integrates all current Thermal Asset Management programmes under an Enterprise Asset Management (EAM) system, which will lead to ISO 55000/ PAS 55 certification.

Thermal Operational Excellence

We recognise the need to enhance our long-term operational efficiency in order to realise our vision of becoming a powerhouse in the ASEAN region. This includes improving the cost-effectiveness of our thermal generation to ensure our economic competitiveness.

Under Construction - Balingian Coal Fired Power Plant (600 MW)

Strategy Statement

The Operational Excellence Division is responsible for the following:

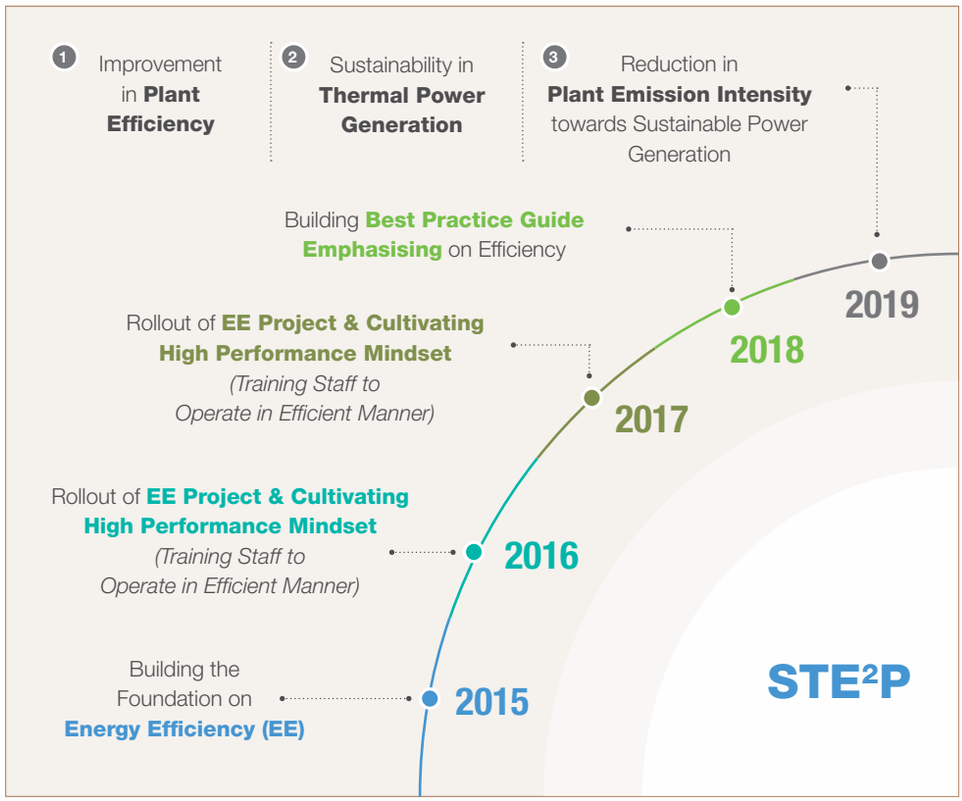
- **Change management**
- **Reliability and quality management**
- **Performance management**
- **Information and internal communications**

Long Term: Towards High Efficiency Power Plants by 2020

In 2015, our Operations Excellence Division embarked on a five-year SEB Thermal Energy Efficiency Programme (STE²P) aimed at establishing high-efficiency, low-emission power plants by 2020. This will ensure our corporate vision is aligned with the national agenda. STE²P focuses on the following areas:

- **Maximising plant availability and efficiency**
- **Contributing to the Malaysian Government's target of reducing the country's carbon emission intensity as a percentage of GDP by 45% by the year 2030 compared to the 2005 level (United Nations Framework Convention on Climate Change, Paris, 2015)**
- **Acquiring the skills and technical expertise to ensure the success of the new thermal power plant project**
- **Better financial, environmental and social performance**

Sejingkat Power Corporation



G4-2

Strategy Statement

Hydropower Generation

We intend to fully harness the state's hydropower potential to provide affordable, renewable and reliable energy for the state's economic development. Towards this end, our Hydropower Department has developed a five to 10-year Hydro Ennovate Programme, built on five Key Strategic Thrusts.

Five Key Strategic Thrusts of Hydro Department

01 Asset Management & Business Continuity Plan

03 Environment

Water Resources and Energy		
Inflow Forecasting	Energy Rule Curve	Hydrometric and Meteorological Stations
Discharge Measurement	Reservoir Operation Study	Maintaining ISO Certifications
Catchment Management		
Water Quality Monitoring	H_2S Monitoring	Training and Workshops
Reservoir Rim and Sedimentation Studies	River Log Jam	Stakeholders' Engagement
Flood Analysis		
Review PMP & PMF	Conduct Dam Break Analysis	Develop Inundation Map
Review and update Emergency Rescue Plan	Conduct ERP Drills	

02 Automation

The Hydro Department plans to fully automate our hydroelectric power station(s) with remote control capability at the new Hydro Central Command Centre.

04 Capability & Capacity Building

Review and enhance employees' knowledge and skills through education and training to support future growth of Hydro Department. To build capacity through international exposure and engagement in hydropower business.

05 Mindset Transformation

PHASE 1	PHASE 2	PHASE 3	PHASE 4
Laying the foundation of change	Establishing the pillars of understanding	Liberating the Mindset	Sustaining the Transformation Journey

Strategy Statement

Transmission

We developed a long-term plan for our transmission network to ensure optimal supply-demand balance within the regulator's criteria and guidelines. This entails various demand-side management programmes to further increase our operational flexibility and to optimise our network reliability. The 500kV transmission line being developed will serve as the backbone of our transmission system, enhancing our capacity and reliability from Similajau to Kuching.

Distribution

We review our regional distribution plans every year to ensure sufficient capacity for growth. We have set a target of achieving a System Average Interruption Duration Index (SAIDI) of below 100 minutes by 2020.

1. Improve supply reliability
2. Improve customer service mindset
3. Improve street lighting response time
4. Asset standards (new technology)
5. Timeliness in releasing connection cost
6. Enhance O&M strategies, practices and performance analysis
7. Staff competency management (Production)
8. Reduction of copper theft
9. Timeliness in project implementation and closing
10. Effective inventory management
11. Effective vegetation management
12. Reduction of worst performing feeders
13. Asset management

Our Distribution Department has identified the following focus areas as part of a further measure to improve system efficiency and reliability

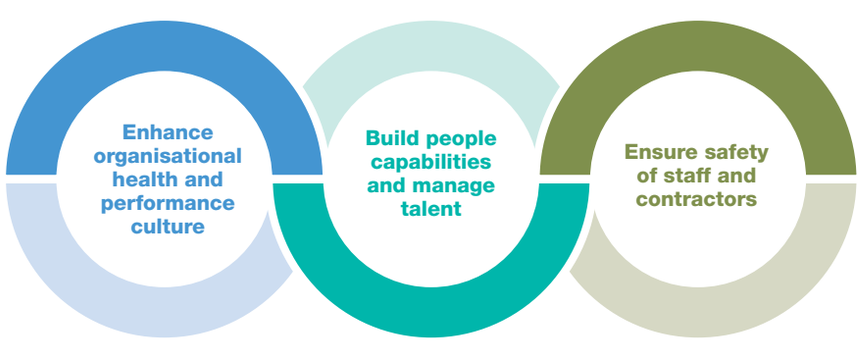
Corporate Asset Management

We have over RM10 billion worth of capital-intensive assets which were installed over decades of system expansion. To maintain these assets in top operating condition, hence avoid production loss and supply interruption, we are pursuing an integrated Enterprise Asset Management (EAM) system that can extract key data pertaining to the assets' condition onto one common platform. Using its analytical capabilities, the new EAM system will enable us to strategise our asset maintenance programme. The new system will also enable our Operations team to understand and adhere to the policies, procedures and guidelines governing such assets. Implementation of the EAM solution will be a positive move towards ISO 55001:2014 certification.

Developing our Human Resource Capacity

Performance-driven capable organisation

- Streamline and modernise recruitment process
- Build technical competency leading to statutory certification
- Develop flexible packages to retain employees



- Develop strong accountability and ownership mindset
- Build and develop inspiring leaders
- Cascade shared vision & direction

- Increase staff awareness
- Conduct consistent monitoring and reporting

G4-EC9
G4-EN18

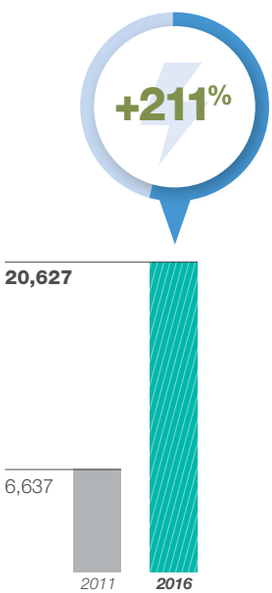
Our Scorecard

2016

Key Highlights

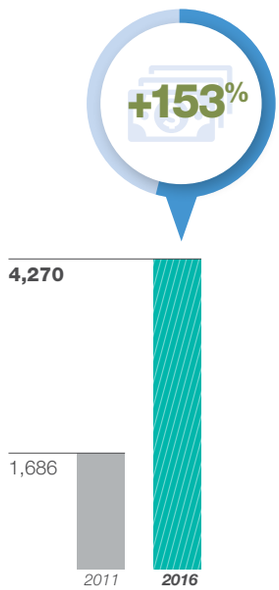
Electricity Sales
(GWh)

Increased 211% since 2011



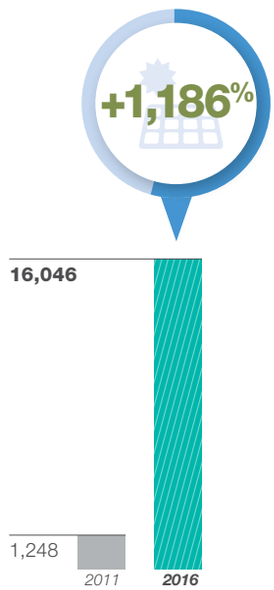
Revenue
(RM million)

Increased 153% since 2011



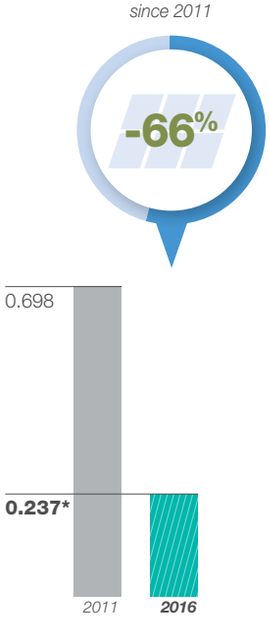
Renewable Energy Generated
(GWh)

Increased 1,186% since 2011



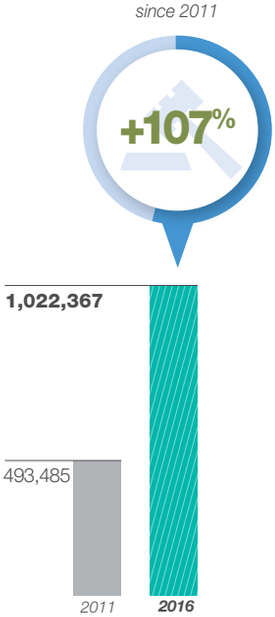
Emission Intensity - Main Grid
(tCO_2eq/MWh)

Decreased 66% since 2011



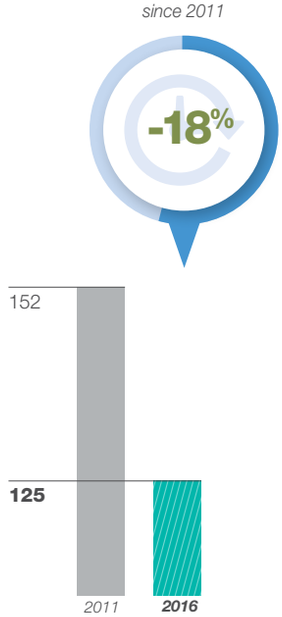
Tenders Awarded to Locals
(RM '000)

Increased 107% since 2011



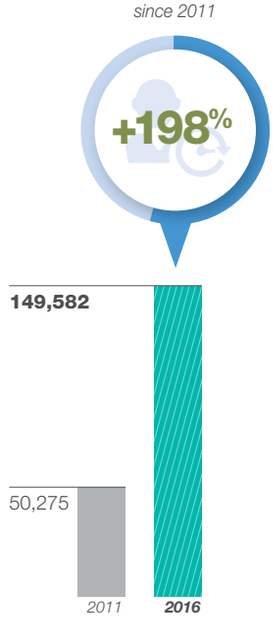
SAIDI - Distribution
(minutes per customer)

Decreased 18% since 2011



Total Hours of Training
(hours)

Increased 198% since 2011



Note:

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-2

Delivering Value to Our Stakeholder

As an organisation which contributes a vital component of the day-to-day lives of the people of Sarawak and the businesses operating in the State, Sarawak Energy is deeply aware of the responsibility we shoulder in creating value for our stakeholders.

Input

Powering The Economy

Fuel Consumption by type

Coal
2,136,639.31 tons

Diesel
23,425,847.71 litres

Natural Gas
34,622,745.43 MMBTU

Hydro
8,314 million m^3
(Water for Power Generation)

Thermal - Water Utilisation
1,065 million m^3
(Cooling Process)

Empowering Our People

Total Workforce
4,468

SUSTAINABLE DEVELOPMENT GOALS

Key trends

Investors | Employees | Society at large

G4-2
G4-EC1
G4-EC7
G4-EC8
G4-EN18
EU26

Delivering Value to Our Stakeholder

We stand guided by a commitment to prioritise renewable energy and to utilise local resources to generate returns throughout our value chain. Our sustainability is further extended by protecting the interest of our stakeholders, and preserving the environment to meet the needs of current and future generations.

▶▶ Output

Powering The Economy

Revenue
RM4,270 million

Economic Value Retained
RM908.2* million

Payments to Government
RM175.8 million

Employee Remuneration
RM372.1 million

Electricity Sales
20,627 GWh

Adding Value to Our Business

Purchases, Equipment & Services
RM3,218 million

Operating Costs
RM2,368.5 million

Tender Awarded to Local
RM1,022 million

Rural Electrification Scheme

Sarawak's Electrification Coverage Raised
94% as at end 2016

Benefitted at Least
101,000 rural households since 2009

Preserving the Environment

Grid Intensity (Main Grid)
0.237*
tCO_2eq/MWh

Reduction
3%
CO_2 in total

CO_2

Empowering Our People

Human Capital Development

Total Training Hours
149,582 hours

Employee New Hires
258

Note:
* *These grid carbon emission intensity and economic value retained data have been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-34

Governance

We have in place a robust governance framework encompassing clear lines of responsibility and accountability. Governance policy at Sarawak Energy is supervised by our Board of Directors and regulated and administrated by the Group Executive Committee (GEC). Together, our directors and GEC ensure we are transparent in everything we do, conduct our business with integrity, and protect the rights of our stakeholders at all times. They are guided in executing their role by the Malaysian Code on Corporate Governance.

Board composition

Non-Independent, Non-Executive Director
80%

Independent, Non-Executive Director
20%

Group Executive Committee composition

Male
83%

Female
17%

Board of Directors

Our Board of Directors is responsible for establishing Sarawak Energy's strategic direction, overseeing the performance of the company, and ensuring we have sufficient risk management controls to safeguard our sustainability. As caretakers of our shareholders' interests, the Board is also ultimately responsible for our financial performance, balancing this with our environmental, social and governance obligations.

Our Board sets the tone of the company's values and standards, and works with management for a meaningful consideration of key sustainability issues throughout the organisation.

Sarawak Energy's Board currently comprises five individuals, each contributing many years of experience and expertise in his or her area of professionalism – from business, accounting, law or economics to public administration. The Chairman leads the Board and monitors its effectiveness as well as conduct. He is supported by four non-executive directions, including an independent director who strengthens the Board's decisions with an element of objectivity.

Collectively, the Board strives to provide sound advice and judgement to influence positive outcomes for the company and our stakeholders.

Group Executive Committee

As part of our transformation into a modern, agile corporation, in 2016 we restructured our management to enhance the efficiency of our decision-making process. The GEC was formed to deliberate on major issues, as well as to review, assess and endorse our current and future strategic direction. Comprising 12 members, the GEC meets every week to ensure we achieve our short and long-term goals, underlining our sustainable growth.

Group Management Team

The Group Management Team (GMT) monitors Sarawak Energy's developments and our progress towards achieving set targets. The team, comprising members of the GEC, all heads of department and key management from relevant departments, meets every quarter.

Sustainability Division

A Sustainability Division was formed in 2012 to oversee our sustainability efforts and to ensure these are integrated into Sarawak Energy's strategic direction. The division reports to the Head of Corporate Social Responsibility.

G4-34

Hydropower Sustainability Assessment Protocol (HSAP) Governing Structure

The Hydropower Sustainability Assessment Protocol (HSAP) is a globally recognised framework for assessing hydropower projects against a comprehensive range of social, environmental, technical and economic considerations. The protocol was developed by representatives from governments, commercial and development banks, social and environmental NGOs, and the hydropower sector.

We have adopted the HSAP, and in 2014 established an internal HSAP governing structure to intensify our efforts to incorporate sustainability into our hydropower development and operation processes. This is essential to ensuring our hydropower development and operations support our sustainability agenda.

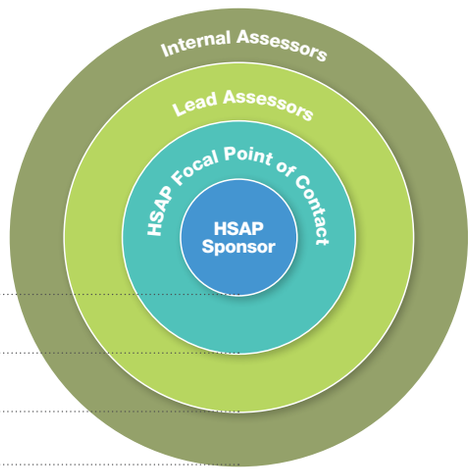
Sarawak Energy acknowledges the Protocol as a good model of guided self-assessments in achieving sustainable hydropower development aligned with the World Bank recommendations.

The integration of sustainability practices into our hydropower project development and operations is managed by the Sustainability Division with the following objectives:

1) Benchmarking our internal practices/processes against global best practices and processes
2) Identifying areas for future improvement
3) Platform to enhance the adoption of HSAP at the project and corporate levels
4) Capacity development of the project team on "the Protocol"
5) Enhancing the technical capabilities of Sarawak Energy's Internal Assessment Team
6) Preparing projects for official assessment
7) Sustaining our efforts to embed sustainability practices

Hydropower Sustainability Protocol Assessment Structure

Note:
Governing Structure and roles & responsibility of the HSAP were approved by Sarawak Energy's Executive Management Committee (EMC) in 2014



01 Head of CSR

02 Sustainability Manager

03 (Various Departments)

04 (Various Departments)

Roles & Responsibilities

01

- 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

02

- 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, scope, criteria

03

- 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

04

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

Key milestones in embedding the HSAP into Sarawak Energy's Project Development Processes:

2012

- Formed IHA Partnership
- Embedded HSAP into Social Environment Impact Assessment requirements
- Unofficial Murum HSAP assessment
- Integrated HSAP requirements into Sarawak Energy Project Model (SPM)
- World Hydropower Congress 2013

2013

- Stakeholder engagement in hydropower development
- Established an internal framework on Resettlement Action Plan
- Integrated the IFC Performance Standard into Sarawak Energy Project Development Model

2014

- Established HSAP internal assessment team
- World Hydropower Congress 2015

2015

- First HSAP Internal Assessment Exercise for Capacity Building

2017

HSAP Internal Assessment Report for Baleh HEP

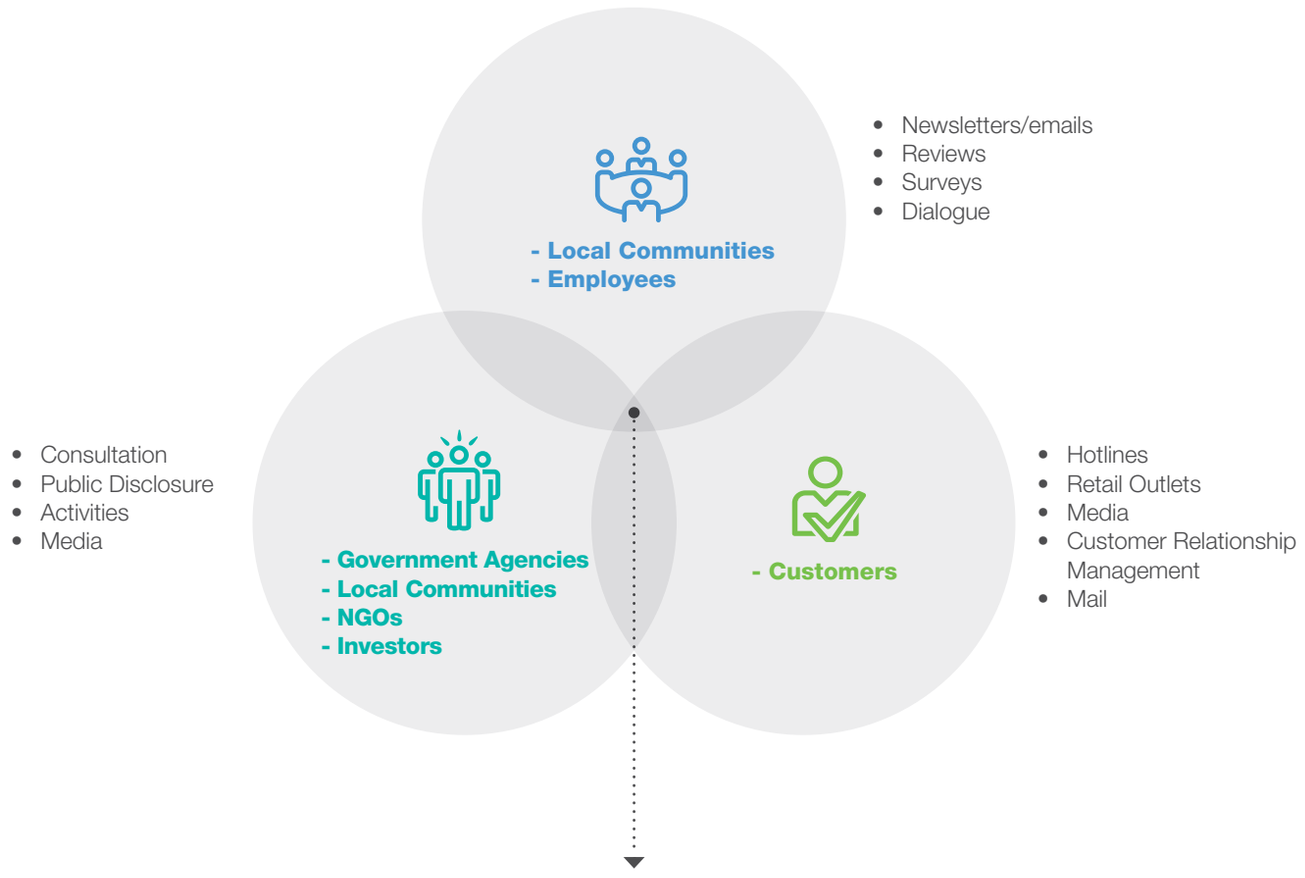
G4-24
G4-25
G4-26
G4-27

Engaging Our Stakeholders

We are committed to delivering value and acting in the best interest of our stakeholders, as they are key to our sustainability. To understand how we can support their needs, as well as to help them understand our business and actions, we engage regularly with our various stakeholders using a variety of platforms.

