Sarawak Sustainability Insights

Documented Outcome

8 November 2024

MINISTRY OF ENERGY AND ENVIRONMENTAL SUSTAINABILITY SARAWAK (MEESty)

EY
Building a better working world

Disclaimer

In carrying out our work and preparing this document, Ernst & Young Consulting Sdn Bhd (“EY” or “we”) have worked solely on the instructions of Ministry of Energy and Environmental Sustainability Sarawak (MEESty) for Sarawak Sustainable Insights purposes. Our document may not have considered issues relevant to any third party. Any use by such third party of this document is entirely at their own risk and we shall have no responsibility whatsoever in relation to any such use.

Managing third party risk

This communication is solely for your needs and is not to be relied upon by any other person or entity. Hence, if you wish to disclose copies of this communication to any other person or entity, you must inform them that they may not rely upon our work for any purpose without our written consent.

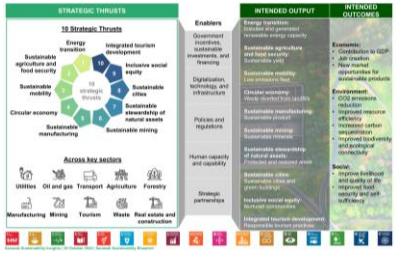
Table of Content

Section 1: Overview

Sarawak Sustainability Insights (SSI) was organized with aim to foster dialogue on sustainability across diverse sectors

Context

- EY was appointed by MEESty to develop Sarawak Sustainability Blueprint.
  - Involves Ministries, Regulators, Government Agencies & Industrial Players;
  - To be completed in December 2024.



- MEESty planned to hold a conference for the Sustainability promotion in Sarawak on 29 October 2024, to promote the blueprint before launch.
- On 8 August and 5 September 2024, EY shared experiences and proposed approach for a Sarawak Sustainability Insights.

Objectives

1 Foster Dialogue
Create a platform for stakeholders from both the public and private sectors to collaborate on driving sustainability initiatives in Sarawak

2 Syndicate the Sarawak Sustainability Blueprint
Gather feedback on the Sarawak Sustainability Blueprint, shaping the future of sustainability in the state

SSI was a full day event was attended by various stakeholders group

Overview

- **Aims to:**
  - Foster dialogue and gather insights on sustainability across various sectors,
  - Promote the upcoming Sarawak Sustainability Blueprint
- **Hosted and supported:**
  - Government of Sarawak
  - Under the purview of MEESty
- **Co-organized by** EY
- **Supported** by PlaceBorneo as professional conference organizer
- **Sponsored by strategic Partners**;
  - PETRONAS
  - PETROS
  - Maybank
  - UEM Edgenta
  - Sarawak Energy
  - Affin Bank
- **Date:** 29 October 2024 9am to 530pm
- **Location:** Pullman Kuching, Sarawak

Program breakdown

Opening	• Welcoming and Introduction • Keynote address and launching by The Right Hon. Premier of Sarawak
Speakers' session	• 2 Plenary Sessions • 1 Fireside Chat • 2 Panel Discussions
Gallery Walk	• Showcase of 10 Strategic Thrusts of Sarawak Sustainability Blueprint draft

Delegates breakdown

Category	Deletages	Organizations
Sarawak Govt / Agencies	113	81
Federal Govt / Agencies	6	5
Industry Players	188	91
Financial Sector	30	7
International	3	1
Universities	37	9
Grand Total	**377**	**194**

SSI was completed successfully and met the intended objectives

Welcome Remarks and Introduction

by YBhg. Dato Sri Dr. Muhammad Abdullah bin Haji Zaidel

Welcome Remarks

by Mathew Nelson

Closing Address

by The Honourable Datuk Dr. Haji Hazland bin Abang Hipni

Keynote, Officiation and Premier Gallery Walk

by The Right Honourable Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari bin Tun Datuk Abang Haji Openg

SSI was completed successfully and met the intended objectives

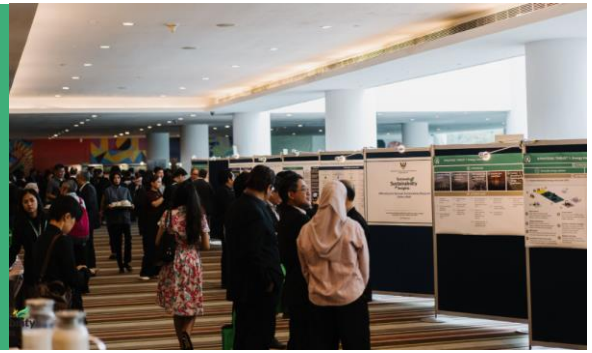
Plenary Session 1: Securing a Safe Future Safe for All

Panel Discussion 1: Sustainable Energy Future for Sarawak

Fireside Chat

Plenary Session 2: Turning Challenges Into Opportunities

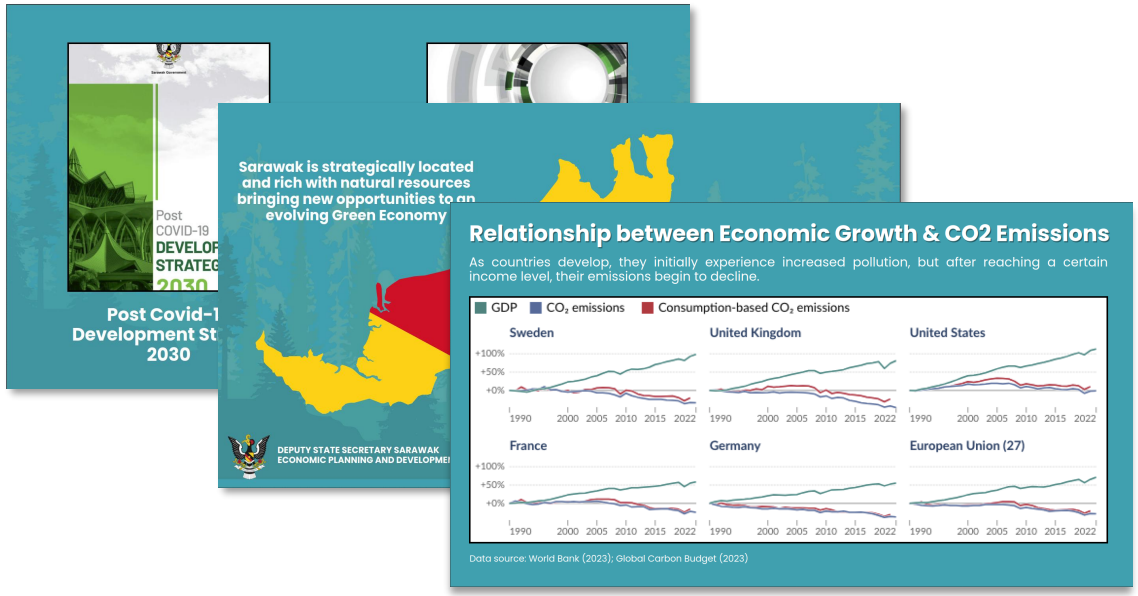
Gallery Walk



Panel Discussion 2: Sustainable Energy Future for Sarawak

Section 2: Welcoming, Introduction & Keynote Address

Deputy State Secretary of Sarawak, welcomed delegates by sharing his key messages: PCDS 2030, the right policies that separate economic growth from pollution



Key Highlights

1. **Aspire to become regional leader in innovation and technology-driven economy:** Innovation will drive economic growth and improve environmental sustainability

2. **Elevate economy to RM282 bil by 2030:** achieving this will require cross-sector innovation and sustainable practices

3. **Grow economy 8% per annum:** This goal reflects a commitment to sustainable economic growth

4. **Leader in green and hydrogen economy:** Sarawak aims to lead in sustainable energy through renewables and green technologies

Mathew Nelson, EY partner, shared about driving sustainability and economic growth and Sarawak's path to a net-zero future

Key Takeaways

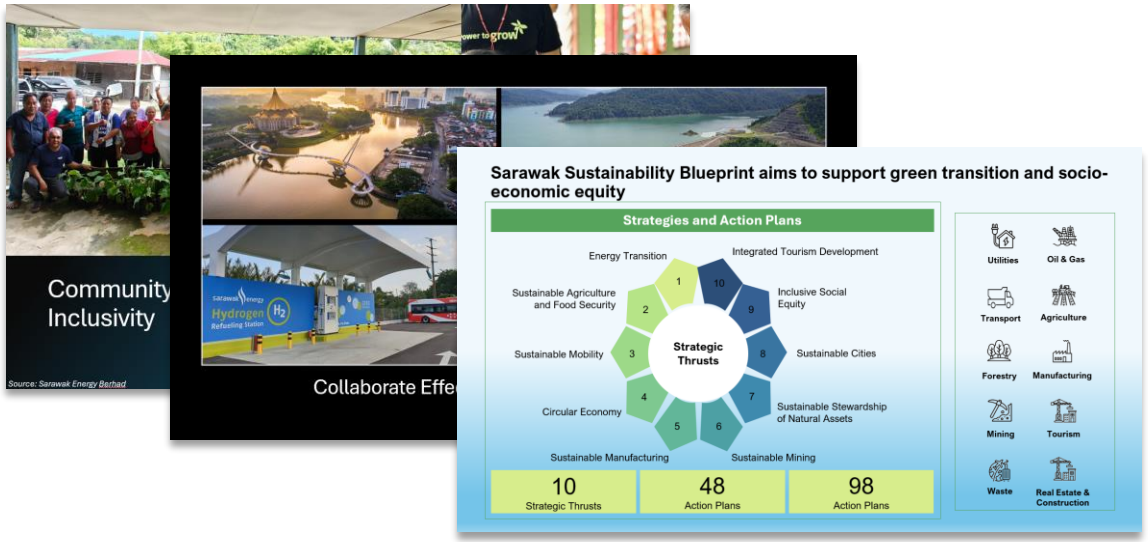
1. The **global push for climate action** is accelerating, with significant **investment in renewable energy** and **advancements in transport and shipping efficiency**

2. **Achieving net zero** will **require diverse approaches**, including renewable energy expansion, carbon capture, green hydrogen, and bio-sequestration technologies

3. **Strategic investment and innovation** will drive economic growth and ensure sustainability for regions like Sarawak

4. **Identifying and leveraging disruptions** is crucial for regions like Sarawak to **drive change and foster economic prosperity**

Premier of Sarawak unveiled 10 Strategic Thrusts of Sarawak Sustainable Blueprint that are pivotal to steer Sarawak towards a sustainable future



Key Takeaways

1. Sarawak demonstrated **unwavering commitment to sustainability** since early 2000s by protected areas and conservation programs, launched of Sarawak Corridor of Renewable Energy (SCORE) and hydropower development

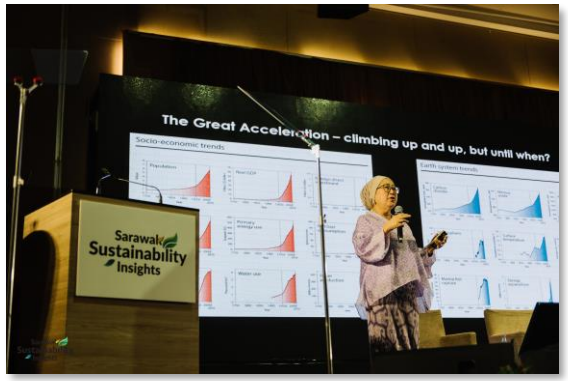
2. Sarawak is **committed to national target** for 2030: Commitment to a 45% reduction in carbon emissions, supported by renewable energy initiatives and advanced technologies like carbon capture.

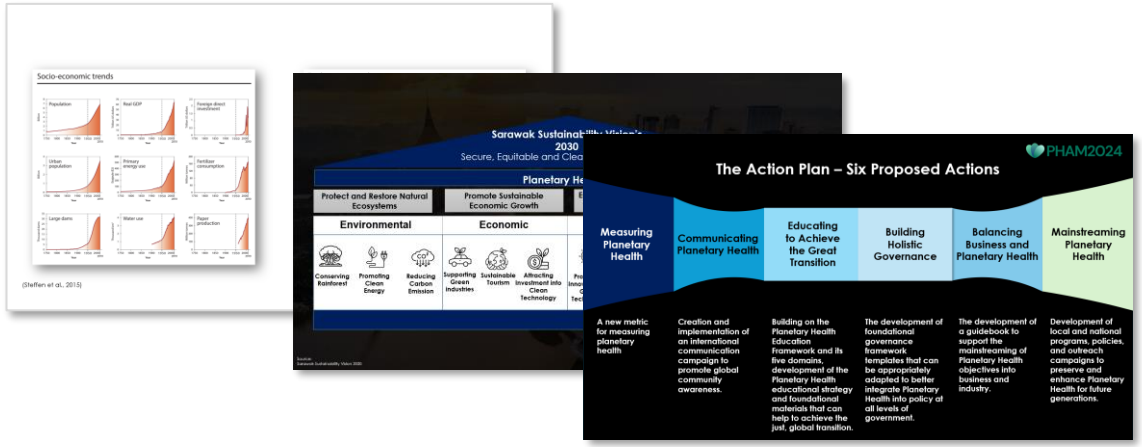
3. **Sarawak Sustainability Blueprint** is a comprehensive roadmap with 10 strategic thrusts, including green mobility, circular economy, sustainable cities, and eco-tourism that are aligned with the 17 UN Sustainable Development Goals.

4. **Call for Collective Action:** Encouragement for collaboration among stakeholders, with a focus on community engagement and inclusivity to achieve sustainability goals.

Section 4: Plenary and Panel Sessions

Tan Sri Dr. Jemilah shared about safeguarding planetary health and protecting our planetary boundaries





Speaker name	Designation
Tan Sri Dr. Jemilah Mahmood	Professor and Director, Sunway Centre for Planetary Health

Key Takeaways for Sarawak Sustainability Blueprint

1. A strategic move towards clean energy position **Sarawak as a renewable energy leader**, reducing dependence on fossil fuels and aligning with global sustainability trends

2. As a **hub for green industries**, Sarawak can **generate employment** and **attract investors** by developing sectors such as sustainable timber, non-timber forest products, and eco-tourism

3. **Indigenous knowledge** is vital for **conservation efforts**, and involving indigenous communities helps ensure that development projects respects cultural heritage and rights

Panelist discussed on critical success factors for sustainability agenda

Speaker name	Designation
Dato' Sri Lee Kim Shin	Minister, Ministry of Transport, Sarawak (MOTS)
Tan Sri Dr. Jemilah Mahmood	Professor and Director, Sunway Centre for Planetary Health
Shahril Azuar Jimin	Group Chief Sustainability Officer, Maybank

Key Takeaways for Sarawak Sustainability Blueprint

1. Effective environmental action, such as that achieved by the Montreal Protocol, requires **clear policies to drive change** and global cooperation. Financial institutions are uniquely positioned to foster systemic changes through their funding policies.

2. **Integrating sustainability into education** is critical for long-term change. Teaching planetary health and developing educational playbooks can raise awareness from a young age.

3. **Respecting indigenous knowledge** by engaging with indigenous communities and learning from traditional practices can enhance sustainability efforts, particularly in conserving biodiversity.

4. **Emphasize the importance of communication** around both successes and challenges in sustainability efforts, fostering public understanding and engagement.

Panelist discussed on the sustainable energy future for Sarawak

Speaker name	Designation
Mathew Nelson (Moderator)	EY Oceania Chief Sustainability Officer
Tan Sri Datuk Amar (Dr) Haji Abdul Aziz Bin Dato Haji Husain	Chairman, Sarawak Economic Development Corporation (SEDC)
Datuk Haji Sharbini Suhaili	Group CEO, Sarawak Energy
Dr. James Foo	Chief Operating Officer, PETROS
Charlotte Wolff-Bye	Vice President & Group Chief Sustainability Officer, PETRONAS

Key Takeaways for Sarawak Sustainability Blueprint

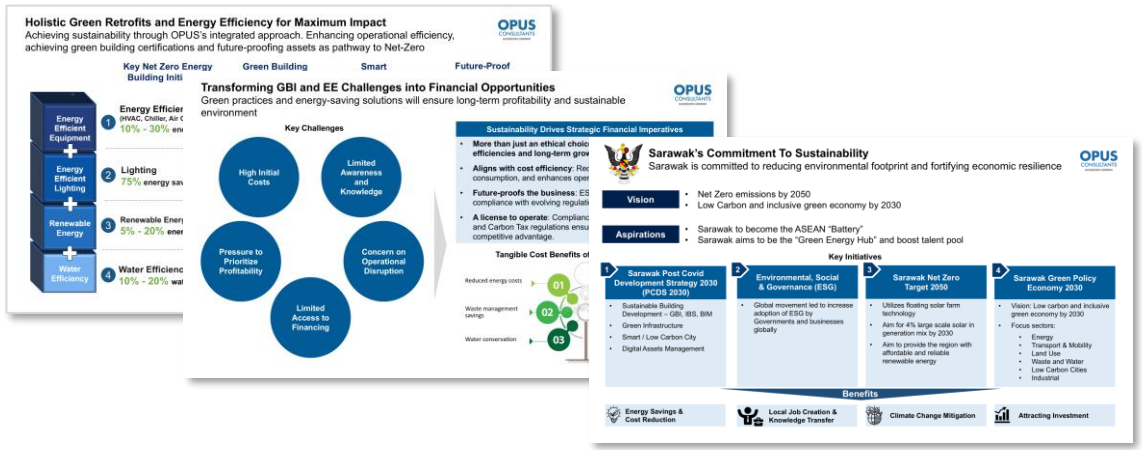
1. **Collaborative approach is essential** in achieving sustainability goals requires strong collaboration across sectors, with both government and private sectors sharing the financial and logistical risks.

2. **Sarawak has the resources and infrastructure** potential to become a leader in sustainable energy within the region. Strategic investments and policy support can make it a model for clean energy development.

3. **Incorporating community perspectives,** emphasizing local involvement and respecting traditional practices is seen as essential to achieving long-term sustainability and maintaining community trust.

4. **Sarawak aims to become a hydrogen hub** by building a full hydrogen value chain from production to transport supporting local and export needs. Investment in infrastructure and technology will be crucial.

Ms. Kavetha speaks about advancing sustainability with energy efficiency and presented on green building solutions for Net Zero Goals



Speaker name	Designation
Kaveta Chelliah	Head of Sustainability Engineering Solutions, UEM Edgenta

Key Takeaways for Sarawak Sustainability Blueprint

1. Sarawak's **roadmap towards a low-carbon economy** includes initiatives in **renewable energy, waste reduction, and sustainable building practices**. Achieving these goals is essential for both environmental and economic growth.
2. **Leveraging local resources for sustainable growth** with emphasis on developing local talent, fostering partnerships, and engaging with local suppliers ensures Sarawak's sustainability initiatives contribute directly to the region's economic and social well-being.
3. **Financing models** that **minimize initial costs**, such as **zero capex** and energy performance contracting, are essential for encouraging more organizations to adopt sustainable practices and meet Sarawak's green building goals.
4. Beyond branding, **green certifications are valuable** for maintaining long-term energy efficiency and reducing operational costs, helping organizations comply with future environmental regulations.

Panelist deliberated about the agenda of driving of sustainable transport and beyond

Speaker name	Designation
Tony Canavan (Moderator)	EY Global Transport Leader, Government and Public Sector
Tessa Teng	Executive Director Hydrogen and Fuel Cell Association of Singapore
Natasha Zulkifli	Leader of the Women in Rail Malaysia Group
Haji Zafrin Bin Zakariah	Project Director, Kuching Urban Transportation System (KUTS)

Key Takeaways for Sarawak Sustainability Blueprint

1. **Hydrogen-powered transport** and **high-speed rail** are both seen as key elements in building a **cleaner**, **more connected** Sarawak, with long-term benefits for the economy and society.

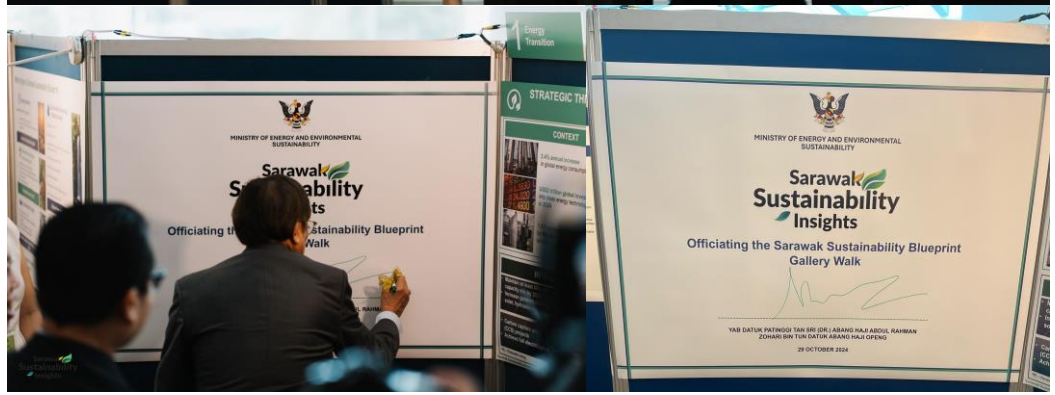
2. **Government, industry, and communities must work together** to fund, plan, and implement transport solutions that align with Sarawak's sustainability goals.

3. To promote EVs, **Sarawak needs to address infrastructure limitations** and manage the cost of renewable electricity, aiming for a balance that appeals to consumers and reduces emissions effectively.

4. **Sustainable transport is a comprehensive endeavor** and building a sustainable transport ecosystem requires integrated planning across multiple modes, addressing technology, urban development, and behavior change for long-lasting impact.

