sarawak energy

The 13th World Islamic Economic Forum
'Disruptive Change: Impact and Challenges'

13TH WIEF SARAWAK MALAYSIA

Hydropower Development and Community Transformation in Sarawak

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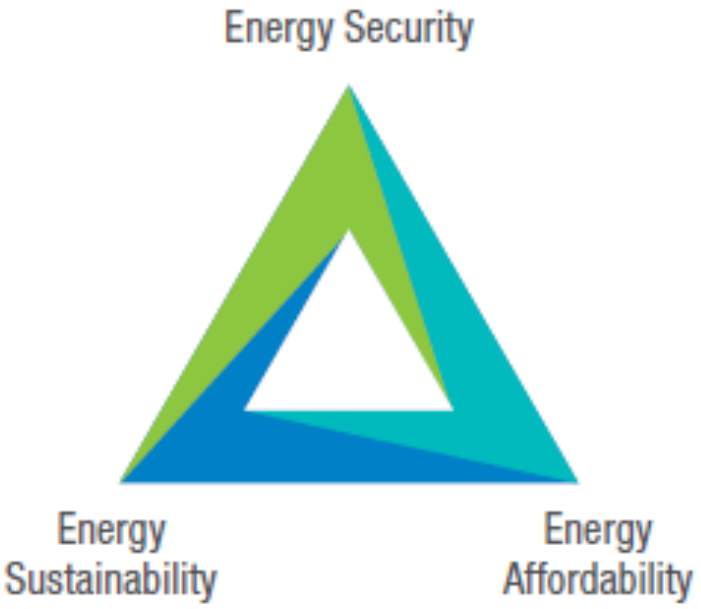
Sarawak Energy Berhad

About Sarawak Energy

- Fully integrated power utility and energy development company, wholly owned by the state of Sarawak
- Generates power through hydro and thermal (coal and gas)
- Serving a population of 2.6 million covering 650,000 domestic, commercial, industrial and export customers through an extensive transmission and distribution network.
- Multidisciplinary workforce of 5,000
- Lowest tariffs in Malaysia and amongst the lowest in South East Asia

