

# **DELIVERING ON THE SUSTAINABLE DEVELOPMENT GOALS (SDGs) - CONNECTING SUSTAINABILITY TO BUSINESS VALUE IN ELECTRICITY SUPPLY INDUSTRY (ESI)**

AMAN, Mohamad Irwan

Sarawak Energy Berhad

Menara SEB, No. 1, The Isthmus, 93050 Kuching, Sarawak, Malaysia

**Email: [irwan@sarawakenergy.com.my](mailto:irwan@sarawakenergy.com.my)**

## **Abstract:**

Sustainable Energy Supply is about striking a balance between economic, social and environments considerations in a transparent and accountable manner, by taking the advantage of expanding knowledge, multiple perspectives, and innovation that contribute to local, national, and regional benefits as well as playing an important role in meeting needs of global sustainability agenda such as the United Nation Sustainable Development Goals (SDGs). The SDGs was introduced in 2015 to replace the United Nation Millennium Development Goals (MDGs) which ended in 2015. The SDGs cover a broad range economic development and social issues with 17 goals and 169 targets to be achieved by 2030.

Sarawak Energy Berhad has evolved into an integrated energy development corporation over the last 10 years and now preparing to take the journey to the next logical step, namely to become an ASEAN powerhouse, providing the neighbours with clean, primarily renewable energy driven from hydro sources. In 2016, the Sarawak Energy renewable energy generation has increased by 1,186% from 1,248 GWh (2011) to 16,046 GWh. With the increased of renewable generation has reduced the grid emission intensity by 66% from 0.698 tCO<sub>2</sub>/MWh (2011) to 0.237 tCO<sub>2</sub>/MWh (2016). In addition, sustainable energy supply has significantly contributed to the exponentially growth of Sarawak Energy with an increase of 211% in electricity sales and 153% in revenues.

This paper highlight an assessment on the connection between sustainability to business value in ESI based on the materiality assessment, sustainability indicators while delivering the SDGs. The assessment results indicated that sustainable hydropower playing an important role in contributing toward SDGs.

**Keywords:** *Sustainable Hydropower, Sustainable Development Goals, Business Value, Affordable & Clean Energy*

## Introduction

Sustainability is about “...meets the needs of the present without compromising the ability of future generations to meet their own needs...” (Brundtland Commission Report, 1987)<sup>1</sup>. Within this broad definition of sustainability, it’s very important to understand on how corporations could also contribute toward sustainable development based on their risk and opportunity of their business at local, national and global level. It’s about embracing, embedding and implementing sustainability strategies and practices in the way corporations managing their business to create value and delivering SDGs.

According to Bursa Malaysia (2018), sustainability is “...a strategic approach to long-term material risks and opportunities can make companies more resilient, more innovative and more attractive to investors, customers and potential employees...”<sup>2</sup>. Where sustainable business deliver must deliver real results when it’s linked to the core business in the long term perspective.

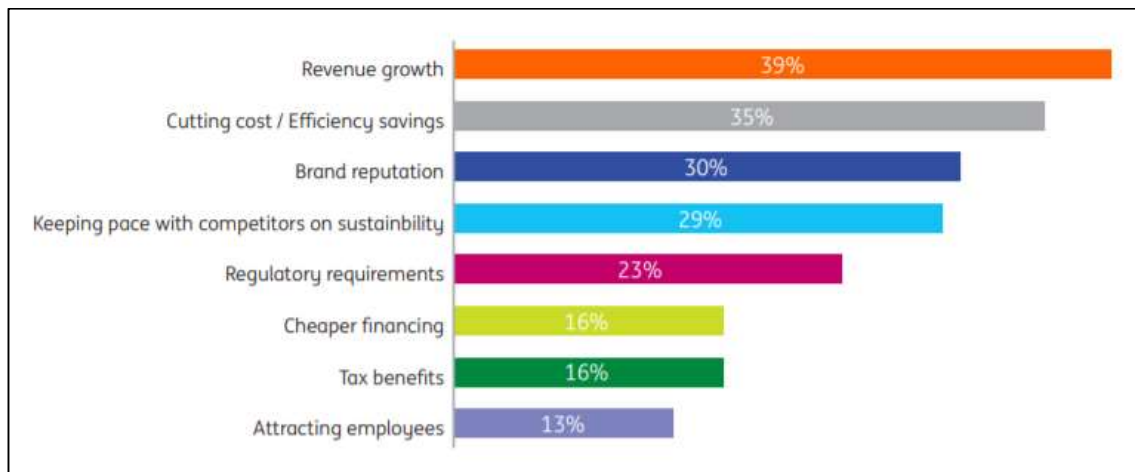
Sustainable energy supply is about striking a balance between economic, social and environments considerations in a transparent and accountable manner, by taking the advantage of expanding knowledge, multiple perspectives, and innovation that contribute to global sustainability agenda such as the United Nation Sustainable Development Goals (SDGs).