Section 3: Gallery Walk

The Right Hon. Premier of Sarawak reviewed and provided feedback on the 10 Strategic Thrusts of Sarawak Sustainable Blueprint



Key Takeaways for Sarawak Sustainability Blueprint

1. **Geothermal** to be explored as part of Sarawak's strategy to increase renewable energy sources.
2. Sarawak's strategy to scale up hydrogen supply and energy transition:
   - To produce **large scale green hydrogen for Japanese market** under tripartite agreement between SEDC and Eneos and Sumitomo Corp.
   - To include **Methylcyclohexane (MCH)** as part of the hydrogen scale up ecosystem
   - Shift public transport systems to **hydrogen fuel cells** technologies
3. **BREEAM (UK) and MyCrest (CIDB)** to be adopted in green building certification
4. **Building Information Modelling (BIM)** to be included in adoption of advanced construction technology including
5. **Health Tourism** to be part of integrated tourism development strategy

Note: Blueprint feedback has been extended to 17 November 2024. Refer Appendix 2

Section 5: Closing Remarks

Closing address highlights by Deputy Minister of MEESty

Key Takeaways

1. Sarawak is **focused on creating resilient communities** through **cross-sector partnerships**, ensuring development alignment with both economic and environmental goals.

2. Sarawak's **shift towards sustainable energy** is exemplified by **projects under the Sarawak Alternative Renewable Energy** (SARE) program and advancements in hydrogen fuel cell technology, which **support carbon reduction and energy security**.

3. Initiatives like the Kuching Urban Transportation System and the Green Mobility Strategy underscore **Sarawak's dedication to clean public transportation**, especially through **hydrogen-powered solutions**.

4. Sarawak's **environmental policies**, including the Sarawak Climate Change Policy and the Sarawak Environmental Quality Act, aim **to protect biodiversity and promote eco-friendly development**.

Section 6: Media Coverage

Sarawak Sustainable Insights has received wide media coverage

[Sarawak Tribune](#)

[The Star](#)

[Buletin TV3](#)

[TVS [YouTube]](#)

[Sarawak Tribune](#)

[Dayak Daily](#)

[The Borneo Post](#)

[TVS [YouTube]](#)

Key Highlights

1. Premier of Sarawak **introduced the Sarawak Sustainability Blueprint**, which includes **ten strategic thrusts**. The blueprint serves as a **guide to balance economic growth with environmental conservation** across all sectors, aligning with global sustainability standards such as the United Nations' Sustainable Development Goals.

2. The blueprint places a strong emphasis on **transitioning to green energy sources**, with innovative approaches such as exploring Ocean Thermal Energy Conversion (OTEC) and other renewable energy sources to reduce the state's carbon footprint. These initiatives aim **to position Sarawak as a leader in sustainable energy** within the region.

3. The plan underscores the **importance economic and social equity** as well, ensuring that **all communities benefit from the state's development**. It focuses on creating opportunities that will sustain economic growth while protecting Sarawak's natural resources and cultural heritage

Section 7: Next Steps

Next steps

Sarawak Sustainability Blueprint (Draft) feedback extension

1. The blueprint posters have been uploaded on the MEESty website for extended feedback period by stakeholders until 17 November 2024.

   Link: https://meesty.sarawak.gov.my/web/subpage/webpage_view/44

2. The feedback to be analyzed and incorporated for finalization of the Sarawak Sustainability Blueprint.

Section 7: Appendices

List of Appendices

Appendix 1	List of organizations attended
Appendix 2	Gallery Walk posters
Appendix 3	Speakers slides

Appendix 1:
List of organizations attended

List of organizations attended (1 of 3)

Sarawak Government / Agencies (81)

Bintulu Development Authority
Department of the Premier of Sarawak
Dewan Bandaraya Kuching Utara (DBKU)/ The Commission of The City of Kuching North
EPU Sarawak
Forestry Department of Sarawak
Government
Immigration Labour Management Unit (ILMU)
Institut Latihan Perindustrian (ILP)
Invest Sarawak
Jabatan Alam Sekitar Sarawak
Jabatan Bekalan Air Luar Bandar Sarawak (JBALB)
Jabatan Hutan Sarawak
Jabatan Mufti Negeri Sarawak
Jabatan Pengairan dan Saliran (JPS)
Jabatan Pengairan dan Saliran Sarawak
Jabatan Perbendaharaan Negeri Sarawak
Jabatan Perkhidmatan Pembetungan Sarawak
Jabatan Wanita Dan Keluarga Sarawak
JKR Sarawak
Kementerian Belia, Sukan dan Pembangunan Usahawan Sarawak
Kementerian Industri Makanan, Komoditi Dan Pembangunan Wilayah Sarawak
Kementerian Kesihatan Awam, Perumahan Dan Kerajaan Tempatan Sarawak
Kementerian Pengangkutan Sarawak
Kementerian Sumber Asli dan Pembangunan Bandar
Kementerian Utiliti dan Telekomunikasi Sarawak
Land Custody and Development Authority
Lembaga Air Kuching
Lembaga Kemajuan Tanah Sarawak (SLDB)
Lembaga Penyatuan Dan Pemulihan Tanah Sarawak
Lembaga Sumber Asli Dan Alam Sekitar (NREB)
Majlis Adat Istiadat
Majlis Bandaraya Kuching Selatan
Majlis Daerah Bau
Majlis Daerah Kanowit
Majlis Daerah Matu & Daro
Majlis Daerah Simunjan
Majlis Perbandaran Kota Samarahan
Majlis Perbandaran Padawan
Menteri Di JPS (Hal Ehwal Korporat Dan Unit Komunikasi Awam Sarawak)
Menteri Infrastruktur Dan Pembangunan Pelabuhan Sarawak (Pembangunan Infrastruktur)
Menteri Kesihatan Awam, Perumahan Dan Kerajaan Tempatan Sarawak (Kerajaan Tempatan)
Menteri Pengangkutan Sarawak
Menteri Tenaga Dan Kelestarian Alam Sekitar Sarawak
Ministry Of Food Industry, Commodity And Regional Development Sarawak
Ministry of International Trade, Industry and Investment Sarawak
Ministry of Natural Resources and Urban Development (MUDeNR)
Ministry of Public Health, Housing and Local Government
Ministry of Tourism, Creative Industry and Performing Arts Sarawak (MTCP)
Ministry of Utility & Telecommunication
Miri City Council
Miri Port Authority
Natural Resources and Environment Board (NREB)
Padawan Municipal Council (MPP)
Pejabat Residen Serian
Pemangku Setiausaha Perbandaran Padawan
Premier Office
Pustaka Negeri Sarawak
Regional Corridor Development Authority (RECODA)
Residen Bahagian Kapit
Residen Bahagian Mukah
Residen Serian
Saradise Innovation Sdn Bhd
Sarawak Biodiversity Centre
Sarawak Economic Development Corporation (SEDC)
Sarawak Electrical Association
Sarawak Forestry Corporation (SFC)
Sarawak Land Consolidation and Rehabilitation Authority (SALCRA)
Sarawak Research and Development Council (SRDC)
Sarawak Rivers Board
Sarawak Tourism Board (STB)
Sarawak Tropical Peat Research Institute
Sibu Water Board
State Attorney General's Chambers
Tanah Dan Servei Sarawak
Timbalan Peguam Besar Negeri
Timbalan Speaker Dun
Unit Audit Dalam, Jabatan Premier Sarawak
Unit Digitalisasi Perkhidmatan Awam (SCSDU), JPS
Unit Hal Ehwal Agama-Agama Lain (UNIFOR), Jabatan Premier Sarawak
Unit Keselamatan Dan Penguatkuasaan Sarawak (UKPN), JPS
Veterinar Sarawak

List of organizations attended (2 of 3)

Federal Government / Agencies (5)

Forestry Department Peninsular Malaysia
Ministry of Health (MOH)
Ministry of Housing and Local Government (KPKT)
Ministry of Natural Resources and Environmental Sustainability of Malaysia (NRES)
Ministry of Tourism, Arts and Culture (MOTAC)

Financial Sector (7)

Affin Bank Berhad
Affin Hwang Investment Bank Berhad
Development Bank of Sarawak Berhad (DBOS)
Hong Leong Bank Berhad
Malayan Banking Berhad (Maybank)
OCBC Bank (Malaysia) Berhad (OCBC)
United Overseas Bank (Malaysia) Bhd (UOB)

International Body (1)

WWF-Malaysia

Industrial Players (91)

Age Laboratory Sdn Bhd
Albar Oil
Andamara Energy Sdn Bhd
Asean Bintulu Fertilizer Sdn Bhd
Axcel Asia Sdn Bhd
Borneo Thunder Sdn Bhd
Borsa Food Sdn Bhd (YourgutBB Kuching)
BP Auction Strategy Sdn Bhd/ BPG Realty Sdn Bhd
Breakfast Byte Sdn Bhd (AI Company)
Bureau Veritas (M) Sdn Bhd
Bureau Veritas (Sarawak) Sdn Bhd
Bursa Malaysia Berhad
Business Events Sarawak/ Sarawak Convention Bureau
Cahya Mata Sarawak Berhad
CEIG (M) Sdn Bhd
Centre of Technical Excellence (CENTEXS)
Chemsain Konsultant Sdn Bhd
Confexhub Group
DHL Global Forwarding (Malaysia) Sdn Bhd
East Asia Palm Product Sdn Bhd
Edra Resources Sdn Bhd
Elizabeth Voong and Company (AF00223)
Envisar Sdn Bhd
Ernst & Young
ESG Malaysia
Faradale Media-M Sdn Bhd
Federation of Malaysian Manufacturers (Sarawak Branch)
Global Telecommunications Sdn Bhd
HighChem Company Ltd
Housing Development Corporation
Huawei Technologies (Malaysia) Sdn Bhd
IMetal (M) Sdn Bhd
Independent
Intertek Certification International Sdn Bhd
Jaya Tiasa Holdings Berhad
JX Nippon Oil & Gas Exploration (Malaysia) Limited
Kemuncak Lanai Sdn Bhd
Kim Hin Industry Berhad
Kumpulan Sarawak Energy
LCDA Holdings Sdn Bhd
Longi Malaysia Sdn Bhd
M&M Nasbal Conundrum
Malaysia Airports Holdings Berhad
Malaysia Forest Fund (MFF)
Marubeni Malaysia Sdn Bhd
Maxeon Technologies Sdn Bhd
Metasonic
Micron Power Company
Mitsubishi Heavy Industries Ltd
Mitsubishi Power Asia Pacific Pte Ltd
MSM Nasbal Conundrum
NAIM Holdings Berhad
Ombak Energy Sdn Bhd
OPUS Consultants
OPUS Energy Sdn Bhd
Opus International (M) Berhad
Organization for Addiction Prevention Treatment & Recovery (OAPTAR)

List of organizations attended (3 of 3)

Industrial Players (91)

PETRONAS
PETRONAS Carigali Sdn Bhd
PETRONAS Sarawak
Phytotech Bioscience Malaysia
PJ Energy Services (M) Sdn Bhd
Pullman Kuching
PwC
Regas EV Auto
Regenerative X Association
Saradise
Sarawak CSO-SDG Alliance
Sarawak Development Institute (SDI)
Sarawak Energy Berhad
Sarawak Information Systems Sdn Bhd
Sarawak Manufacturers' Association
Sarawak Metro Sdn Bhd
Sarawak Multimedia Authority (SMA)
Sarawak Shell Berhad
Sarawak Timber Association (STA)
Sarawak Timber Industry Development Corporations
SCCI/ SBF
SEDC Energy Sdn Bhd
Sejingkat Power Corporation Sdn Bhd
SGS (Malaysia) Sdn Bhd
South East Carbon Sdn Bhd
Subject Matter Company
Sundrop Fruit Juices Sdn Bhd
Superb Cleaning Services Company
Swinburne Engineering Master Students
Syarikat Rimujaya
Thian Sheng Automobile & Services Sdn Bhd
Vector Infotech Sdn Bhd
ZHA Environmental Sdn Bhd

Universities (9)

Institute of Ecosystem Science Borneo, UPM Sarawak
Rektor Universiti Teknologi Mara Cawangan Sarawak (UiTM)
Sarawak Skills Development Centre (Sarawak Skills)
Sunway University
UCSI University
UKM Pakarunding Sdn Bhd
Universiti Malaysia Sarawak (UNIMAS)
Universiti Putra Malaysia Sarawak
Universiti Teknologi Malaysia (UTM)

Appendix 2: Gallery Walk posters

Gallery Walk posters link

https://meesty.sarawak.gov.my/web/subpage/webpage_view/44

Appendix 3: Speakers slides

Dato Sri Dr Muhammad Abdullah bin Hj Zaidel

Deputy State Secretary Sarawak

DEPUTY STATE SECRETARY SARAWAK
ECONOMIC PLANNING AND DEVELOPMENT

The Right Policies can Separate Economic Growth from Pollution - Sarawak PCDS 2030

For **Sarawak Sustainability Insights**

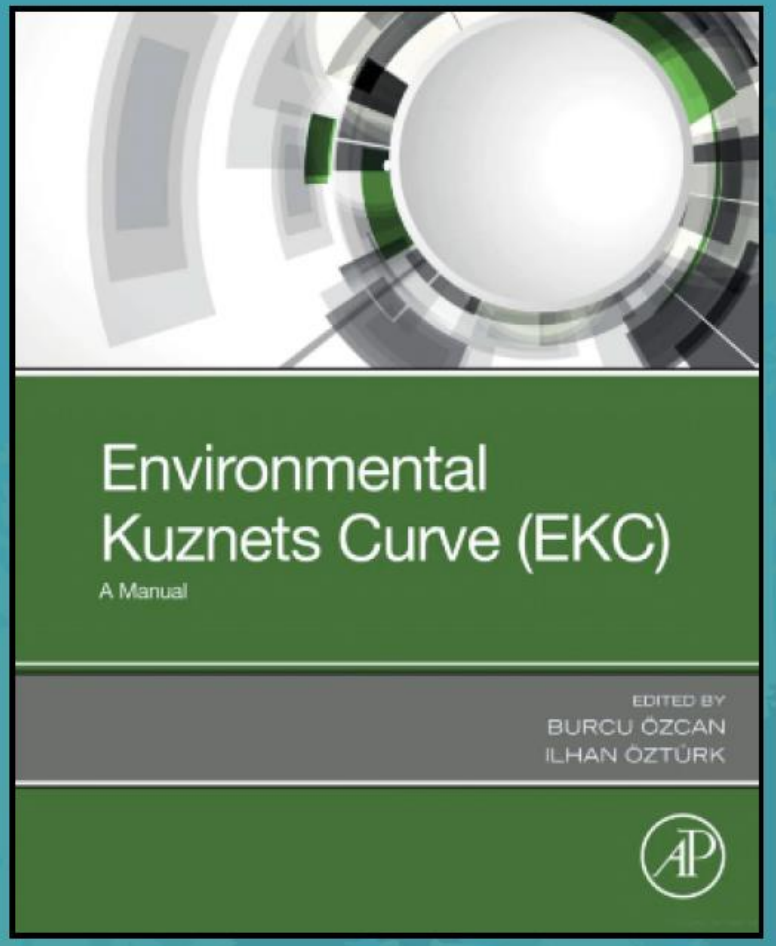
By : Dato Sri Dr Muhammad Abdullah bin Hj Zaidel

YAB Premier of Sarawak

*"by 2030, Sarawak will be a thriving society driven by **Data and Innovation** where everyone enjoys **Economic Prosperity, Social Inclusivity and Sustainable Environment**."*

Post Covid-19 Development Stratey 2030

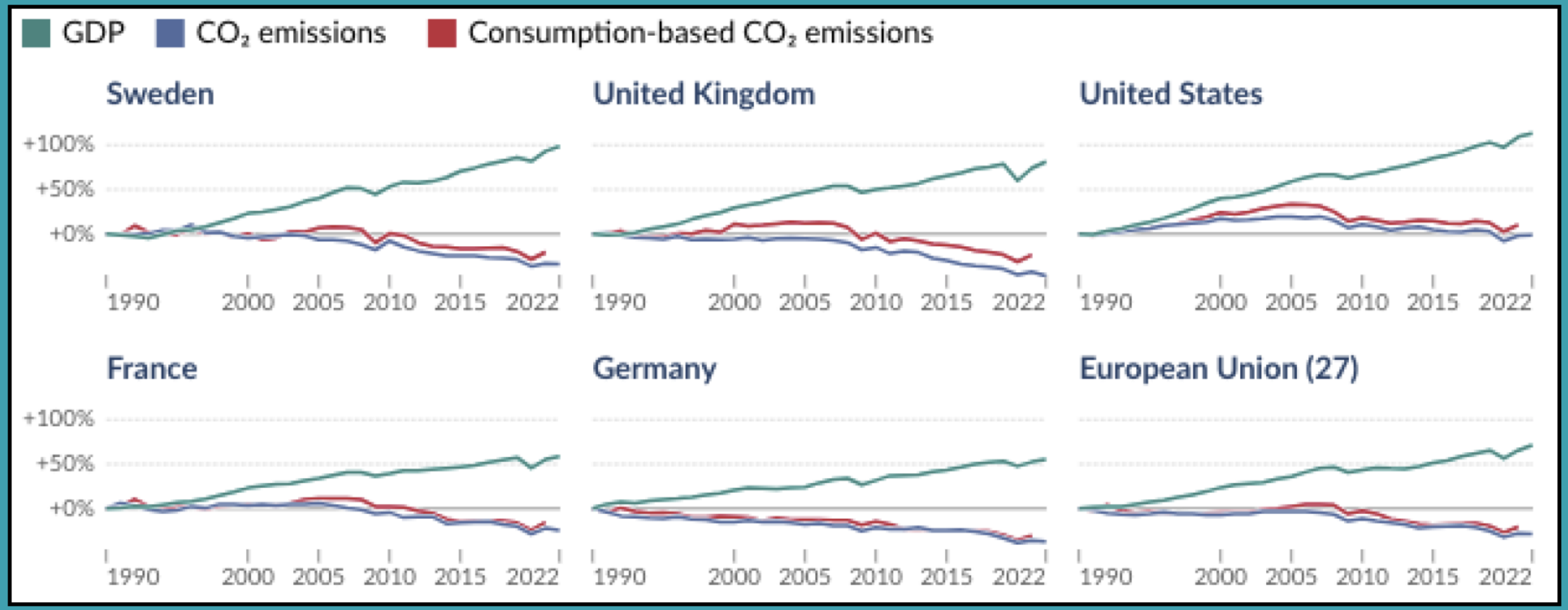
=



ADB - Environmental Kuznets Curve Hypothesis

Relationship between Economic Growth & CO2 Emissions

As countries develop, they initially experience increased pollution, but after reaching a certain income level, their emissions begin to decline.



Data source: World Bank (2023); Global Carbon Budget (2023)

Sarawak is strategically located and rich with natural resources bringing new opportunities to an evolving Green Economy

Close proximity to develop & growing economies:

DEPUTY STATE SECRETARY SARAWAK
ECONOMIC PLANNING AND DEVELOPMENT

The Global Sustainability Landscape is shaped by Five Key Forces

Key forces

1. **Economic uncertainty and geopolitical risks**

2. **Demographic shift**

3. **Sustainability imperative**

4. **Technology shift and digital innovation**

5. **Evolving labor market**

Changing sustainability landscape

- Rising investment in green economy
- Implementation of carbon pricing mechanisms
- Heavy investments in climate-resilient infrastructure
- Growth in sustainable finance and investments
- Investments in digital literacy and innovation hubs
- Increasing focus on future-ready skills such as digital and sustainability

Implications

- **Substantial investment and budget allocation** for green initiatives and resilient infrastructure
- **Higher operating and compliance cost** for non-green industries
- **Higher costs** for green products and services
- **Adaptation to new skills**

ALIGNMENT WITH CURRENT POLICIES IS KEY IN NAVIGATING SARAWAK'S MOVE TOWARDS CARBON NEUTRALITY

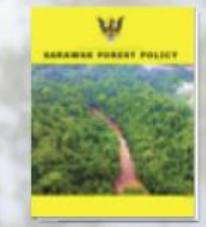
~~Alignment with~~ Sarawak's policies and plans

Existing policies and plans

PCDS 2030

Green Economy Policy

Digital Economy Blueprint 2030



Sarawak Forest Policy 2019

FDS Strategic Plan 2021-2025

Environment (Reduction Of GHG Emission) Ordinance, 2023

Kuching Smart City Masterplan

Sarawak Mining and Quarrying Economic Development Masterplan 2035

Ongoing developments

- Sarawak Integrated Transport Masterplan
- Climate Change Policy
- Net Zero Strategy and Carbon Plan
- Energy Transition Policy
- Sarawak Blue Economy Policy
- Environmental Policy

Sustainability blueprint focus areas

Accelerate transition towards low carbon and high growth economy

- Transition Sarawak's economy from carbon-intensive to sustainable sectors
- Reduce environmental impact

Protect and enhance natural assets

- Preserve and restore Sarawak's ecosystems
- Safeguard ecological balance

Strengthen social inclusiveness, wellbeing, and safeguard security

- Promote an equitable society
- Ensure inclusive growth for all

Sarawak Sustainability Blueprint Framework

Purpose

To lead Sarawak's green economy transformation and build a sustainable, prosperous, and resilient future

Goals

- Economic growth and prosperity
- Environmental stewardship
- Healthy, resilient and inclusive community

Strategic thrusts

- Strategies
- Action plans

Sector coverage

Utilities	Oil and gas	Transport	Agriculture	Forestry
Manufacturing	Mining	Tourism	Waste	Real estate and construction

Enablers

- Government incentives, sustainable investments, and financing
- Digitalization, technology, and infrastructure
- Policy and regulation
- Human capacity and capability
- Strategic partnership

SARAWAK SUSTAINABIITY BLUEPRINT AIMS TO GUIDE SARAWAK'S SUSTAINABILITY EFFORTS

10 Strategic Thrusts

Across key sectors

Utilities | Oil and gas | Transport | Agriculture | Forestry

Manufacturing | Mining | Tourism | Waste | Real estate and construction

Enablers

- Government incentives, sustainable investments, and financing
- Digitalization, technology, and infrastructure
- Policies and regulations
- Human capacity and capability
- Strategic partnerships

Energy transition:
Installed and generated renewable energy capacity

Sustainable agriculture and food security:
Sustainable yield

Sustainable mobility:
Low emissions fleet

Circular economy:
Waste diverted from landfills

Sustainable manufacturing:
Sustainable product

Sustainable mining:
Sustainable minerals

Sustainable stewardship of natural assets:
Protected and restored areas

Sustainable cities:
Sustainable cities and green buildings

Inclusive social equity:
Nurtured communities

Integrated tourism development:
Responsible tourism practices

Economic:
- Contribution to GDP
- Job creation
- New market opportunities for sustainable products

Environment:
- CO_2 emissions reduction
- Improved resource efficiency
- Increased carbon sequestration
- Improved biodiversity and ecological connectivity

Social:
- Improve livelihood and quality of life
- Improved food security and self-sufficiency

DEPUTY STATE SECRETARY SARAWAK
ECONOMIC PLANNING AND DEVELOPMENT

Thank You.