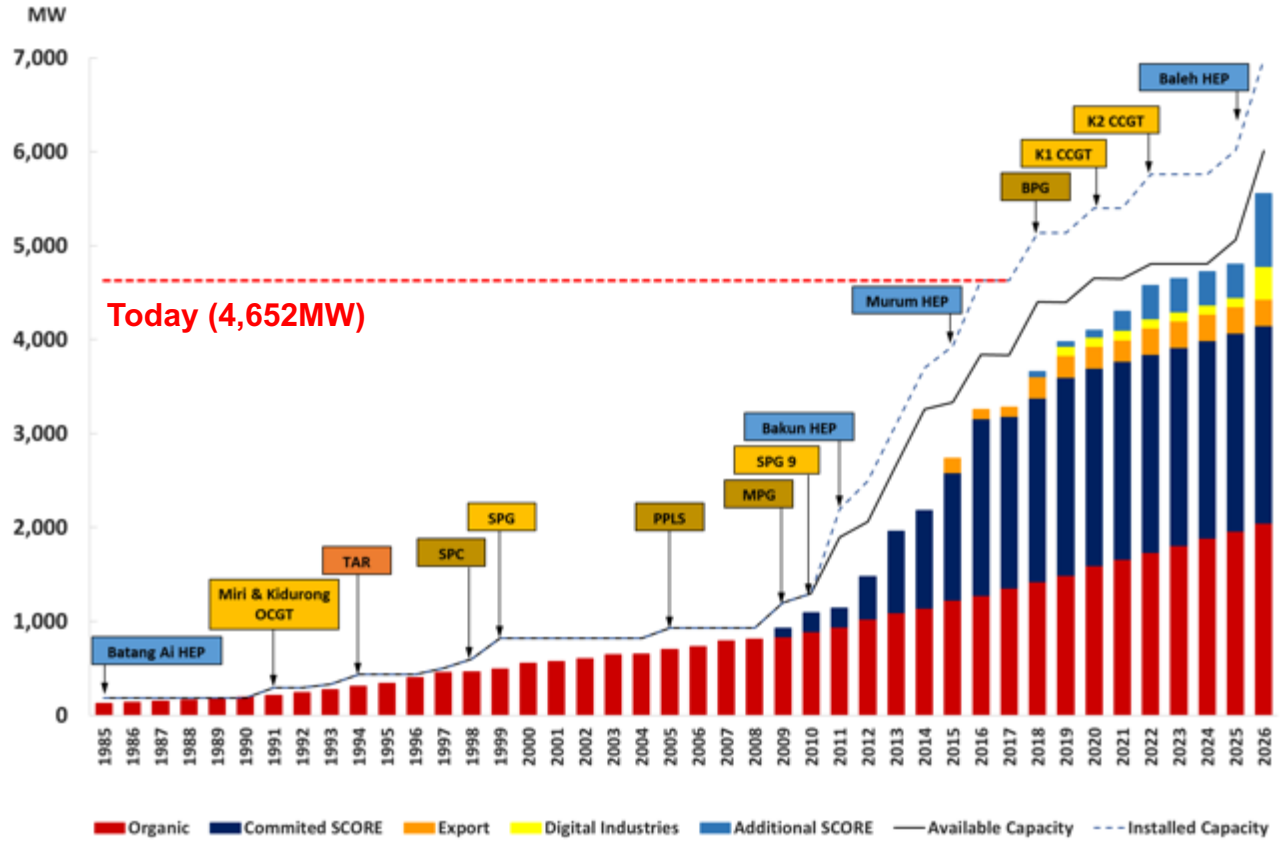
Holistic View of Energy Development



- **Balanced energy development**
  - drives socio economic transformation
  - requires energy reliability, sustainability and affordability

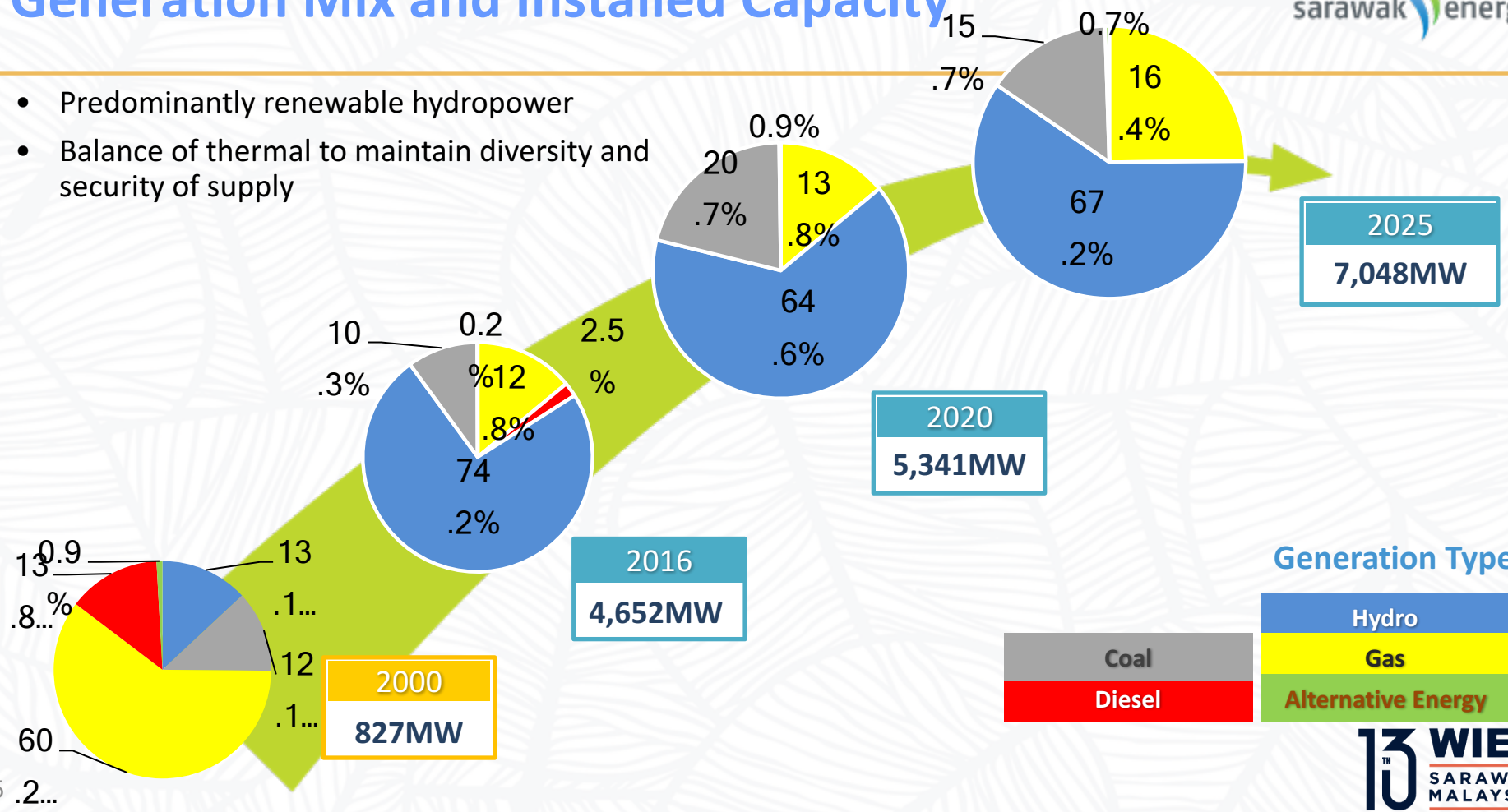
- **Sarawak Energy is focused on**
  - A balanced generation mix for energy **reliability** and **security**
  - **Affordability**, we offer amongst the lowest tariff in the region, through hydropower development
  - **Sustainability** - 75% renewable hydro energy, guided by the international best practices such as IHA Sustainability Assessment Protocol