The SDGs was introduced in 2015, replacing the United Nation Millennium Development Goals (MDGs) which ended in 2015. The SDGs cover a broad range economic development and social issues with 17 goals and 169 targets to be achieved by 2030<sup>3</sup>.

## Sustainability and Business Value

Electric Supply Industry 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.

Sustainability is about more than meeting the needs of the customers. It is about challenging the status quo and a business-as-usual mind-set to deliver business solutions toward sustainable development. Sustainability strategies from improving energy efficiency, rethinking supply chains as well as transformation of business models have the potential to drive competitive advantage, innovation and revenue growth<sup>4</sup>.



Source: ING Sustainability and Finance Study 2018

<sup>1</sup> Brundtland Commission (1987), "Report of the World Commission on Environment and Development", United Nations.

<sup>2</sup> Bursa Malaysia (2018), <https://bursasustain.bursamalaysia.com/droplet-details/sustainability/the-business-case-for-sustainability>

<sup>3</sup> United Nation (2017), The Sustainable Development Goals Report 2017

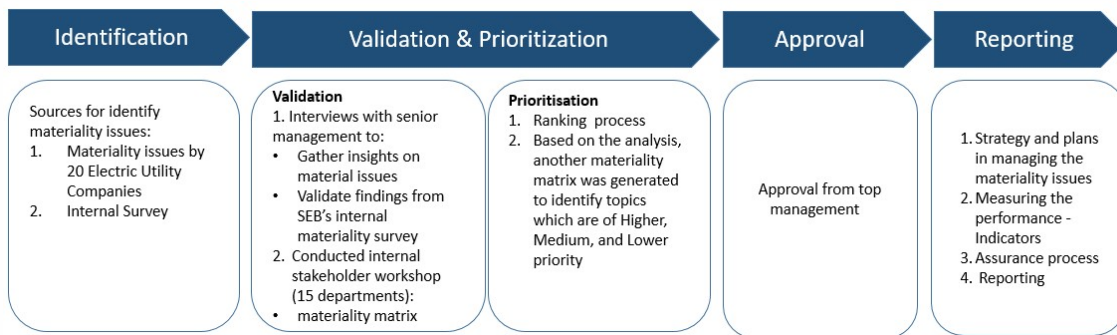
<sup>4</sup> ING (2018), From Sustainability to Business Value, Finance as a catalyst

## Determine the Materiality Issues

Determining the materiality issues is the first step in understanding the key sustainability issues before it can be linkage to business value. By having clear understanding of the key materiality issues that faced by the industry form a basis for ESI to develop a comprehensive strategy and strategic plans to minimization and mitigation risks, while maximizing and leveraging opportunities to create long-term business value.

## Corporate Materiality Assessment

The assessment will provide an insight on the relative importance of specific economic, environmental, and social topics to Sarawak Energy. Sarawak Energy materiality assessment was developed using the Global Reporting Initiative's (GRI) Sustainability Reporting Framework. The concluded and approved material issues are used as a foundation in measuring Sarawak Energy sustainability performance and impact. The materiality assessment was defined by a three-step approach which covers identification, validation and prioritisation, and approval.



The diagram above provides an overview of the materiality assessment process at corporate level.

| Social  |  | Economic                         | Environment                          |
|---|--|----------------------------------|--------------------------------------|
| 1. Indigenous Rights                            | 11. Customer Health & Safety                 | 19. Indirect Economic Impacts    | 27. Materials                        |
| 2. Customer Privacy                             | 12. Product & Service Labelling              | 20. Procurement Practices        | 28. Compliance (EN)***               |
| 3. Occupational Health & Safety                 | 13. Supplier Assessment for Labour Practices | 21. System Efficiency**          | 29. Water                            |
| 4. Compliance (PR)***                           | 14. Labour/ Management Relations             | 22. Availability & Reliability** | 30. Biodiversity                     |
| 5. Employment                                   | 15. Labour Practice Grievance Mechanisms     | 23. Research & Development**     | 31. Emissions                        |
| 6. Training & Education                         | 16. Human Rights Grievance Mechanisms        | 24. Economic Performance         | 32. Effluent & Waste                 |
| 7. Local Communities                            | 17. Non-discrimination                       | 25. Demand Side Management**     | 33. Energy                           |
| 8. Access**                                     | 18. Public Policy                            | 26. Market Presence              | 34. Environment Grievance Mechanisms |
| 9. Disaster/ Emergency Planning Response**      |  |                                  |                                      |
| 10. Grievance Mechanisms for Impacts on Society |  |                                  |                                      |