Tan Sri Dr. Jemilah Mahmood

Sunway Centre for Planetary Health

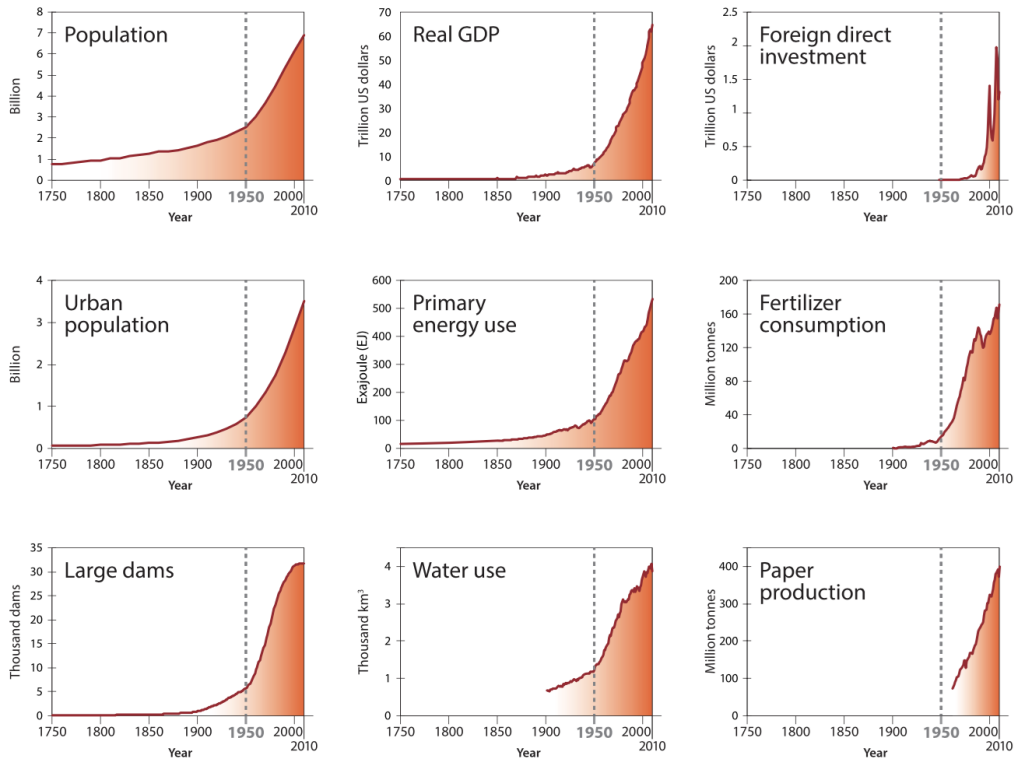
SUNWAY CENTRE FOR PLANETARY HEALTH

SUNWAY UNIVERSITY
A CLASS ABOVE

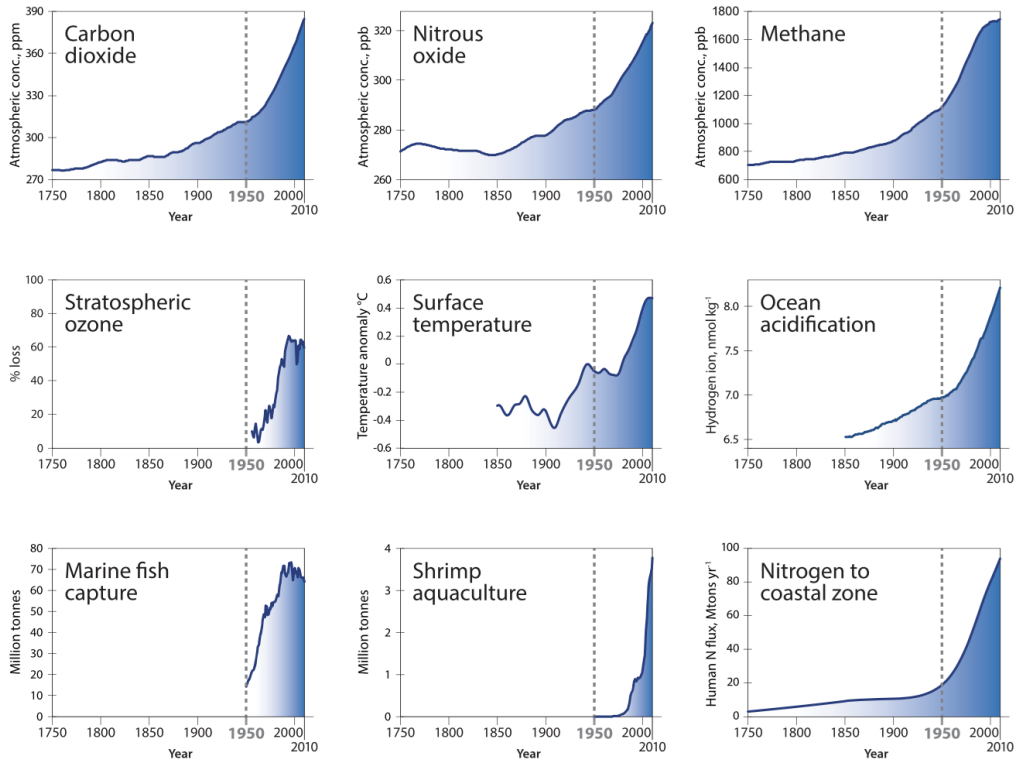
Securing a Future Safe for All

Jemilah Mahmood
29 October 2024

Socio-economic trends

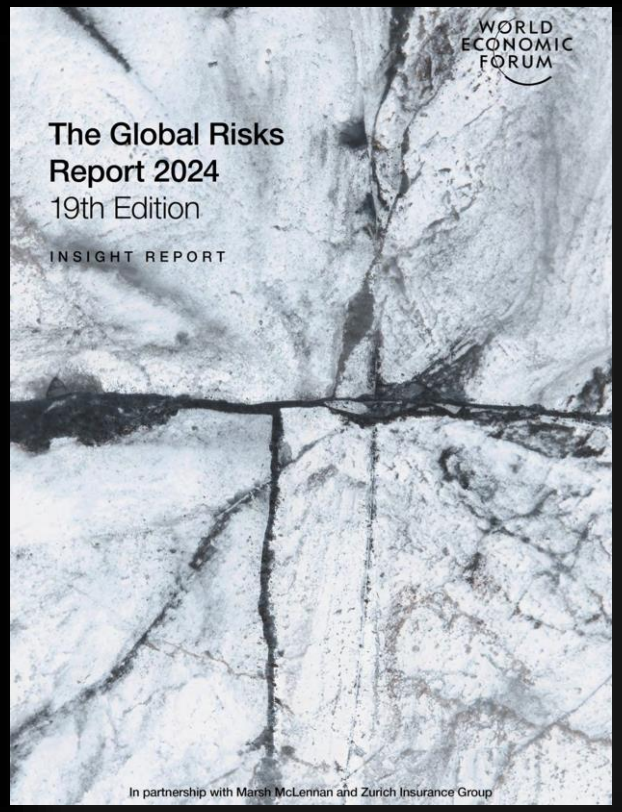


Earth system trends



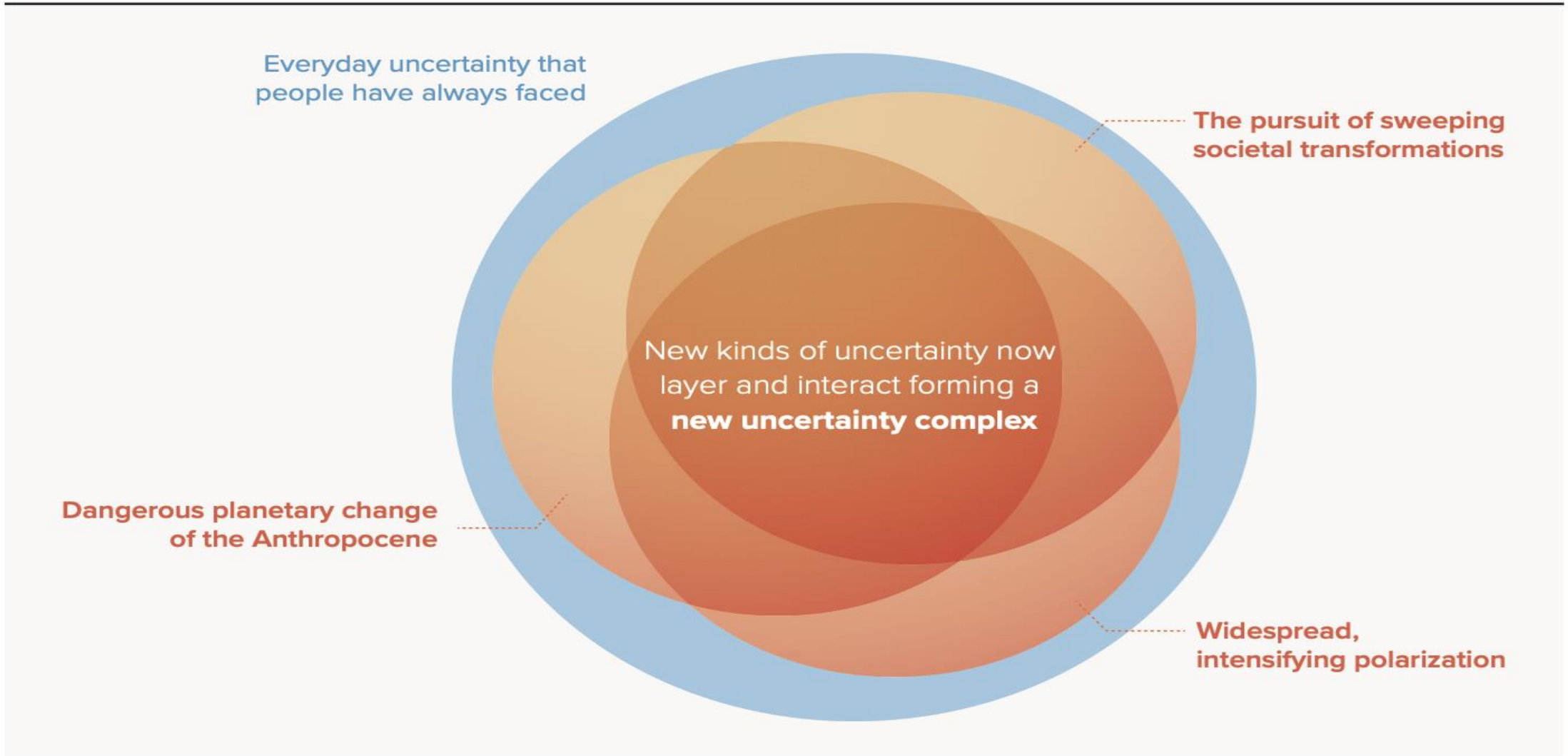
(Steffen et al., 2015)

Environmental risks are dominating the global risk landscape.



Risk categories	2 years	10 years
Economic		
Environmental		
Geopolitical		
Societal		
Technological		
1st	Misinformation and disinformation	Extreme weather events
2nd	Extreme weather events	Critical change to Earth systems
3rd	Societal polarization	Biodiversity loss and ecosystem collapse
4th	Cyber insecurity	Natural resource shortages
5th	Interstate armed conflict	Misinformation and disinformation
6th	Lack of economic opportunity	Adverse outcomes of AI technologies
7th	Inflation	Involuntary migration
8th	Involuntary migration	Cyber insecurity
9th	Economic downturn	Societal polarization
10th	Pollution	Pollution

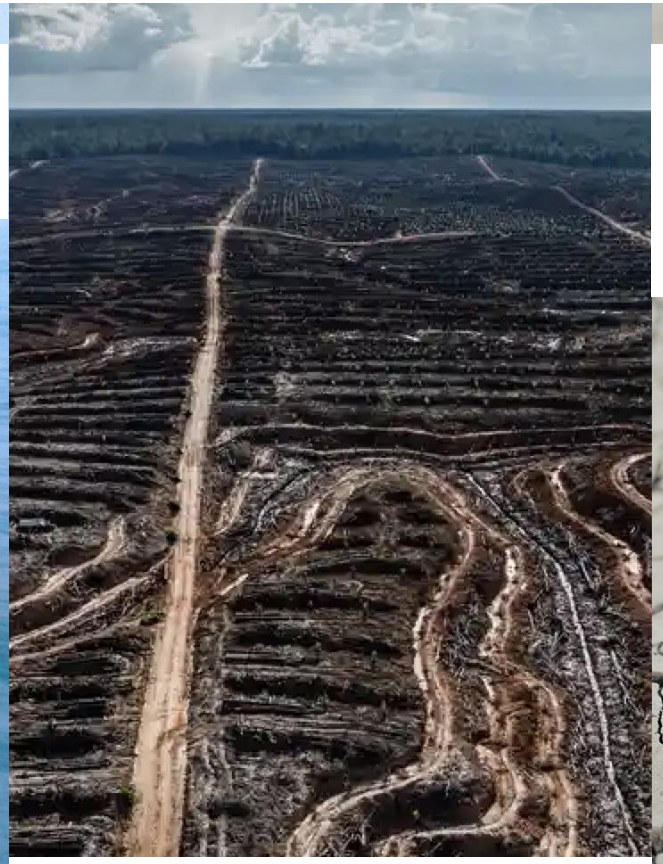
Figure 1 **A new uncertainty complex is emerging**



Source: Human Development Report Office.

Unchecked climate-change related impacts could cause 250,000 more deaths per year

By 2050, over 40% of world's population could be under severe water stress



Biodiversity loss threatens humanity

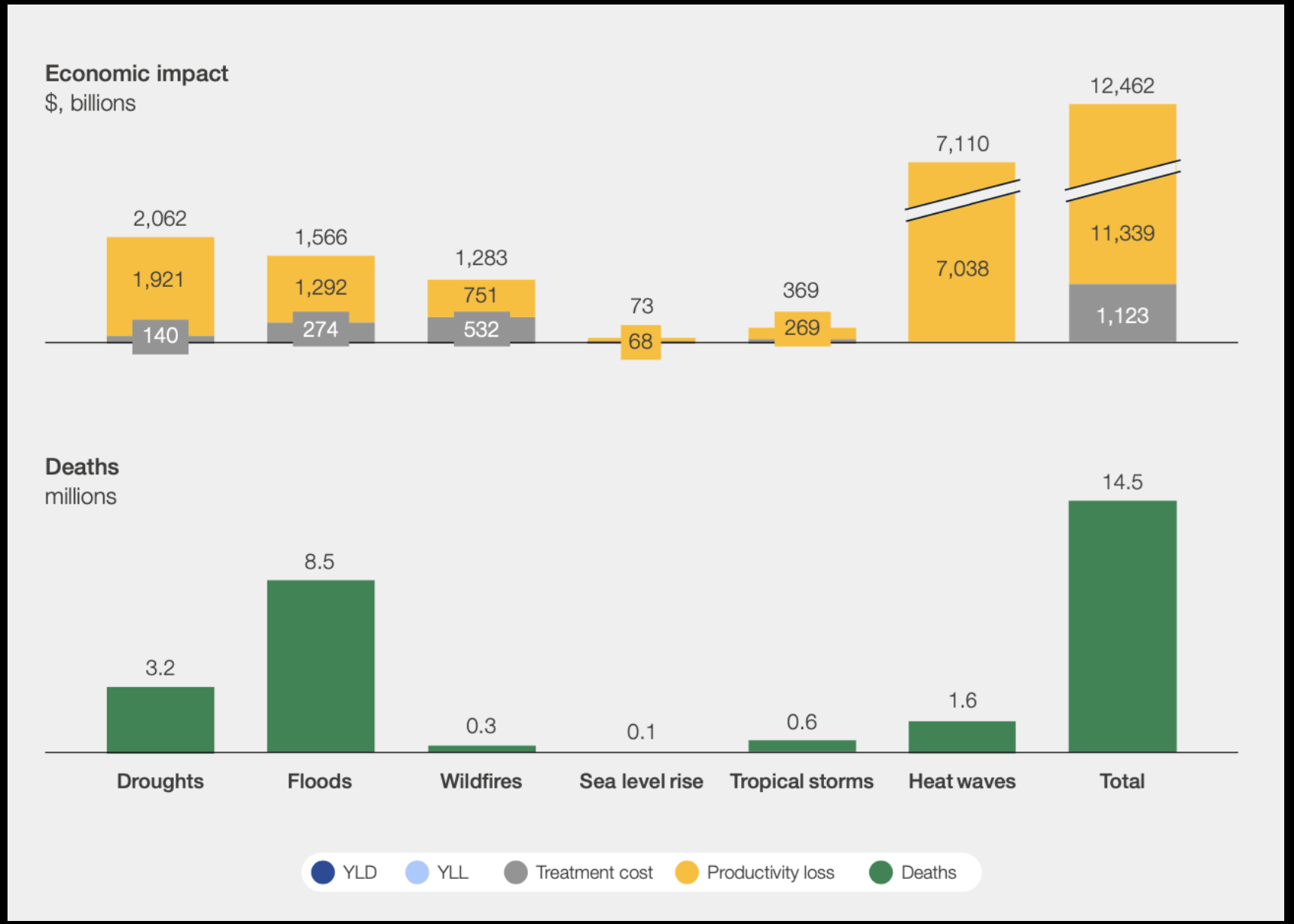
Soil degradation leading to loss of 1-2 million hectares of agricultural land per year

Millions at risk of under-nutrition

Over 150 million at risk for climate-sensitive malaria

10 million children stunted from climate change-related impacts

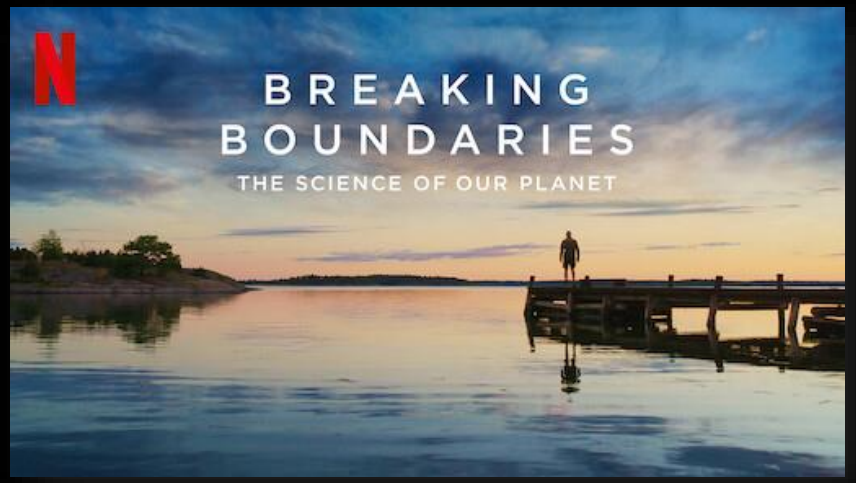
$30 billion health costs due to climate change

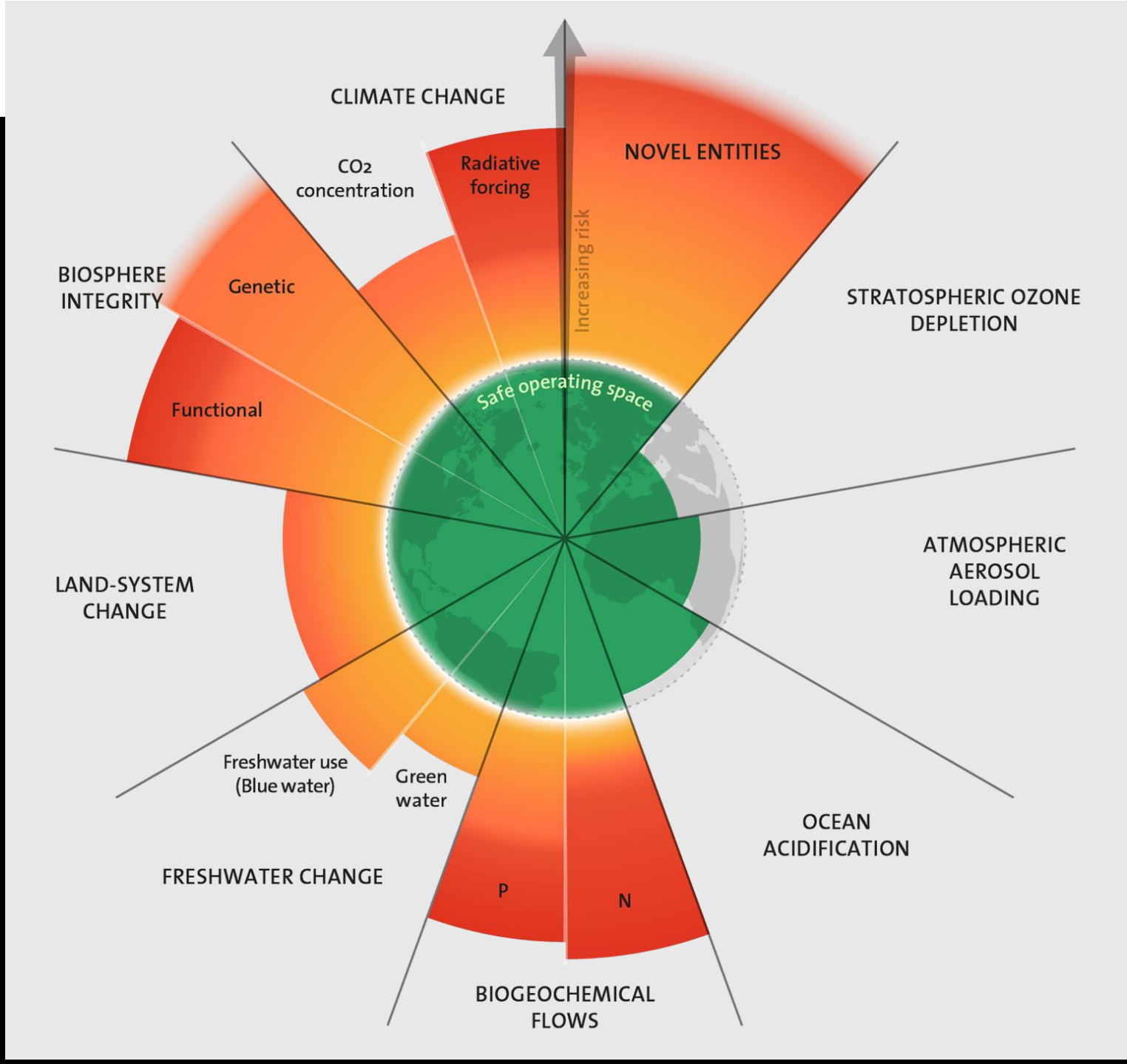


By 2050, climate change will place immense strain on global healthcare systems, causing 14.5 million deaths and $12.5 trillion in economic losses.