Expected Demand - Supply Scenario 1985 – 2035



Generation Mix and Installed Capacity

- Predominantly renewable hydropower
- Balance of thermal to maintain diversity and security of supply

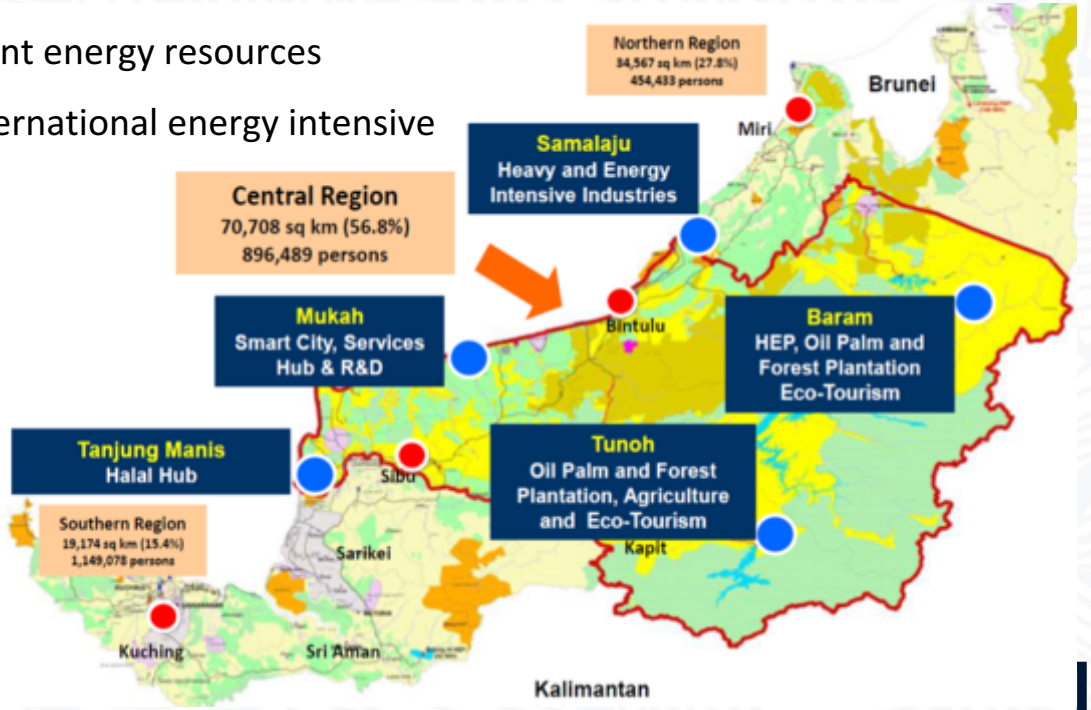


Sarawak Corridor of Renewable Energy (SCORE)

SCORE is a comprehensive economic plan to transform Sarawak into a high income state by:

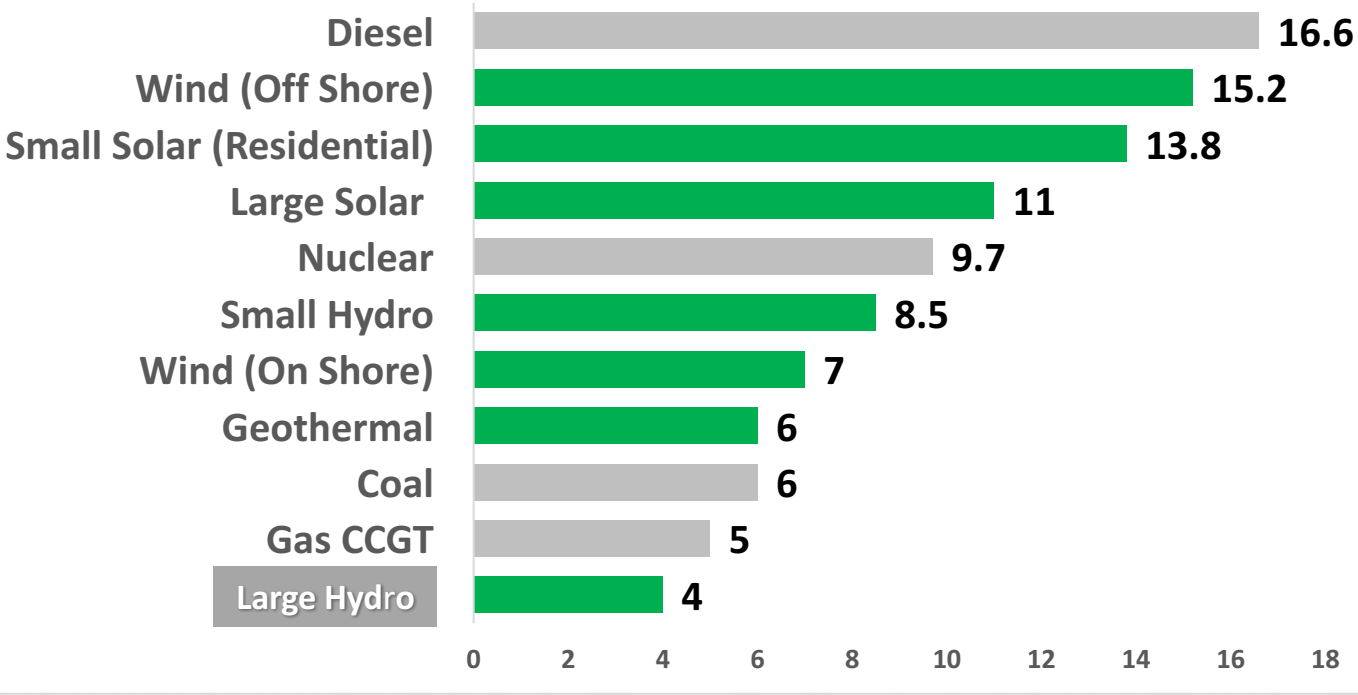
- harnessing Sarawak's abundant energy resources
- attracting and developing international energy intensive industry

Five growth nodes strategically selected to focus investment effort within the corridor



Hydropower for Industry: A Sustainable Competitive Advantage

Levelised Cost of Energy by Technology (USD Cent/kWh)