The table above provides an overview of the materiality issues for Sarawak Energy

## Sustainability Hydropower - Materiality Issues

The Hydropower Sustainability Assessment Protocol (“the Protocol”) is a globally recognised framework for assessing hydropower projects against more than 20 materiality topics in hydropower development and operation<sup>5</sup>. The Protocol covers comprehensive range of social, environmental, technical and economic considerations and it was developed by representatives from governments, commercial and development banks, social and environmental NGOs, affected communities and the hydropower sector.

| Sustainability Aspects - HSAP              |                                 |  |                      |  |
|--|---------------------------------|--|----------------------|--|
| Technical                                  | Environment                     | Social                                       | Economic & Financial | Integrative                                |
| Siting & design                            | Downstreams flows               | Project-affected communities and livelihoods | Economic viability   | Demonstrated need and strategic fit        |
| Hydrological resource                      | Erosion & sedimentation         | Resettlement                                 | Financial viability  | Communications & consultation              |
| Reservoir planning, filling and management | Water quality                   | Indigenous peoples                           | Project benefits     | Governance                                 |
| Infrastructure safety                      | Biodiversity & invasive species | Cultural heritage                            | Procurement          | Integrated project management              |
| Asset reliability & efficiency             | Waste, noise & air quality      | Public health                                |                      | Environmental and social issues management |
| Cross Cutting Aspects                      |                                 |  |                      |  |
| Climate Change                             | Human rights                    | Gender                                       | Grievance Mechanisms | Transparency                               |
| Integrated Water Resource Management       | Legacy Issues                   | Livelihoods                                  | Transboundary Issues |  |

The table above illustrates the materiality topics covers under the Protocol.

## Sustainability Development Goals (SDGs) – Global Agenda

Malaysia has adopted the 2030 Agenda for Sustainable Development at the United Nations General Assembly in New York on September 2015<sup>6</sup>. Sustainability Development Goals cover a broad range economic development and social issues with 17 goals and 169 targets to be achieved by 2030. This is a global commitment towards a more sustainable, resilient and inclusive development. This paper focusing on the Sustainability Developments Goals and targets number 7 and 8 which relevant to Electricity Supply Industry

1. SDGs #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
2. 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.

<sup>5</sup> Hydropower Sustainability Assessment Protocol (2010), International Hydropower Association

<sup>6</sup> Malaysia Sustainability Development Goals Voluntary National Review 2017, Economic Planning Unit




The diagram below illustrates 17 Sustainability Development Goals.

## Mapping Sustainability Development Goals (SDGs) and Sustainability Indicators

In order to understand the linkages between sustainability and different type of business value in Electricity Supply Industry (ESI). Each corporation need to develop an effectively measurement indicators and map it against SDGs and targets. By having a clear understand these linkages, the corporation would be able to develop a comprehensive and strong business case to accelerate and deepen the integration of sustainability into business strategy and operations.

**07** AFFORDABLE AND  
CLEAN ENERGY




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

| Indicators* | Description  |
|-------------|--|
| G4-EC7      | Development and impact of infrastructure investments and services supported  |
| EU1         | Describe the fuels used and the capacity of multi-fuel plants.   |
| EU2         | Describe net energy generated by the utility   |
| EU4         | Report aggregated circuit lengths in km, by regulatory regime, voltage category, and overhead and/or underground             |
| EU10        | Planned Capacity Against Projected Electricity Demand over the long term, broken down by energy source and regulatory regime |
| EU11        | Average generation of efficiency of thermal plants by energy source and by regulatory regime                                 |
| EU12        | Transmission and distribution losses as a percentage of total energy   |
| EU26        | Percentage of population unserved in licensed distribution or service areas  |
| EU27        | Number of residential disconnections for non-payments, broken down by duration of disconnection and by regulatory regime     |
| EU28        | Power outage frequency   |
| EU29        | Average power outage duration  |
| EU30        | Average plant availability factor by energy source and by regulatory regime  |

**08** GOOD JOBS AND  
ECONOMIC GROWTH



Promote inclusive and sustainable economic growth, employment and decent work for all