Protecting planetary boundaries

6 out of 9 have been breached



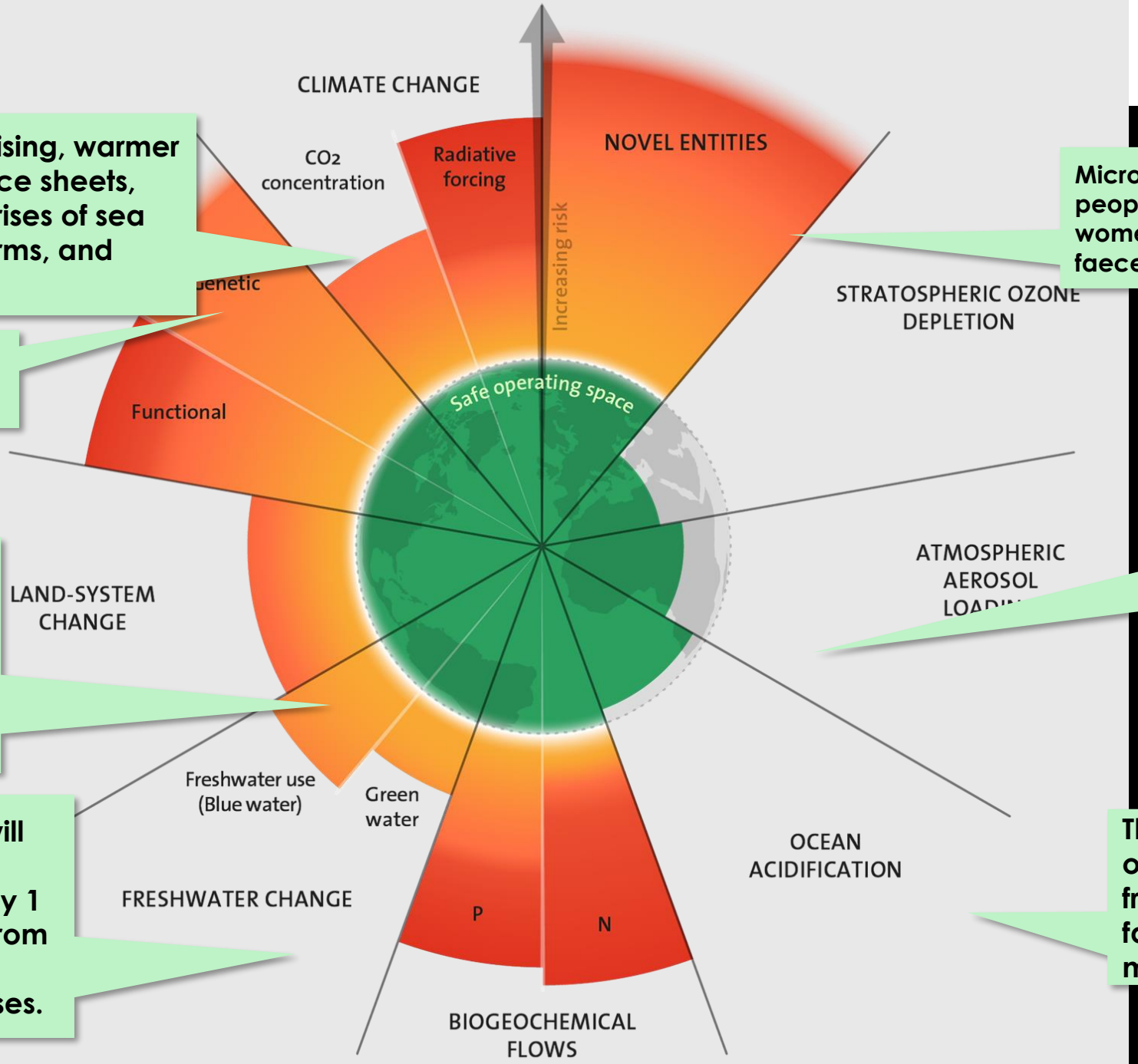


Global temperature rising, warmer ocean, shrinkage of ice sheets, retreating of glacier, rises of sea level, heatwaves, storms, and drought

Loss of wildlife population, monocrop

Cutting down rainforest , decrease in agricultural land due to conversion into develop land and open land

By 2050, half a billion will be subjected to water-stress. At present, nearly 1 million die each year from water, sanitation, and hygiene-related diseases.

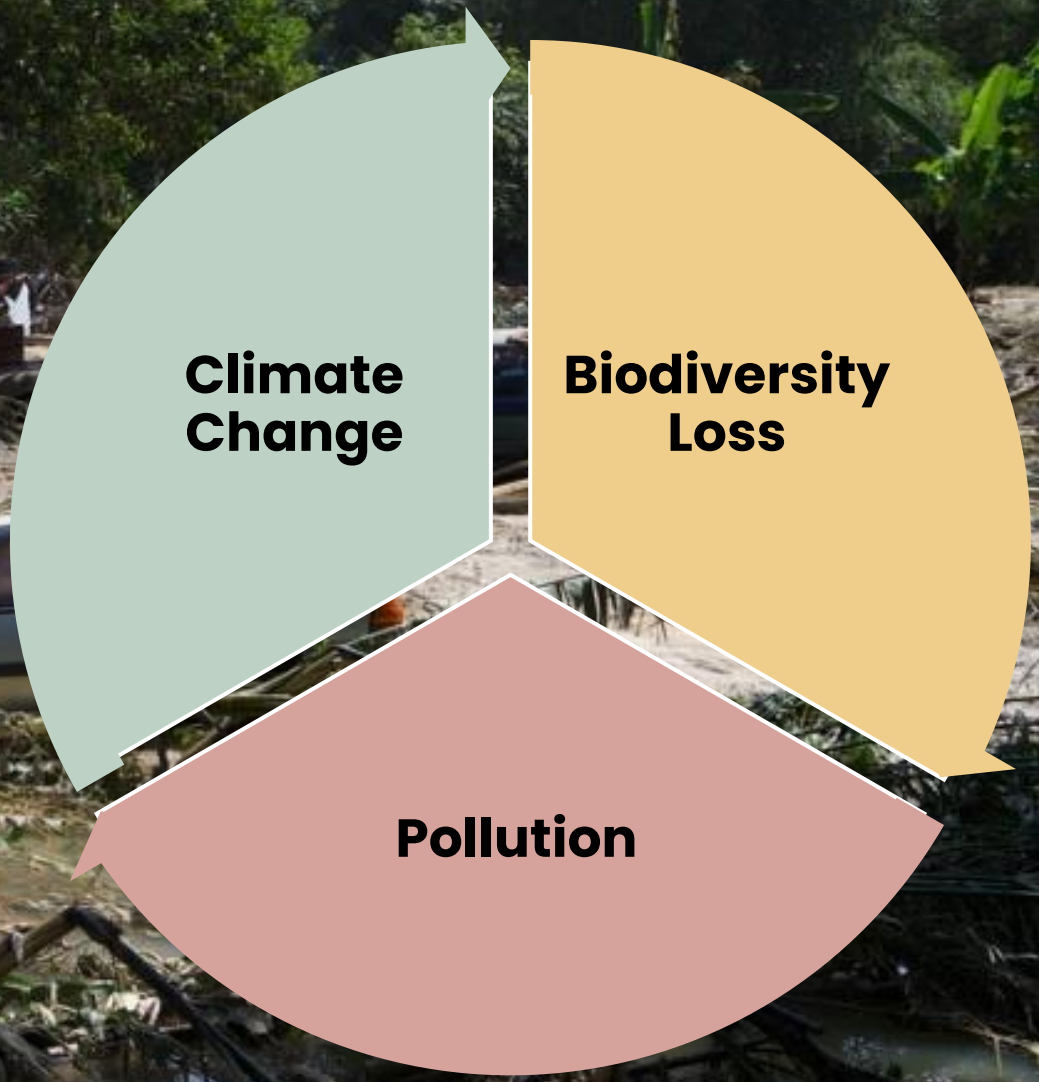


Microplastics have been found in people's bloodstream, pregnant women's placenta, and in babies' faeces.

Inhaling highly polluted air causes roughly 7 Million people to die prematurely each year.

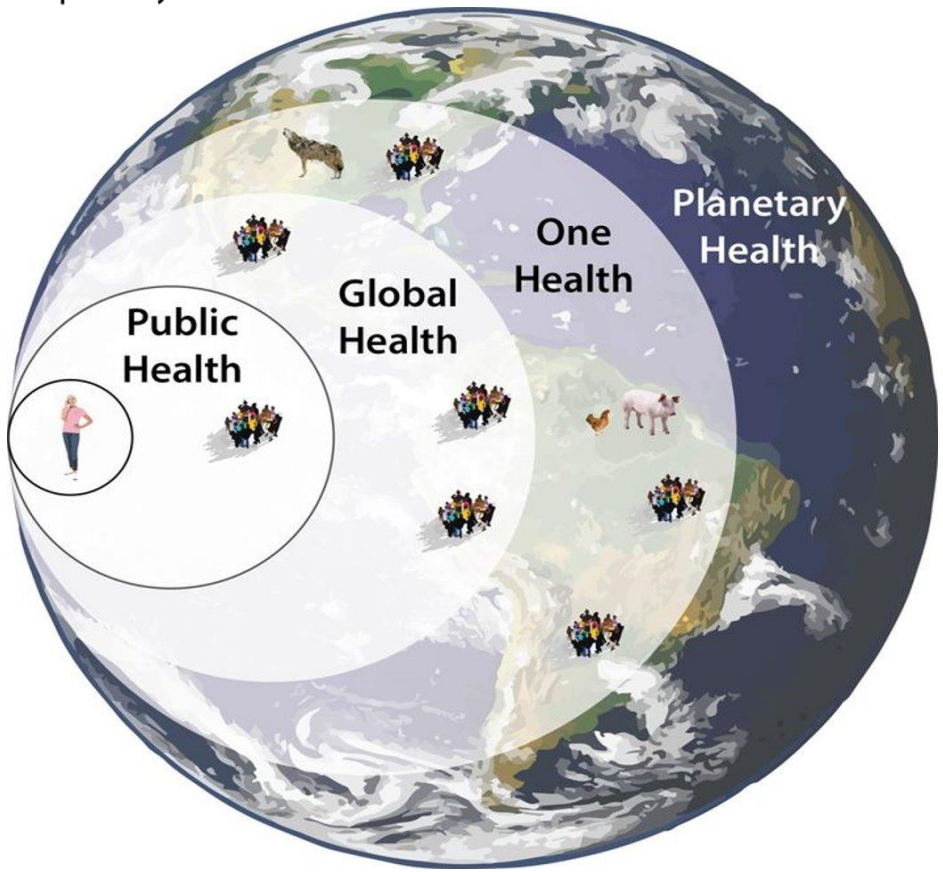
The pH level of the ocean might drop from 8.1 to 7.7, the fastest drop in 50 million years

Triple Planetary Crisis



The Rockefeller Foundation–*Lancet* Commission on planetary health

Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–*Lancet* Commission on planetary health



Planetary health addresses the interconnectedness of people and the planet, and the growing anthropogenic nature of disasters.

"the health of human civilization and the state of the natural systems on which it depends"

Lancet-Rockefeller Commission, 2015

"the international and interdisciplinary field focused on characterizing and addressing the human health impacts of global environmental change"

Planetary Health Alliance, 2019

PHAM2024

PLANETARY HEALTH

Roadmap and Action Plan

Sarawak Sustainability Vision's 2030

Secure, Equitable and Clean Energy for Sarawak

Planetary Health

Protect and Restore Natural Ecosystems	Promote Sustainable Economic Growth	Enhance Community Health and Well-being	Inclusive and Equitable Development
Environmental	**Economic**	**Data & Innovation**	**Social**
Conserving Rainforest	Supporting Green industries	Promoting Innovation for Green Technology	Improving Community Health
Promoting Clean Energy	Sustainable Tourism	Enhancing Data-Driven Decision-Making for Sustainability	Supporting Indigenous Rights
Reducing Carbon Emission	Attracting Investment into Clean Technology	Leveraging AI for Environmental Predictions	Addressing Social Determines of Health

Source:
Sarawak Sustainability Vision 2030

Why Planetary Health?

1
Litigation Risks

- Non-Compliance with International Standards
- Environmental Impact Lawsuits:World Resources Institute highlights that EIAs are critical tools for mitigating the environmental impact of large projects .
- **Displacement of Indigenous Communities**: Projects like dam constructions can violate the **Free, Prior, and Informed Consent (FPIC)**

2
Orang Asli Rights & Advocacy

- Threats to Traditional Lands: Rainforest Foundation UK reports on the impacts of deforestation on Indigenous territories .
- **Loss of Indigenous Knowledge**: The **Food and Agriculture Organization (FAO)** has documented the importance of Indigenous knowledge in maintaining forest biodiversity.

3
Education & Skillset Development

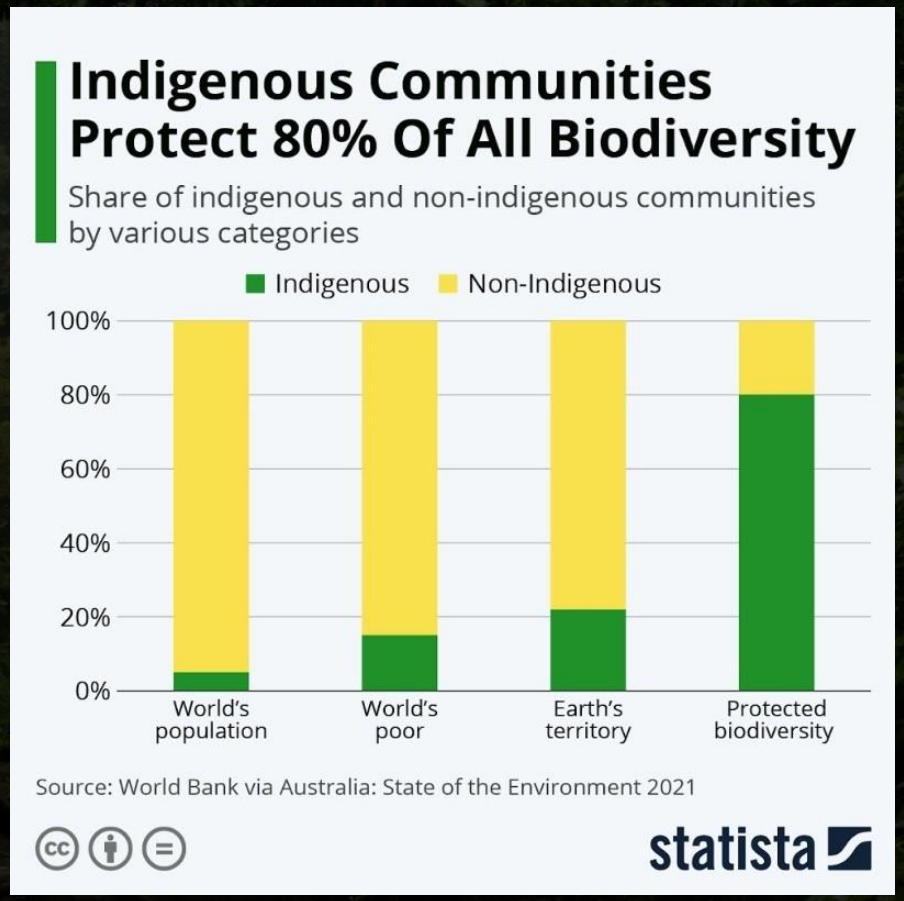
- **Shortage of Expertise in Environmental Science**: A study published by the **International Union for Conservation of Nature (IUCN)** emphasizes the lack of trained professionals in Southeast Asia
- **Need for Training in Sustainable Agriculture**: **World Bank** reports suggest that skills in sustainable farming practices like agroforestry are crucial for regions like Sarawak

4
Harnessing The Energy of Youth

- Most impacted by Planetary Crisis
- Future consumers
- Inclusion in policy making and planning
- Invest in their training on governance and policy

Source:
WRI Environmental Laws and EIA Insights,FAO,IUCN, World Bank, UNESCO,

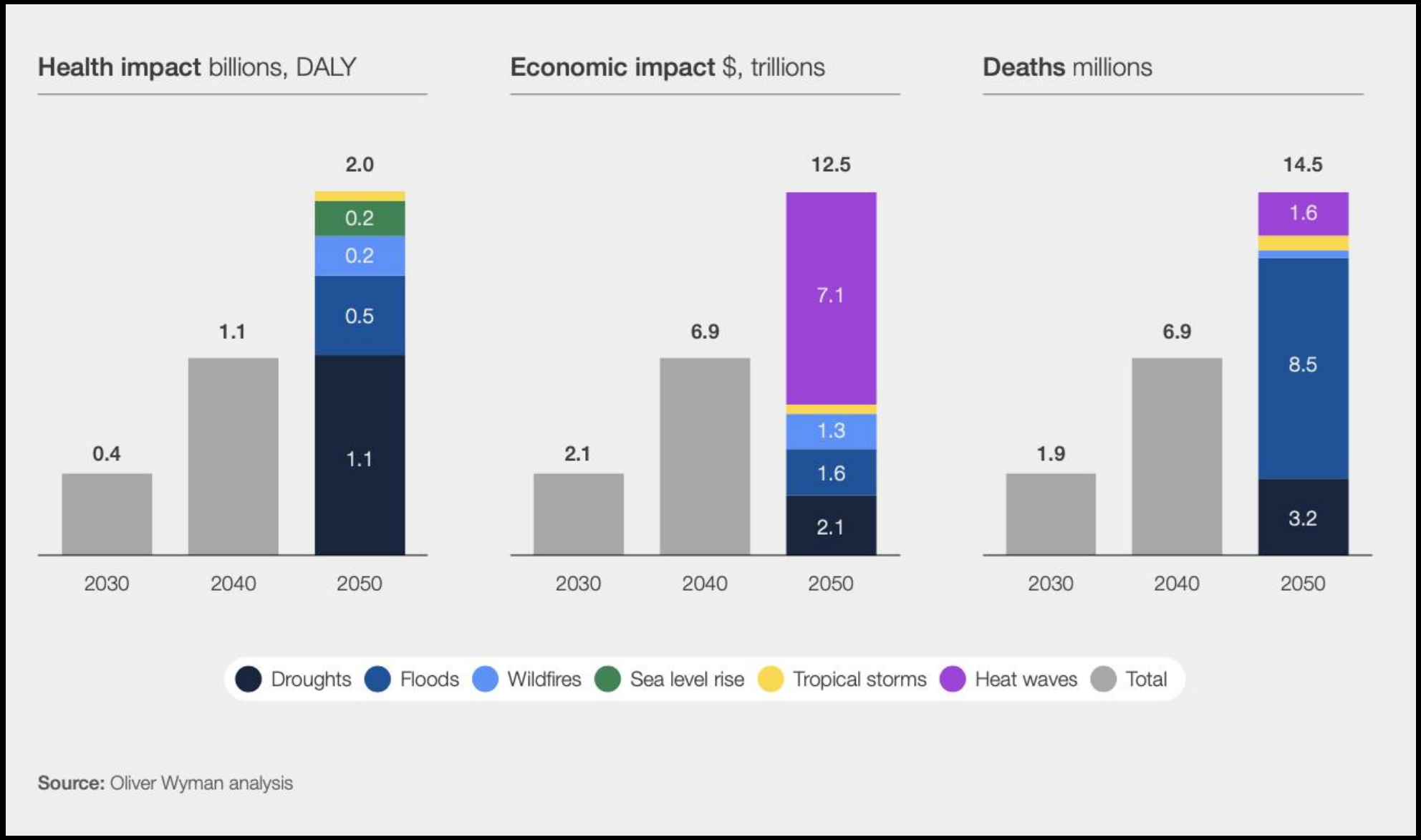
5 ways Indigenous people are protecting the planet



Source : World Economic Forum
https://www.weforum.org/agenda/2023/08/indigenous-people-protecting-planet/

$7.1 trillion of estimated economic loss to heat waves.

8.5 million estimated deaths from floods.