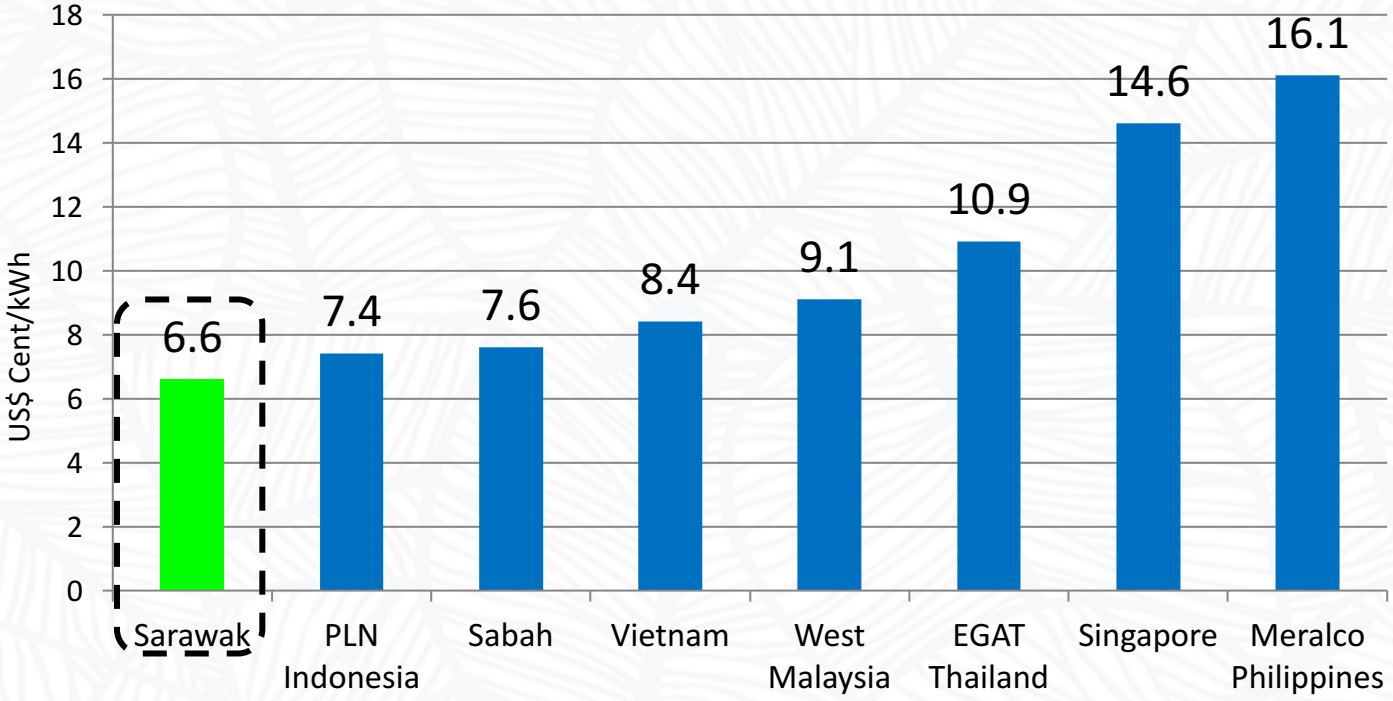


Source:
IRENA Renewables 2017 – Global Status Report,
IEA – Southeast Asia Energy Outlook 2015,
Lazard's LCOE Analysis Version 10 (2016) & Sarawak Energy's Analysis Team;

All values using average except Diesel(USD78/bbl), Small Solar (Residential) and Nuclear using low end estimates

Among the Lowest Tariffs within ASEAN

- *for Residential, Commercial and Small Medium Enterprises*



Source:

- *Malaysia Energy Statistic 2016 except*
- *Vietnam based on KPMG Report 2015*
- *PLN Indonesia based on PLN Annual Report 2015*

Samalaju Industrial Park
Success in Attracting Energy Intensive Investors

Aerial view of Samalaju Industrial Park
Source: Recoda

Realising our Regional Ambition

- Strategic location – located at the centre of APAC
- Competitively priced electricity tariffs
- Ease of export with excellent connectivity
- Reliable, sustainable and renewable of energy supply

Hydropower Development in Sarawak

Good Management of Natural Resources

Bakun Hydroelectric Plant

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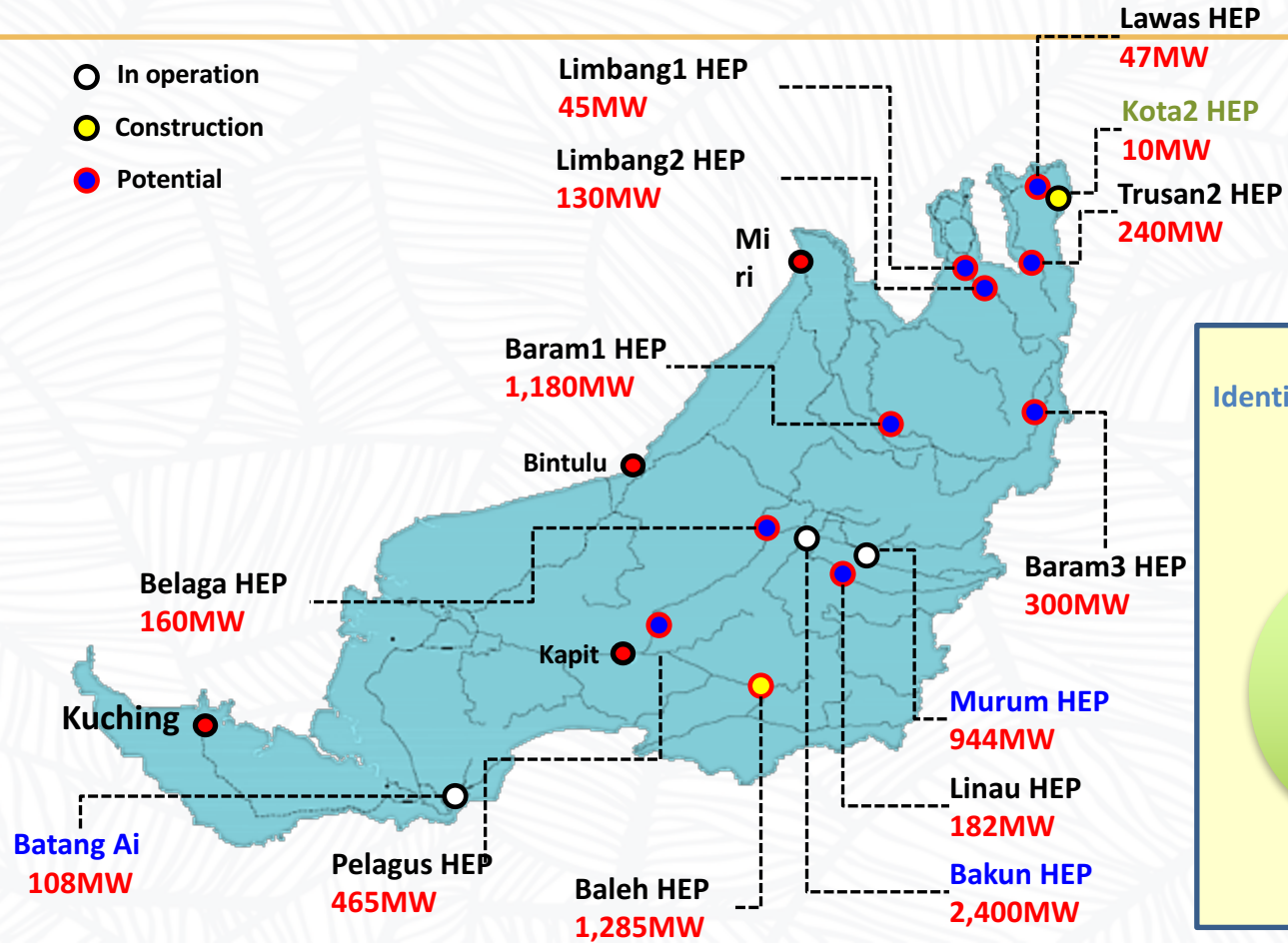
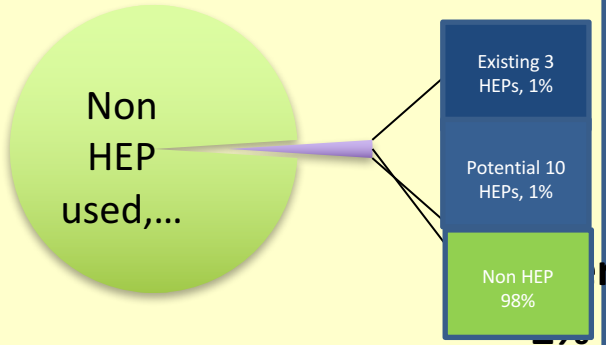
Hydropower Potential in Sarawak