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

| Indicators* | Description  |
|-------------|--|
| EC8         | Significant indirect economic impacts, including the extent of impacts           |
| EN1         | Materials used by weight or volume   |
| LA2         | Benefits provided to full-time employees that are not provided                   |
| LA7         | Workers with high incidence or high risk of diseases related to their occupation |
| LA9         | Average hours of training per year per employee                                  |
| EU11        | Average generation of efficiency of thermal plants by energy source              |

Notes: \*GRI Indicators Based on GRI G4



## Results - Connecting Sustainability to Business Value in Electricity Supply Industry

Emphasis on sustainability in ESI is imperative, in view of the fact that the energy sector is the foundation for economic development in any country. Sarawak Energy strategy to develop Sarawak's abundant hydropower resources is crucial factor in delivering sustainable energy, economic growth and sustainability development to Sarawak.

### Sustainable Energy

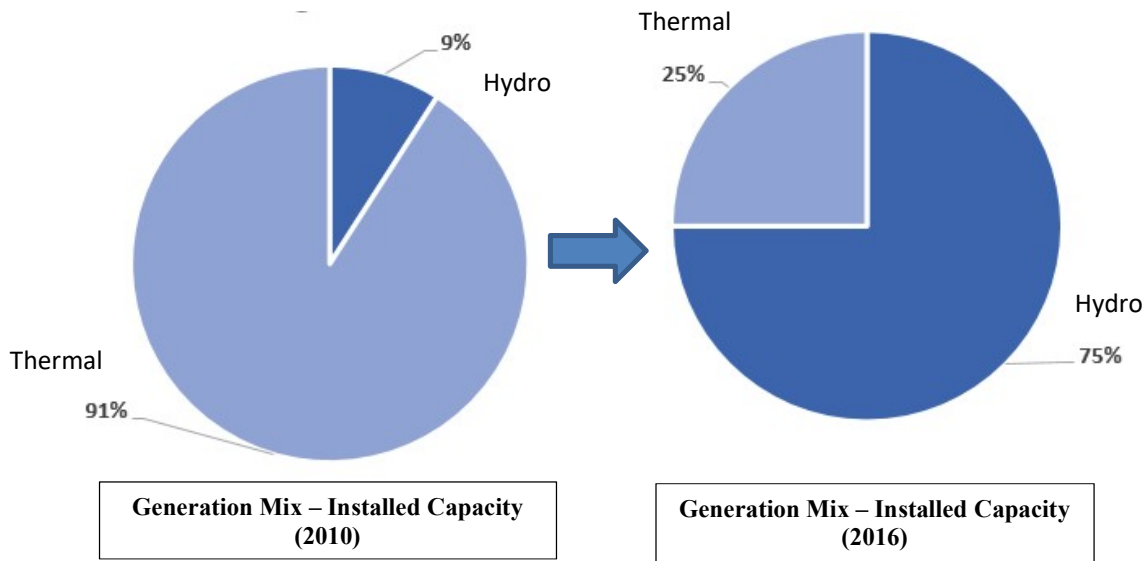
Sarawak Energy grid generation capacity has increased by 254% from 1,300MW in 2011 to more than 4,600MW in 2016 and 75% of the grid generation capacity is coming from renewable energy.

#### SDG # 7

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

#### Sustainability Indicators (GRI)

- EU 1 - Describe the fuels used and the capacity of multi-fuel plants
- EU 10 - Planned Capacity against projected Electricity demand over long term, broken down by energy source



In term of renewable energy generated, it has increased exponentially by +1,186% from 1,248 GWh to 16,046 GWh which also contributed towards global and national agenda in terms of mitigating climate change as well as providing access to affordable energy which is the lowest average tariffs in Malaysia.

### Economic Sustainable

Sarawak Energy contributes to the economic sustainability agenda, where the 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 has increased significantly, which represent high industrial output per GDP<sup>7</sup>.