National Planetary Health Action Plan – Cost of inaction

US$125 trillion per year globally
estimated value of loss of ecosystem services

US$4 trillion per year globally
increase in health costs

RM39.8 billion per year in Malaysia
environment-related causes since 2000

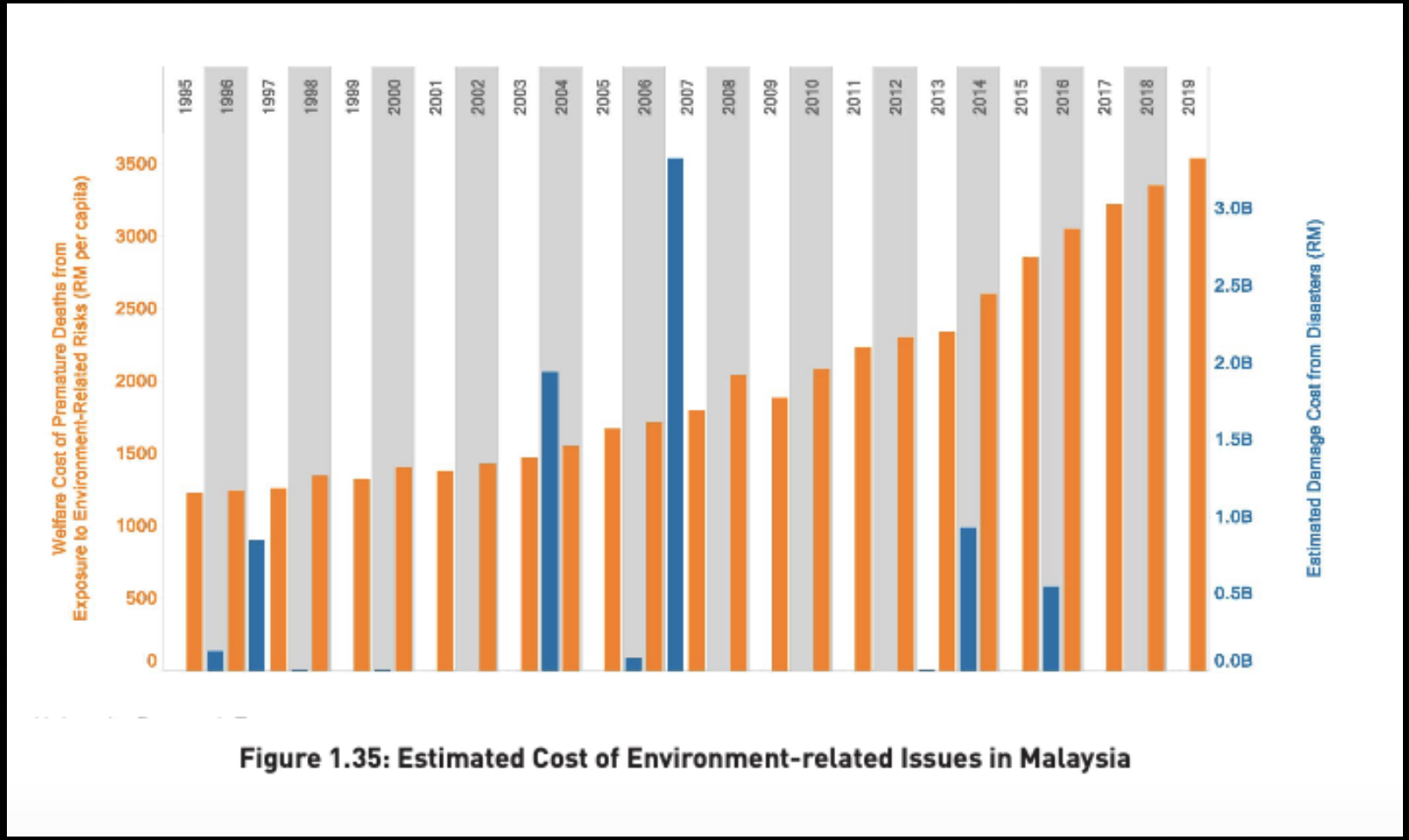
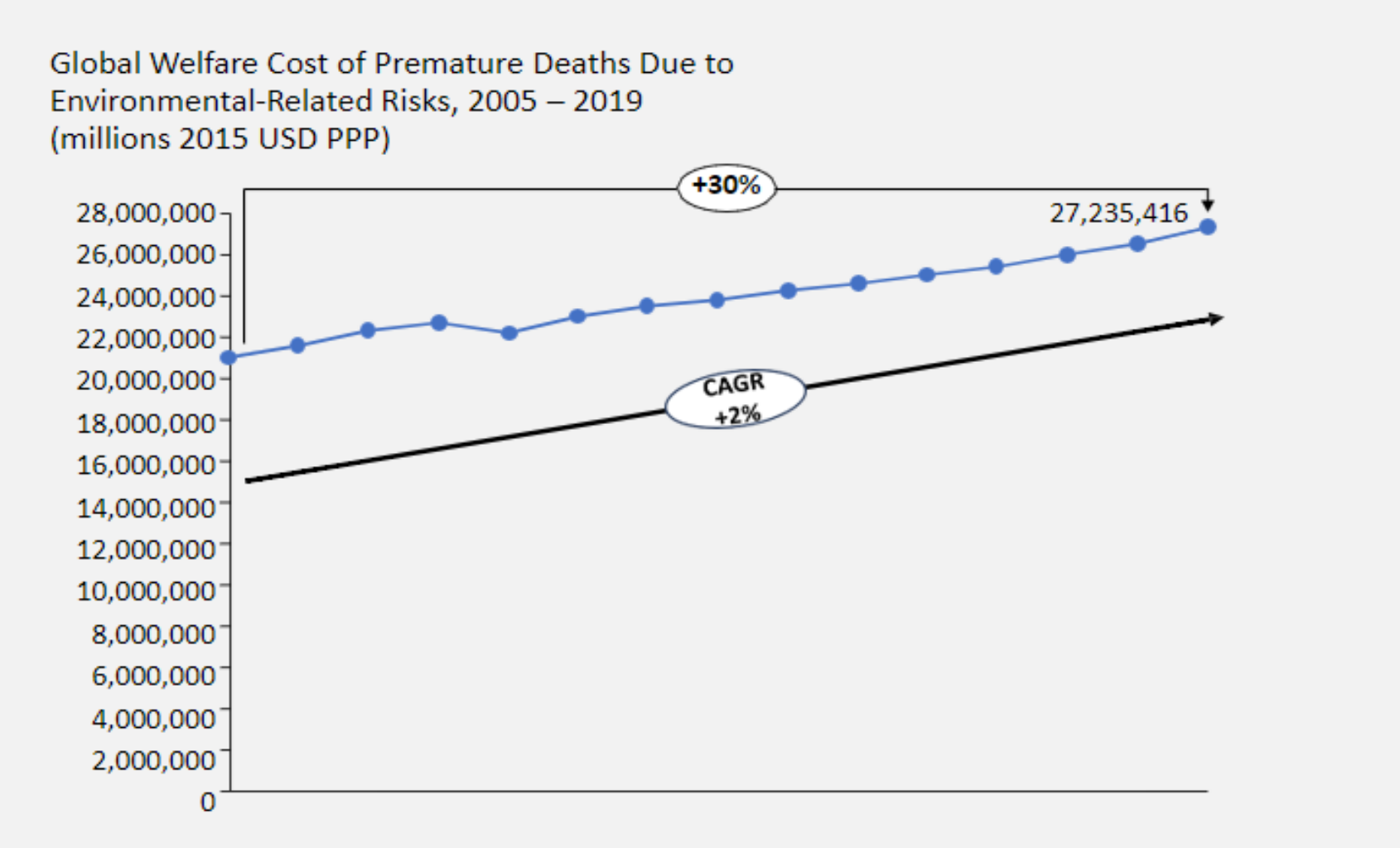


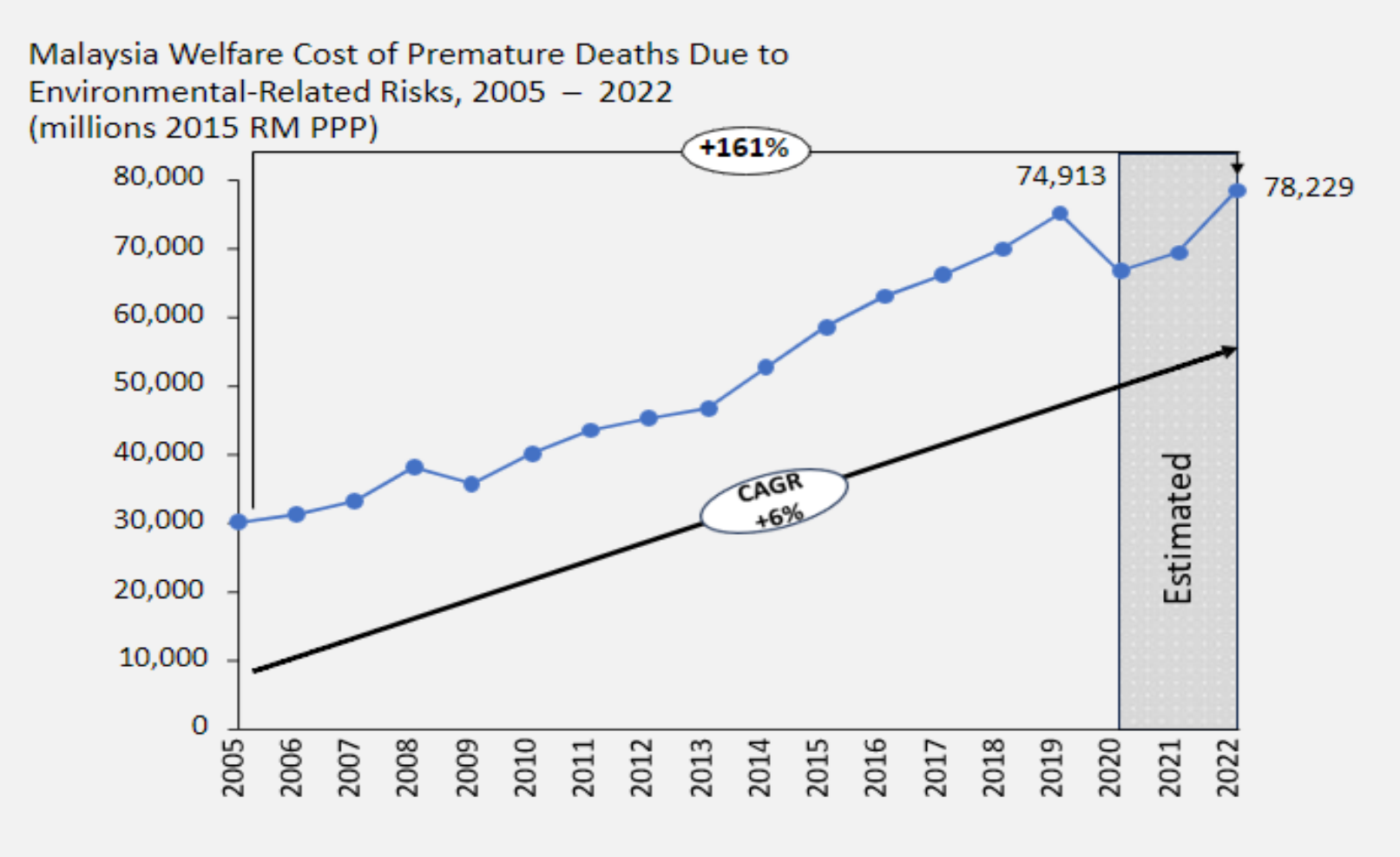
Figure 1.35: Estimated Cost of Environment-related Issues in Malaysia

Global Welfare Cost of Premature Deaths Due to Environmental-Related Risks 2005 - 2019

- Over the past 15 years, **global welfare costs have risen by 30%.**
- It has been growing at a compound annual growth rate (CAGR) of **2% per annum.**
- The cumulative global welfare costs from 2005 – 2019 was **358 Trillion USD.**

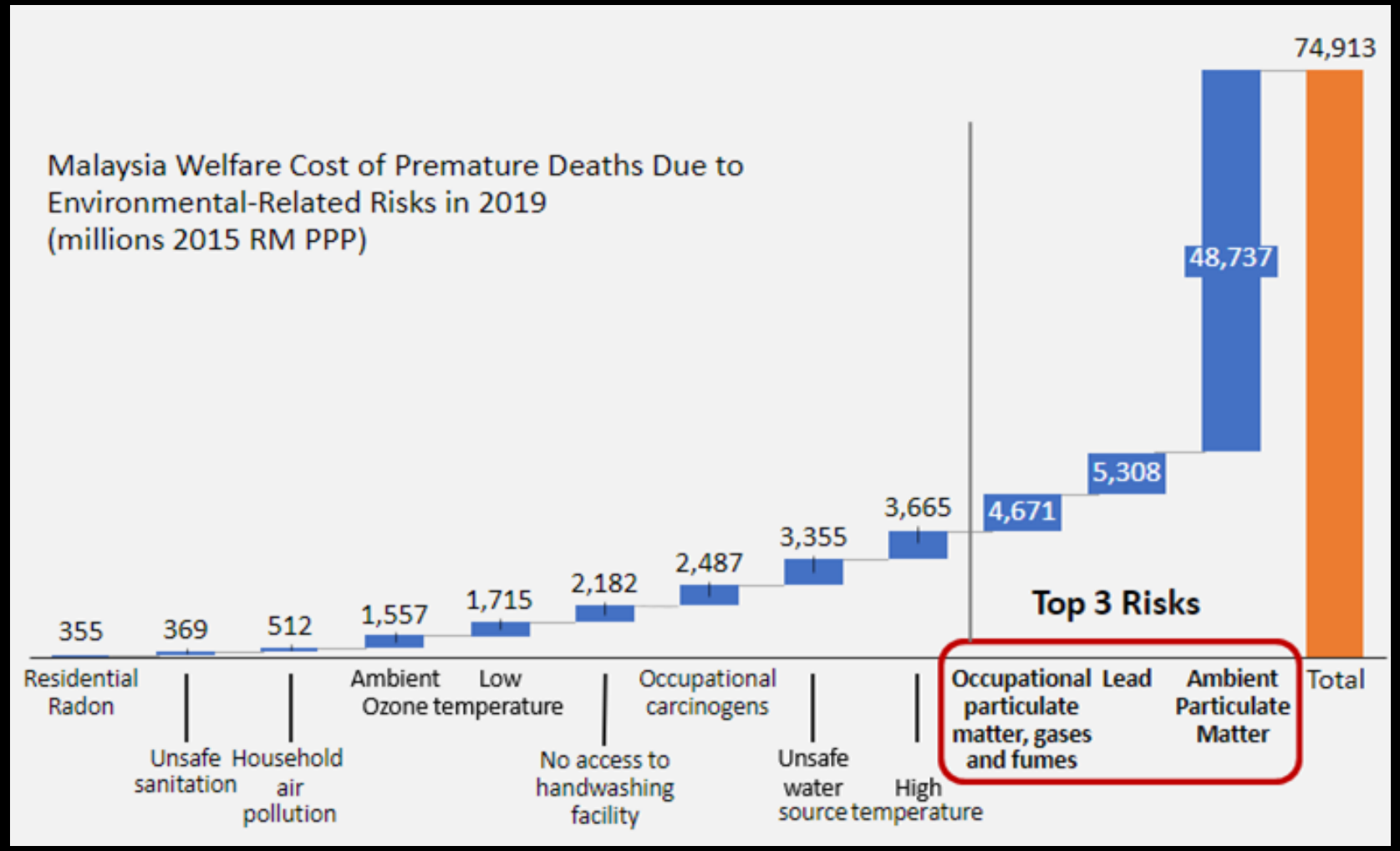


Malaysia Welfare Cost of Premature Deaths Due to Environmental-Related Risks 2005 - 2022



- For Malaysia over the past 15 years, **global welfare costs have risen by 161%.**
- It has been growing at a compound annual growth rate (CAGR) of **6% per annum.**
- The cumulative global welfare costs from 2005 – 2022 was **RM 941 Billion.**

Malaysia Welfare Cost of Premature Deaths Due to Environmental-Related Risks in 2019 by Risk Categories

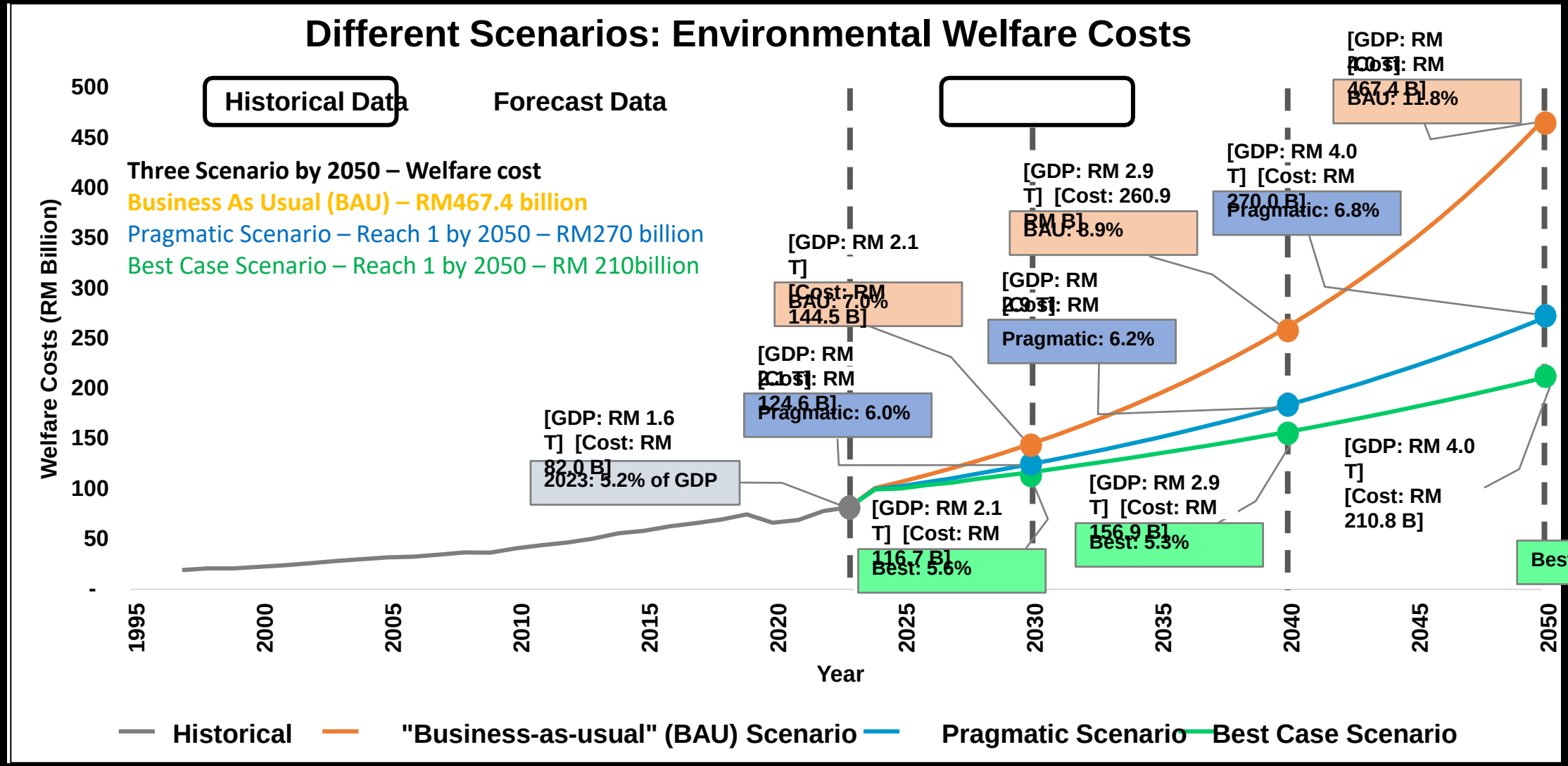


In 2019, **Malaysia's welfare cost** of environmental-related premature deaths amounted to **RM 74.9 Billion.**

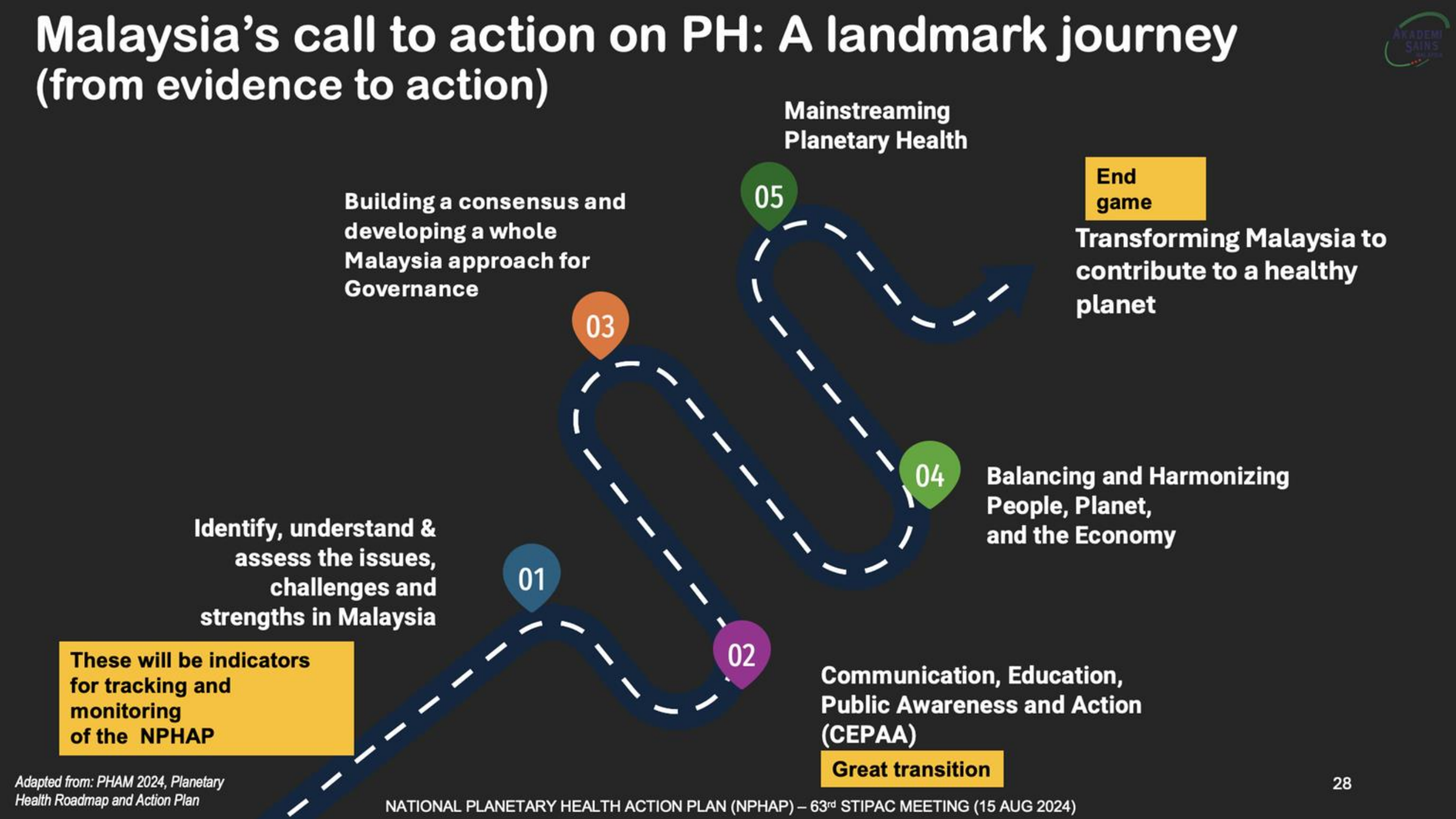
That was around **5% of Malaysia's GDP** in 2019.