Percentage of Land Use for Identified and Potential Hydro Electric Project (HEP) in Sarawak – ONLY 2%



Hydroelectric Plants (HEPs)

Batang Ai

108 MW Installed Capacity
Commissioned in 1984

Bakun

2,400MW Installed Capacity
Commissioned in 2011

Murum

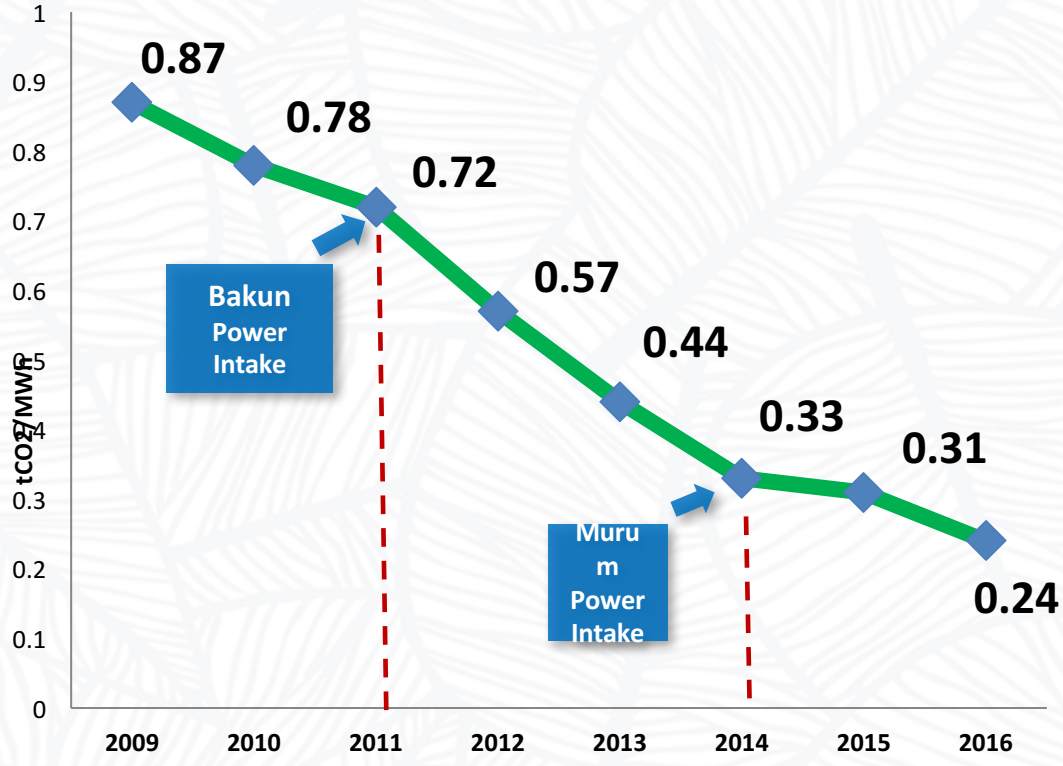
944 MW Installed Capacity
Commissioned in 2014

Baleh

1285MW Installed Capacity
Expected date of commissioning : 2025

Our HEPs are developed according to International Commission on Large Dams (ICOLD) standards and guidelines which ensure they are built and operated safely, efficiently, economically and are environmentally and socially equitable.