#### SDG # 7

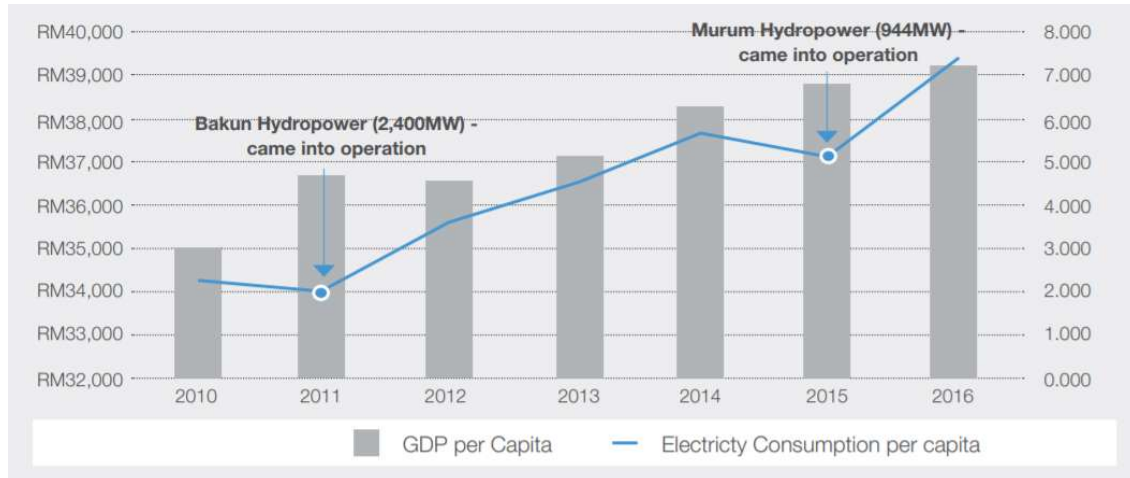
- Sustain per capita economic growth and achieve higher levels of economic productivity through diversification, technological upgrading and innovation

<sup>7</sup> Sarawak Energy Sustainability Report 2016

- Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, innovation and decouple economic growth from environmental degradation

Sustainability Indicators (GRI)

- EC8 - Significant indirect economic impacts, including the extent of impacts
- EN1 - Materials used by weight or volume



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

Table above shows the Electricity Consumption per capita and Sarawak’s Gross Domestic Product (GDP) per capita

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.

**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

**Sustainable Development Goals**

**08 GOOD JOBS AND ECONOMIC GROWTH**

**07 AFFORDABLE AND CLEAN ENERGY**

**Malaysia Sustainable Development Agenda**

- Green Economy
- Energy Security

**Sarawak Sustainable Development Agenda**

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

|  |  |  |   |
|--|--|--|---|
| <p><b>RM1,022,367 (000')</b></p> <p><b>Tender Awarded to Local Companies</b></p> | <p><b>0.237*</b></p> <p><b>tCO<sub>2</sub>/MWh</b></p> <p>Emission Intensity (Main Grid)</p>                 | <p><b>4%</b></p> <p><b>Electricity Sales</b></p> <p>contribute to State GDP</p>    |   |
| <p><b>74%</b></p> <p>Renewable Energy</p>  | <p><b>100%</b></p> <p><b>Local Resources</b></p> <p>for Generation</p>                                       | <p><b>RM175.8 million</b></p> <p>Income taxes paid (net of refunds)</p>            | <p><b>94%</b></p> <p><b>State Electricity</b></p> <p>Coverage</p> |
| <p><b>7.5 MWh</b></p> <p><b>Electricity Consumption</b></p> <p>Per Capita</p>    | <p><b>+ 264%</b></p> <p><b>Increase in Electricity</b></p> <p>Consumption Per Capita as compared to 2011</p> | <p><b>RM4,270 million</b></p> <p><b>Direct Economic</b></p> <p>Value Generated</p> |   |

Linkages between Sustainability Indicators, Business Value and Global Sustainability Agenda



## **Conclusion**

The challenge for electricity supply industry in developing countries today is to be able to meet the future demand for energy at affordable prices to fuel the growth of their respective economies. Globally, we have seeing how resource scarcity and the growing awareness on the benefits of sustainable where renewable, clean and affordable energy is key drive towards sustainably developing.

The key challenge is to understand the real benefits of embracing sustainability to electricity supply industry. Hence, it is very important to ensure that materiality assessment process capture the accurate sustainability issues faced by the industry before comprehensive strategy and plans can be developed to manage and measure the sustainability performance to create long term business value.

## **References**

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## **Speakers CV :**

### **Mohamad Irwan Aman, Senior Sustainability Manager (Sustainability Division)**

Mohamad Irwan Aman is a Senior Sustainability Manager for Sarawak Energy Berhad and his main responsible is to develop and implement sustainability strategies which reflects Sarawak Energy's values and supports for its business plans. He holds a Master of Science in Environmental Engineering and a Master in Business in Business Administration. Prior to joining Sarawak Energy, Irwan was a Consultant in Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. from 2008-2011 managing clean energy investment and financing for Malaysia and Singapore market, and as a Technical Expert in Environmental Engineering for Tenaga Nasional Berhad, the biggest power utility company in Malaysia from 1998-2008.