The **Top 3 Risks contributed almost 80%** of the welfare costs.

Environmental Welfare Costs – Pragmatic and Best Scenarios

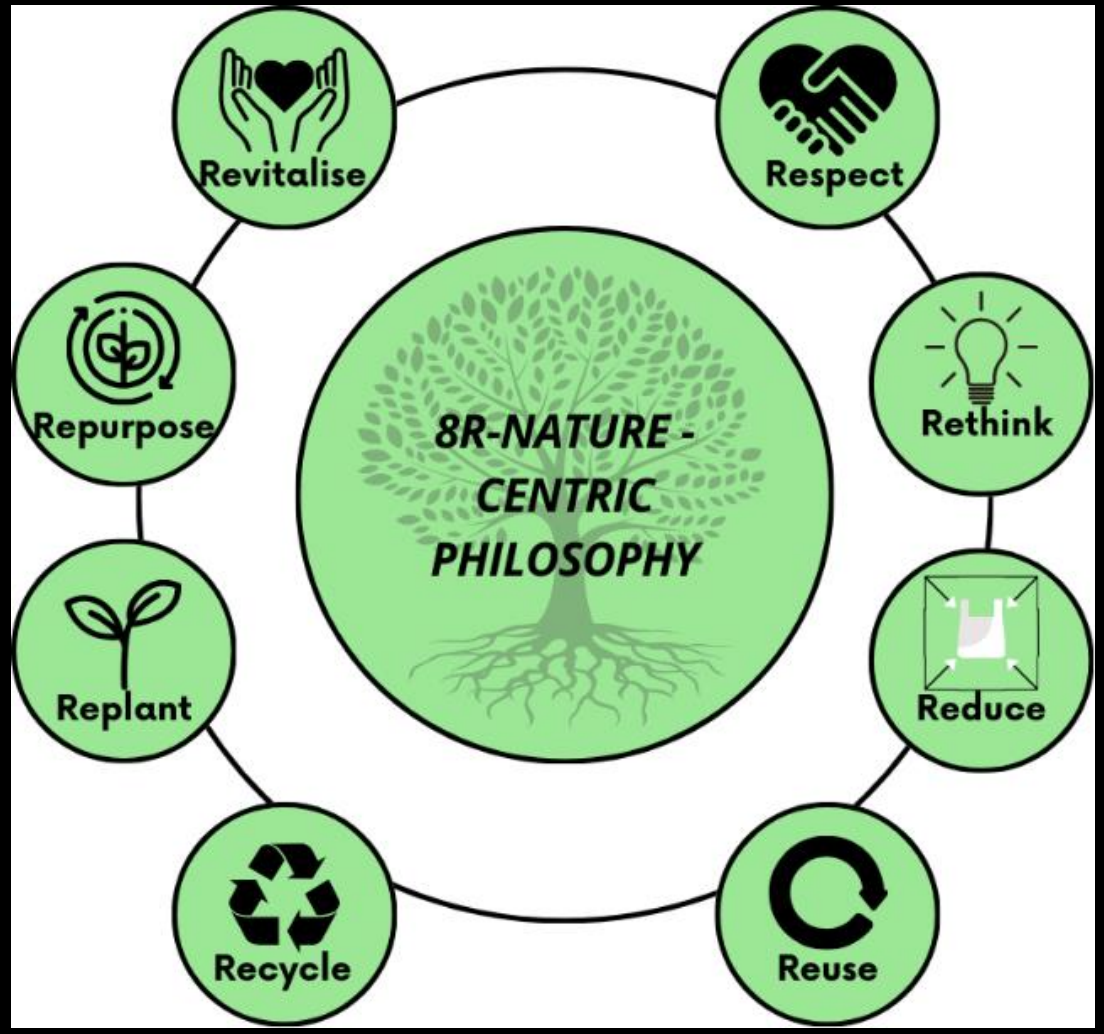


Malaysia's call to action on PH: A landmark journey (from evidence to action)



Adapted from: PHAM 2024, Planetary Health Roadmap and Action Plan

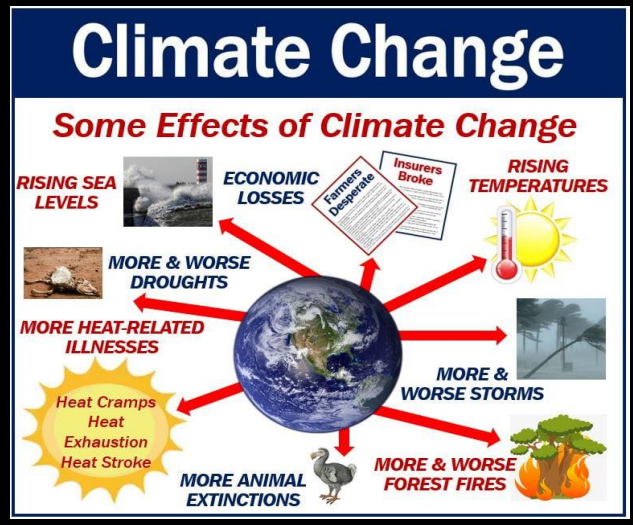
Values & Mindset



Nature-Centric Values

"If we do not re-boot our economic ecosystems; nature will boot us out of the natural ecosystem"

Source:
Nair, Ahmed and Vaithilingam (2022), updated version 2024.



Definition of Return on Values (ROV)

ROV is the "*values gained to the organisation and to all stakeholders in the ecosystem (from economic, social, political, and environmental perspectives) resulting from the adoption of advanced technologies, knowledge-based systems, processes, new business models and value chains that are aligned to global best practices*".

Source: Nair et al. (2022a), Values-Based Development and Competitiveness: A Conceptual Analysis https://sunwayuniversity.edu.my/sites/default/files/d7/webuni/SU-2204-Sunway-Value-Based-Paper-Report-2022-FA-181222.pdf

PROPOSED: COMMON FRAMEWORK

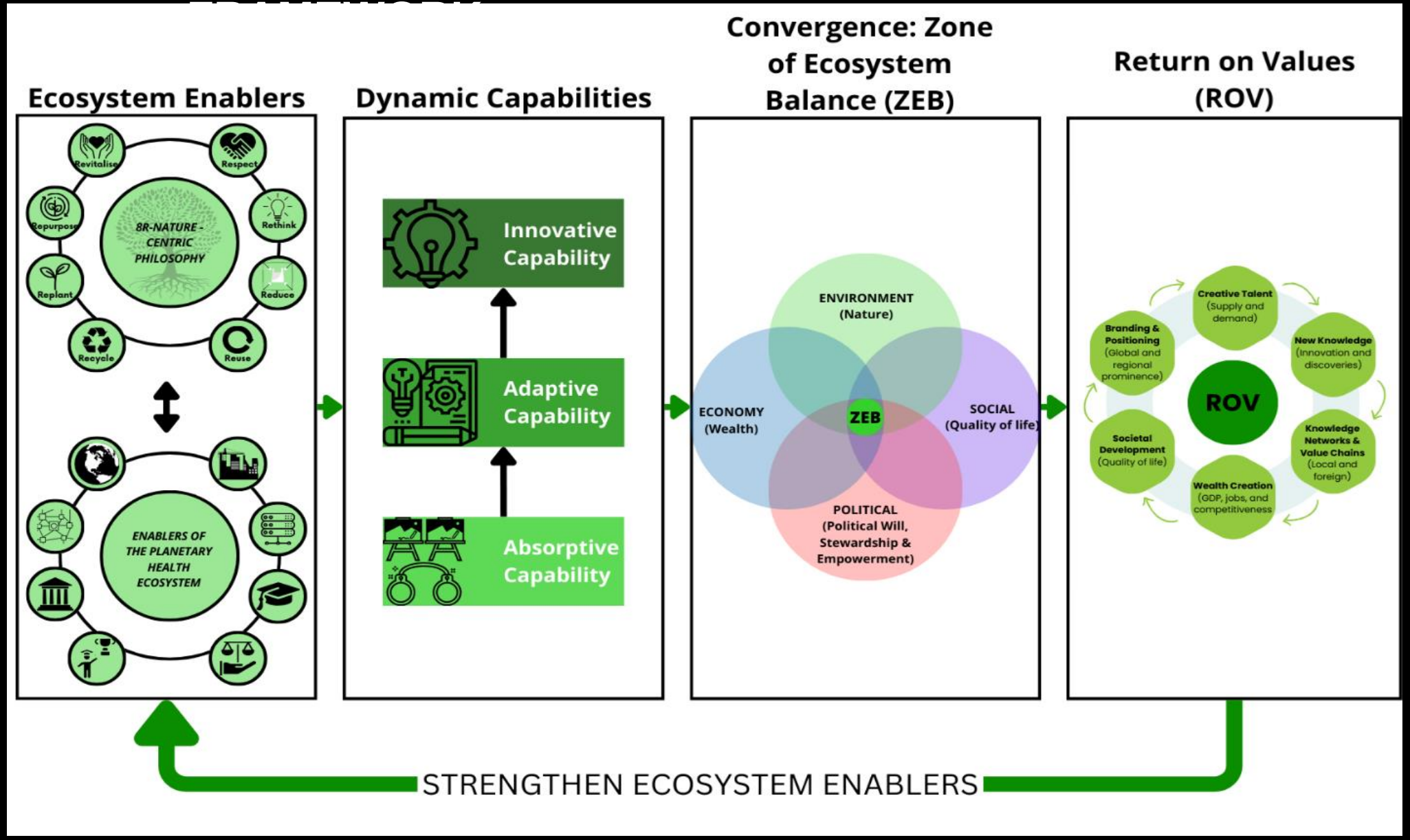
Planetary Health Ecosystem-8i Framework

The 8R-nature-centric Planetary Health Philosophy

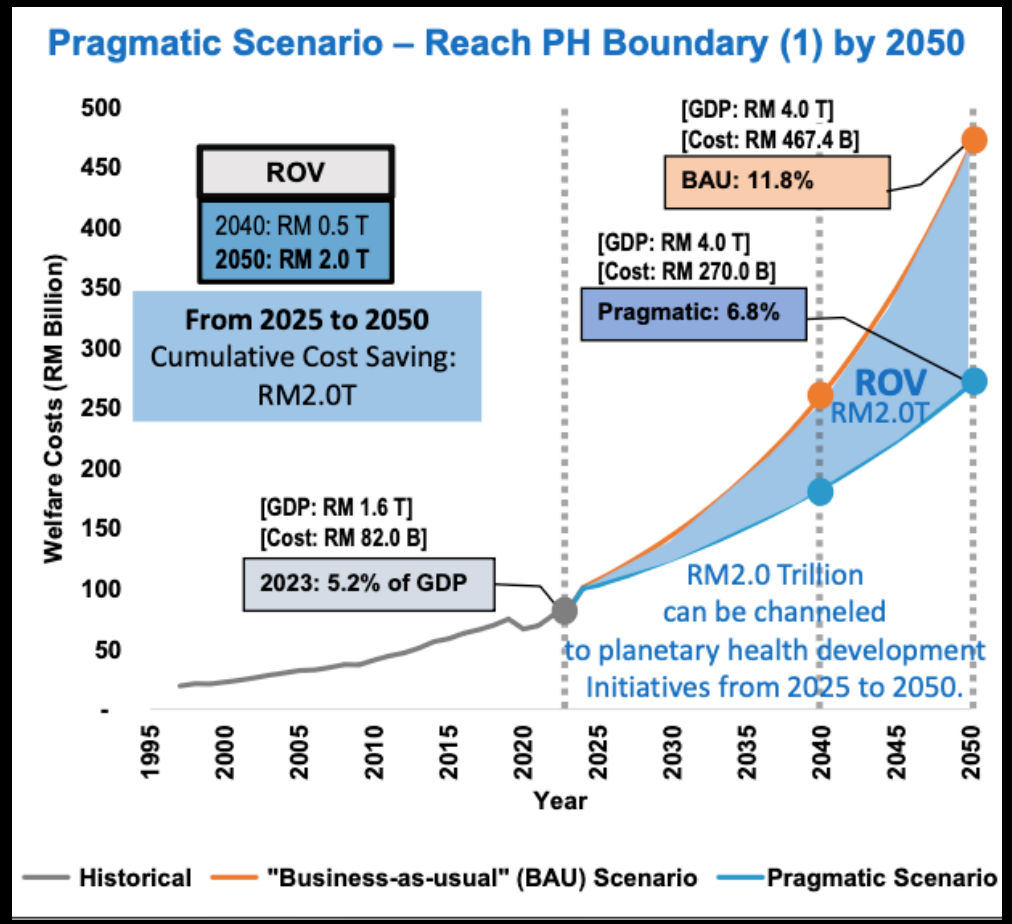
- To formulate the NPHAP, we need all 6 pillars/working groups to address a **common 8i-8R framework** since planetary health is cross-cutting.
- Focus group discussions/ stakeholder discussions were held with key players in the ecosystem **guided by the 8i framework**
- The outputs need to be interlinked and allow for integration of the action plan with the 8R philosophy governed by values.
- **Harmonised 8R-8i Action plan** with economic impact but governed by values was formulated by the 7th pillar (integration pillar)
- Validation of the harmonized Action plan with key players in the ecosystem

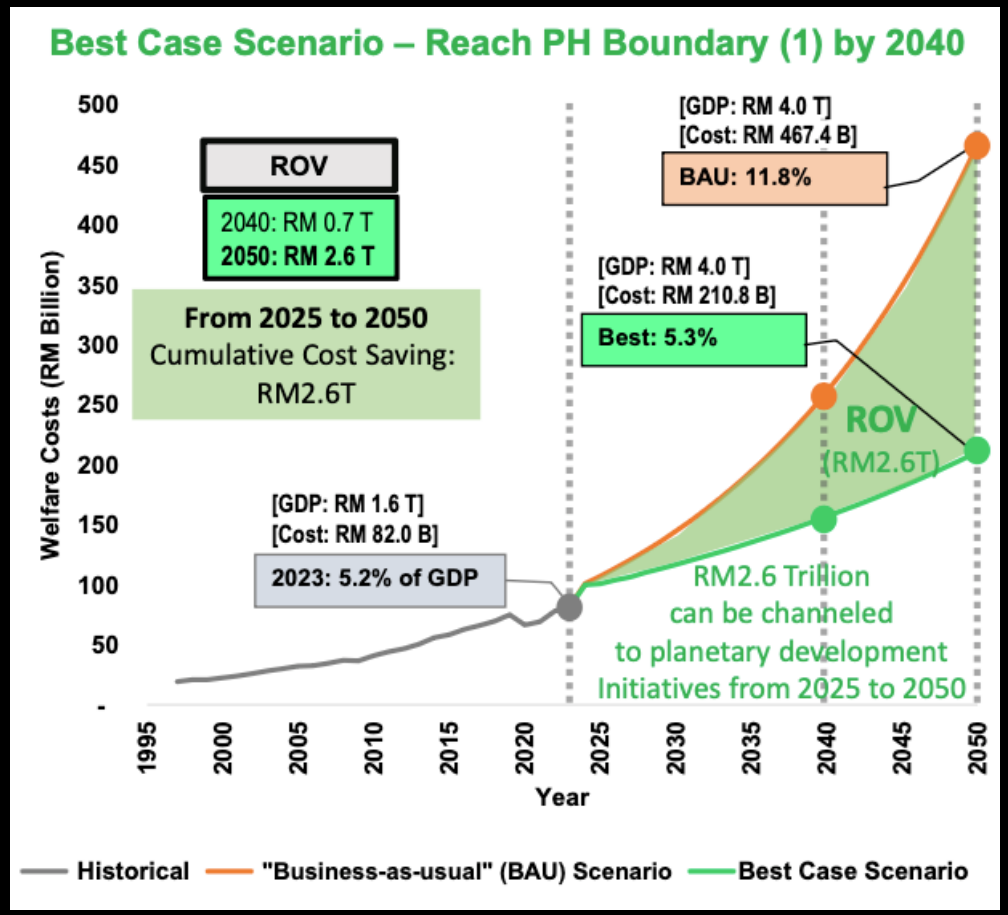
Source: Nair, M., Ahmed, P. and Vaithilingam, S., 2022

INTEGRATED PLANETARY HEALTH



Cumulative Environmental Welfare Costs – Preliminary Analysis





PHAM2024

The Action Plan – Six Proposed Actions

Measuring Planetary Health	Communicating Planetary Health	Educating to Achieve the Great Transition	Building Holistic Governance	Balancing Business and Planetary Health	Mainstreaming Planetary Health
A new metric for measuring planetary health	Creation and implementation of an international communication campaign to promote global community awareness.	Building on the Planetary Health Education Framework and its five domains, development of the Planetary Health educational strategy and foundational materials that can help to achieve the just, global transition.	The development of foundational governance framework templates that can be appropriately adapted to better integrate Planetary Health into policy at all levels of government.	The development of a guidebook to support the mainstreaming of Planetary Health objectives into business and industry.	Development of local and national programs, policies, and outreach campaigns to preserve and enhance Planetary Health for future generations.

COP29 | Sustainable Markets | Climate Change

Climate change: UN report says planet to warm by 3.1 C without greater action

By **Gloria Dickie**

October 25, 2024 5:44 AM GMT+8 · Updated 4 days ago

Safe and Just Energy Transition

Coal vs. Natural Gas: A Complex Reality

Coal Impact

- Major CO_2 emitter in electricity production
- High carbon content

Natural Gas Considerations

- 50% lower emissions in electricity generation
- LNG: 33% higher footprint than coal (2024 study)

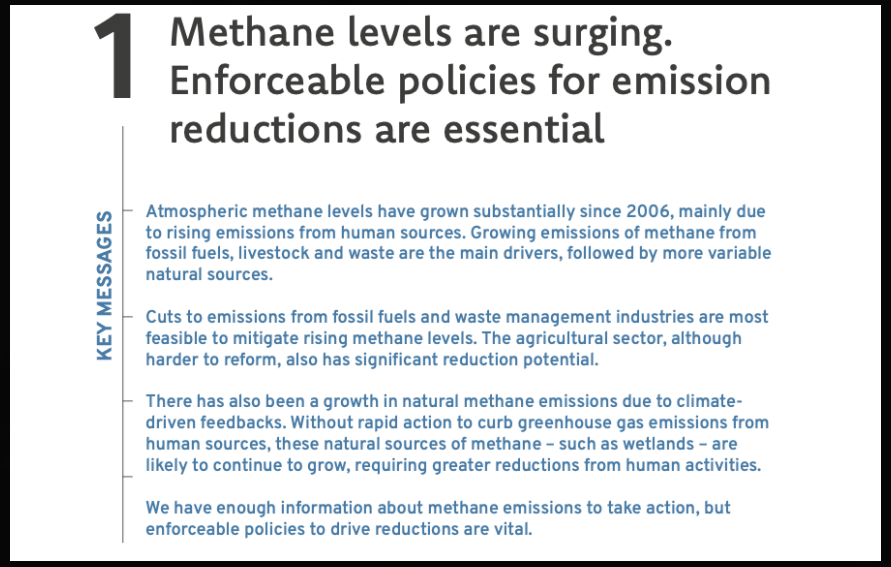
Key Takeaways

Challenges

- Methane leaks in gas supply chain
- High environmental cost of LNG

Solutions

- **75% emissions reduction** possible **by 2030** with best practices
- Comprehensive methane leak management



1 Methane levels are surging. Enforceable policies for emission reductions are essential

KEY MESSAGES

Atmospheric methane levels have grown substantially since 2006, mainly due to rising emissions from human sources. Growing emissions of methane from fossil fuels, livestock and waste are the main drivers, followed by more variable natural sources.

Cuts to emissions from fossil fuels and waste management industries are most feasible to mitigate rising methane levels. The agricultural sector, although harder to reform, also has significant reduction potential.

There has also been a growth in natural methane emissions due to climate-driven feedbacks. Without rapid action to curb greenhouse gas emissions from human sources, these natural sources of methane – such as wetlands – are likely to continue to grow, requiring greater reductions from human activities.

We have enough information about methane emissions to take action, but enforceable policies to drive reductions are vital.