Carbon Intensity for Electricity Supply in Sarawak since Major Hydro Development



Carbon Intensity decreased by 72%

Sustainability

Sustainability in Sarawak Energy

“Managing our business to minimise any negative impact of our operations and maximise the positive impact of what we do for our community.”

Sarawak Energy in IHA 2015, Beijing

Sarawak Energy in IHA 2017, Addis Ababa

Partnerships with International Sustainability Associations & Best Practices

Sarawak Energy is a Platinum Member of International Hydropower Association (IHA) we are an elected board member

2017 IHA BoD

Sarawak Energy is a member of UN Global Compact Network Malaysia (2017) and EVP CS is a advisory board member

Sarawak Energy is a Gold Member of the Global Reporting Initiatives since 2016

Alignment with UN Sustainable Development Goals

2014-2016 Sustainability Reports

GRI SDG Mapping Sarawak Energy Berhad Sep 2017 Service

pwc

Sarawak Energy Sustainability Report 2016 has been endorsed by GRI on the accuracy of SDG linkage to relevant indicators and verified by PWC

UN Sustainable Development Goals

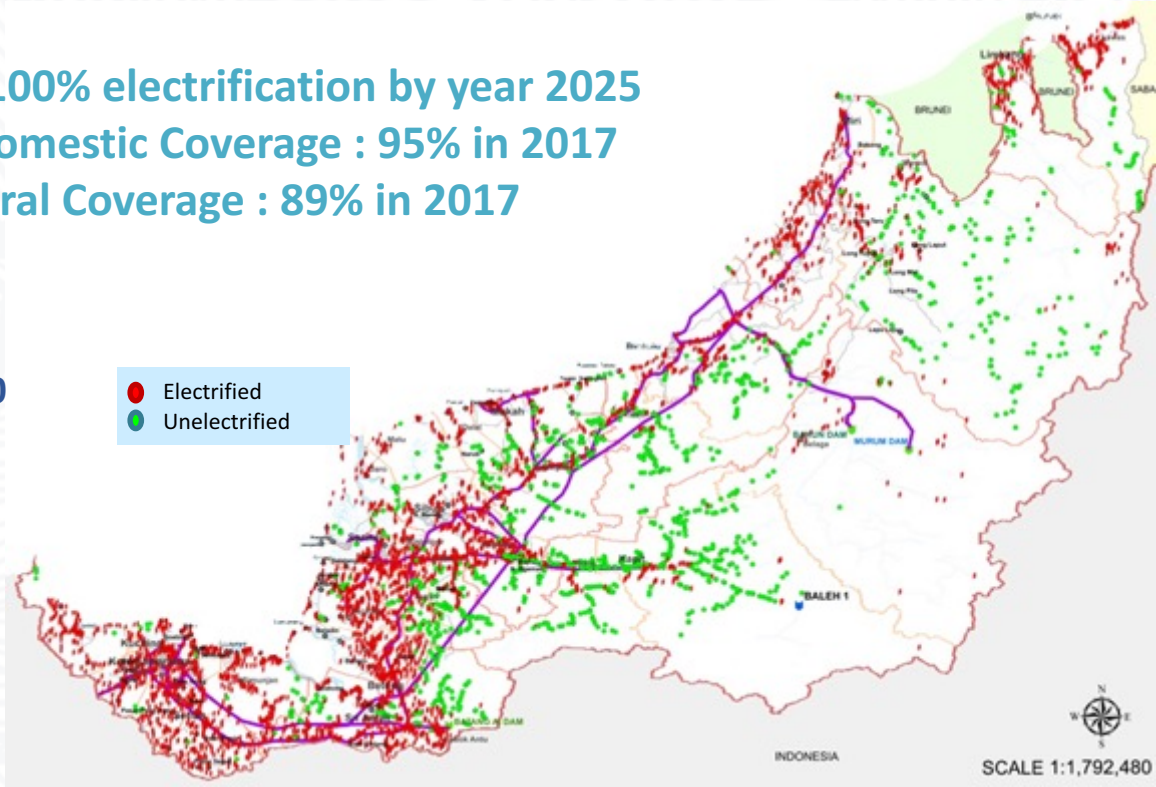
Rural Electrification

SDG Goal No. 7 :
Ensure access to affordable , reliable , sustainable energy for all

Target : 100% electrification by year 2025
State Domestic Coverage : 95% in 2017
Rural Coverage : 89% in 2017

Remaining about **1,600 villages** and **36,000 households** are yet to be electrified.