Sarawak Energy's key stakeholders are our customers, employees, investors, the State Government of Sarawak, the local communities in areas where we have operations, and the broader public. Together, they determine our licence to operate. To validate this licence, we seek to meet the expectations and needs of each group. We engage with them regularly through various channels and encourage healthy dialogue on any matter that is material to them.

Stakeholder Group



Sarawak Energy's Stakeholder Engagement Strategy & Process

Engagement Strategy

Stakeholder Mapping & Analysis

G4-DMA
G4-24
G4-25
G4-27

Engaging Our Stakeholders

Briefing and dialogue with Kapit-Baleh contractors in Kapit

These engagements serve to strengthen our stakeholder relationships and enable us to build the trust we have established with them, further entrenching our fundamentals and providing us strong pillars for continued growth.

Through public and private dialogue, one-on-one meetings as well as surveys and daily conversations with our stakeholders, we gain a deeper insight into how our operations impact their lives. This is further supported by a materiality analysis undertaken every four years, in which our internal and external stakeholders provide feedback on issues that are important to them, as well as issues they perceive to be important generally. The materiality analysis helps us to identify and prioritise issues we need to work on to safeguard our sustainability and that of our local communities.

In the end, our sustainable development is not only about ensuring Sarawak Energy's growth. It is more about ensuring the people of Sarawak prosper together with Sarawak Energy.

Review & Continuous Improvement

Engagement, Monitoring & Reporting

Stakeholder Engagement Plan (Partially)

CATALYSING ECONOMIC SUSTAINABILITY

In developing our hydropower projects, Sarawak Energy is adopting the Hydropower Sustainability Assessment Protocol (HSAP) to ensure the projects are developed in a sustainable manner and continued to our engine for growth.

Economic Highlights

Revenue

RM4,270 million

Electricity Sales (RM)

4% of State GDP[1]

Electricity Consumption Per Capita

+264%
Since 2011

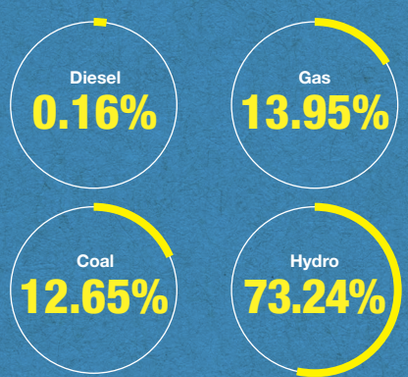
Total Electricity Sales

20,627 GWh

Economic Value Retained

RM908.2* million

Generation Mix



Notes:

[1] *State of Sarawak Growth Domestic Product (GDP) for 2015 at 2010 price.*

* *This economic value retained data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

System Average Interruption Duration Index (SAIDI)

Transmission

117

Distribution

125

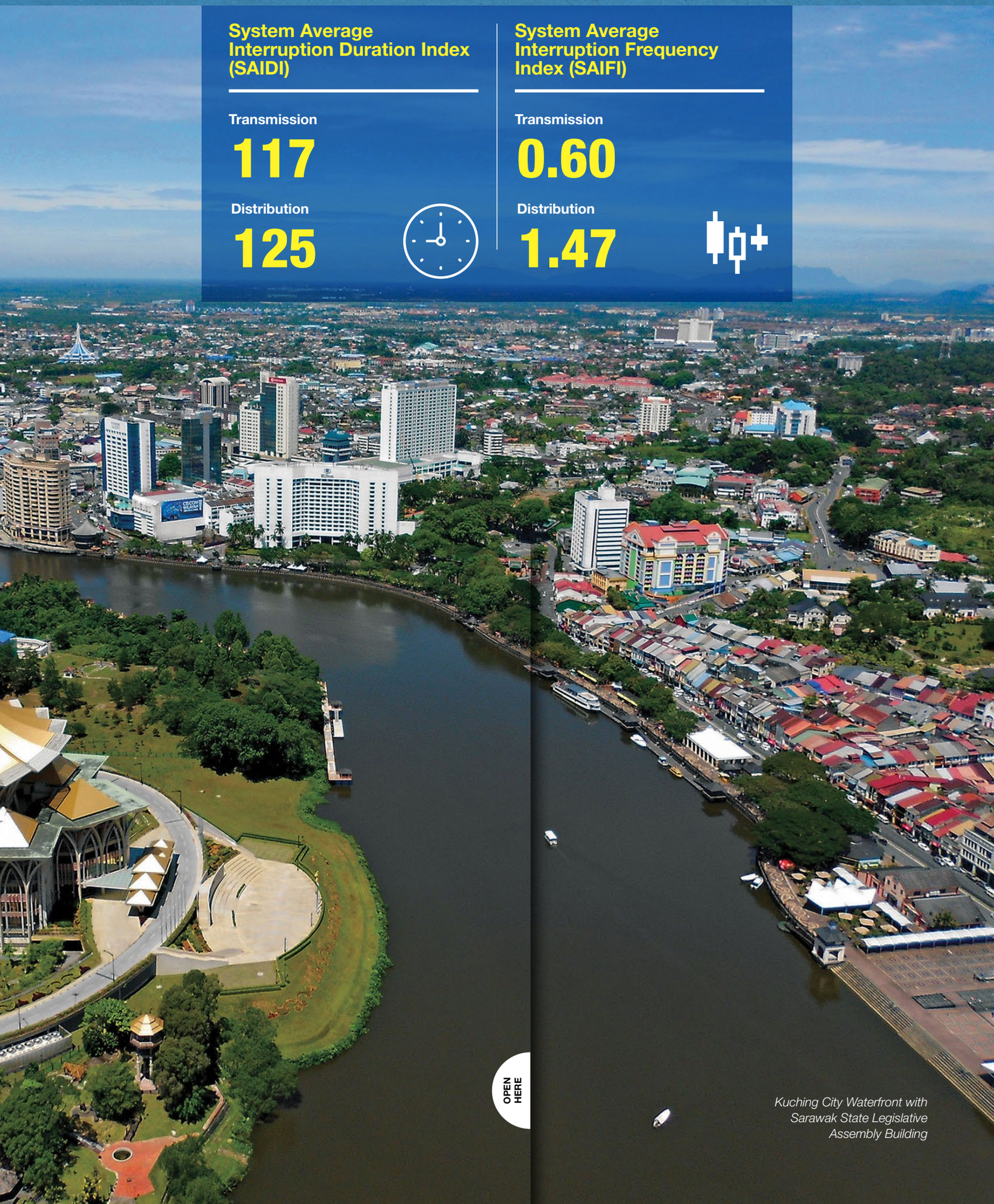
System Average Interruption Frequency Index (SAIFI)

Transmission

0.60

Distribution

1.47



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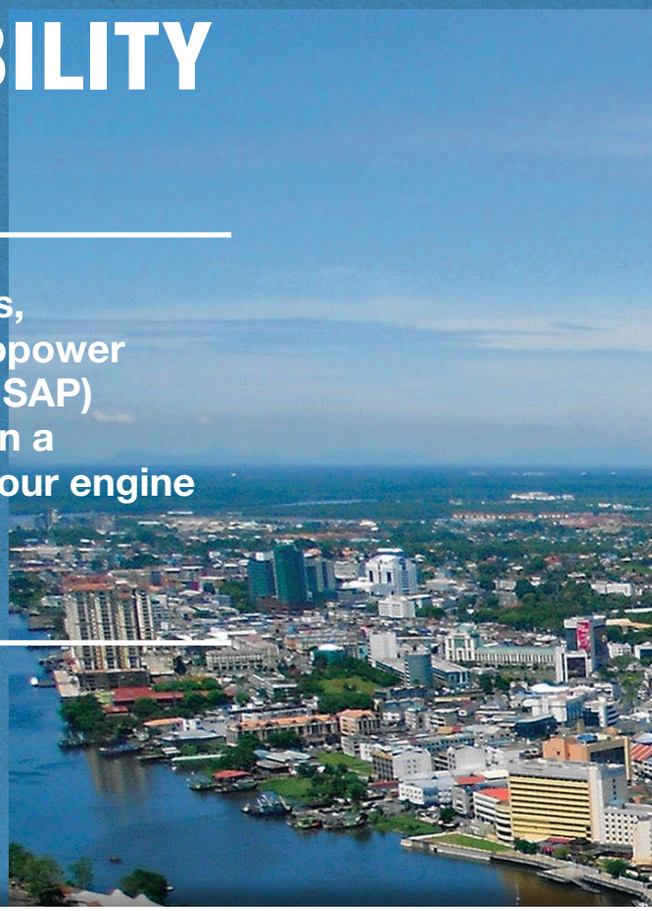
Kuching City Waterfront with Sarawak State Legislative Assembly Building

CATALYSING ECONOMIC SUSTAINABILITY



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Economic Highlights

Revenue

RM4,270 million

Electricity Sales (RM)

4% of State GDP[1]

Electricity Consumption Per Capita

+264

Since 2011

Total Electricity Sales

20,627 GWh

Economic Val

RM9

Generation Mix

Diesel	Gas	Coal	Hydro
0.16%	13.95%	12.65%	73.24%

Notes:

[1] *State of Sarawak Growth Domestic Product (GDP) for 20*

* *This economic value retained data has been assured by a Independent Assurance Report on pages 77 - 78.*

ECONOMIC

Making an Impact at the global, national & state levels

United Nations Sustainable Development Goals (SGDs)

SDG #07 "Ensure access to affordable, reliable, sustainable and modern energy for all"

- By 2030, ensure universal access to affordable, reliable and modern energy services
- By 2030, increase substantially the share of renewable energy in the global energy mix

SDG #8 "Promote inclusive and sustainable economic growth, employment and decent work for all"

- Sustain per capita economic growth and achieve higher levels of economic productivity through diversification, technological upgrading and innovation
- Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, innovation and decouple economic growth from environmental degradation

Malaysia Sustainable Development Agenda

- Green Economy
- Energy Security

Sarawak Sustainable Development Agenda

- State economic development
- Access to energy
- Clean, renewable & affordable energy

System Average Interruption Duration Index (SAIDI)

Transmission

117

Distribution

125

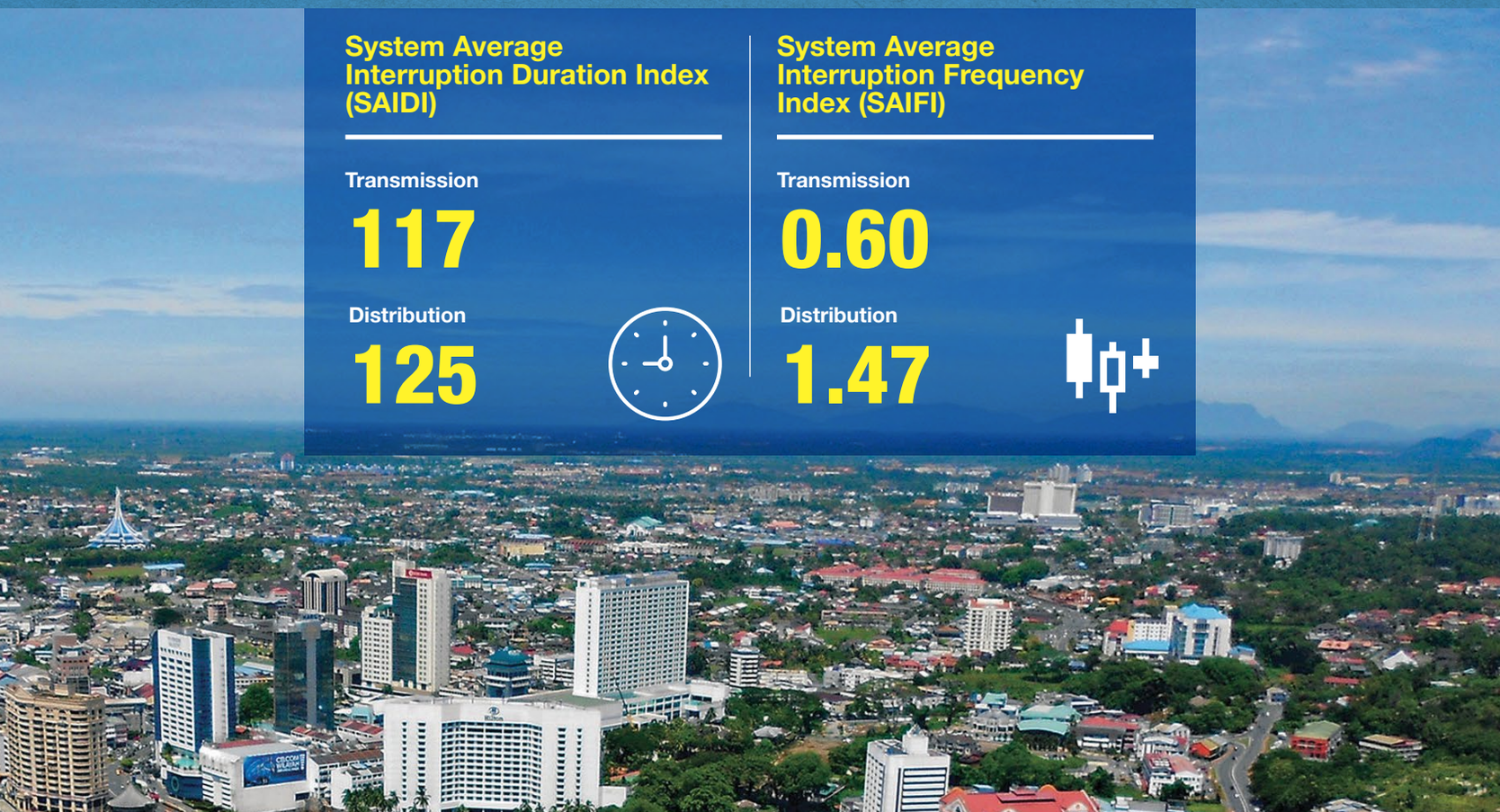
System Average Interruption Frequency Index (SAIFI)

Transmission

0.60

Distribution

1.47



Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS

08 GOOD JOBS AND ECONOMIC GROWTH

07 AFFORDABLE AND CLEAN ENERGY

RM1,022,367 (000')
Tender Awarded
to Local Companies

0.237*
tCO_2/MWh
Emission Intensity (Main Grid)

4%
Electricity Sales
contribute to State GDP

74%
Renewable Energy

100%
Local Resources
for Generation

RM175.8 million
Income taxes paid (net of refunds)

94%
State Electricity
Coverage

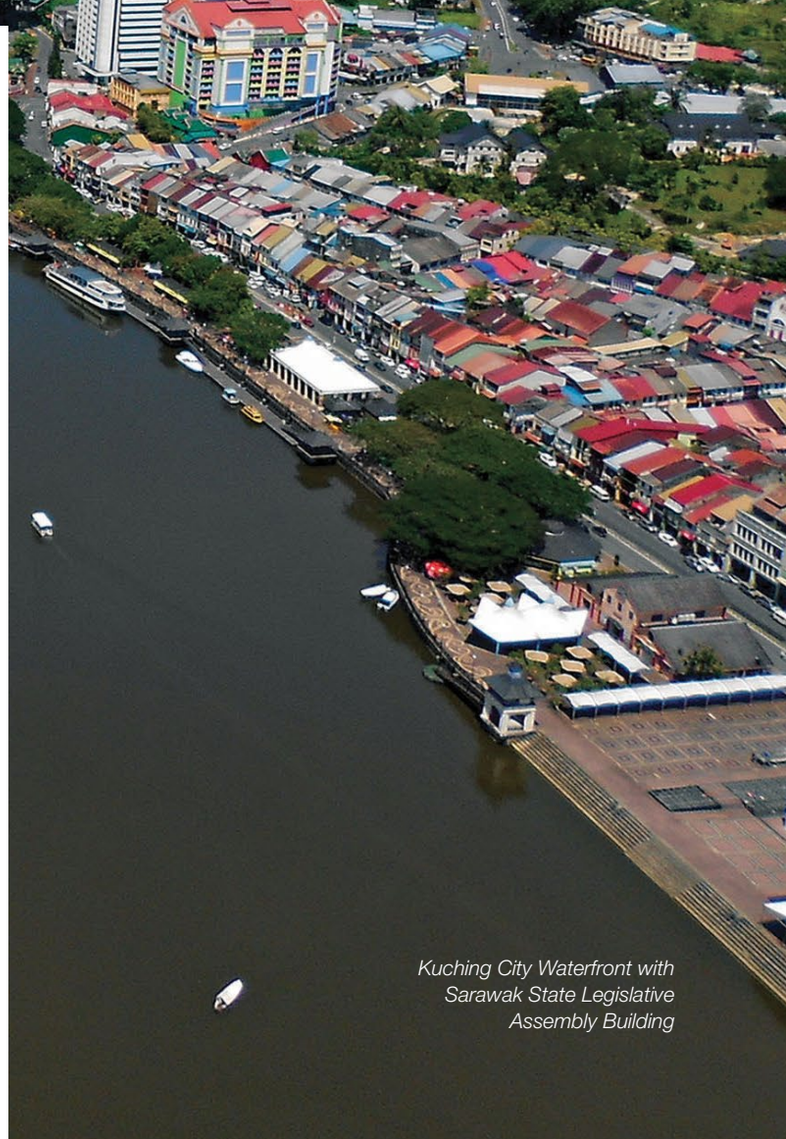
7.5 MWh
Electricity Consumption
Per Capita

+ 264%
Increase in Electricity Consumption Per Capita as compared to 2011

RM4,270 million
Direct Economic
Value Generated

Note:

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*



Kuching City Waterfront with Sarawak State Legislative Assembly Building

G4-EC1

Catalysing Economic Sustainability

HIGHLIGHTS

Direct economic value generated, distributed and retained

Direct Economic Value Generated

Revenue

RM4,270 million

Economic Value Retained

RM908.2* million

Economic Value Distributed

Operating costs

RM2,368.5 million

Employee remuneration

RM372.1 million

Interest paid

RM445.3 million

Income taxes paid (net of refunds)

RM175.8 million

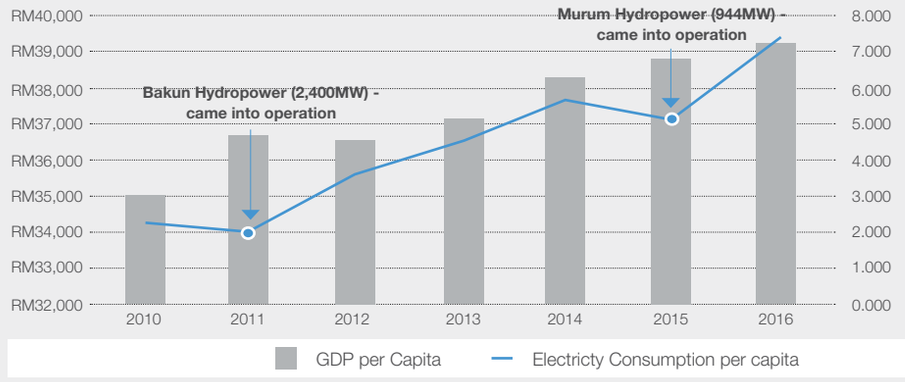
Note:

* *This economic value retained data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

Sibu City

CATALYSING ECONOMIC SUSTAINABILITY

Sarawak Energy contributes to the economic sustainability agenda at global, national & state levels. Shifting our generation mix toward renewable energy has also contributed towards global and national agenda in terms of mitigating climate change as well as providing access to affordable energy.



Notes: *1. Sarawak GDP at 2010 Prices (RM million)**

Figure 1: Electricity Intensity – Electricity Consumption per Sarawak State Gross Domestic Product (GDP)

At the state level, total revenue from the sales of electricity alone accounted for 4% of the Gross Domestic Product (GDP), with electricity consumption increasing by 264% from 2.05MWh per capita in 2011 to 7.45MWh per capita in 2016. Electricity intensity per GDP (Figure 1) has also shown a increased significantly, representing high industrial output per GDP. The increase in electricity demand has also created an indirect economic spin-off to our stakeholders. At the corporate level, we provide employment to 4,468 individuals and, through the award of contracts, we support local businessmen and entrepreneurs. All our existing and proposed hydroelectric power plants are located in rural areas of Sarawak hence the development of hydropower projects also contributes to the development of basic infrastructure as a catalyst for rural development.

G4-DMA
G4-EC7
G4-EC8
G4-EC9

Catalysing Economic Sustainability

ECONOMIC PERFORMANCE

In 2016, Sarawak Energy earned RM4.27 billion in revenue, marking a significant 32.7% increase from RM3.22 billion in 2015. RM175.8 million of our income was channelled back to the state government in the form of tax. We also paid out RM372.1 million in wages to employees and RM445.3 million in interest to capital providers.

In addition, via philanthropic activities, we channelled a total of RM3,966,139 to various charitable organisations during the course of the year. Among the key beneficiaries were local communities we have helped to power up through solar, residents of 22 Batang Ai longhouses which were re-wired, and Curtin University, where scientists are undertaking research relevant to Sarawak Energy's operations.

Sarawak Energy has maintained AA1/Stable credit rating from RAM Ratings for its RM15 billion Sukuk Musyarakah programme since the first issuance under the programme in 2011.