9 Closing governance gaps in the energy transition minerals global value chain is crucial for a just and equitable energy transition

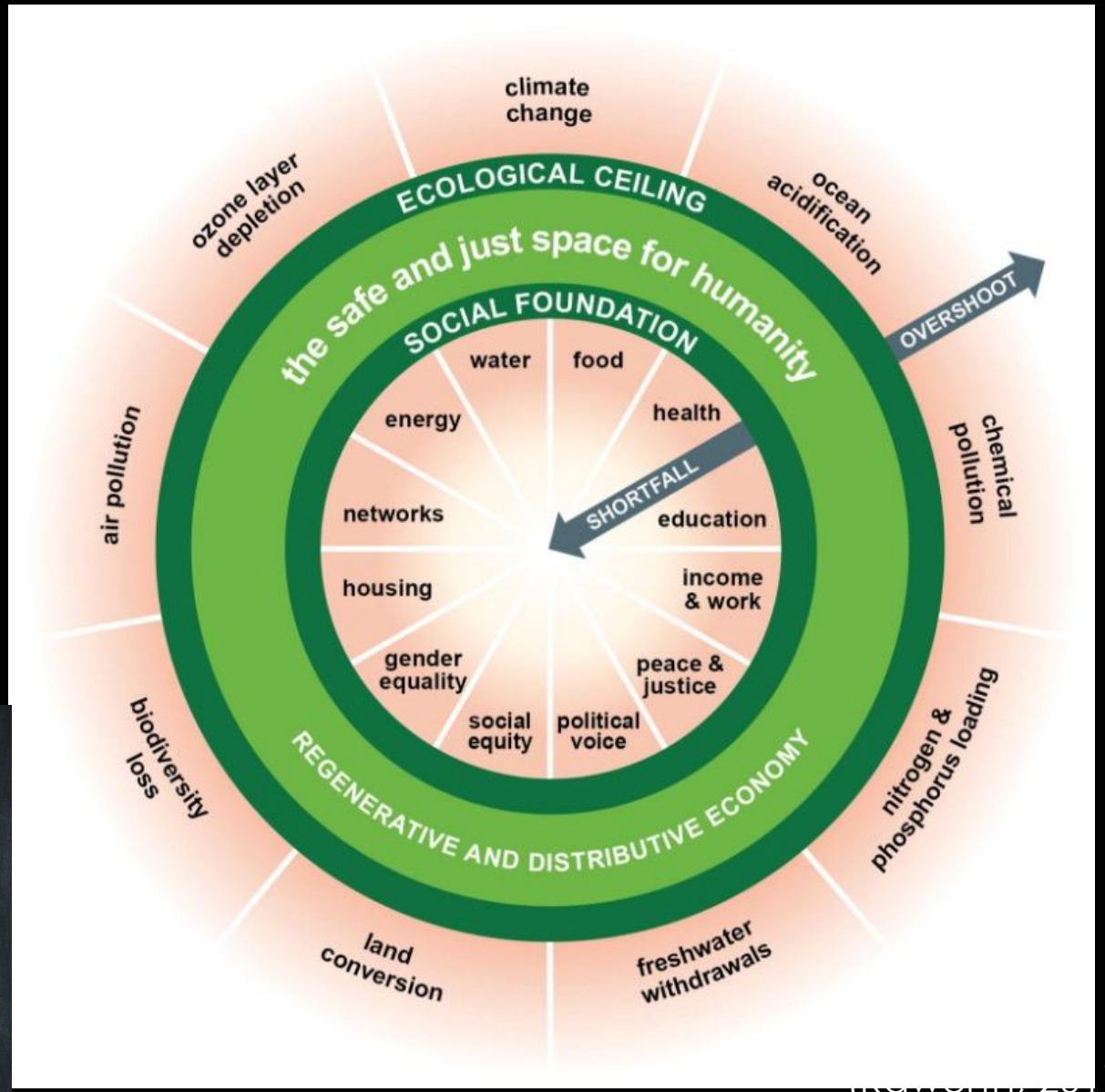
KEY MESSAGES

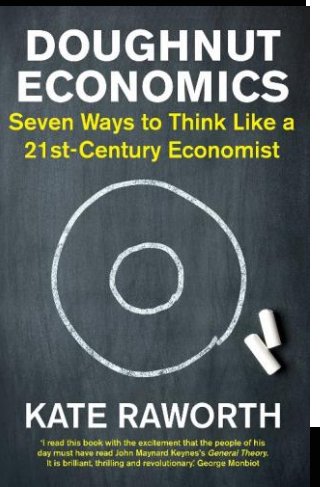
As demand for renewable energy technologies rises there are growing concerns about trade dynamics and value chain-related challenges for energy transition minerals (ETMs).

The ETM value chain has significant environmental, social and economic impacts, which are felt hardest in the Global South.

Addressing the governance gaps within the ETM value chain is a major challenge for a just energy transition that avoids greater burdens and fewer benefits for Global South countries.

Source:
10NICS 2024 Report
https://www.iea.org/reports/global-methane-tracker-2024/methane-emissions-in-a-15-0c-pathway





Doughnut Economics

safe and just space for humanity!

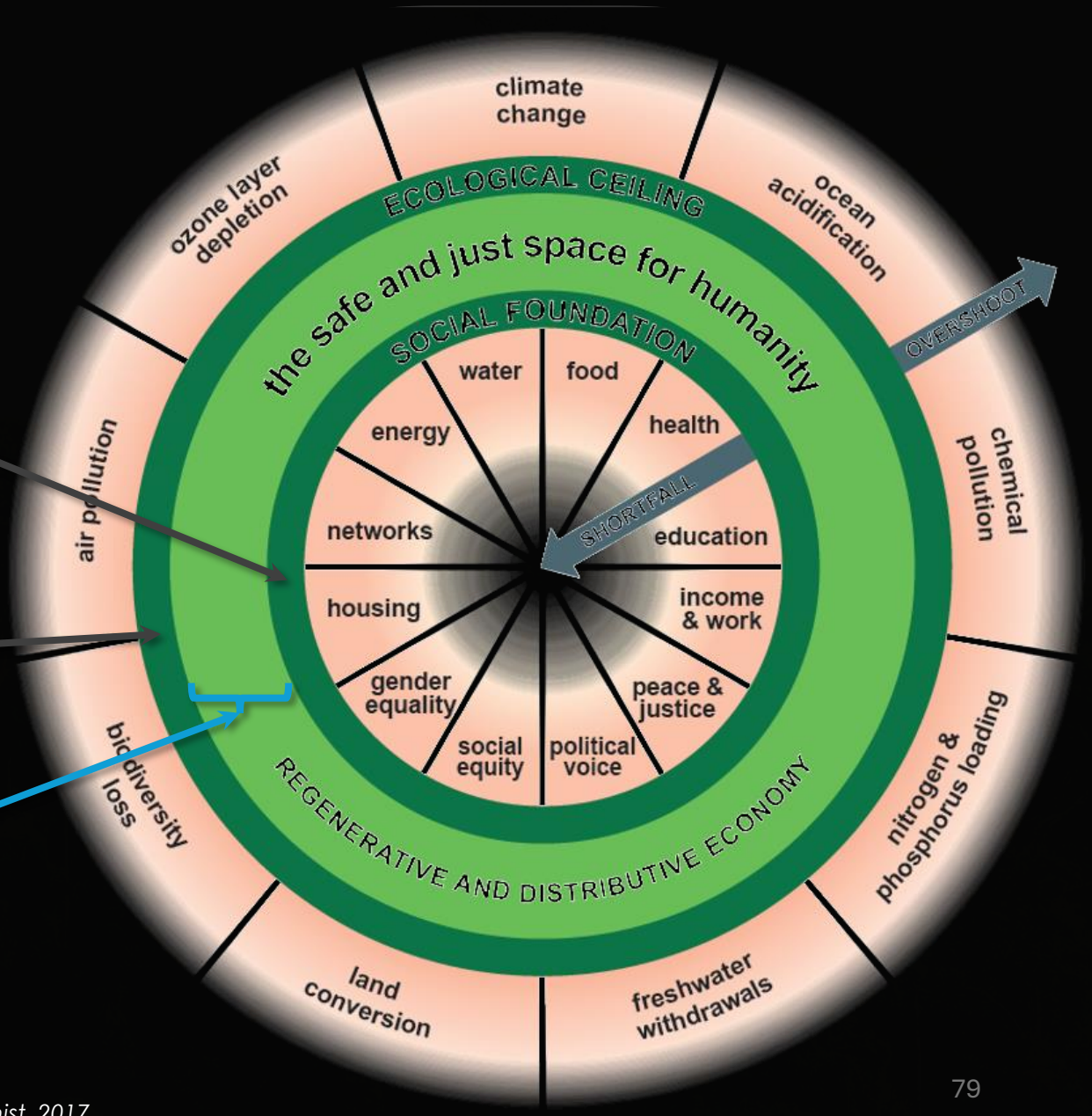
(Raworth, 2017)

Intro to Doughnut Economics

Social Foundation
The minimum level of social progress where every person's basic needs are met

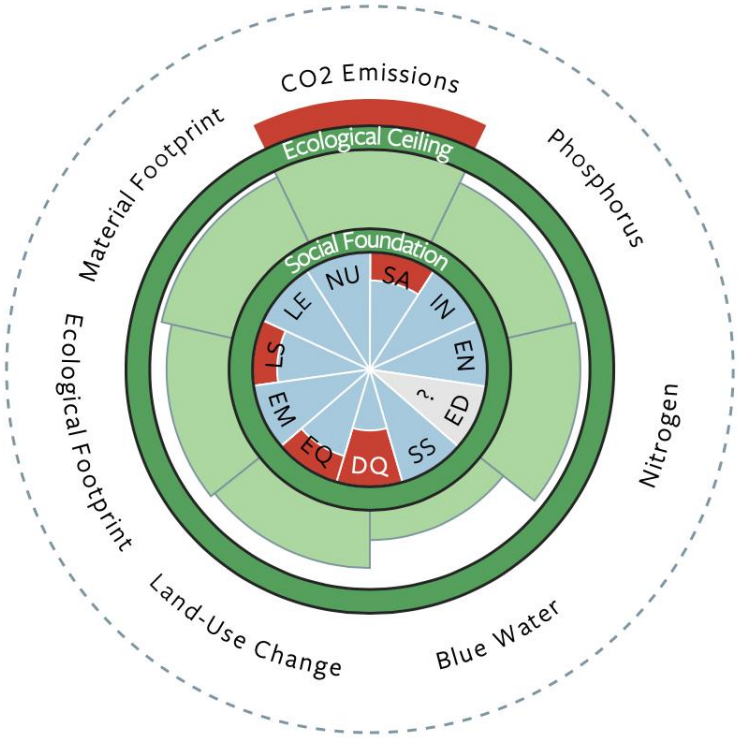
Ecological Ceiling
The boundaries of sustainable consumption of our planet's resources

Living within the Doughnut
A thriving society within a sustainable environment

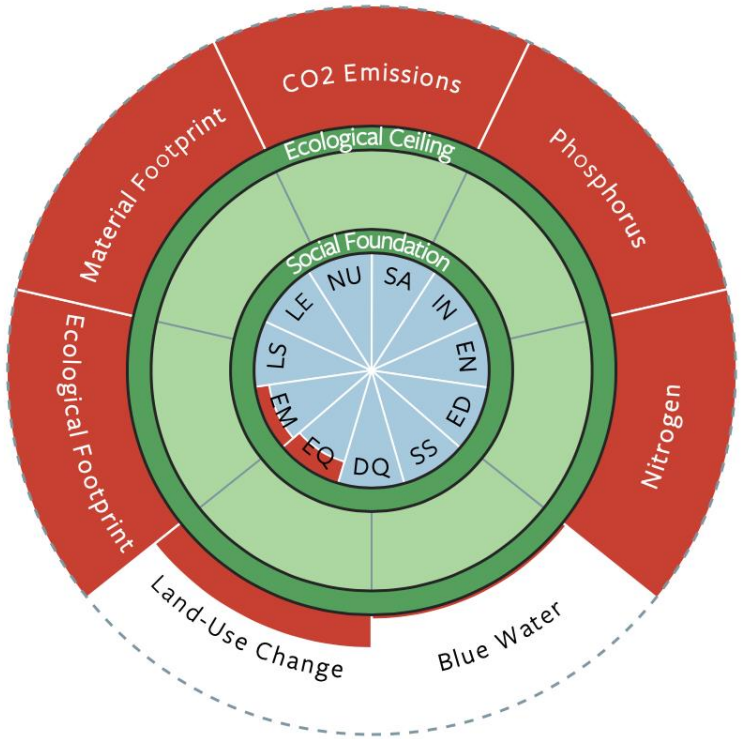


Source: Kate Raworth, Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist, 2017

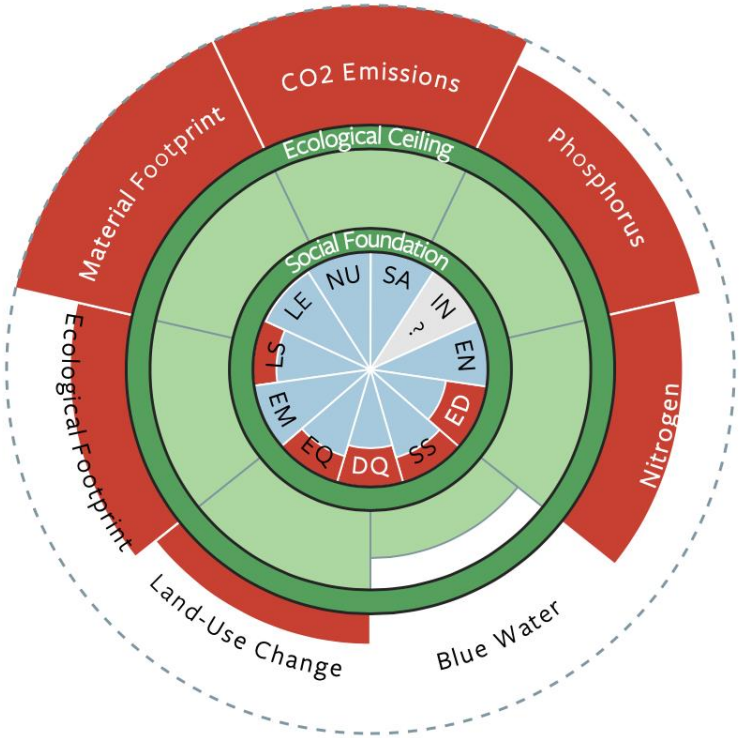
Country comparison – Where does Malaysia stand?



Vietnam



United States

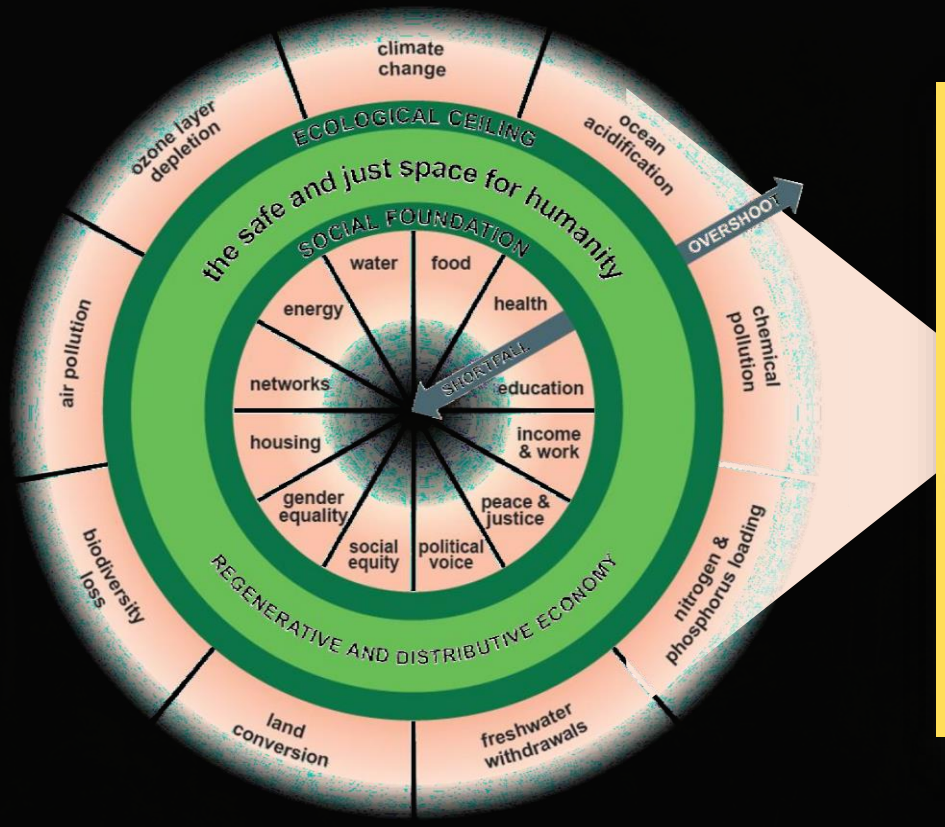


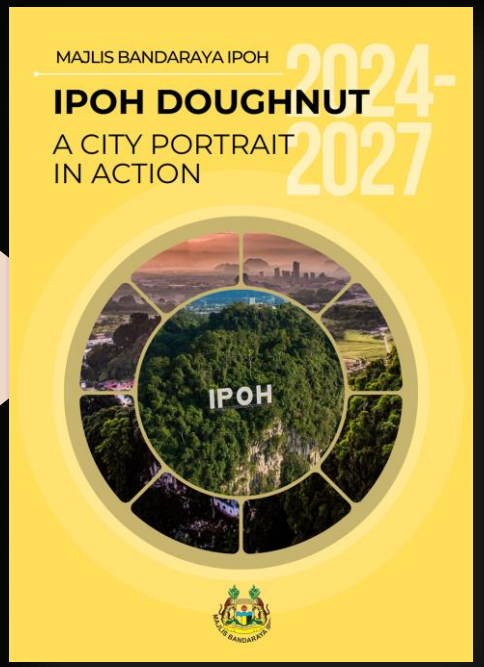
Malaysia

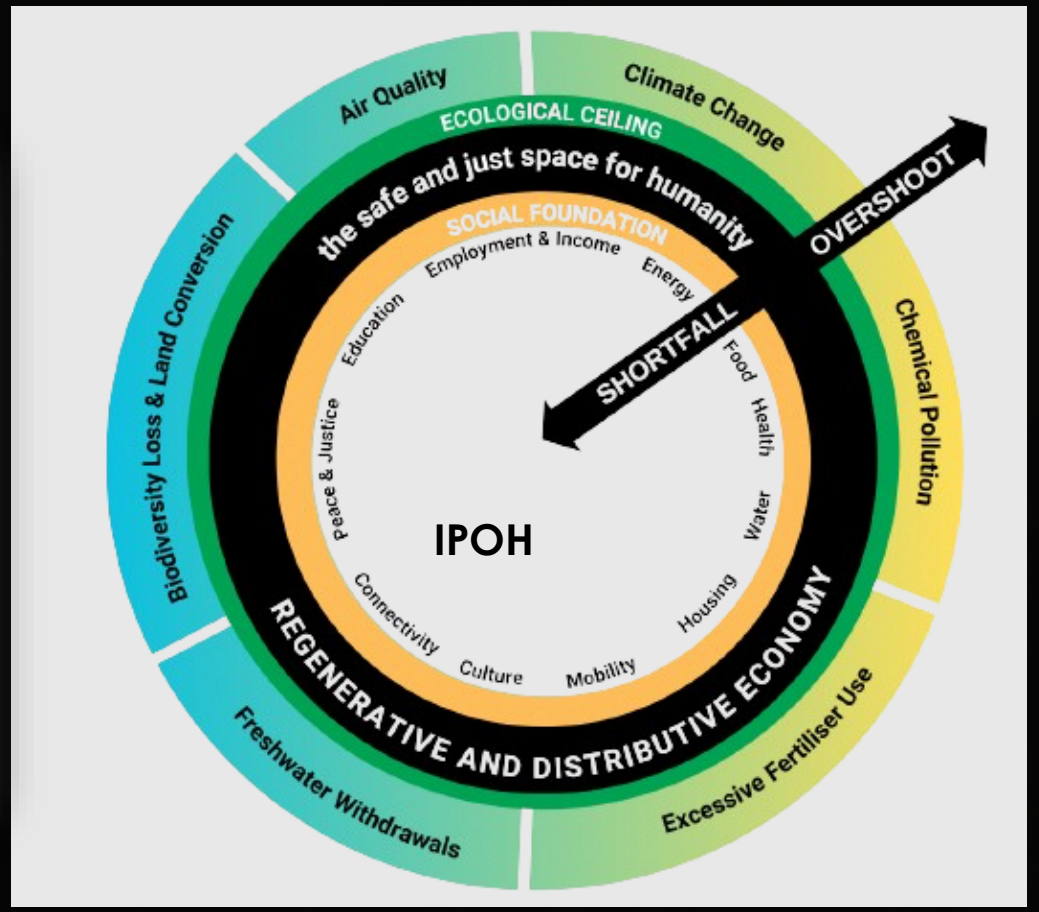

Every nation must transform


DOUGHNUT ECONOMICS
KATE RAWORTH
MAJLIS BANDARAYA IPOH

Ipoh, Perak shifting the narrative from a mining-heavy city to a regenerative society using the Doughnut Economics model.







UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME
Programme des Nations Unies pour les établissements humains

UN-HABITAT

OFFICE OF THE EXECUTIVE DIRECTOR

Ref: UNH-OED-OL-240827-05

Nairobi, 27 August 2024

Dear Sir/Madam,

I am delighted to inform you that Ipoh Doughnut Economics has been selected to receive the 2024 UN-Habitat Scroll of Honour Award.

Many commendable candidates were considered for this award. It was our unanimous opinion that Ipoh Doughnut Economics receive the award for its effort to transition the city from a resource-intensive economy to a regenerative model focused on health, waste management, and ecotourism, while aligning with the Sustainable Development Goals.