Development of mini/micro hydro & solar generation systems for remote communities under Sarawak Alternative Rural Electrification Scheme (SARES)



Case Study : Murum HEP Resettlement

Pre Murum HEP

Affected Communities:
Impact of Semi Nomadic Lifestyle

- Low literacy rate – limited access to formal education
- Sub standard housing
- Great distance to proper health services
- No provision of basic infrastructures
- Limited access to markets for alternative business opportunities

Post Murum HEP : Standard longhouses with basic amenities 24/7 electricity and water supply

Access to Education

Schools for Tegulang & Metalun Resettlements

Flagship Murum Penan Literacy Programme

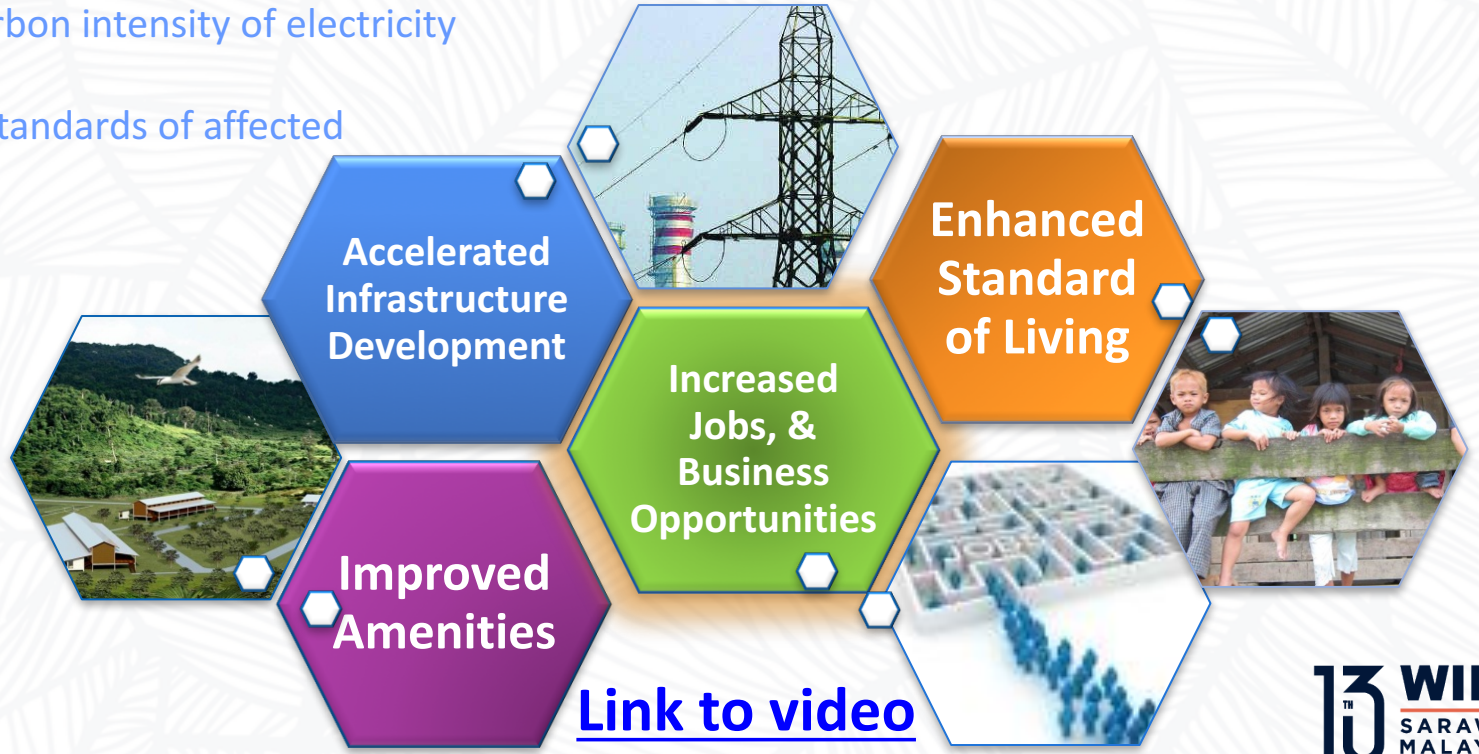
For some 400 Penan adults to close the literacy gaps

Sustainable Livelihood through Handicraft Marketability

Entrepreneurship support by diversifying artisan's craft skills through training and marketing exposure

Positive Disruption through Hydropower Development

- Platform for socio-economic transformation
- Renewable, affordable energy for Sarawakians
- Reduction of carbon intensity of electricity supply
- Uplifting living standards of affected communities



THANK YOU