Procurement

Sarawak Energy has a policy of supporting local businesses as far as possible. This means awarding projects to Sarawakian companies that have the ability to satisfy our needs. During the year, of the total of RM2.90 billion worth of projects awarded, RM1,022.37 million went to Sarawakian companies, RM221.89 million went to Malaysian non-Sarawakian companies, and RM1.65 billion was awarded to international corporations. Awards given to international companies tend to be for hydropower equipment that is not available locally.

Our procurement practices are based on the following principles:

- Best Value for Money – all decisions are guided by a central objective of achieving the best value for money for the company and the people of Sarawak
- Open and Effective Competition – all contract and procurement activities will be conducted on a consistent and fair basis through clearly documented systems, processes and procedures
- Impartiality and Transparency of Process – procurement activities will be impartial, transparent and ethical, without internal or external influences
- Enhance Opportunity for Local Content – the company will seek to enhance opportunities for local content

Tenders Awarded by Sarawak Energy

Sarawakian vs Non-Sarawakian vs International

	Value (RM)					
Status	**Year 2011**	**Year 2012**	**Year 2013**	**Year 2014**	**Year 2015**	**Year 2016**
Sarawakian	493,484,890	1,159,217,853	1,155,661,906	1,036,485,969	1,512,493,591	**1,022,366,550**
Malaysian *(Non-Sarawakian)*	122,196,259	273,058,866	620,100,468	1,914,252,163	719,519,594	**221,885,631**
International	44,331,403	344,393,007	25,256,863	57,395,043	128,861,301	**1,652,720,100**
Overall Total	**660,012,553**	**1,776,669,725**	**1,801,019,237**	**3,008,133,175**	**2,360,874,486**	**2,896,972,281**

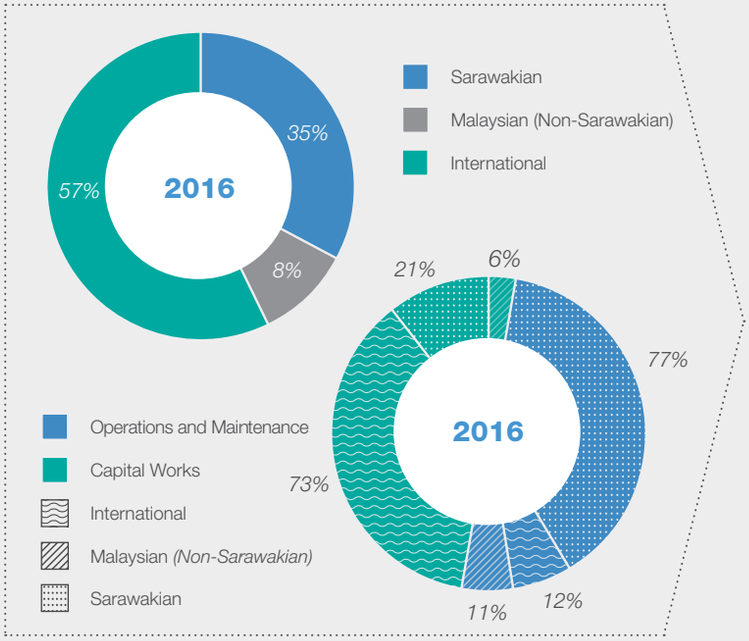
Malaysian vs International

	Value (RM)					
Status	**Year 2011**	**Year 2012**	**Year 2013**	**Year 2014**	**Year 2015**	**Year 2016**
Malaysian	615,681,150	1,432,276,718	1,775,762,374	2,950,738,132	2,232,013,185	**1,244,252,181**
International	44,331,403	344,393,007	25,256,863	57,395,043	128,861,301	**1,652,720,100**
Total	**660,012,553**	**1,776,669,725**	**1,801,019,237**	**3,008,133,175**	**2,360,874,486**	**2,896,972,281**

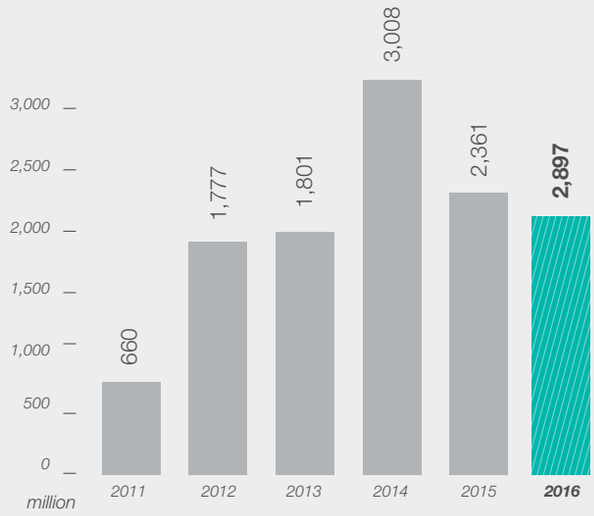
G4-EC9
EU30

Catalysing Economic Sustainability

Total Tenders Awarded by Categories



Total Tenders Awarded by Sarawak Energy (Malaysian & International) 2011-2016



Operational Performance

Our economic performance depends on our operational performance, namely the performance of our power generating plants and transmission as well as distribution networks.

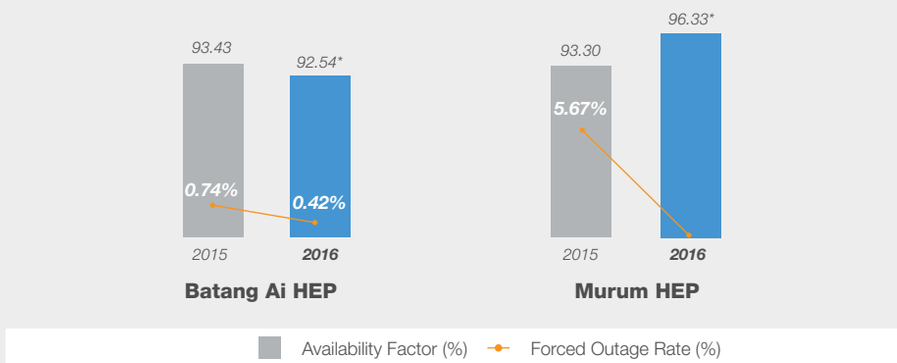
Availability & Reliability

During the year, we continued to maintain a high level of availability of our hydro plants, and were particularly pleased to achieve an availability factor of 96.33*% for the Murum HEP which also recorded zero forced outage. Batang Ai HEP recorded an availability factor of 92.54*%, which is considerably good for a hydropower plant that has been in operation for more than 30 years. We were also able to reduce its forced outage** from 0.74% to 0.42%.

Thermal Energy Efficiency

In 2015, we embarked on a five-year Sarawak Energy Thermal Energy Efficiency Programme (STE^{2}P) which serves not only to enhance our performance but also to support the Government's target to reduce the country's carbon emission intensity per GDP by 40% from its 2005 level by 2020. On average the efficiency of our thermal plants improved from 29.51% in 2015 to 30.66%[1] in 2016.

Availability Factor of hydro plants in 2015 & 2016



Notes:

[1] *Total average energy efficiency for Sarawak Energy thermal power plants connected to Main and Northern Grids.*

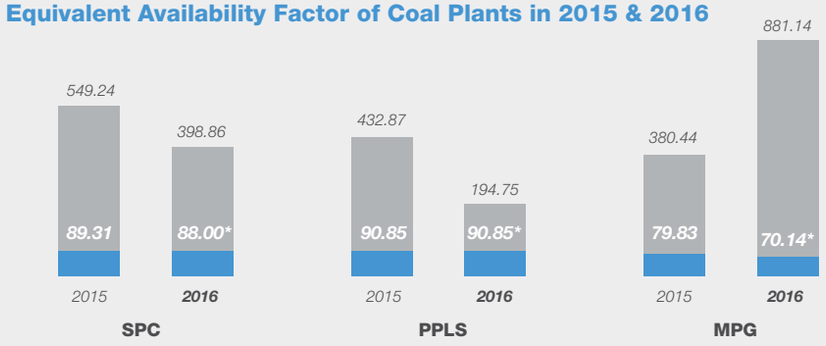
* *These availability factor (hydro power plants) data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

** *Forced outage - unplanned outage that requires the plant to be taken out of service immediately or before the next planned outage.*

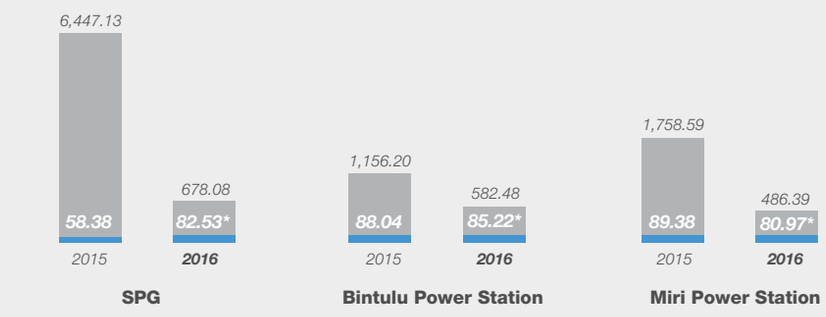
EU30

Catalysing Economic Sustainability

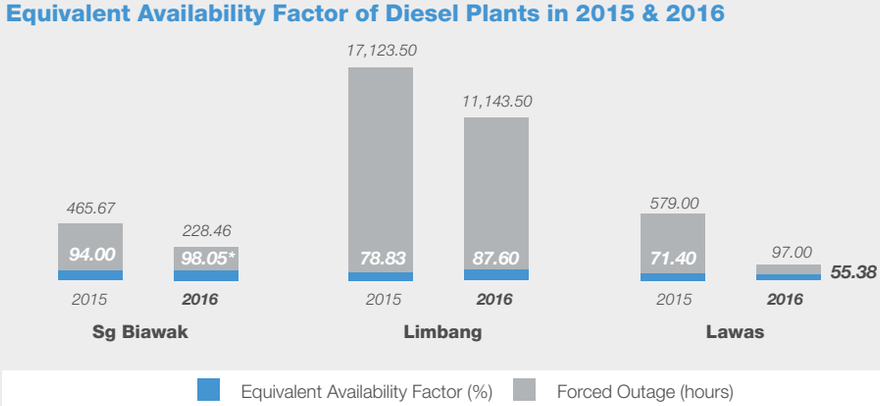
Equivalent Availability Factor of Coal Plants in 2015 & 2016



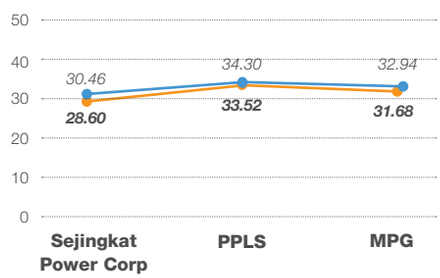
Equivalent Availability Factor of Natural Gas Plants in 2015 & 2016



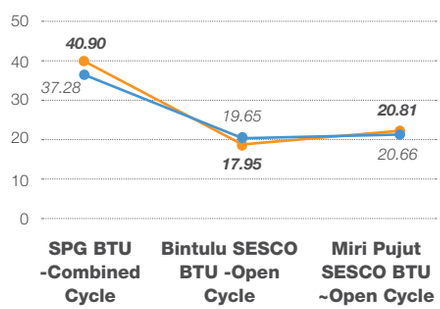
Equivalent Availability Factor of Diesel Plants in 2015 & 2016



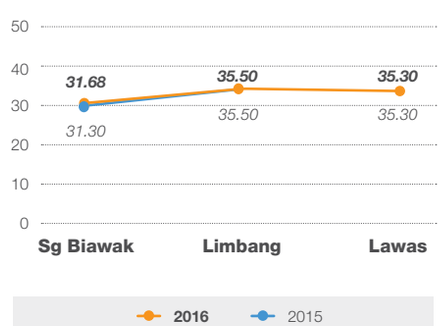
Efficiency of Coal Plants (%)



Efficiency of Natural Gas Plants (%): Open Cycle & Combined Cycle



Efficiency of Diesel Plants (%)



The performance of our plants enabled us to meet increased demand for electricity during the year, with total sales increasing 46.9% from 14,038GWh to 20,627GWh. Moving forward, energy demand in Sarawak is expected to increase to 4,100MW by 2020, from 3,776MW currently. We are committed to meeting this with increased capacity together with enhanced asset management.

Asset Management

In June 2017, Sarawak Energy's Group Executive Committee (GEC) approved our Operations Asset Management Policy which defines the key principles and requirements to be applied in our work processes to ensure our assets are managed in line with our corporate strategies. It also complies with BSI PAS 55:2008 Management of Infrastructure Assets and ISO 55000 Asset Management standards.

Note:

* *These equivalent availability factor (thermal power plants) data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-DMA

Catalysing Economic Sustainability

The policy comprises eight aspects, to be applied in all our asset management processes:

Policy	Element
Safety	• A commitment to "no harm to anyone at any time" with no compromise with regard to cost, time or any other reason • Ensure our own safety and the safety of others to achieve zero fatality
Legislative Compliance	• To carry out all asset lifecycle management activities, viz. planning, acquisition, operation, risk management, maintenance and disposal of assets in accordance with the applicable laws of Sarawak/Malaysia
Environmental Impact	• To consider the environmental impact of all our actions, and comply with all environmental legislation and procedures
Reliability of Supply	• Through continued investment in modern technology, practices and system enhancement, reliability and plant availability will continue to be a key focus of all asset management planning
Sustainability of Supply	• Secure upstream supplies through strategic partnership with industry players to ensure sustainable operation • Ensure a robust infrastructure is in place that will facilitate additional demand through optimal generation mix
Continual Improvement ***(Operational Excellence)***	• Incorporate regular audits and formal management reviews • Achieve operational excellence through commitment to continual improvement in managing our assets, adopting best practices • Ensure the people involved in asset management are appropriately selected, developed and trained in continuous improvement approach to managing our assets to achieve operational efficiency
Risk Management	• Adopt risk-based approach to asset management planning with respect to economic, safety, environmental, quality of supply, reputational, vulnerability and regulatory risks
Lifecycle Management	• Adopt a whole-life approach in the planning, acquisition, operations, performance, maintenance and disposal of assets; and develop investment plans that are sustainable, efficient and that balance risks, cost and performance in the short and long terms

Policy Awareness

To create awareness of the new policy, the Asset Management division conducted a number of briefings to personnel in different departments. A circular on the policy was also released to all Sarawak Energy personnel on 24 November 2016.

Asset Management Initiatives

Along with the policy, the Generation, Transmission and Distribution departments have developed their own asset management strategies and plans.

In October 2016, the Thermal Asset Management Plan and Strategy 2016 were endorsed. The Generation department also introduced Reliability Centred Maintenance (RCM) methodologies which concentrate on hidden failures in protective systems, devices and equipment or components.

EAM software procurement

We have embarked on the implementation of an enterprise asset management (EAM) system, which is targeted to go live by the fourth quarter of 2017. Aside from managing robust asset information and tracking asset health, the system will enable employees to input asset data via mobile devices from remote locations. Additionally, maintenance workers can access asset information to facilitate scheduled maintenance activities. The system will be used primarily by maintenance and operations officers from Transmission and Distribution and will facilitate ISO 55001:2014 compliance in the near future.

Enhancing Service Quality

We measure our service delivery in two broad key parameters: continuity of supply; and the speed with which we are able to reconnect customers whose power supply is disconnected due to late payments. For time being, this initiative focuses on the Kuching region only.

G4-DMA
EU12
EU27
EU28
EU29

Catalysing Economic Sustainability

During the year, we disconnected 9,579 accounts in Kuching area amounting to RM22,014,129, and reconnected 6,463 accounts once our customers had settled their bills amounting to RM8,981,923. Of the reconnections, 91.7% were completed within 24 hours of settlement of payment.

Length of time between disconnection and arrangement of payment

<48 Hours	48 – 1 Weeks	1 Weeks – 1 Month	1 Month – 1 Years	> 1 Year
6,175	208	44	36	-

Time taken to restore electricity after payment

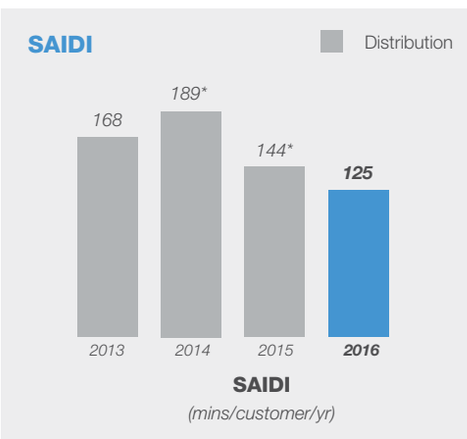
< 24 Hours	24 Hours – 1 Week	> 1 Weeks
5,925	320	218

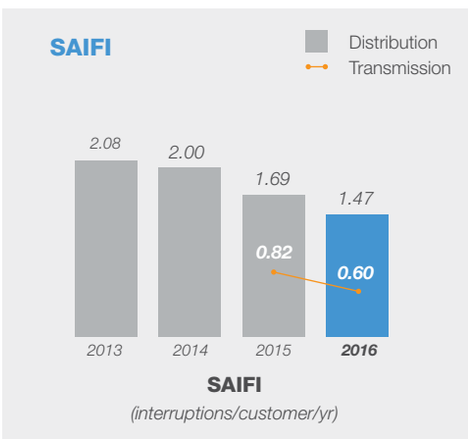
Transmission & Distribution Performance

Description	2016
Transmission Losses (%)	**1.95%**
Distribution Losses (%)	**11.9%**

Distribution losses can occur for technical or non-technical reasons. Technical losses are due mainly to power dissipation in the system components such as transmission and distribution lines, transformers and measurement systems. Non-technical losses are caused by actions external to the power system and consist primarily of electricity theft, non-payment by customers and errors in accounting and record-keeping. During the year, 10.87% of the losses were technical in nature, and 1.03% were non-technical.

Along with better asset management and other initiatives to increase efficiency, we have been able to decrease both the number and duration of interruptions in supply as measured by our System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI).





Notes:
Prior to 2015, system interruption was measured only for Distribution.
** These Distribution SAIDI data has been assured by a third party for Sustainability Report 2014 and 2015.*

SEB Cares Mobile App

- Customers to view and pay their electricity bills via FPX (saving/current account) or credit card/debit card
- Report outages, faulty streetlights, billing and meter reading issues
- Receive alerts and updates on outages
- Locate our customer service counters
- Receive our latest news

Official Launch of Sarawak Energy Mobile App

SEB Cares Programme

As part of efforts to get closer to our customers, and create greater convenience for them, in 18 February, Sarawak Energy launched the SEB Cares mobile app which allows customers to view and pay their electricity bills via real time online banking from their saving/current account or credit card/debit card; report outages, faulty streetlights, billing and meter reading issues; receive alerts and updates on outages; locate our customer service counters; and receive our latest news.

We have also started installing payment kiosks and intelligent queue management system at all major branches throughout Sarawak, and are building electric ramp at Wisma SESCO for wheelchair-bound customers. Expanding our reach, new customer service counters have been opened at the Urban Transformation Centres (UTCs) in Sibu and Miri, while the customer service counter in the Sibu Regional Office is undergoing renovation.

As a result of fewer power interruptions, faster breakdown restoration and efforts to create greater customer convenience our Customer Satisfaction Index (CSI) continued to inch up, to 77.42% in 2016 from 77.29% in 2015.

Catalysing Economic Sustainability

Briefing session on Business Continuity Management (BCM) with Management Team at Menara Sarawak Energy for Desktop Walkthrough Exercise

Business Continuity Management

To strengthen our crisis management, we are putting in place a Business Continuity Management (BCM) framework. BCM is a holistic process that identifies potential threats and their impacts to an organisation. It helps to build organisational resilience with the capability for an effective response that safeguards the interests of key stakeholders, reputation, brand and value-creating activities.

The BCM Framework was developed against the ISO 22301:2013, ISO22313:2012, ISO22300:2012, ISO 27001:2005 and other relevant Malaysian and international BCM standards and guidelines.

As part of the development of the framework, a Business Impact Analysis (BIA) was undertaken. This determined, among others, which critical business functions should be prioritised in the event of a crisis. It also set an Impact & Recovery Time Objective (RTO), and Minimum Operating Resources.

Catalysing Economic Sustainability

Our Milestones in 2016

#1 **Four Business Continuity Plan (BCP) Documentation Training** workshops were conducted for BCM Coordinators from 7-13 January.

#2 **The first Crisis Communication Team (CMT) Meeting** was held on 21 January to discuss and finalise the Code Declaration Criteria, check list, and roles and responsibilities of the CMT.

#3 **The Command Centre and BCM Secretariat/Corporate Communication Rooms** in Menara Sarawak Energy were completed and fully furnished in May.

#4 BCM Desktop Walk-through Exercises (DWEs) were conducted at Menara Sarawak Energy, SPC and the Kuching Regional Office to:

- **Enhance awareness of the BCM Programme**
- **Accustom staff with the response and recovery procedures documented in the departmental Business Continuity Plans and Crisis Management Plan**
- **Identify areas of improvement (if any) to the BCM documentation**

Building Our Capabilities

Further supporting the development of an efficient and productive organisation, we are committed to building the capabilities of our people.

We use On the Job Competency (OJC) as a tool to measure employees' current competencies within an occupation or function to the standards expected by the job to meet the departmental goals. The tool assesses competency based on employees' knowledge, the processes being used, and product evidence. With the OJC, we are able to identify competency gaps, determine training needs, support yearly performance appraisals, and support our employees' career development.

The People and Leadership Development (P&LD) department is creating an OJC Database to help develop, measure, monitor and review employees' OJC development.

Progress of OJC Documents & Target for 2017:

					Target 2017
No	Group	OJC Modules to be Developed	OJC Modules Submitted	Gap	30% of Gap to be Submitted
1	NE1- NE6	581	146	435	131
2	E1 - E4	417	257	160	48
	TOTAL	**998**	**403**	**595**	**179**

IMPROVING OUR ENVIRONMENTAL FOOTPRINT

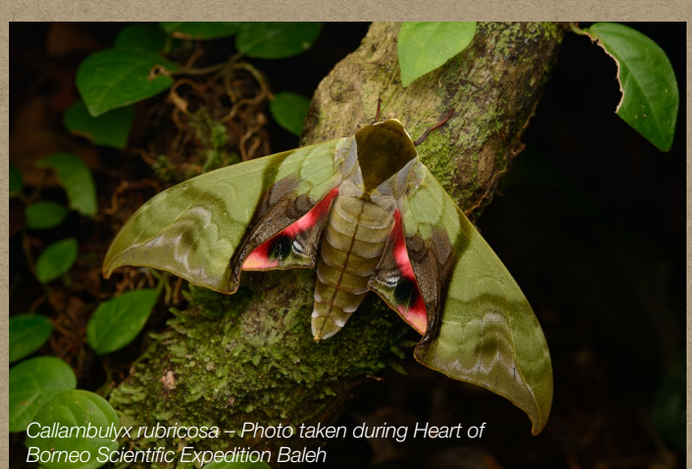
Managing our environmental footprint is a key component of our business strategy, and an integral part of our vision to achieve sustainable growth for Sarawak by meeting the region's need for reliable, renewable energy.

Environment Highlights

Emission Intensity - Main Grid (tCO_2eq/MWh)

0.237*

CO_2



Callambulyx rubricosa – Photo taken during Heart of Borneo Scientific Expedition Baleh

Total CO_2 Reductions

615,130

(tCO_2)

Only for Bintulu Gas Combined Cycle Power Plant

Total Volume of Carbon Emission ('000)

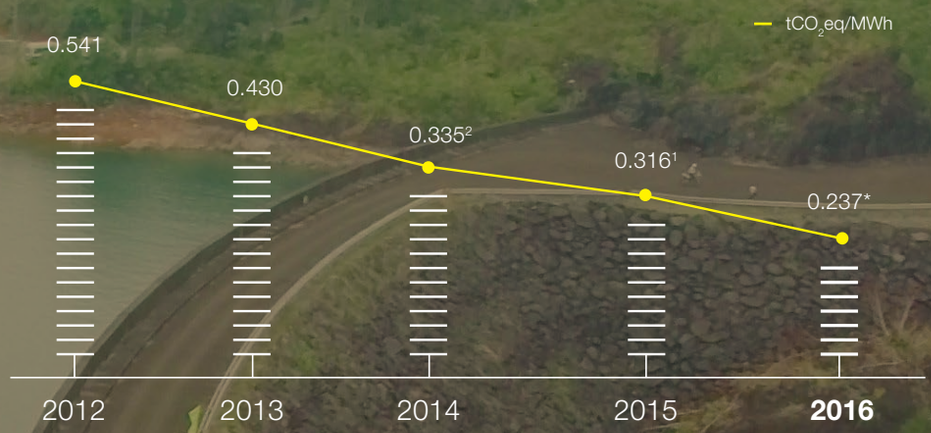
5,203

(tCO_2)

Note:

* *This grid carbon emission intensity have been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

Sarawak Energy Main Grid CO_2 Emission Intensity 2012-2016



Notes:

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[2] *This grid carbon emission intensity data has been assured by a third party for Sustainability Report 2014.*

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

OPEN HERE

Riding on Batang Ai HEP dam crest - Sarawak Energy Batang Ai MTB Jamboree 2016

IMPROVING OUR ENVIRONMENTAL FOOTPRINT

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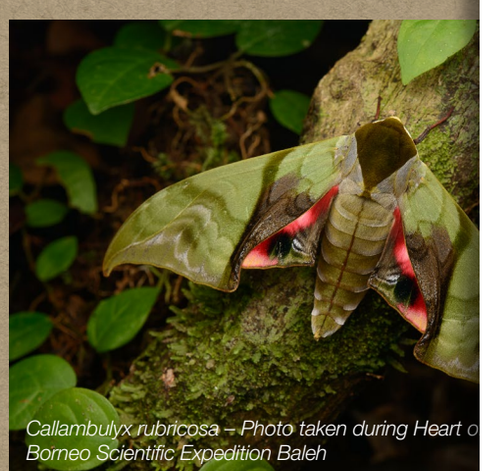
0.237*

CO_2



Callambulyx rubricosa – Photo taken during Heart o Borneo Scientific Expedition Baleh

Total CO_2 Reductions

615,130

(tCO_2)

Only for Bintulu Gas Combined Cycle Power Plant

Total Volume Carbon Emis ('000)

5,20

(tCO_2)

Note:

* *This grid carbon emission intensity have been assured by Independent Assurance Report on pages 77 - 78.*

ENVIRONMENT

Making an Impact at the global, national & state levels

United Nations Sustainable Development Goals (SGDs)

SDG #13 "Take urgent action to combat climate change and its impacts"

- Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
- Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

SDG #12 "Ensure sustainable consumption and production patterns"

- Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

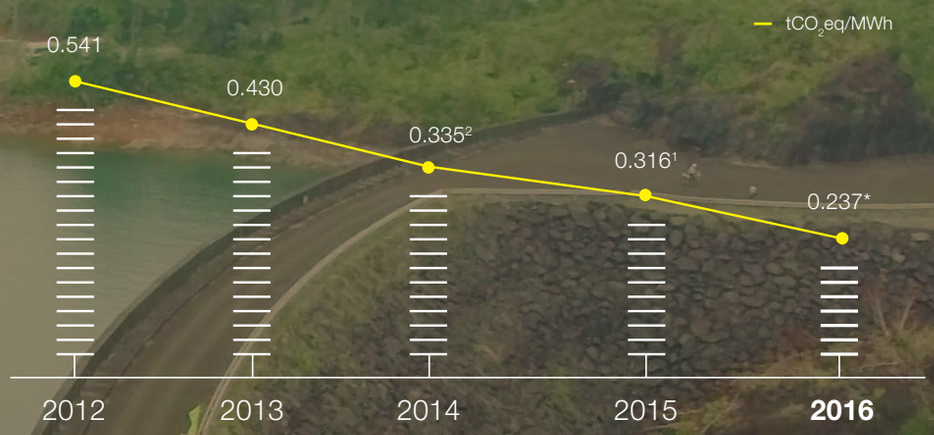
Malaysia Sustainable Development Agenda

- To reduce Carbon emissions intensity by 45% by 2030
- Energy Security

Sarawak Sustainable Development Agenda

- Harnessing state renewable energy potential
- Clean, Sustainable and renewable energy

Sarawak Energy Main Grid CO_2 Emission Intensity 2012-2016



Notes:

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[2] *This grid carbon emission intensity data has been assured by a third party for Sustainability Report 2014.*

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

Sustainable Development Goals

6.27 million tCO_2eq
Avoidance via displacement of fossil fuels through renewable energy since 2010

-66%
Emission Intensity (Main Grid) reduced from 2011

16,046.5 GWh
Renewable Energy Generated

+1,186%
Increased of Renewable Energy in Generation Mix since 2011

Thermal - Water Withdrawn
1,065 million m^3
(Cooling Process)

Hydro
8,315 million m^3
Water for Power Generation

615,130 tCO_2eq
Carbon Reduction from Clean Development Mechanism (CDM)

SO_X
Emission Intensity (Main Grid)
0.000366 kg/kWh

NO_X
Emission Intensity (Main Grid)
0.000206 kg/kWh

Riding on Batang Ai HEP dam crest - Sarawak Energy Batang Ai MTB Jamboree 2016

G4-DMA
G4-EN18

Improving Our Environmental Footprint

Highlights

Main Grid CO_2 Emission Intensity

0.237* **tCO_2eq/MWh**

Northern Grid CO_2 Emission Intensity

0.680 **tCO_2eq/MWh**

Stand-Alone Grid CO_2 Emission Intensity

0.895 **tCO_2eq/MWh**

Our emission intensity (main grid) has reduced by

66%

since 2011

In addition, our electricity tariff is the cheapest in Malaysia & Southeast Asia.


Murum HEP

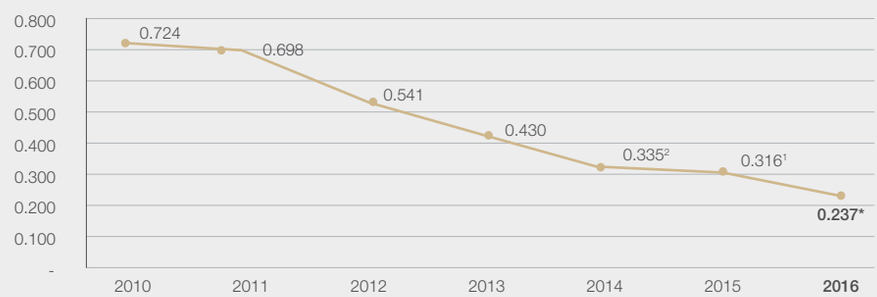
With about 74% of our energy based on hydropower, Sarawak Energy's main grid has the lowest carbon footprint in the region at 0.237* tCO_2/MWh. However, we seek to ensure that our entire operations are conducted in the most environmentally-conscientious manner to minimise as far as possible our carbon emissions.

We also play our part in creating greater environmental awareness among the people of Sarawak, and are investing in research that will help promote a greener state, nation and hopefully world.

De-carbonising our Electricity Grid

In 2016, Sarawak Energy was responsible for generating a total of 21,908,472MWh of energy in the main grid (2015: 15,096,655MWh). Using the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines, this translates into 5,203,104 tonnes of CO_2 emissions (2015: 4,775,325 tonnes). Our energy intensity, however, reduced from 0.316[1] tCO_2/MWh in 2015 to 0.237* tCO_2/MWh.

Sarawak Energy Main Grid CO_2 Emission Intensity 2010 - 2016 (tCO_2eq/MWh)



Notes:

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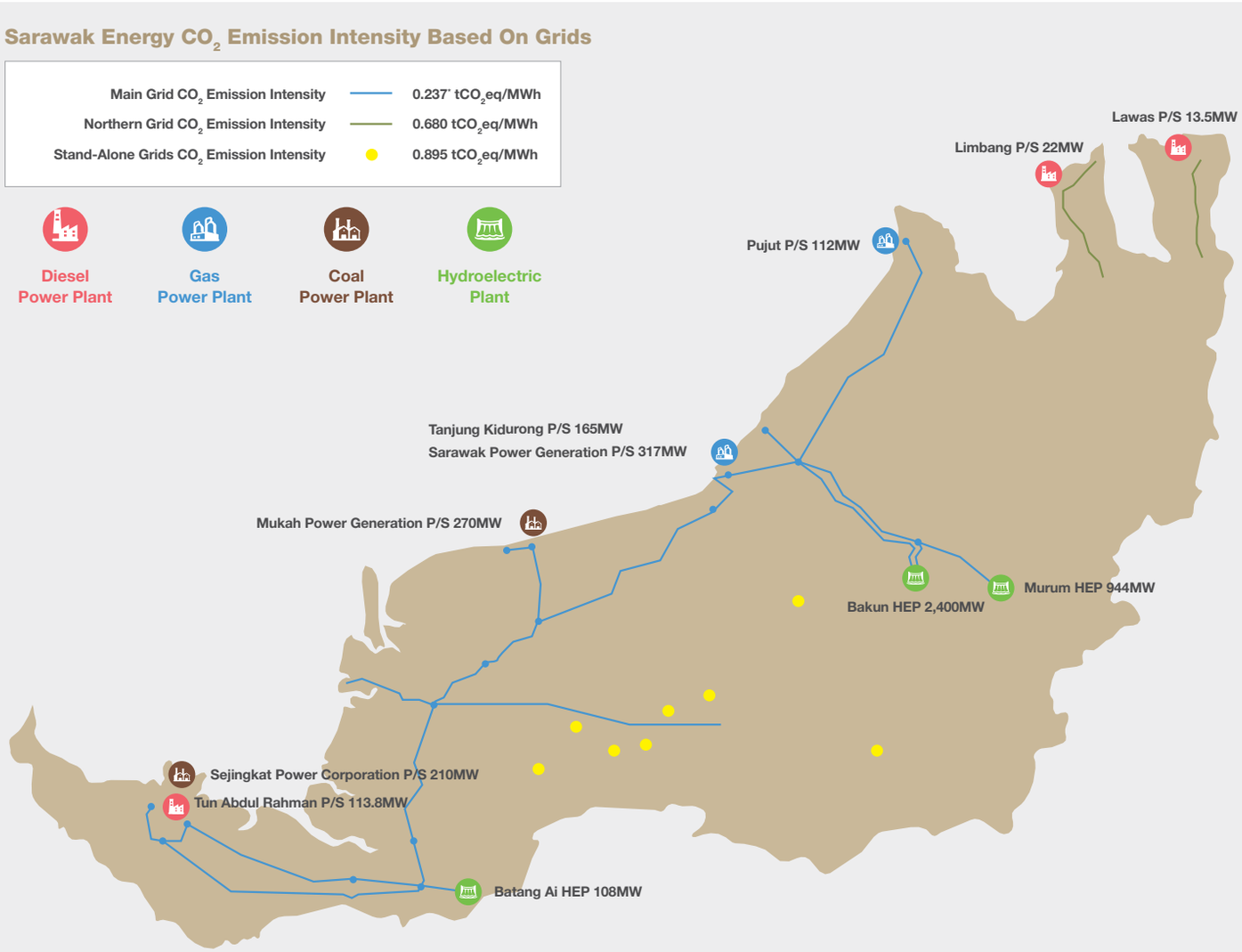
G4-DMA
G4-EN18
G4-EN19
EU1

Improving Our Environmental Footprint

Sarawak Energy CO_2 Emission Intensity Based On Grids



Carbon Reduction Projects

Our commitment to reducing our carbon footprint has seen Sarawak Energy embark on various green initiatives. These include increasing our share of renewable energy, retiring old and small power plants and introducing more efficient technologies such as converting our open cycle power plants to combined power plants.

The Bintulu Combined Cycle Plant, commissioned in 2009, is the first project in the country to be registered under the United Nations' Clean Development Mechanism (CDM) programme. CDM projects earn certified emission reduction (CER) credits, each equivalent to one tonne of CO_2. These CERs can be traded and sold, and used by industrialised countries to meet a part of their emission reduction targets under the Kyoto Protocol. By using waste heat from the gas turbines to generate electricity, the plant does not burn any fossil fuel for power generation and reduces our CO_2 emissions by about 600,000 tonnes a year.

For the year under review, we reduced our total CO_2 emissions by 615,130 tonnes, which was more than the 150,538 tonne reduction in 2015, and the highest reduction achieved since year 2010.

Note:

* *This grid carbon emission intensity data has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-DMA
G4-EN21

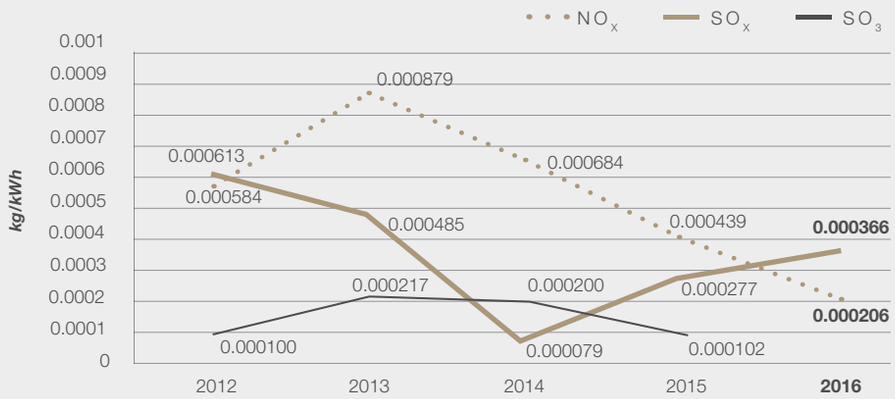
Improving Our Environmental Footprint

Managing our Environmental Footprint

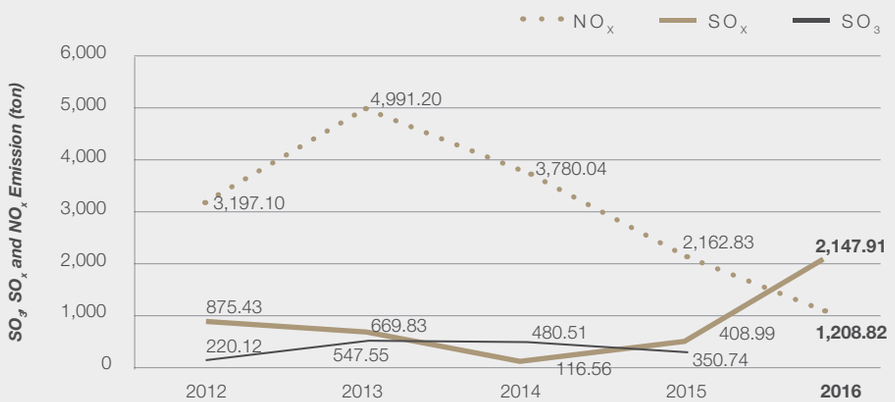
In addition to reducing our CO_2 emissions, Sarawak Energy is conscious of the need to manage the emissions of other noxious gases as well as chemicals that are hazardous to the environment. In particular, we measure the sulphur and nitrous oxides emitted by our plants. Our goal is to ensure these remain within acceptable levels under relevant regulations such as the Environmental Quality Act.

Our Performance

Emission Intensity of SO_3, SO_x and NO_x – Sarawak Energy Main Grid (Thermal)



Total SO_3, SO_x and NO_x Emission – Sarawak Energy Main Grid (Thermal)



Notes:

- *For reporting purposes, CO_2 emission is calculated based on the amount of fuel used. NO_x, SO_3 & SO_x are calculated based on monthly Stack Emission Monitoring.*
- *Reports conducted by third party consultants. In addition, these monthly stack emission reports will also be used to verify the CEMS measurements.*
- *Continuous Emission Monitoring System (CEMS) is only available at our SPC, PPLS, Bintulu Power Plant, SPG and MPG power plants and the measurement results are directly connected to the Department of Environment.*
- *Starting in year 2016 all of the main grid thermal power plants are using SO_x parameter instead of SO_3.*
- *For NO_x is applicable for Bintulu, SPG, Miri, Sg. Biawak, PPLS, SPC & MPG.*

Materials Management

We recognise that we have a duty towards reducing as far as possible our use of natural resources such as coal, diesel, natural gas and water as part of our overall commitment to minimising our environmental footprint. Hydrocarbon fuels – eg coal, diesel and natural gas – emit CO_2 in the process of energy generation, hence there is a strong environmental imperative to using these materials efficiently. Water is a clean source of energy; however, it is a limited and precious resource, and we believe in using water in a manner that is mindful of how important it is in the daily lives of our local communities, and Malaysians in general. Water is used not only in our hydro plants but also as a cooling agent in our thermal plants.

We have been measuring our water and materials consumption for better water management.

Principle Agreement between the Government of Sarawak and PETRONAS on the Supply of 450mmscfd of Natural Gas for the Power and Non-Power Sectors in the State of Sarawak

G4-14
G4-EN11
G4-EN12

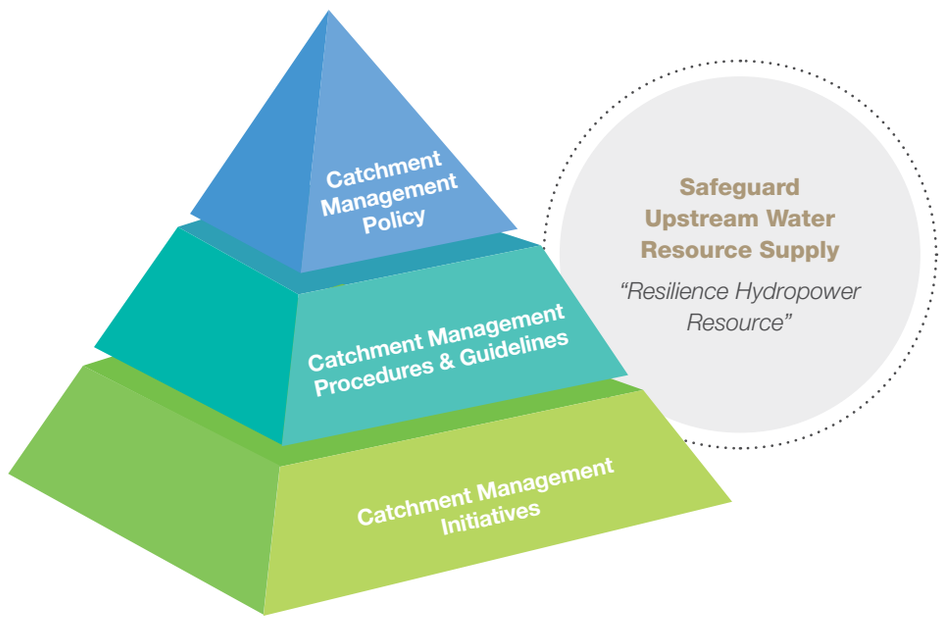
Improving Our Environmental Footprint

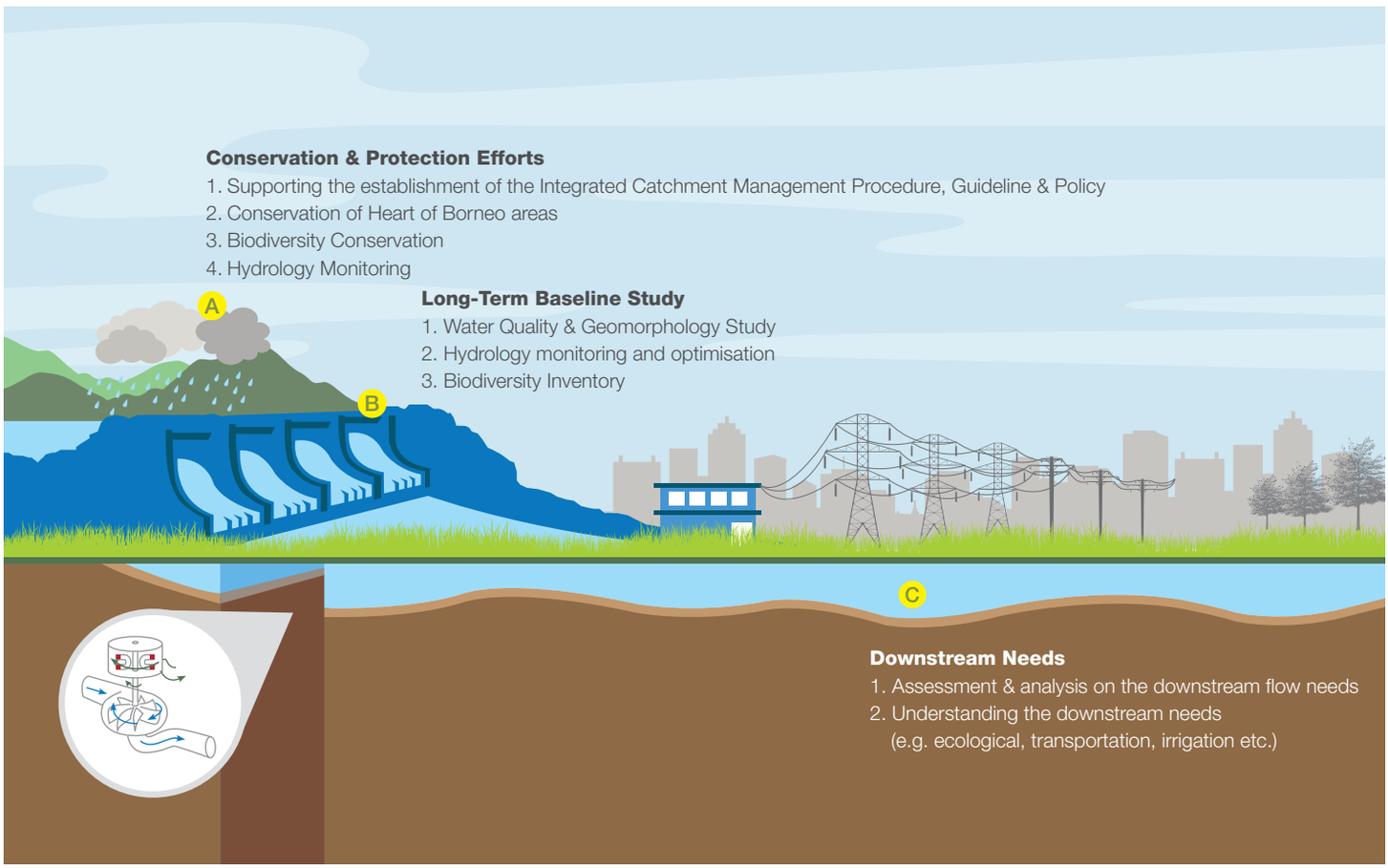
Managing our Water Resources

Integrated Catchment Management

Sarawak Energy's broad objectives in Integrated Catchment Management are:

1. The conservation and protection of catchment areas located upstream of our existing and future hydropower plants;
2. Development and establishment of catchment management plan, procedure, guidelines & policy; and
3. Collaboration with other agencies in conservation and protection efforts.





G4-EN8
G4-EN11
G4-EN12

Improving Our Environmental Footprint

Reservoir Management Plan

We have in place a Catchment Management Plan, under which we monitor hydrometric data such as rainfall, river water levels, inflow of water into our hydro plants and sediment concentration to ensure our operations do not negatively impact the security of our own water supply as well as that for the local communities and others in Sarawak. We currently have 23 hydrometric stations at our hydropower project sites, and are collaborating with the Department of Irrigation and Drainage Sarawak to set up more stations in river basins in the state.

This programme includes:

- Network design and catchment monitoring
- Instrument and infrastructure procurement
- Selection of new hydrometric sites, and setting up of new stations
- Operation and maintenance of all stations
- Field raw data collection
- Data archiving, validation and reporting

We provide training to hydrometric staff so they are as technically competent as counterparts in international hydro organisations, and will provide us the necessary support to expand the programme. Our aim is to collect and provide an even greater range of quality data that will contribute to the sustainable use and development of water resources in the state.

Water quality sampling

Group photo of participants from Sarawak Energy, Forest Department Sarawak (FDS), Natural Resources and Environment Board Sarawak (NREB), Ministry of Utilities Sarawak (MPU), State Planning Unit (SPU), Public Works Department Sarawak and WWF-Malaysia at the Integrated Watershed Management for Power Generation, Water Security and Environmental Sustainability Workshop (Development of a Pilot Study for Baleh Watershed)

Water inflow to our reservoirs

Hydroelectric plant	Annual inflow (million m^3)		Annual Water Volume for energy generation (million m^3)		Annual Energy Generated (GWh)	
	2015	2016	2015	2016	2015	2016
Batang Ai	3,100	**3,802**	2,755	**3,881**	316	**445**
Murum	7,840	**8,663**	2,933	**4,433**	2,093	**3,390**

G4-DMA
G4-EN8
G4-EN11
G4-EN12
G4-EN22

Improving Our Environmental Footprint

Water

Consumption of water by our hydro plants, together with the controlled release of water into natural water bodies help to regulate water levels in the state of Sarawak, preventing floods and improving our resilience to climate change.

Water intake in 2016 for cooling process

Plant Type	Major Plants	Water Source	Total intake (m^3)
Coal	Sejingkat Power Corp + PPLS	Municipality	**1,750,284**
		Sea water or other natural water source	**416,275,200**
Coal	Mukah Power Generation	Municipality	**775,245**
		Sea water or other natural water source	**396,509,120**
Combined Cycle - Natural Gas	SPG + Bintulu SESCO	Municipality	**122, 406**
		Sea water or other natural water source	**249,789,231**
Open Cycle - Natural Gas	Miri SESCO	Municipality	**10,036**
		Sea water or other natural water source	**Not Applicable**
Diesel	Sg Biawak SESCO	Municipality	**22,402**
		Sea Water or other natural water source	**2,143,090**
Diesel	Non-grid Limbang	Municipality	**31**
Diesel	Non-grid Lawas	Municipality	**239**

Biodiversity Conservation

Sarawak, along with the rest of Borneo, boasts the world's oldest tropical rainforests which are home to one of the most biologically diverse ecosystems on the planet. Among the thousands of endemic animal and plant species in this hotbed of diversity are many that cannot be found elsewhere in the world.

We are proud of this incredible biodiversity and are playing our part towards its preservation – not only for biodiversity's own sake but also for the many benefits that can be obtained from sustainable use of products derived from the tropical rainforest. In addition to ensuring our operations have minimal impact on the environment, we support conservation efforts such as the Heart of Borneo Initiative which seek to protect the biological, ecological and cultural richness of the Bornean rainforests.

G4-EN11
G4-EN12

Improving Our Environmental Footprint

Conservation Efforts

Flora Conservation Garden in Murum

In September 2015, we embarked on developing a Flora Conservation Garden as part of our Murum HEP Wildlife Monitoring and Rescue (WiMoR) project. The garden is on an island in the reservoir about 3km to the east of the Murum Dam, about a 30-minute boat ride from the water intake jetty. The island was handed over to us by Sarawak Forestry Corporation (SFC). It is hoped that the two-acre garden will be useful for educationists and researchers while also serving as a tourist attraction.

View inside of orchid nursery at Murum Flora Conservation Garden

Entrance view of the Murum Flora Conservation Garden

Group	Type of Plants	As of December 2015	Est. survival rate as of 7 April 2016
Trees	Gaharu (Aquilaria spp.)	716	**75%**
Trees	Other tree species (e.g., fruit trees etc.)	291	**65%**
Non-trees	Orchids	1,429	**55%**
	Ethno-botanical plants	261	**40%**
	Bamboo	38	**40%**
	Other species (gingers, aroids, pitcher plants, etc)	2,036	**45%**
	TOTAL	**11,941**	**6,368 (53.33%)**

Survival rate of plants in the garden

In addition to the trees and plants, the garden also features a temporary floating house. We are committed to maintaining the Flora Conservation Garden as a place to showcase the rich biodiversity of Murum.

G4-EN11
G4-EN12

Improving Our Environmental Footprint

Train the Trainers Programme - Sarawak's Environmental Education Practitioners

Mr. Mahmood, Manager, Environment Division (left) presenting a memento to Environment Minister YB Dato Sri Dr. Haji Wan Junaidi at National Environmental Day

Green Run 2016 in conjunction with Menara Sarawak Energy Health, Safety & Environment Week

Environmental Awareness Activities

Sarawak Energy promotes greater awareness of the importance of protecting the environment through a number of activities. Some of our efforts in 2016 are described below:

- From 26-28 February, we collaborated with the Sarawak Forestry Department (SFD) to organise an Environmental Communication, Education & Public Awareness Programme for students from SMK Petra Jaya at the Matang Wildlife Centre, Kuching. The aim was to educate the students about the importance of wetlands, threats to wetland ecosystems, as well as the resources available for environmental protection.
- On 24 April, we collaborated with the Department of Environment (DOE) to organise a Household e-Waste Take Back Programme 2016 at Kampung Panglima Seman Lama. Among the 200 participants were licenced scheduled waste collection agencies and kampung folk who learnt about e-waste collection, segregation and disposal.
- Together with the Natural Resources and Environment Board (NREB), we organised two Train the Trainers sessions to instil environmental awareness and knowledge among school teachers as well as to engage environmental education practitioners, teachers and school children in sustainable development processes taking place in the state. The first session was held from 9-11 August at Purnama Hotel, Limbang; followed by a second session held at Taman Negara Similajau, Bintulu from 14-16 December.
- We collaborated with DOE to organise a National Environment Day 2016 event at the Kuching Waterfront on 22 October. Themed Environment Our Shared Responsibility, the event attracted 3,000 participants including members of the public and school children.
- On 23 October, we organised a Green Run 2016 to instil environmental awareness among our staff. The run, which attracted the participation of 120 employees, was held in conjunction with Menara Sarawak Energy Health, Safety & Environment Week.

Environmental Research

GHG emissions of hydro plants

Globally, there has been very little research on GHG emissions from tropical reservoirs. These emissions are due to the decomposition of organic matter in the water. We launched a three-year study in collaboration with Université du Québec à Montréal (UQAM), Canada focused on the Batang Ai reservoir. In 2016, we embarked on the second phase of the research.

Preliminary results indicate that the reservoir emits about 3 Gg CO_2eq a year, which is minimal in relation to the amount of electricity generated. We aim to continue with the study to furnish us with knowledge that will help minimise the environmental impact of future hydropower developments.

Electric Mobility (Electric Scooter Programme)

Sarawak Energy intends to include electric scooters in our vehicle fleet to further strengthen our clean environmental slate. Electric scooters do not create any direct pollution or emissions that would contribute to global warming, so long as their source of electricity is clean. As more than 70% of electricity in Sarawak is derived from hydropower, electric modes of transport would go a long way towards reducing the state's carbon footprint.

TRANSFORMING SOCIAL OUTCOMES

Sarawak Energy cares for the well-being of the communities which are directly impacted by our development projects.

Social Highlights

Baram Penan Literacy Programme

282
Participants

29
Facilitators

Murum Resettlement

Total Hours of Training

Management

1,068
Hours

Executive

55,572
Hours

Non-Executive

92,943
Hours

Total Electrification Coverage
(URBAN & RURAL)

94%

Total Number Of Staff

4,468

OPEN HERE

TRANSFORMING SOCIAL OUTCOMES

Sarawak Energy cares for the well-being of the communities which are directly impacted by our development projects.

Social Highlights

Baram Penan Literacy Programme

282
Participants

29
Facilitators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Total Hours of Training

Management

1,068
Hours

Executive

55,572
Hours

SOCIAL

Making an Impact at the global, national & state levels

United Nations Sustainable Development Goals (SGDs)

SDG #04 "Ensure inclusive and quality education for all and promote lifelong learning"

- By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
- By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development

SDG # 11 "Make cities inclusive, safe, resilient and sustainable"

- Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

Malaysia Sustainable Development Agenda

- Green Economy
- Energy Security
- Access to electricity for Rural Areas

Sarawak Sustainable Development Agenda

- State economic development
- Rural Development
- Empowerment Rural Community
- Access to Electricity for Rural Areas

Total Electrification Coverage
(URBAN & RURAL)

94%

Total Number Of Staff

4,468

Sustainable Development Goals

28 sen/KWH
Electricity Tariff – Cheapest in Southeast Asia

23*
Loss Time Injury

258
New Staff Hires

149,582
Total Training Hours (Staff)

3.97 million
CSR Spending

0.84
Lost Time Injury Frequency Rate (Operation)

RM1,022,367 million
Tenders Awarded to Local Sarawakian Companies

94%
State Electricity Coverage

0.86
Lost Time Injury Frequency Rate (Project Execution)

Note:

* *This number of loss time injury data cases has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-DMA
EU26

Transforming Social Outcomes

HIGHLIGHTS

Sarawak Electricity Coverage

94%

Number of Households Electrified

14,640

Total Training Expenses

RM7.5 million

Total Training hours

149,582 hours

(Management, Executives, Non-Executives)

Average Training hours

14.91 hours

per staff

SOCIAL OUTCOMES

As a utility provider, the most significant positive impact we can have on society is to carry out our role to supply electricity efficiently, reliably and in an affordable manner. Beyond this, in a state such as Sarawak, where there are still pockets of communities living in remote areas, we have a duty to expand as far as possible our coverage. In addition, we believe in caring for communities that have been displaced by our hydro plants, and to looking after the interests of our employees whose lives we also impact in a meaningful way.

SERVING THE PEOPLE OF SARAWAK

Electricity Coverage

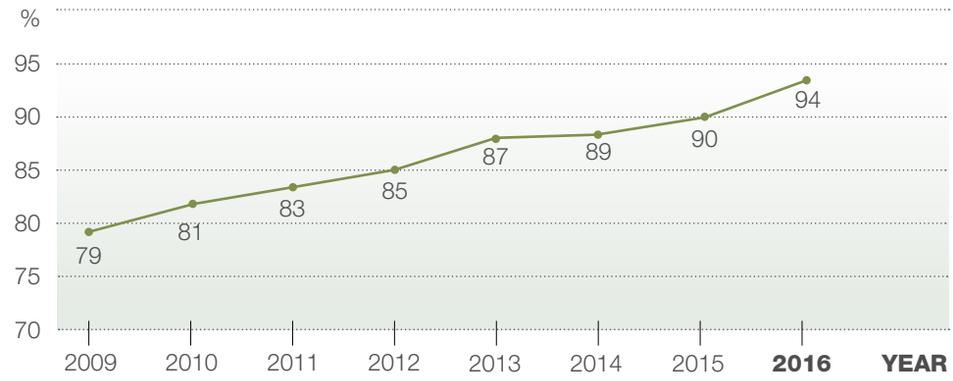
Sarawak Energy has always sought to provide electricity to the entire Sarawak population. This ambition received a boost in 2009 along with the Government Transformation Programme (GTP) that outlined six National Key Result Areas (NKRAs) among which was one to improve Rural Infrastructure Development. This included Ensuring 24-hour Access to Electricity. Since then, a total of RM3.1 billion has been allocated under a Rural Electrification Scheme (RES), of which approximately RM2.35 billion has been channelled towards grid extension and RM750 million for alternative supply, ie off-grid power supply such as micro-hydro and solar hybrid, to the remotest villages.

RES is being undertaken with the Ministry of Rural and Regional Development (MRRD). In 2016, MRRD together with the Sarawak State Government, committed another RM610 million for the next three-year Sarawak Alternative Rural Electrification Scheme (SARES), of which RM360 million will go towards grid extension and RM250 million towards hybrid projects.

In addition to RES, Sarawak Energy leverages our particular hydro expertise to develop mini hydro stations in villages that have the potential for it.

As a result of joint efforts and our own efforts to electrify rural and remote communities, the electrification coverage in Sarawak has grown from 79% in 2009 to 94% in 2016.

Sarawak Electricity Coverage



G4-DMA

Transforming Social Outcomes

In 2016 itself, 14,640 rural households were electrified, bringing the total number to about 101,000 since 2009. With this, it is estimated that there are still 38,000 rural households left to be connected out of the total of about 600,000 rural households in Sarawak.

Programme	Households Connected
Normal Rural Electrification Scheme (RES)	12,697
Hybrid Programmes	1,224
SARES	719
TOTAL	14,640

Number of households electrified under various schemes in 2016

As we continue to collaborate with the MRRD and Ministry of Utilities Sarawak (KKAS), we hope to achieve full electricity coverage in the state by year 2025, at an estimated cost of RM8 billion.

Rural Power Supply Scheme (RPSS)

In 2015, RES received a boost in the form of the Rural Power Supply Scheme (RPSS) which was launched to build new transmission lines/substations and distribution substations to enable more villages to be electrified. RPSS was needed because most of the existing transmission and distribution lines were reaching their technical limitations. RPSS is an initiative to achieve full electrification by 2025.

Sarawak Alternative Rural Electrification Scheme (SARES)

Under Phase 1 of SARES, which extends from the time the scheme was launched in early 2016 until mid-2017, a total of 1,439 households are to be provided with solar system. As at end 2016, 719 households in 43 villages were already receiving solar energy. This will be followed with another 720 households in 15 villages. A total of RM75 million was allocated for Phase 1 and, in 2017, RM95 million will be allocated for Phase 2. The total fund allocation for SARES is RM500 million, which aims to cover more than 8,700 households in remote villages using off-grid technologies such as solar home systems, solar centralised systems or micro-hydro, to be completed by year 2020.

Hybrid System

MRRD provides utility-grade (24-hour) electricity to remote villages that cannot be connected to the state grid via renewable hybrid schemes using solar and micro hydro as primary energy sources, backed up by diesel generator sets. Between 2009 and end 2006, approximately 2,000 households have been supplied with electricity via solar hybrid schemes in Kapit, Song, Belaga, Lawas, Bario, and Betong.

In November 2014, we built and commissioned a successful mini hydro project in Long Banga. Equipped with two turbines with a combined capacity of 320kW, and two diesel generators with the capacity of 80kW and 160kW as back-ups, the micro hydro station currently supplies 138 households.

Official Launch of SARES Phase 1 - Commitment Signing between Sarawak Energy & the Sg. Binyo, Sebauh Community

G4-DMA

Transforming Social Outcomes

In February 2016, we began Phase 2 of the Long Banga Project. This entails doubling the micro hydro plant's capacity from 320kW to 640kW with the installation of two new 160kW turbo turbines. The upgrade is meant to supply another 152 households in three more nearby villages, namely Long Beruang, Long Balong and Long Lamai, as well as the Proposed Integrated Highland Agriculture Centre.

No.	Micro/mini hydro station Name	Location	Installed Capacity	Completion Date	Project Status
1	Sg Pasir Mini Hydro	Sematan	800kW	July 1998	Running
2	Sebako Mini Hydro	Sematan	300kW	April 1985	Running
3	Peninden Mini Hydro	Sematan	300kW	1991	Running
4	Lundu Mini Hydro	Lundu	300kW	April 1985	Running
5	Sg Kejin Mini Hydro	Long Lama, Miri	480kW	Year 1997 (Under Refurbishment works)	Commissioned in November 2016
6	Kalamuku Mini Hydro	Lawas	2 x 500kW	October 1984	Running
7	Sg Kota Mini Hydro	Lawas	2 x 2MW	May 2000	Running
8	Long Banga micro hydro project	Long Banga, Baram, Miri	2 x 160kW	Feb 2015	Phase 2 Started date: Feb 2016 Completion date: Feb 2018
9	Proposed Kota 2 small hydro project	Lawas	3 x 3.5MW	Expected by 2016/2017	Under Construction

Status of the micro/mini hydro stations under Sarawak Energy

CARING FOR OUR COMMUNITIES

"Minimising any negative impact of our operations and maximising the positive impact of what we do for our community", is Sarawak Energy's ultimate goal in Corporate Social Responsibility (CSR). We work towards this goal based on our four strategic CSR pillars:

- Creating economic opportunities for Sarawakians;
- Supporting partners in Community Investment;
- Undertaking our projects in a sustainable way; and
- Demonstrating high standards of transparency and community engagement.

Sarawak Energy has identified four focus areas in community investment which we are developing as long term sustainable partnership programmes that meet real community needs. Specifically, the four areas are: education and young people; culture and heritage; environment management and conservation; community development and entrepreneurship.

Cheque presentation by Mr. Sharbini Suhaili, Group CEO of Sarawak Energy to DCM TSD James Masing on Bakun Charitable Trust for Special Education Fund for the Penan Community in Belaga

- **Special Education Fund for the Penan Community.** This year Sarawak Energy remains committed to supporting the education of the Penans in Belaga and the Murum resettled community by contributing to the Bakun Charitable Trust for the second year. Besides giving away study incentives for attendance and academic performance, the fund also looks at preparing the community for employment opportunities whereby Penan youth has completed six-month training at the Centre of Technical Excellence in Kuching.

G4-DMA
G4-EC8

Transforming Social Outcomes

Education & Young People

Sarawak Energy strongly believes that education can bring positive impacts to the society, especially on community development and poverty alleviation. Working with both the government and NGOs, we continue to support SK Metalun and SK Tegulang in Murum resettlement and the Penan communities in Belaga and Baram.

Students open saving accounts with Bank Simpanan Nasional to deposit the cash incentives received

- **Education and School Attendance Incentives.** On 26 September 2016, 266 Penan students from SK Tegulang and SK Metalun received education incentives worth over RM50,000. The incentives are meant to recognise the students' efforts in attending school regularly which contributes to better academic achievements over time. The incentive programme has helped to improve the students' attendance rate, which currently registers at around 80%. Only 20% of children in the area received formal education before the set up of SK Tegulang and SK Metalun.

Literacy for social inclusion - A collaborative project to uplift the level of literacy in Bahasa Melayu and English among students in Tegulang, Murum School

SK Tegulang students using new learning methods

- **Literacy for Social Inclusion in Murum.** This programme was developed for Penan children who were lagging behind with their reading skills at SK Tegulang. The programme was initiated by Sarawak Energy, facilitated by Dyslexia Association of Sarawak (DASwk) and organised in collaboration with the United States Embassy in Kuala Lumpur and Sarawak Education Department. A total of 39 students completed the programme which helped them improve their reading, spelling and writing in Bahasa Melayu and English, which will contribute to better performance in their first public examination at UPSR level. Through the programme, mini community libraries have also been set up at Long Wat and Long Malim. The programme will be extended to students in SK Metalun in 2017.

Baram Penan community in Long Lilim in a group discussion during Stage 2 of the Baram Penan Literacy Programme

- **Baram Penan Literacy Programme.** Building on the success of Stage 1 of the Baram Penan Literacy Programme which was designed to address the illiteracy gap in the community, Stage 2 kick started in May 2016 focused on enhancing personal development, hygiene, nutrition, health and basic agriculture training. Stage 2 saw the participation of 282 students and 29 trained facilitators from the local community.

G4-DMA
G4-EC8

Transforming Social Outcomes

Culture and Heritage

As one of the state's leading corporations, local culture is deeply engrained within Sarawak's Energy's identity. We have initiated a number of social investment programmes which focus on preserving the culture and heritage of indigenous communities in Sarawak. These not only help to perpetuate ways of living that are in danger of being forgotten, but also enhance the income earning potential of the local communities.

Handicraft development has been identified as a CSR community investment strategy to provide socio-economic opportunities for the resettled Penan community in Murum.

Over the years, we have worked closely with local organisations such as Sarawak Craft Council, Malaysian Handicraft Development Corporation (MHDC), and Universiti Malaysia Sarawak (UNIMAS) to improve on the marketability of crafts produced by Murum Penan artisans through quality improvement and developing their craftsmanship by exposing the artisans to new ideas and design concepts.

Her Royal Highness Princess Anne carrying a rattan bag which is hand woven by Penan artisan Nia Adu of Long Malim

Murum Penan artisans are trained on new product designs to add value to their craft products

Handicraft Development Project for Murum Artisans

In 2016, we embarked on a partnership with Universiti Malaysia Sarawak's (UNIMAS) Faculty of Applied and Creative Arts to develop value-added handicraft with contemporary designs that will be commercially viable. This forms part of our community partnership programme to provide sustainable livelihood opportunities for the resettled community as well as the preservation of their heritage for generations to come.

A Penan artisan from Murum weaving rattan handicraft at a handicraft exhibition in Kuching

On top of that, the Murum Penan artisans participated in the following Handicraft Exhibitions:

1. 27 Feb-6 March 2016 - National Craft Day Exhibition, Kuala Lumpur, 4 artisans
2. 11-20 Nov 2016 - Malaysia Craft Festival, Kuching, 6 artisans

We have supported the participation of Murum Penan artisans in four exhibitions since 2015. These provide a platform to promote and market their products as well as to broaden the artisans' exposure.

Cultural Preservation

During the year, two initiatives stood out in terms of preserving the culture and heritage of the Penan community in Murum and the Orang Ulu community in Ulu Baram:

- ***Sape Heritage Training in Ulu Baram.*** In May 2016, Sarawak Energy kicked off a Sape Heritage Training Programme for Orang Ulu youth in Ulu Baram. The programme was inspired following engagement with the community during which elders raised their concern on diminishing interest in traditional sape (traditional wooden lute) music among the younger generation. This CSR initiative was therefore designed to revive interest in playing the instrument, encouraging the transfer of knowledge and skills from one generation to another. A total of 20 youths aged between 12 and 30 years from all over Ulu Baram are undergoing the one-and-a-half-year programme.

G4-EC8

Transforming Social Outcomes

Warisan Sape Telang Usan programme for Baram Youths

- **Sacred Site for the Murum Community - Batu Tungun.** In 2016, Sarawak Energy invested about RM300,000 to construct a proper ritual ceremony site for the Penan community from the Plieran and Danum river of Murum to carry out their annual Batu Tungun Ritual Ceremony.

  Since 2008, Sarawak Energy has worked hand in hand with the Murum Penan Development Committee (MPDC) to organise the ceremony. Today, the event is held on a indent grander scale attracting a large number of the Penan community, and uniting Penan communities from both Plieran and Danum river.

  Even during the construction of Murum HEP, Sarawak Energy took special consideration to preserve the Penans' Batu Tungun rock, which is considered sacred. The Murum dam crest was deliberately re-designed to preserve the formation.

Annual Batu Tungun ritual ceremony at Batu Tungun lookout point

Community Development & Entrepreneurship

Skills and Technical Training for Rural Youth and Job Seekers in Baleh and Murum

Sarawak Energy strongly believes that skills and technical training are key to income generation, stable employment and entrepreneurship. We have therefore invested in a number of training programmes for the Baleh community that aim to provide technical skills which meet the new demands of evolving industries and sectors of growth.

Abseiling training for Baleh youth

Baleh youth welding the metal plate

Youth from Baleh undergoing training on Petrol and Diesel Engine Operation & Maintenance at IKBN Miri

To prepare local youth for employment, as of 2016 Sarawak Energy has begun providing skills training at local training institutions like Institut Kemahiran Belia Negara and Institut Latihan Perindustrian. Within the next two years, we expect to support the training of around 500 youth from Baleh and Kapit.

These trainings are in the fields of construction, welding, scaffolding, safety and health, engine operation and maintenance, electrical, mechanical, metal blasting and coating, rigging & slinging, abseiling, administration, human resources and entrepreneurship.

Since the first programme began in May 2016, a total of 40 youths have been trained in engine operation and maintenance and metal welding in the year 2016.

In addition, 20 Penan youths from Tegulang underwent a year-long welding and wiring programme at the Centre of Technical Excellence in Kuching (CENTEXS). CENTEXS is a technical trades training centre spearheaded by Yayasan Sarawak. Most of the youth were graduates of the Mobile Youth Transformation Vocational (MYTV) Programme organised by the Chief Minister's Office at Long Wat, Tegulang in 2015.

G4-DMA
G4-EC8

Transforming Social Outcomes

Staff Participation in CSR Programmes

We encourage our employees to take part in our CSR programmes, and have been heartened by the strong spirit of volunteerism seen over the years. Our employees genuinely enjoy being able to contribute in a meaningful way to the less privileged, and this enhances their overall job satisfaction.

Staff actively participate in blood donation drives organised throughout the state

In addition to volunteering in programmes organised for local communities throughout the years, we also organise blood donation drives for and by our staff throughout the state, which always draw a positive response.

Staff selecting handicraft products by Murum Penan artisans at a handicraft sale at our headquarters

This year, we also organised a handicraft sale at Menara Sarawak Energy. Every item in the collection had been hand-woven by Murum Penan artisans, bearing intricate indigenous motifs and contemporary designs the artisans had picked up from workshops we had arranged earlier. We felt proud of the sales generated as, prior to our engagement with these artisans, their products were made mainly for their own use or were sold within their own community.

Solar power lights up remote communities in Batang Ai

Launch of Centralised Solar Power System at Rumah Brown, Nanga Stapang, Batang Ai

In 2014, Sarawak Energy embarked on a CSR initiative on the solar home system (SHS). The project helps to extend electricity supply to upstream communities in Batang Ai where supply from the grid is unavailable due to remoteness of villages.

This CSR initiative enables the communities to have communal refrigeration to freeze some of their fresh food. The system also helps to reduce their monthly household expenditure on fuel cost previously spent on diesel-powered generator sets.

Solar Freezer System for the community at Rumah Ninting

The first two phases have seen SHS successfully installed in 63 households, benefiting over 300 residents in Rumah Kino, Rumah Manggat, Rumah Griffin, Rumah Jangong and Rumah Ninting at a total cost of RM2 million. The third phase of the project is in the Engkari area where installation of the system for Rumah Brown, Nanga Stapang benefits 16 households with 80 residents.

G4-DMA
G4-LA5
G4-LA6

Transforming Social Outcomes

SAFETY AT WORK

Our sense of duty towards empowering and caring for our employees extends to ensuring they are always safe at work. The priority we place on safety is reflected by the number of safety and health committees we have across the organisation. Each of our 10 regional offices and eight power stations has its own safety and health committee. These committees, comprising a chairman, secretary, employer representative and employee representative, are guided by the Occupational Safety and Health (Safety and Health Committee) Regulations 1996.

Total number of safety and health committee members in 2016, according to their positions

Chairman	18
Secretary	18
Employer Representative	128
Employees Representative	208

The safety and health committees perform the following functions:

(a) Assist in the development of safety and health rules and systems of work
(b) Review the effectiveness of safety and health programmes
(c) Analyse accidents, near-misses, dangerous occurrences, occupational poisoning or disease at the workplace, reporting any unsafe or unhealthy conditions together with recommendations for corrective action
(d) Review our safety and health policies and make recommendations on the need for revisions
(e) Workplace inspections
(f) Investigation into accidents

The committees, which meet at least every quarter, are supported by our Corporate Risk and HSE (CR&HSE) at headquarters. Our Corporate Safety Division appoints Corporate Environment & Occupational, Safety & Health (EOSH) Committee representatives to attend the quarterly EOSH committee meetings at the main power stations and regions to provide advise and support, and to review the annual health, safety and environment activities and performance of the units.

We also have a Corporate Safety Council (CSC), made up of members of our top management, which meets every quarter to discuss any major issue related to health, safety and the environment. The CSC also deliberates on our HSE programmes as well as the KPIs of all chairmen and secretaries of the committees. The ultimate aim is to achieve zero fatality and enhance our safety culture in accordance with our slogan: “Raising Standards, Saving Lives, Nurturing Culture”.

Safety Performance

Lost time injury frequency rate (LTIFR) is the number of lost-time injuries per million hours worked, and is the standard safety measurement across various industries. As of 2016, we have decided to measure our LTIFR in two categories – Operations and Project Execution. Operations covers our existing core business operations from Generation (thermal and hydropower) to Distribution, Transmission and Retail, while Project Execution relates to any ongoing project, such as the construction of Baleh dam.

Sarawak Energy Corporate Risk & HSE

LTIFR	2014 Achievement	2015 Achievement	2016 Target (KPI)	2016 Achievement	2017 Target
Operations	1.08	0.52	0.50	0.84	0.50
Project Execution	-	-	2.00	0.86	2.00

G4-DMA
G4-LA6

Transforming Social Outcomes

HIGHLIGHTS

2016 LTI

23*

We also set ourselves a stringent Operational LTIFR target for 2016 of 0.5, as compared to 1.00 for the overall LTIFR in 2015. Unfortunately, we did not meet the target due to 13* lost time injuries (LTI) – three among contractors and seven among Sarawak Energy employees. There were also three fatalities, all involving contractors' workers. We take very seriously any incident of injury, and especially any fatality.

In our commitment to minimising injuries, various new initiatives have been implemented to ensure our contractors reflect the same level of consciousness in maintaining safe behaviours as we at Sarawak Energy do. These initiatives include:

- Greater engagement with all contractors and stakeholders working for us
- Improving contractors' compliance with safety via incentives
- Conducting a contractor HSE audit
- Quarterly HSE meetings with contractors
- Implementation of Sarawak Energy Safety Passport System (SESP)
- Implementation and enforcement of Sarawak Energy Life-saving Rules (SE-LSR)

Official Opening of Sarawak Energy Health, Safety and Environment Week 2016 at Menara Sarawak Energy

In the meantime, all existing HSE programmes will be maintained. These include:

- Quarterly EOSH Committee meetings
- Yearly HSE audits and inspections at all regions and power stations (urban & rural areas)
- HSE inspection of all project sites
- Health and repetitive wellness programmes
- Noise monitoring, audiometric testing and health talks
- HSE training and development
- Quarterly mass tool box talks/weekly tool box talks
- HSE Week campaigns at all regions and main power stations
- Enhancing awareness of safety using electrical appliances at schools, long houses, oil palm estates and plantations, public utilities companies, government agencies, local communities under the rural electrification scheme, and stakeholders of the Pan Borneo Highway project
- HSE promotions involving staff, contractors, government agencies and members of the public in all regions and power plants

At Sarawak Energy, each regional office and power station monitors its own safety and health performance. In order to standardise the reporting of safety statistics and to establish valid OSH statistics, our Corporate Risk & HSE Department has created a Main Safety Performance Statistics Database. All regional offices and power stations are required to upload their safety statistics at the end of the first week of every month using this database. Short-term contractors have to submit their safety statistics at the end of their project, while contractors on long-term projects are to do so monthly. Standard safety performance forms have been prepared and given to our contractors to facilitate the reporting process.

In compliance with OSHA 1994, our Corporate Risk & HSE Department submits our safety performance statistics to the Director General of DOSH before 31 January every year.

Note:

* *This number of loss time injury data cases has been assured by a third party. Read the Independent Assurance Report on pages 77 - 78.*

G4-DMA
G4-LA7

Transforming Social Outcomes

Workers at High Risk

Although we believe our employees are not exposed to specific occupational or work-related diseases, we monitor their health for prevention purposes. New staff are required to undergo full medical check-ups before reporting for duty, while all employees at the power stations undergo annual check-ups.

In compliance with Factory and Machinery (Noise Exposure) Regulation 1989, we monitor noise levels and conduct audiometric tests in all regions and at our power stations. During the year, 583 employees exposed to noise hazard at our power stations underwent audiometric testing.

Further reinforcing a healthy culture, health inspections, talks and campaigns were conducted and a new wellness programme was implemented. The programme encompasses a one-day Mind-set Change Programme during which participants undergo mental conditioning for a brand-new lifestyle. Topics discussed include nutrition, habit change, stress management, healthy living and goal setting.

Disaster/Emergency Planning & Response

A critical component of our safety framework is to ensure our employees are prepared to respond quickly and effectively in times of emergency. This is achieved via emergency response and planning (ERP) drills and other activities at out hydro and thermal plants; and dam safety emergency plans for our hydroelectric plants (HEPs).

During the year, an ERP drill was carried out at the Murum HEP in October while another was held at Batang Ai HEP in November. Both HEPs have in place their own dam safety surveillance programmes, in line with International Dam Safety Procedures and Guidelines.

Mr. Marconi, GM for Corporate Risk & HSE dispensing waste in recycling bins as a symbolic gesture at the Official Opening of Sarawak Energy Health, Safety and Environment Week 2016 at Menara Sarawak Energy

ERP drills carried out at out thermal plants during the year included:

Plant	Activity
MPG	Fire drill on 14 December.
Miri Pujut	Chemical Spillage Exercise was conducted on 8 December to evaluate the response of ERP, as well as the effectiveness of the ERP procedures & identify any weaknesses in ERP implementation, chemical management and waste management for further improvement.
Sg Biawak Power Station	Monthly Emergency Response Drills were held, except in September when a major drill was organised.
Limbang Power Station	Two ERP training sessions were held. The first, on 4 March, was conducted with power station staff. The second, on 12 October, involved the local fire brigade (Bomba) & the Emergency Team.

Safety Activities

In addition to ERP drills, our plants carry out various safety activities to inculcate a safety culture among employees.

- SPC, in collaboration with the Fire Preventors' Society, organised a fire prevention talk, Never Trust Fire, on 28 April in conjunction with World Day for Safety and Health at Work.
- SPC also collaborated with 1st Fire Rescue Sdn Bhd to organise a presentation and demonstration of automatic/passive fire extinguishers on 12 August in conjunction with the Occupational Safety and Health (OSH) Week.
- Limbang Power Station organised a Northern Region Power Stations Week Campaign from 10-14 October.
- Sg Biawak Power Station held an HSE Week from 19-23 September at which it organised an ERP presentation/power station safety video, a hazardous chemicals presentation, and talk on Malaysian laws and regulations, among others.

G4-DMA
G4-10

Transforming Social Outcomes

Indigenous Rights

INVESTING IN OUR PEOPLE

As we continue to grow to meet the increasing energy needs of the state, so too has our workforce. As at end 2016, we had a total of 4,468 employees on our payroll, compared to 4,308 employees at end 2015. Of these, 123 were under contract. Of the total number of employees, 21.3% were female.

Contract employees, by gender

Year	Gender	
	Male	Female
2016	85	38

Permanent employees, by gender

Year	Gender	
	Male	Female
2016	3,431	914

Leadership Training for Sarawak Energy staff during Leadership Conference

Graduation Ceremony for Certified Solution Focused Coach during Leadership Conference

Employee turnover

During the year, we hired a total of 258 new employees while a total of 114 employees left the organisation. The attrition rate, measured by the number of staff who left company as a percentage of total number of staff, was 2.55%, which was almost the same as in 2015 (2.53%).

	2014			2015			2016		
New Hires (by Gender)	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**
Total number	153	85	238	172	70	242	**190**	**68**	**258**
By age, in numbers									
Up to 30 years	134	66	200	145	54	199	**167**	**56**	**223**
Between 31 and 50 years	15	19	34	27	16	43	**20**	**12**	**32**
Over 50 years	4	0	4	0	0	0	**3**	**0**	**3**

	2014			2015			2016		
Staff Turnover (by Gender)	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**
Total	92	22	114	84	25	109	**86**	**28**	**114**
By age, in numbers									
Up to 30 years	32	14	46	27	11	38	**25**	**16**	**41**
Between 31 and 50 years	30	7	37	29	7	36	**34**	**10**	**44**
Over 50 years	30	1	31	28	7	35	**27**	**2**	**29**

Employee Welfare

We provide our employees a comprehensive compensation package that includes medical and welfare benefits, various types of leave as well as loans for housing and the purchase of cars, motorcycles and computers.

G4-DMA
G4-LA9
G4-LA10
G4-LA11

Transforming Social Outcomes

Leadership Development

We recognise it is important for the organisation to have a steady leadership pipeline to be able to fill any gaps in senior management positions when these become vacant. It is also important for employee morale for leadership potential to be recognised and developed. Our Talent Development Department is therefore tasked with identifying potential future leaders and providing them with the necessary training and grooming to assume positions of greater responsibility. During the year, the department organised a total of 49 training courses for professional leadership development. The average number of hours spent on leadership training for a male executive was 14.27 hours and that for a female executive, 14.21 hours; while non-executive males spent an average of 7.13 hours on leadership programmes, and non-executive females 8.24 hours.

In 2016, the total spent on leadership training at Sarawak Energy increased significantly, from RM147,136 in 2015 to RM485,667.

Training and Education

In addition to ensuring a strong leadership bench, we provide continuous professional training and development opportunities for all employees across the board in both technical and non-technical subjects. A total of 874 courses were held during the year. These included courses on management skills, administrative skills, information technology, finance, legal and technical matters related to electrical and mechanical skills, among others.

Performance Appraisals

In order to provide relevant feedback to employees on their performance at work, we conduct an annual appraisal with supervisors filling up employees' appraisal forms and discussing both the employees' strengths as well as weaknesses with them. During the year, all employees underwent their annual appraisal.

Courses Conducted in 2016 by Category (External Courses)

No	Course Category	No. of Courses
1.	Administration	23
2.	Civil	11
3.	Electrical	70
4.	Finance	23
5.	Health, Safety & Environment	47
6.	Information Technology	50
7.	Leadership Management	168
8.	Legal	4
9.	Mechanical	5
10.	Others	26
	TOTAL	427

Courses Conducted in 2016 by Category (In-house Courses)

No	Course Category	No. of Courses
1.	Electrical	24
2.	Mechanical	9
3.	Civil	0
4.	Management	145
5.	Quality Management	6
6.	IT	30
7.	Safety	55
8.	Finance	10
9.	Clerical Development Program	7
10.	Legal	2
	TOTAL	288

Courses Conducted in 2016 by Category (Internal Courses)

No	Course Category	Course Category (As per monthly Report)	No. of Courses
1.	Electrical	Chargeman	28
2.	Electrical	Wiring Installation	15
3.	Electrical	Switching	22
4.	Electrical	Other Electrical Courses	21
5.	Mechanical	Mechanical Course	7
6.	Information Technology	Information Technology	6
7.	Safety	Safety Awareness	26
8.	Safety	First Aid	33
9.	Administration	Administration	1
	TOTAL		159

Notes:
In-house - training were delivered by external parties & conducted in Sarawak Energy
Internal - training were delivered internally

Awards & Recognition

1 **Excellence in Provision of Literacy & Education Award (Silver)** at the 8th Annual Global CSR Summit & Awards 2016

3 **Winner of the 7th Sarawak Chief Minister's Environmental Award (CMEA) 2015/2016** in the Large Enterprise Category (Services-Electricity Supply) for Sejingkat Power Corporation

5 **Green Building Index (GBI) - Silver Award**

2 **CSR Excellence Award** at Sin Chew Business Excellence Awards 2016

4 **Gold Award at the 7th Sarawak Chief Minister's Environmental Award (CMEA) 2015/2016** in the Large Enterprise Category (Services-Electricity Supply) for Mukah Power Generation

6 GCEO Datuk Torstein Dale Sjotveit won the **Asia Pacific Entrepreneurship Awards (APEA) 2016** in the Energy Sector Category

G4-33

Independent Third Party Assurance Statement

Independent Assurance Report
To Management of Sarawak Energy Berhad (2016)

We have been engaged by Sarawak Energy Berhad ("SEB") to perform an independent limited assurance engagement on selected Sustainability Information (hereon after referred to as "Selected Information" comprising the information set out in the Subject Matter) as reported in its Making an Impact Sustainability Report 2016 ("SEB Sustainability Report 2016").

Management's Responsibility

Management of SEB is responsible for the preparation of the Selected Information included in the SEB Sustainability Report 2016 in accordance with the SEB's internal sustainability reporting guidelines and procedures.

This responsibility includes the selection and application of appropriate methods to prepare the Selected Information reported in the SEB Sustainability Report 2016 as well as the design, implementation and maintenance of processes relevant for the preparation. Furthermore, the responsibility includes the use of assumptions and estimates for disclosures made by SEB which are reasonable in the circumstances.

Our Responsibility

Our responsibility is to provide a conclusion on the Subject Matter based on our limited assurance engagement performed in accordance with the approved standard for assurance engagements in Malaysia, International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information". This standard requires that we comply with ethical requirements, and plan and perform the assurance engagement under consideration of materiality to express our conclusion with limited assurance.

The accuracy of the Selected Information is subject to inherent limitations given their nature and methods for determining, calculating and estimating such data.

Our assurance report should therefore be read in connection with SEB's sustainability reporting guidelines and procedures on the reporting of its sustainability performance.

In a limited assurance engagement, the evidence-gathering procedures are more limited than for a reasonable assurance engagement, and therefore less assurance is obtained than in a reasonable assurance engagement.

Subject Matter

The following information collectively known as Selected Information on which we provide limited assurance consists of the management and reporting processes with respect to the preparation of the following five (5) Selected Information reported and marked with asterisks (*) in SEB Sustainability Report 2016 as follows:

1. Availability and Equivalent Availability Factor (Thermal & Hydro) for the financial year 2016;
2. Economic Value Retained for the financial year 2016;
3. Number of Lost Time Injury Cases for the financial year 2016;
4. Plants Carbon Emission Intensity for the financial year 2016; and
5. Grid Carbon Emission Intensity for the financial year 2016.

Criteria

- SEB's internal sustainability reporting guidelines and procedures by which the Selected Information is gathered, collated and aggregated internally.

G4-33

Independent Third Party Assurance Statement

Main Assurance Procedures

Our work, which involved no independent examination of any of the underlying financial information, included the following procedures:

- Inquiries of personnel responsible for the Selected Information reported in SEB Sustainability Report 2016 regarding the processes to prepare the said report and the underlying controls over those processes;
- Inquiries of personnel responsible for data collection at the corporate, division and operation unit level for the Selected Information;
- Inspection on a sample basis of internal documents, contracts, reports, data capture forms and invoices to support the Selected Information for accuracy including observation of management's controls over the processes;
- Inquiries of personnel on the collation and reporting of the Selected Information at the corporate, division and operation unit level; and
- Checking the formulas, proxies and default values used in the computation of the Carbon Emissions against SEB's sustainability reporting guidelines and procedures.

Independence and Quality Control

We have complied with the relevant independence requirements and other ethical requirements of the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

We apply International Standard on Quality Control 1 "Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements", and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Conclusion

Based on our limited assurance engagement, in all material aspects, nothing has come to our attention that causes us to believe that the Selected Information in the Subject Matter has not been fairly stated in accordance with SEB's internal sustainability reporting guidelines.

Restriction on use

This report, including our conclusions, has been prepared solely for the Board of Directors and management of SEB in accordance with the agreement between us, in connection with the performance of an independent limited assurance on the Selected Information in the Subject Matter as reported by SEB in its SEB Sustainability Report 2016. Accordingly, this report should not be used or relied upon for any other purposes. We consent to the inclusion of this report in the SEB Sustainability Report 2016 and to be disclosed online at www.sarawakenergy.com.my , in respect of the 2016 financial year, to assist the Directors in responding to their governance responsibilities by obtaining an independent assurance report in connection with the Selected Information. As a result, we will not accept any liability or assume responsibility to any other party to whom our report is shown or into whose hands it may come. Any reliance on this report by any third party is entirely at its own risk.

PRICEWATERHOUSECOOPERS
(No. AF: 1146)
Chartered Accountants

Kuala Lumpur
29 September 2017

G4-32

GRI Content Index

Indicators disclosed in 2016 met the Core in accordance option of GRI G4 Guidelines. This report was submitted for SDG Mapping Service and GRI confirmed the accuracy of the SDG linkage to the relevant disclosures

General Standard Disclosures

General Standard Disclosures	Page	External Assurance	Description	SDG linkage to Disclosure
Strategy and Analysis				
G4-1	Chairman's Foreward, p.22-23 Sustainability Driven by Leadership, p.24-25		Statement from the most senior decision-maker of the organisation	
G4-2	This information can be found under: • SDG#7 Affordable and Clean Energy on p.2 • SDG#13 Climate Change on p.8 • Strategy Statement on p.27-34 • Delivering Value to Our Stakeholder on p.36-37		Key impacts, risks and opportunities	
Organisation Profile				
G4-3	Sarawak Energy Berhad (Sarawak Energy, or the Company)		Name of the organisation	
G4-4	This information can be found in the Organisation Profile on p.12-21		Primary brands, products and services	
G4-5	Menara Sarawak Energy, No. 1, The Isthmus, 93050 Kuching, Sarawak		Company Headquarters	
G4-6	Sarawak, Malaysia		Countries of operation	
G4-7	The principal activity of the Company is that of an investment holding company. Information on the Company's organisation structure can be found on p.14		Nature of ownership and legal form	
G4-8	The Company provides services to the following customers (p.15) in the State of Sarawak: a. Organic - domestic, commercial, industrial and public lighting; b. Bulk - SCORE customers and interconnection		Markets served	
G4-9	The Company's corporate structure is reported in the Organisation Profile on p.14		Scale of the organisation	
G4-10	The total number of employees is reported under: • SDG#8 Decent Work and Economic Growth on p.4 • Transforming Social Outcomes on p.63 and p.74		Organisation's workforce	No 8 - Promote inclusive and sustainable economic growth, employment and decent work for all
G4-11	All of Sarawak Energy's non-executive staff are covered by collective bargaining agreements		Percentage of total employees covered by collective bargaining agreements	No 8 - Promote inclusive and sustainable economic growth, employment and decent work for all
G4-12	This information can be found under: • SDG#7 Affordable and Clean Energy on p.3 • Organisation Profiile on p.16-17		Supply Chain	
G4-13	This information can be found in the Organisation Profile on p.14		Significant changes during the reporting period regarding size, structure, ownership or its supply chain	
G4-14	p.25, p.57		Explanation of whether and how the precautionary approach or principles is addressed by the organisation	

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General Standard Disclosures

General Standard Disclosures	Page	External Assurance	Description	SDG linkage to Disclosure
G4-15	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) • UNDRIP • Global Reporting Initiative (GRI) • IFC • UN Global Compact (UNGC) • World Commission on Dams • ISO14001 • OSHA		Externally developed economic, environmental and social charters, principles or other initiatives	
G4-16	The Company signed a "Sustainability Partnership" with the International Hydropower Association (IHA) in early 2011, which requires it 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 Gold Community Members		Memberships of associations and national/international advocacy organisations	
Identified Material Aspects and Boundaries				
G4-17	The list of entities is reflected in the Company's organisation structure, found in the Organisation Profile, p.14		Entities included in the organisation's consolidated financial statements or equivalent documents	
G4-18	Information about this is elaborated under "About this Report" on p.1		Process for defining report content and the Aspect Boundaries	
G4-19	The list of material aspects can be found under "Materiality Issues" on p.26		Material Aspects identified in the process for defining report content	
G4-20	This information can be found under "About this Report" on p.1 and Sustainability Driven by Leadership, p.24-25		Aspect Boundary within the organisation	
G4-21	This information can be found under "About this Report" on p.1		Aspect Boundary outside the organisation	
G4-22	No restatements have been made, as this is the Company's third Sustainability Report		Restatements of information provided in previous reports	
G4-23	None		Significant changes from previous reporting in the Scope and Aspect Boundaries	
Stakeholder Engagement				
G4-24	The list of stakeholder groups engaged by the Company is stated under "Engaging With Our Stakeholders" on p.40-41		List of stakeholder groups engaged by the organisation	
G4-25	Basis for identification and selection of stakeholders with whom the Company engages with is elaborated under "Engaging With Our Stakeholders" on p.40-41		Basis for identification and selection of stakeholders with whom to engage	

G4-32

GRI Content Index

General Standard Disclosures

General Standard Disclosures	Page	External Assurance	Description	SDG linkage to Disclosure
G4-26	Approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group is elaborated under "Engaging With Our Stakeholders" on p.40		Approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group	
G4-27	This information can be found under "Engaging with Our Stakeholders" on p.40-41. Key topics and concerns, particularly those that are of primary concern, are addressed throughout this Sustainability Report		Key topics and concerns that have been raised through stakeholder engagement, and how the organisation has responded to those key topics and concerns, including through its reporting	
Report Profile				
G4-28	From 1 January until 31 December 2016		Reporting period	
G4-29	This is the Company's third Sustainability Report		The previous report is 2015	
G4-30	The Company plans to publish this Sustainability Report on an annual basis		Reporting cycle	
G4-31	General questions regarding this report can be addressed to the Sustainability Division at: Menara Sarawak Energy, Level 8, No. 1, The Isthmus, 93050 Kuching, Sarawak. Tel: 082-388 388 (ext. 8816/8165)		Contact point	
G4-32	This report has been prepared in accordance with the GRI G4 "Core" option and the general standard disclosures and specific standard disclosures are available on p.79-104		GRI content index	
G4-33	Indicators that are subjected to external assurance and represented in Sarawak Energy's Sustainability Report 2016 for year ended 31 December 2016 (p.77-78): • Grid CO_2 Emission Intensity (Main grid only) • Plants Carbon Intensity • Availability and Equivalent Availability Factor (Thermal & Hydro) • Economic Value Retained • Lost Time Injury	Yes	External Assurance	
Governance				
G4-34	This information can be found under "Governance" on p.38-39		Organisation's governance structure	
Ethics and Integrity				
G4-56	This information is discussed in our Sustainability Driven by Leadership on p.24-25		Organisation's values, principles, standards and norms of behaviours	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

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
ECONOMIC					
Economic performance					
G4-DMA	p.45				
G4-EC1	This information can be found in: • SDG#8 Decent Work and Economic Growth on p.4 • Delivering Value to Our Stakeholder on p.37 • Catalysing Economic Sustainability on p.44		Yes	Direct economic value generated and distributed	No 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Indirect economic impacts					
G4-DMA	p.15				
G4-EC7	This information can be found under: • Delivering Value to Our Stakeholder on p.37 • Catalysing Economic Sustainability on p.45 • Transforming Social Outcomes on p.63 Corporate Social Responsibility (CSR) Expenses **RM3,966,139**			Development and impact of infrastructure investments and services supported	Goal 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
G4-EC8	This information is available under: • Delivering Value to Our Stakeholder on p.37 • Catalysing Economic Sustainability on p.45 • Transforming Social Outcomes - Caring for Our Communities on p.67-70			Significant indirect economic impacts, including the extent of impacts	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
Procurement practices					
G4-DMA	p.45				
G4-EC9	Information on this is available unde: • SDG#8 Decent Work and Economic Growth on p.4-5 • Chairman's Foreword on p.23 • Our Scorecard on p.35 • Catalysing Economic Sustainability on p.45-46 • Transforming Social Outcomes on p.63			Proportion of spending on local suppliers at significant locations of operation	No 12 - Ensure sustainable consumption and production patterns

G4-32

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure

G4-EC9

Tenders Awarded	Status	Year 2016
Capital Works	Sarawakian	445,710,032.50
	Malaysian (Non-Sarawakian)	138,620,455.11
	International	1,565,861,871.58
Operations and Maintenance	Sarawakian	576,656,517.32
	Malaysian (Non-Sarawakian)	83,265,176.00
	International	86,858,228.00

ENVIRONMENTAL

Materials

G4-DMA p.56

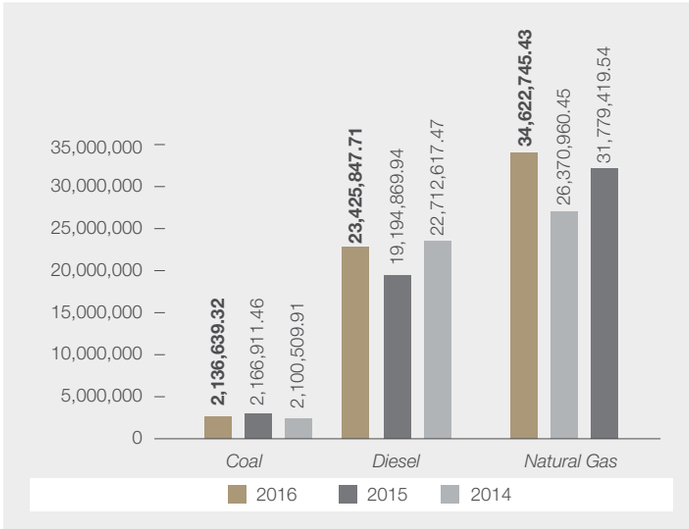
G4-EN1 Category: Non-renewable materials used (2016)

Materials used by weight or volume

SDG linkage to Disclosure: 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

Plant Type	Volume	Unit
Coal	2,136,639.32	Ton
Diesel	23,425,847.71	Litre
Natural Gas	34,622,745.43	mmbtu



Category: Renewable Materials
Batang Ai HEP (2016):
*Annual inflow 3,802 million m^3 (annual inflow from catchment)
*Annual energy generated 445GWh

Murum HEP (2016)
*Annual inflow 8,663 million m^3 (annual inflow from catchment)
*Annual energy generated 3,390GWh
*Annual water consumption 4,194 million m^3 (Spillway discharge)

GRI Content Index

Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
Water					
G4-DMA	p.56				
G4-EN8	This information is available under: • SDG#6 Clean Water and Sanitation on p.6 • Improving Our Environmental Footprint on p.58-59 For thermal, water is used for cooling purposes. As for hydro, withdrawal of water is used for electricity generation			Total water withdrawal by source	No 6 - Ensure availability and sustainable management of water and sanitation for all
Biodiversity					
G4-DMA	p.59				
G4-EN11	This information is available under: • SDG#6 Clean Water and Sanitation on p.7 • SDG#15 Life on Land on p.10 • Improving Our Environmental Footprint on p.57-61			Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	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
G4-EN12	This information is available under: • SDG#6 Clean Water and Sanitation on p.7 • SDG#15 Life on Land on p.10-11 • Improving Our Environmental Footprint on p.57-61			Impacts of activities, products, and services on biodiversity in areas of high biodiversity value outside protected areas	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

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
Emissions					
G4-DMA	p.54-56				
G4-EN15	1. Gross direct (Scope 1) GHG emissions in metric tons of CO_2 equivalent			Direct greenhouse gas (GHG) emissions (Scope 1)	No 3 - Ensure healthy lives and promote well-being 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

Grid	Total Emissions (tCO_2eq) (2016)
Main	5,203,104.32
Northern	103,730.92
Isolated	11,285.76

Total CO_2 Emission (Main Grid)

POWER STATION	2013	2014	2015	2016
PPLS Power Generation (Main grid)	796,564.42	699,287.53	770,033.30	828,257.76
Sejingkat Power Corp (Main grid)	734,362.86	825,823.49	836,758.64	889,123.60
Mukah Power Sdn. Bhd (Main grid)	1,521,674.59	1,630,849.29	1,678,345.18	1,572,390.67
Sarawak Power Generation (Main grid)	828,229.82	789,089.66	501,310.17	928,015.97
Bintulu PS (Main grid)	603,107.14	475,832.10	446,329.02	407,590.29
Miri PS (Main grid)	428,360.31	398,087.77	521,034.44	547,229.20
Sg Biawak PS (Main grid)	6,166.68	33,132.06	21,514.69	30,496.82
Total tCO_2eq Emission (Main Grid)	**4,918,465.82**	**4,852,101.90**	**4,775,325.45**	**5,203,104.32**

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-EN15	Total CO_2 Emission (Northern Grid)			Direct greenhouse gas (GHG) emissions (Scope 1)	No 13 - Take urgent action to combat climate change and its impacts

POWER STATION (Northern Grid)	2013	2014	2015	2016
Limbang PS	56,813.27	58,749.86	60,939.51	63,859.92
Lawas PS	32,029.91	33,347.74	35,234.70	39,870.99
Total tCO_2eq Emission (Northern Grid)	**88,843.18**	**92,097.60**	**96,174.21**	**103,730.92**

Total Overall Stand-alone Grid CO_2 Emission (All over Sarawak)

POWER STATION (Northern Grid)	2013	2014	2015	2016
Kapit PS	23.99	121.26	0	55.35
Belaga PS	3,095.91	3,283.10	3,636.68	3,700.47
Song	0	0	0	0
Ng Mujong PS	143.54	151.97	185.23	220.55
Ng Ngungun PS	960.75	854.24	933.79	1,095.53
Ng Jagau PS	158.61	159.97	178.61	214.01
Ng Entawau PS	223.57	242.41	247.75	293.29
Mulu PS	1,009.72	1,597.18	2,177.35	2,111.50
Long Lama PS	2,382.71	2,426.75	2,518.51	2,721.80
Pantu PS	725.76	0	0	0
Banting PS	211.81	216.24	238.22	246.50
Paloh PS	504.4742	536.99	544.46	570.85
Kpg Bruit PS	2,263.87	2,409.49	966.12	8.92
Kpg Saai PS	794.78	905.70	268.97	1.82
Bakun PS (Non grid)	4,905.53	4,885.94	126.89	45.18
Total tCO_2eq Emission (Non Grid)	**17,405.03**	**17,791.24**	**12,022.59**	**11,285.76**

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-EN15	Total Net Energy Generated for Main Grids			Direct greenhouse gas (GHG) emissions (Scope 1)	No 13 - Take urgent action to combat climate change and its impacts

Plant Type	Plant	2013	2014	2015	2016
Coal	PPLS Power Generation	665,653.45	673,067.79	700,441.70	722,881.10
Coal	Sejingkat Power Corp	670,717.36	677,982.14	702,474.60	720,113.20
Coal	Mukah Power Sdn. Bhd	1,381,055.96	1,481,594.57	1,478,459.86	1,328,886.32
BTU-Combined Cycle	Sarawak Power Generation	1,770,203.95	1,638,149.35	1,026,084.62	2,088,595.82
BTU-Open Cycle	Bintulu Power Plant	695,162.97	572,782.13	486,779.46	405,355.13
Miri-Open Cycle	Miri Power Plant	491,203.58	445,644.89	509,402.69	562,562.83
Diesel-Standby	Biawak Power Plant	5,098.36	37,644.93	22,737.11	33,584.08
Total MWh		**6,242,758.86**	**5,526,865.80**	**4,926,338.74**	**5,861,978.47**
Hydropower	Batang Ai HEP	349,834.63	311,289.09	315,331.46	444,514.18
Hydropower	Bakun HEP	5,415,266.50	8,477,979.00	7,721,996.75	12,161,263.00
Hydropower	Murum HEP	-	167,945.87	2,129,021.85	3,437,479.87
Hydropower	Lundu Power Plant	-	-	3,965.96	3,236.00
Total MWh		**5,23,497.55**	**8,957,213.96**	**10,170,316.02**	**16,046,493.04**

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-EN15	Total Net Energy Generated for Stand-Alone Grids			Direct greenhouse gas (GHG) emissions (Scope 1)	No 13 - Take urgent action to combat climate change and its impacts

Plant Type	Plant	2013	2014	2015	2016
Diesel	Kapit PS	-	-	-	0
Diesel	Belaga PS	3,684.30	3,752.66	4,054.91	4,144.13
Diesel	Song	-	-	-	0
Diesel	Ng Mujong PS	144.69	154.34	205.38	243.70
Diesel	Ng Ngungun PS	951.88	985.24	1,084.81	1,262.96
Diesel	Ng Jagau PS	134.26	128.65	123.31	155.97
Diesel	Ng Entawau PS	241.23	272.23	278.93	330.61
Diesel	Mulu PS	1,067.51	1,811.50	2,423.58	2,262.76
Diesel	Long Lama PS	2,945.30	2,962.34	3,069.97	3,301.29
Diesel	Pantu PS	864.01	-	-	0
Diesel	Banting PS	212.45	219.76	244.52	263.54
Diesel	Paloh PS	562.11	601.86	616.39	641.65
Diesel	Kpg Bruit PS	2,507.33	2,699.45	1,064.10	5.56
Diesel	Kpg Saai PS	885.24	987.13	289.88	0
Diesel	Bakun PS	5,665.81	5,591.56	56.00	0
Total MWh		**19,866.11**	**20,166.70**	**13,511.76**	**12,612.18**

Total Net Energy Generated (Northern Grids)

Plant Type	Plant	2013	2014	2015	2016
Diesel	Limbang PS	79,535.69	81,769.58	85,331.79	86,650.77
Diesel	Lawas PS	42,470.59	44,129.66	49,059.72	53,624.09
Total MWh		**98,951.75**	**125,899.24**	**134,391.51**	**140,274.86**

Plant Type	Plant	2013	2014	2015	2016
Mini Hydro	Lawas M/H (Kalamuku)	3,432.32	3,238.58	-	2,388.01
Mini Hydro	Lawas M/H (Sg. Kota)	3,811.00	6,678.60	-	4,698.30
Mini Hydro	Sg. Kejin	-	-	-	0.02
Total MWh		**7,243.32**	**9,917.18**	**9,494.71**	**7,086.33**

Data assumption:

1. Fuel consumption, fuel Calorific Value & fuel Specific Density (for CO_2 emission calculations) data obtained from OpX
2. Net Energy Generated for main grid connected power plants (using GSO data) – Request for both grid Thermal & Hydro (Batang Ai, Bakun & Murum)
3. Net Energy Generated for non-grid connected power plants (using Non-grid generation Planning & Development) – Request for both non grid Thermal & Mini hydro (Kalamuku, Kota 1 & Sg. Kejin)

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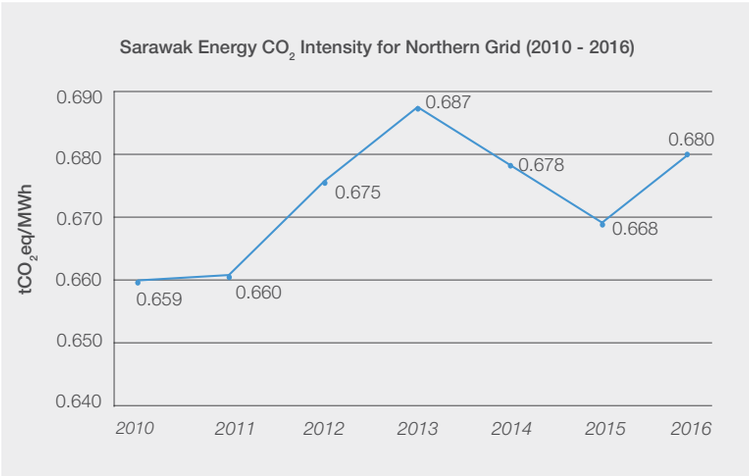
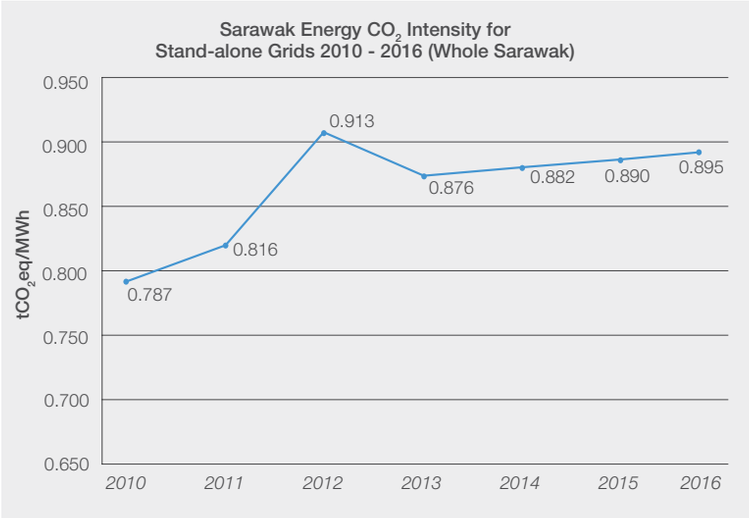
Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-EN18	CO_2 Intensity for Sarawak Energy Main Grid can be found in: • SDG#7 Affordable and Clean Energy on p.2-3 • SDG#8 Decent Work and Economic Growth on p.4 • SDG#13 Climate Action on p.8 • Organisation Profile on p.18 • Chairman Foreword on p.22 • Our Scorecard on p.35 • Delivering Value to Our Stakeholder on p.37 • Improving Our Environmental Footprint on p.52-55 • Catalising Economic Sustainability on p.43 **Northern Grid**  **Overall stand-alone Grids (All over Sarawak)**  		Yes	Greenhouse gas (GHG) emissions intensity	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

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-EN18	**Plants CO_2 Intensity (tCO_2/MWh) - Main Grid**				

Year	Plant (Main Grid)	Total CO_2 Emission (ton)	Gross Energy Generated from Thermal (MWh)	CO_2 Intensity (tCO_2/ MWh)
2016	Sejingkat Power Corp	889,123.60	762,687.44	1.166*
	PPLS	828,257.76	832,090.00	0.995*
	MPG	1,572,390.67	1,493,795.56	1.053*
	SPG	928,015.97	2,128,911.00	0.436*
	Bintulu SESCO	407,590.29	412,809.11	0.987*
	Miri SESCO	547,229.20	567,238.22	0.965*
	Sg Biawak SESCO	30,496.82	36,199.09	0.842*

Note:

* *These plants carbon emission intensity data have been assured by a third party. Read the Independent Assurance Report on pages 77 – 78.*

G4-EN19	This information is detailed under: • SDG#13 Climate Action on p.8 • Improving Our Environmental Footprint on p.52 and p.55			Reduction of greenhouse gas (GHG) emissions	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

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-EN21	This information is detailed under "Improving Our Environmental Footprint" on p.56			NO_x, SO_x and other significant air emissions	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
Effluent and Waste					
G4-DMA	p.56				
G4-EN22	p.59			Total water discharge by quality and destination including thermal discharges as part of the total volume of planned and unplanned water discharges.	No 3 - Ensure healthy lives and promote well-being for all at all ages No 6 - Ensure availability and sustainable management of water and sanitation for all No 12 - Ensure sustainable consumption and production patterns No 14 - Conserve and sustainably use the oceans, seas and marine resources for sustainable development

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
Compliance					
G4-DMA	p.56			Progress and processes to ensure the availability of skilled workforce	
G4-EN29	The Company did not incur any monetary sanctions in 2016			Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	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
SOCIAL					
Labour Practices and Decent Work					
Employment					
G4-DMA	p.70-75				
G4-LA1	New Hires and Turnover by Gender and Age			Total number and rates of new employee hires and employee turnover by age group, gender and region	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

	2014			2015			2016		
New Hires (by Gender)	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**
Total number	153	85	238	172	70	242	**190**	**68**	**258**
By age, in numbers									
Up to 30 years old	134	66	200	145	54	199	**167**	**56**	**223**
Between 31 and 50 years old	15	19	34	27	16	43	**20**	**12**	**32**
Over 50 years old	4	0	4	0	0	0	**3**	**0**	**3**

	2014			2015			2016		
Staff Turnover (by Gender)	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**
Total	92	22	114	84	25	109	**86**	**28**	**114**
By age, in numbers									
Up to 30 years old	32	14	46	27	11	38	**25**	**16**	**41**
Between 31 and 50 years old	30	7	37	29	7	36	**34**	**10**	**44**
Over 50 years old	30	1	31	28	7	35	**27**	**2**	**29**

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-LA1	New Hires and Turnover by Company				

	2014			2015			2016		
New Hires (by Company)	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**
Total number	153	85	238	172	70	242	**190**	**68**	**258**
By company, in numbers									
Sarawak Energy Berhad	1	3		2	0		**82**	**37**	
Sejingkat Power	1	1		1	1		**-**	**-**	
Mukah Power	3	1		7	1		**-**	**-**	
SESCO Headquarters	70	56		93	51		**51**	**21**	
SESCO Kuching	20	8		10	5		**3**	**4**	
SESCO Sri Aman	5	0		2	0		**1**	**0**	
SESCO Sarikei	5	1		0	0		**1**	**0**	
SESCO Sibu	6	2		13	5		**16**	**1**	
SESCO Bintulu	20	1		18	2		**23**	**1**	
SESCO Miri	22	12		12	1		**8**	**3**	
Balingian Power Generation	-	-		14	4		**5**	**1**	

	2014			2015			2016		
Staff Turnover (by Company)	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**	**Men**	**Women**	**TOTAL**
Total number	92	22	114	84	25	109	**86**	**28**	**114**
By company, in numbers									
Sarawak Energy Berhad	8	2		4	2		**6**	**1**	
Sejingkat Power	2	0		3	1		**3**	**1**	
Mukah Power	6	0		4	0		**4**	**0**	
SESCO Headquarters	32	10		24	16		**37**	**17**	
SESCO Kuching	13	3		7	2		**13**	**3**	
SESCO Sri Aman	2	0		0	0		**1**	**0**	
SESCO Sarikei	0	0		1	0		**3**	**1**	
SESCO Sibu	11	2		12	2		**9**	**1**	
SESCO Bintulu	5	2		13	1		**5**	**0**	
SESCO Miri	13	3		16	1		**3**	**4**	
Balingian Power							**2**	**0**	

% Turnover rate 2014 = 2.74%
% Turnover rate 2015 = 2.53%
% Turnover rate 2016 = 2.55%

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-LA2				Benefits provided to full-time employees that are not provided to temporary or part- time employees, by significant locations of operation	No 8 - Promote inclusive and sustainable economic growth, employment and decent work for all

Welfare

Natural Calamity:

Deceased Person	Rate (RM)
Serving Employee	3,000.00
Spouse & Children<21yrs	1,000.00
Biological Parent	500.00
Pensioner	500.00
Wreath/Delicacies	150.00
Hospital Visit	
Fruits Basket or Baby's Gift	150.00

Benefits

Type of Loan	Entitlement	Remarks
(a) Housing (Subsidy)	RM360,000	SG1-SG4
	RM300,000	E5-E8
	RM250,000	E1-E4
	RM200,000	NE1-NE6
(b) Car (Subsidy)	RM170,000	SG1-SG4
	RM130,000	E5-E8
	RM80,000	E1-E4
	RM50,000	NE1-NE6
(c) Motorcycle (Subsidy)	RM7,000	All staff
(d) Computer	RM3,000	All staff

House Moving Expenses Subsidy

Salary Grade	Single	Married
SG1-SG4	RM1,950	RM2,600
E5-E8	RM1,425	RM1,900
E1-E4	RM1,125	RM1,500
NE1-NE6	RM750	RM1,000

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-LA2					

Types of Leave	Description	Remarks
(a) Annual	E1-SG1 = 20 days per annum NE1-NE6 = 15 days per annum	Service below 5 years
	E1-SG1 = 20 days per annum NE1-NE6 = 16 days per annum	Service more 5 years
	E1-SG1 = 25 days per annum NE1-NE6 = 20 days per annum	Service 10 years and above
(b) Maternity	60 days - continuous	Limited to 5 surviving child
(c) Nursing	90 days - maximum	Unpaid
(d) Paternity	7 days - continuous	Limited to 5 occasions
(e) Hajj	40 days	• Granted only once Should serve for not less than 5 continuous years
(f) Unrecorded	30 days per annum - maximum	For the purpose of; • Armed Forces Training • Sporting & Cultural Activities • Koperasi SESCO • Examination
(g) Advance	5 days	For the following reasons; - Bereavement - Family members hospitalise - Flood
(h) Study	Subject to terms and conditions as determined by Company	
(i) Compassionate	3 days – continuous	For purpose of attending the funeral of any one of the following relatives; • Spouse • Children who are natural, lawfully adopted or stepchildren • Parents
(j) Deepavali	1 day	For Hindus or Sikhs, permanent or staff on fixed term contract
(k) Overtime	Maximum 15 days or 120 hours	For Executive E1 till E4 only Valid 6 months only
(l) Sick	• Non-hospitalised = 22 days • Hospitalised = 60 days	Aggregate 60 days paid leave per annum
(m) Prolonged Illness & Treatment	• On full salary for a maximum period of 2 consecutive months • On half salary for a further period of 2 consecutive months • Unpaid prolonged illness leave for a further period of 2 consecutive months	
(n) Quarantine	Paid quarantine leave	Employee who is required by the relevant Government authority
(o) Blood donors privilege	1 day	

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
Occupational Health and Safety					
G4-DMA	p.70				
G4-LA5	This information is disclosed under "Transforming Social Outcomes - Safety At Work" on p.71			Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programmes	No 8 - Promote inclusive and sustainable economic growth, employment and decent work for all
G4-LA6	This information is disclosed under "Transforming Social Outcomes - Safety At Work" on p.71-72			Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work-related fatalities, by region and by gender	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
G4-LA7	This information is disclosed under "Transforming Social Outcomes - Sarawak Energy Corporate Risk & HSE LTIFR" on p.73			Workers with high incidence or high risk of diseases related to their occupation	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					
G4-DMA	p.75				
G4-LA9	This information is available under "Transforming Social Outcomes" on p.75			Average hours of training per year per employee by gender, and by employee category	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

Total and Average Hours of Training Record By Category and Gender (Leadership Courses) for Year 2016

Year	2016	
Total Number of Employees by Category	**Male**	**Female**
Management	0	0
Executive	418	269
Non-Executive	323	51
Sub-total	741	320
TOTAL	**1,061**	

Total Hours of Training by Category	**Male**	**Female**
Management	0	0
Executive	5,964	3,822
Non-Executive	2,303	420
Sub-total	8,267	4,242
TOTAL	**12,509**	

Average Hours of Training by Category	**Male**	**Female**
Management	0	0
Executive	14.27	14.20
Non-Executive	7.13	8.24

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
G4-LA9	This information is available under "Transforming Social Outcomes" on p.75			Average hours of training per year per employee by gender, and by employee category	No 4 - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Total and Average Hours of Training Record By Category and Gender (Internal Courses) for Year 2016

Year	2016	
Total Number of employees by category	**Male**	**Female**
Management	15	5
Executive	275	138
Non-Executive	1,598	115

Total hours of training by category	**Male**	**Female**
Management	189	38.5
Executive	4,952.50	2,471
Non-Executive	30,324	1,946

Average hours of training by category	**Male**	**Female**
Management	12.60	7.70
Executive	18.01	17.91
Non-Executive	18.98	16.92

Total Hours of Training Record By Category And Gender (Inhouse Courses) for Year 2016

Year	2016	
Total Number of Employees by Category	**Male**	**Female**
Management	9	6
Executive	1042	477
Non-Executive	3068	748

Total Hours of Training by Category	**Male**	**Female**
Management	133	98
Executive	15307	6661
Non Executive	41013	7970

Average Hours of Training by Category	**Male**	**Female**
Management	14.78	16.33
Executive	14.69	13.96
Non Executive	13.37	10.66

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<tr><th>Material Aspects</th><th>DMA and Indicators</th><th>Omission</th><th>External Assurance</th><th>Description</th><th>SDG linkage to Disclosure</th></tr>
<tr><td>G4-LA9</td><td>Total Hours of Training Record By Category And Gender (External Courses) for Year 2016
<table>
<tr><th>Year</th><th colspan="2">2016</th></tr>
<tr><th>Total Number of Employees by Category</th><th>Male</th><th>Female</th></tr>
<tr><td>Management</td><td>25</td><td>8</td></tr>
<tr><td>Executive</td><td>569</td><td>362</td></tr>
<tr><td>Non Executive</td><td>251</td><td>262</td></tr>
</table>
<table>
<tr><th>Total Hours of Training by Category</th><th>Male</th><th>Female</th></tr>
<tr><td>Management</td><td>448</td><td>161</td></tr>
<tr><td>Executive</td><td>10423</td><td>5971</td></tr>
<tr><td>Non Executive</td><td>5544</td><td>3423</td></tr>
</table>
<table>
<tr><th>Average Hours of Training by Category</th><th>Male</th><th>Female</th></tr>
<tr><td>Management</td><td>17.92</td><td>20.13</td></tr>
<tr><td>Executive</td><td>18.32</td><td>16.49</td></tr>
<tr><td>Non Executive</td><td>22.09</td><td>13.06</td></tr>
</table></td><td></td><td></td><td></td><td></td></tr>
<tr><td>G4-LA10</td><td>This information is available under “Transforming Social Outcomes” on p.75</td><td></td><td></td><td>Programmes for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings</td><td>No 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</td></tr>
<tr><td>G4-LA11</td><td>This information is available under “Transforming Social Outcomes” on p.75</td><td></td><td></td><td>Percentage of employees receiving regular performance and career development reviews, by gender and employee category</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></tr>
</table>

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Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
Society					
Local Communities					
G4-DMA	p.41				
G4-SO1	100% of Sarawak Energy's operations involves and includes local community engagement, impact assessments and development programmes, particularly projects categorised under "prescribed activities" by the Natural Resources and Environment Board, Sarawak and Department of Environment			Percentage of operations with implemented local community engagement, impact assessments, and development programmes	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
G4-HR8	There were no identified incidents of violations involving the rights of indigenous peoples during the reporting period			Total number of incidents of violations involving rights of indigenous people and actions taken	No 2 - End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Product Responsibility					
Customer Privacy					
G4-PR8	There was no substantiated complaints regarding breaches of customer privacy and losses of customer data in 2016			Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	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
Compliance					
G4-PR9	In the year under review, Sarawak Energy did not incur any fines for non-compliance with: 1. Provision and use of products and services (G4-PR9) 2. Product & services on information & labelling (G4-PR4) 3. Marketing communications, including advertising, promotions & sponsorship (G4-PR7)			Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	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

G4-32

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
EU1	This information is available in: • SDG#7 Affordable and Clean Energy on p.3 • SDG#13 Climate Change on p.8 • Organisation Profile on p.18-19 • Improving Our Environmental Footprint on p.55			Describe the fuels used and the capacity of multi-fuel plants.	No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all
EU2	See table below:			Describe net energy generated by the utility in GWh or GJ	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

	2015	2016
ENERGY SOURCE	**Net**	**Net**
Hydro	**10,162**	**16,042**
Batang Ai HEP	315	444
Bakun HEP	7,719	12,159
Murum HEP	2,127	3,438
Coal	**2,880**	**2,774**
Sejingkat Power (SPC 1)	683	698
PPLS-PG (SPC 2)	723	745
Mukah Power Generation (MPG)	1,475	1,331
Gas	**2,019**	**3,048**
Miri Pujut Open Cycle	512	561
Bintulu 1- 5 Open Cycle	486	405
SPG Combined Cycle	1,021	2,082
Diesel	**23**	**34**
TOTAL ENERGY GENERATED	**15,084**	**21,897**

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Specific Standard Disclosures

<table>
<tr><th>Material Aspects</th><th>DMA and Indicators</th><th>Omission</th><th>External Assurance</th><th>Description</th><th>SDG linkage to Disclosure</th></tr>
<tr><td colspan="6">Organisation Profile</td></tr>
<tr><td>EU3</td><td>
<table>
<tr><th colspan="5">Grid / Non Grid No of Customers Ending 2016</th></tr>
<tr><th>Grid</th><th>Tariff</th><th>No. of Active Customers</th><th>No. of Inactive Customers</th><th>Total Number of Customers</th></tr>
<tr><td>Grid</td><td>C1</td><td>87,643</td><td>5,112</td><td>92,755</td></tr>
<tr><td>Grid</td><td>C2</td><td>116</td><td>4</td><td>120</td></tr>
<tr><td>Grid</td><td>C3</td><td>34</td><td>1</td><td>35</td></tr>
<tr><td>Grid</td><td>DOM</td><td>520,285</td><td>18,771</td><td>539,056</td></tr>
<tr><td>Grid</td><td>I1</td><td>866</td><td>24</td><td>890</td></tr>
<tr><td>Grid</td><td>I2</td><td>39</td><td>3</td><td>42</td></tr>
<tr><td>Grid</td><td>I3</td><td>88</td><td>3</td><td>91</td></tr>
<tr><td>Grid</td><td>I4</td><td>13</td><td>0</td><td>13</td></tr>
<tr><td>Grid</td><td>PL</td><td>9,232</td><td>211</td><td>9,443</td></tr>
<tr><td>Non Grid</td><td>C1</td><td>3,661</td><td>188</td><td>3,849</td></tr>
<tr><td>Non Grid</td><td>DOM</td><td>16,181</td><td>849</td><td>17,030</td></tr>
<tr><td>Non Grid</td><td>I1</td><td>20</td><td>0</td><td>20</td></tr>
<tr><td>Non Grid</td><td>PL</td><td>225</td><td>4</td><td>229</td></tr>
<tr><td>Grand Total</td><td></td><td>638,403</td><td>25,170</td><td>663,573</td></tr>
</table>
</td><td></td><td></td><td>Report the total number of accounts by type and by point of connection and customers who are also producers.</td><td></td></tr>
<tr><td>EU4</td><td>This information is disclosed in the “Organisation Profile” on p.19</td><td></td><td></td><td>Report aggregated circuit lengths in km, by regulatory regime, voltage category, and overhead and/or underground</td><td>No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all</td></tr>
<tr><td>EU5</td><td>Not relevant</td><td></td><td></td><td>Report on the emissions trading schemes or alternative requirements for managing CO_2 emissions</td><td></td></tr>
<tr><td colspan="6">Availability & Reliability</td></tr>
<tr><td>G4-DMA</td><td>Information on this is elaborated under:
Catalysing Economic Sustainability on p.15 and p.48
Organisation Profile on p.18-20</td><td></td><td></td><td>Management approach to ensure short and long-term electricity availability and reliability</td><td></td></tr>
<tr><td>EU10</td><td>This information is disclosed under “Catalysing Economic Sustainability” on p.15</td><td></td><td></td><td>Planned Capacity Against Projected Electricity Demand over the long term, broken down by energy source and regulatory regime</td><td>No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all</td></tr>
</table>

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Specific Standard Disclosures

Material Aspects | **DMA and Indicators** | **Omission** | **External Assurance** | **Description** | **SDG linkage to Disclosure**

System Efficiency

EU11

Gross Efficiency (%) for Coal Plant

Major Plant	Plant Type	Average Efficiency
Sejingkat Power Corp	Coal	28.60%
PPLS Power Generation	Coal	33.52%
Mukah Power Generation	Coal	31.68%

Gross Efficiency (%) for Natural Gas Plant

Major Plant	Plant Type	Average Efficiency
Sarawak Power Generation	BTU-Combined Cycle	40.90%
Bintulu Power Plant	BTU-Open Cycle	17.95%
Miri Power Plant	Miri-Open Cycle	20.81%

Gross Efficiency (%) for Diesel Plant

Major Plant	Plant Type	Average Efficiency
Biawak Power Plant	Diesel - Standby	31.68%

Average generation of efficiency of thermal plants by energy source and by regulatory regime

*GRI G4 definition: Generation efficiency – the ratio of gross energy going into a plant against the net energy (electricity, and if CHP, heat) supplied

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

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
System Efficiency (Sector Specific)					
G4-DMA	Information on this is available under "Transforming Social Outcomes" on p.64-68			Programmes, including those in partnership with government, to improve or maintain access to electricity and customer support services	
EU12	This information is available under "Catalysing Economic Sustainability" on p.49			Transmission and distribution losses as a percentage of total energy	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
Disaster/Emergency Planning and Response					
G4-DMA	p.73				
Access					
EU26	This information is available under: • SDG#7 Affordable and Clean Energy on p.2-3 • Delivering Value to Our Stakeholder on p.37 • Transforming Social Outcomes on p.63-64			Percentage of population unserved in licensed distribution or service areas	No 1 - End poverty in all its forms everywhere No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all
EU27	This information is available under "Catalysing Economic Sustainability" on p.49			Number of residential disconnections for non-payments, broken down by duration of disconnection 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
EU28	This information is disclosed under: • Organisation Profile on p.19-20 • Catalysing Economic Sustainability on p.43 & p.49			Power outage frequency	No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all
EU29	This information is available under: • Organisation Profile on p.19-20 • Our Scorecard on p.35 • Catalysing Economic Sustainability on p.43 & p.49			Average power outage duration	No 1 - End poverty in all its forms everywhere No 7 - Ensure access to affordable, reliable, sustainable and modern energy for all

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Specific Standard Disclosures

Material Aspects	DMA and Indicators	Omission	External Assurance	Description	SDG linkage to Disclosure
Research & Development					
EU30	This information can be found under: • SDG#7 Affordable and Clean Energy on p.2 • Catalysing Economic Sustainability on p.46-47		Yes	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
(Former EU8)	R&D Projects 2016			Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	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

Power Station	PO (Hours)	FO (Hours)	EAF (%) - GRI
PPLS Power Generation (Main grid)	731.15	194.75	90.85*
Sejingkat Power Corp (Main grid)	1,319.9	398.86	88.00*
Mukah Power Sdn. Bhd (Main grid)	3,726.22	881.14	70.14*
Sarawak Power Generation (Main grid)	1,407.11	678.08	82.53*
Bintulu Power Plant (Main grid)	5,944.07	582.48	85.22*
Miri Power Plant (Main grid)	11,217.68	486.39	80.97*
Biawak Power Plant (Main grid)	785.91	228.46	98.05*

Note:

* *These equivalent availability factor (thermal power plants) data have been assured by a third party. Read the Independent Assurance Report on pages 77 – 78.*

No.	Name of Project	Approved Budget
1.	PLS-160066 (Purchase of Handheld GPS Equipment)	14,803.40
2.	PLS-160075 (Replacement of battery bank and upgrade of standalone solar hybrid system at Sarawak Energy training center)	20,000.00
3.	PLS-160076 (Purchase of HOMER Software (Hybrid Optimization of Multiple Energy Resources) for microgrid system)	13,000.00
4.	PLS-160077 (Upgrade of Sub-basement store to improve security and storage management by installing storeroom fencing and access doors)	15,000.00
5.	PLS-160135 (R&D Block Vote 2016)	8,795,920.00
6.	PLS-160144 (Gasification Plant at Paloh P/S)	3,150,000.00
7.	PLS-160156 (Remote Monitoring System)	267,600.00
8.	PLS-160164 (Improv Transformer CM Process (CP)	328,900.00
9.	PLS-160192 (Rural Solar Hybrid Monitoring – Leonics)	150,000.00
10.	PLS-160210 (Lightning Monitoring System)	578,111.46
11.	PLS-160195 (Purchase of Electric Scooter)	174,500.00
12.	PLS-160214 (Bintulu Cycle Chemistry Project)	600,000.00
13.	PLS-160226 (Proposed Installation of Debris Boom)	114,580.00
14.	PLS-160176 (DJI Phantom 4 UAV Procurement)	165,000.00

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