The award ceremony for the 2024 UN-Habitat Scroll of Honour winners will take place during the Global Observance of World Habitat Day in Querétaro, Mexico, on 7 October 2024. Thereafter, the Government of the United Mexican States, the State of Querétaro, and UN-Habitat will host the "Beyond the 2030 Agenda" event from 8 to 10 October 2024. Please find more information about the Global Observance of World Habitat Day here.

It gives me great pleasure to invite the appointed representative of Ipoh Doughnut Economics to travel to Querétaro, Mexico, to receive this prestigious award and attend the "Beyond the 2030 Agenda" event. UN-Habitat will provide an Economy Class air ticket and a Daily Subsistence Allowance (DSA).

I would be grateful if you could confirm acceptance and provide the details of the representative traveling to Querétaro, Mexico, by Friday, 30 August 2024, and send this information to Ms. Zahra Hassan (zahra.hassan@un.org) and Mr. Bryan Njeru (bryan.njeru@un.org) to discuss further travel arrangements.

Yours sincerely,

Anacláudia Marinheiro Centeno Rossbach
Under-Secretary-General and
Executive Director

Submitter:
Sunway Centre for Plenatary Health
Petaling Jaya, Selangor, Malaysia
maisarahf@sunway.edu.my

Project:
Ipoh Doughnut Economics
Ipoh, Perak, Malaysia
zulqmbi@gmail.com

GENERAL

Nga Congratulates Ipoh For Winning UN Habitat Scroll Of Honour Award

04/09/2024 06:07 PM

Nga Kor Ming

PUTRAJAYA, Sept 4 (Bernama) -- Housing and Local Government Minister Nga Kor Ming today congratulates the Ipoh City Council and key partners for being awarded the 2024 UN-Habitat Scroll of Honour Award for the Ipoh Doughnut Economics programme.

The New York Times

In Landmark Ruling, Air Pollution Recorded as a Cause of Death for British Girl

Legal and environmental experts hailed a coroner's ruling that, for the first time in Britain, directly linked a specific person's death to air pollution.

Give this article

Ella Adoo-Kissi-Debrah in a photo shown by her mother, Rosamund. Hollie Adams/Agence France-Presse — Getty Images

The Guardian
For 200 years

Air pollution

Ella Kissi-Debrah: how a mother's fight for justice may help prevent other air pollution deaths

Landmark ruling that toxic fumes killed nine-year-old Londoner follows long campaign for truth

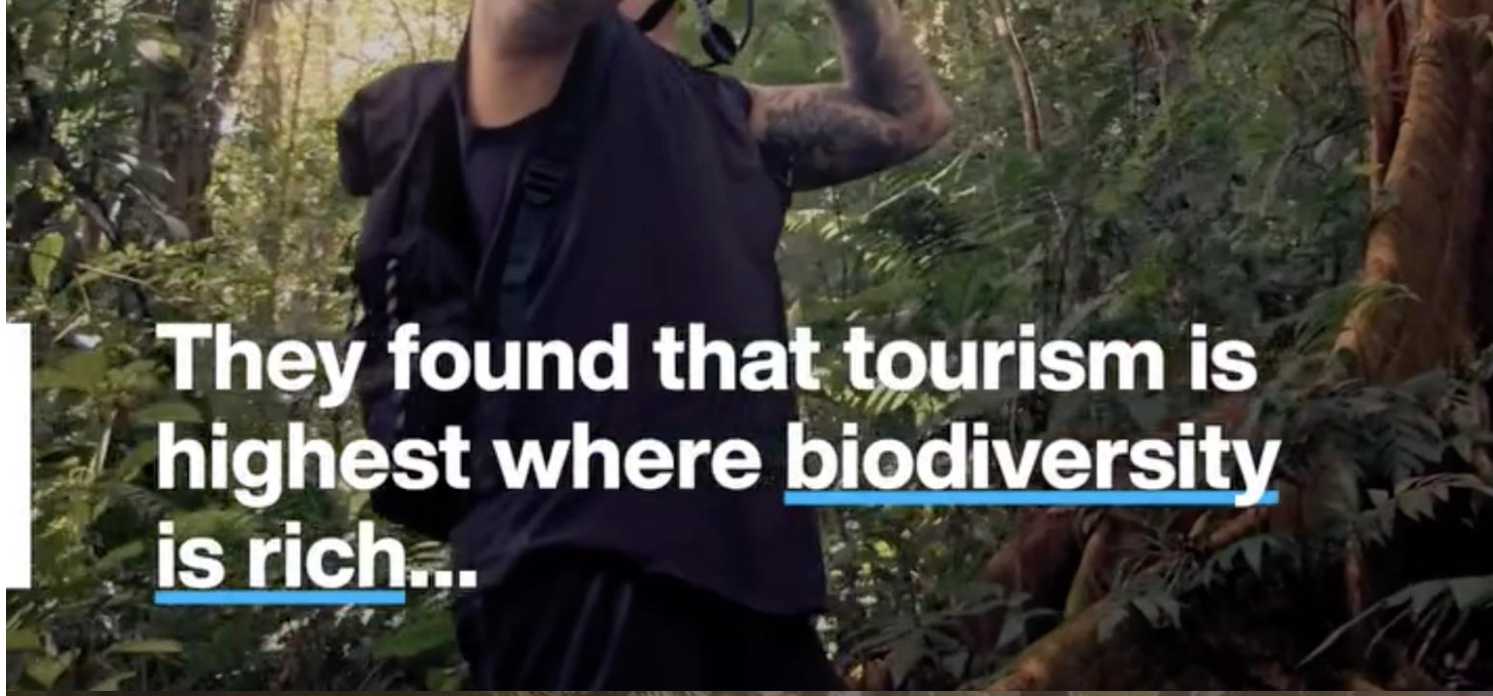
Ella Kissi-Debrah died in February 2013 after a severe asthma attack. Photograph: Hollie Adams/AFP/Getty Images


OPTIMISM
3. Renewables will eclipse fossil fuels for half of the world's population as the share of fossil fuels in the power capacity of BRICS countries will drop to below 50% for the first time this year - an important milestone.
Global Energy Monitor
OUTRAGE!

Case Study: Costa Rica

80% of tourists
Spend time in nature.

Long-term tourist stays are highest
Where biodiversity is rich, and with accessible infrastructure.



PHAM2024

Global Planetary Health Roadmap and Action Plan

Kuala Lumpur Call to Action

The Right Hon. Datuk Patinggi Tan Sri (Dr.) Abang Haji Abdul Rahman Zohari bin Tun Datuk Abang Haji Openg

Premier of Sarawak

Sarawak Sustainability Insights

Keynote Address

by

The Right Honourable
Datuk Patinggi Tan Sri (Dr)
Abang Haji Abdul Rahman Zohari
bin Tun Datuk Abang Haji Openg

Premier of Sarawak

MINISTRY OF ENERGY AND ENVIRONMENTAL SUSTAINABILITY

EY

PETROS UEM EDGENTA PETRONAS 50 Maybank sarawak energy AFFIN

By leveraging on its strategic location and rich natural resources, Sarawak can seize new opportunities in this evolving landscape

Strategic location

Close proximity to developed and growing economies:

Gateway to:

Rich natural resources

- More than 60% forest cover
- Large water bodies and river systems
- Palm and timber products
- Liquefied natural gas (LNG) and petroleum
- 2.1 million hectares of total protected areas
- Valuable minerals and non-radioactive rare earth elements

New opportunities

Hub for sustainable trade and investment

Renewable and clean energy growth

Advanced green technologies

Carbon credits

Addressing challenges posed by climate change and resource depletion

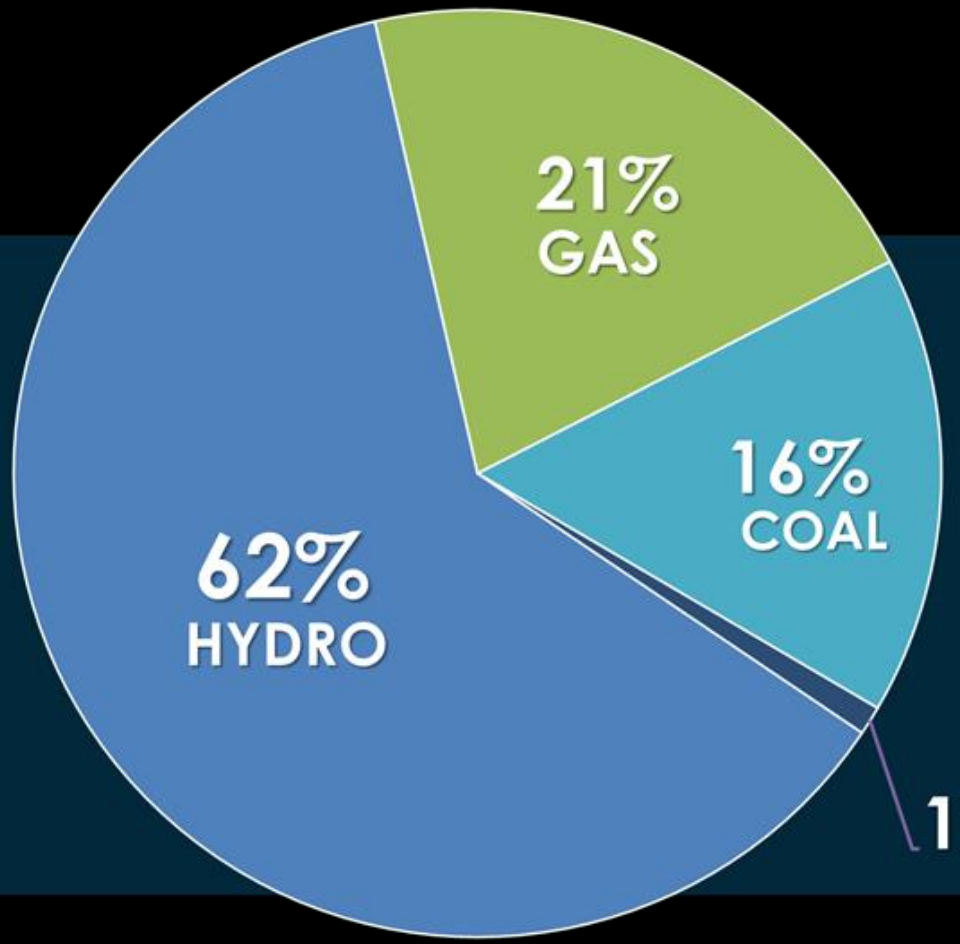
Post COVID-19 Development Strategy 2030

By 2030, Sarawak envisions a prosperous society led by data and innovation, ensuring economic prosperity and environmental sustainability for all

Batang Ai Hydropower

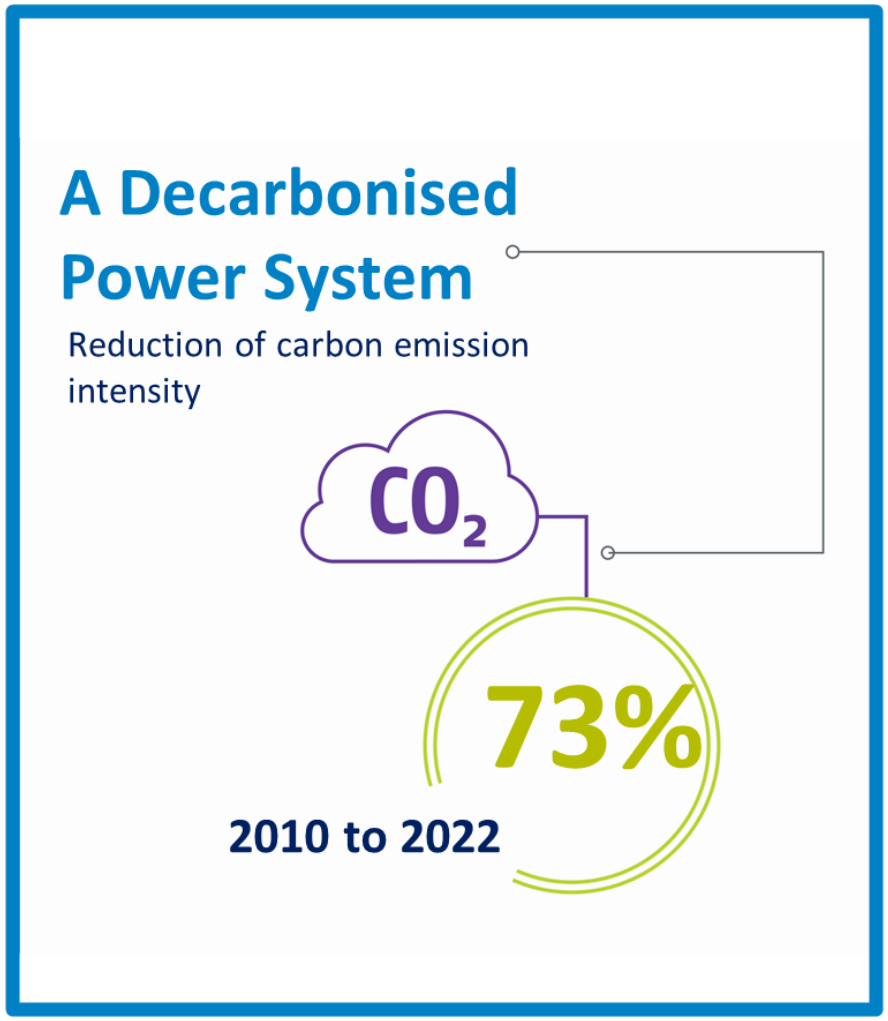
Bakun Hydropower

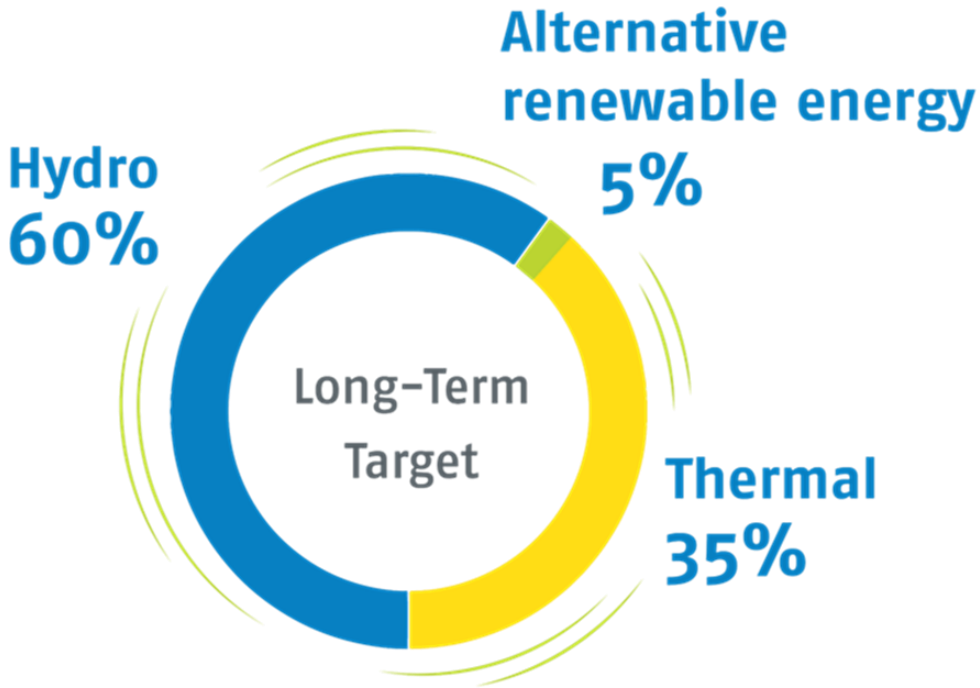
Murum Hydropower



Energy Generation Mix

Energy transition in Sarawak



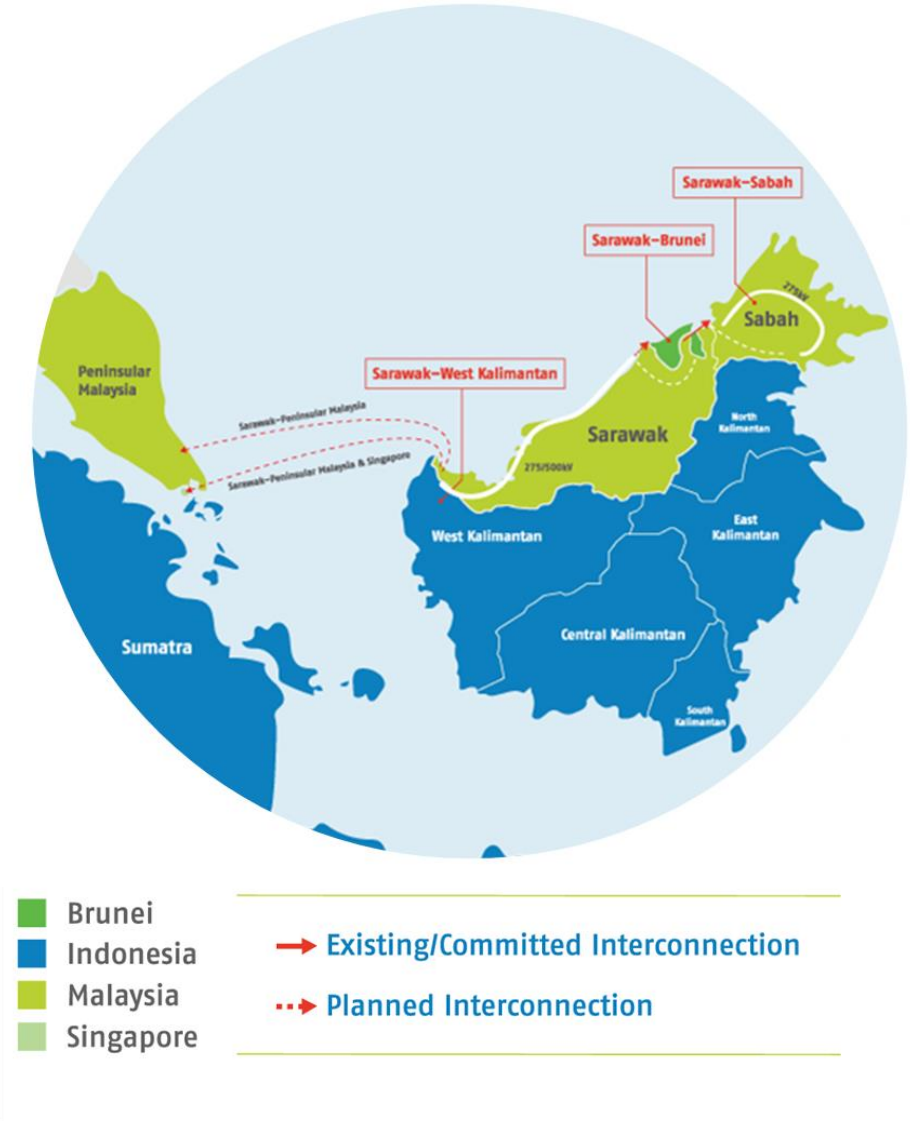


- Predominantly renewable hydropower
- Complemented by indigenous coal and gas for security of supply
- Advancing into renewable energy like solar

Singapore International Energy Week (SIEW) emphasized importance of collaboration to strengthen regional connectivity

Towards becoming a renewable energy powerhouse

Sarawak is advancing efforts to realise the ASEAN Power Grid by pursuing bilateral transmission interconnections with our Southeast Asian neighbours whilst protecting our rich biodiversity and promote eco-tourism



Napier grass as another source of renewable energy feedstock

Sarawak Sustainability Blueprint aims to support green transition and socio-economic equity

Strategies and Action Plans

10	48	98
Strategic Thrusts	Action Plans	Action Plans


Utilities


Oil & Gas


Transport


Agriculture


Forestry


Manufacturing


Mining


Tourism


Waste

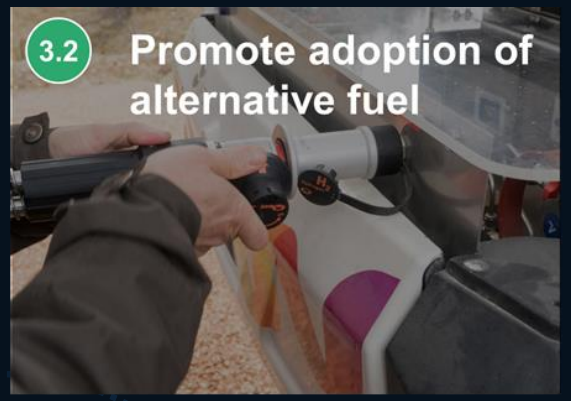

Real Estate & Construction

Reduce emissions and enhance connectivity across Sarawak and beyond

Strategic Thrust 1: Energy Transition

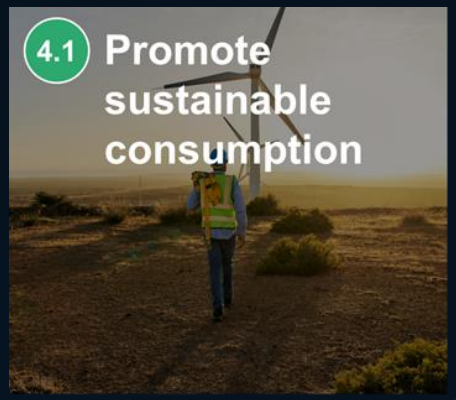
Enhance food security while safeguarding our natural resources

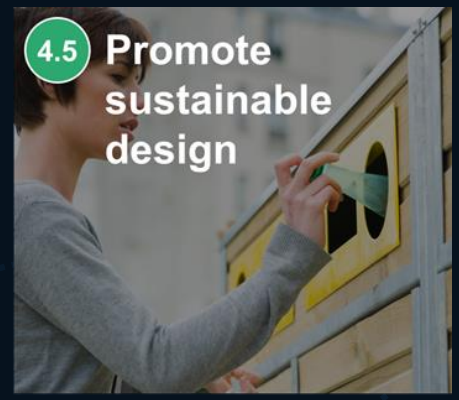
Strategic Thrust 2: Sustainable Agriculture and Food Security



Reduce emissions and enhance connectivity across Sarawak and beyond

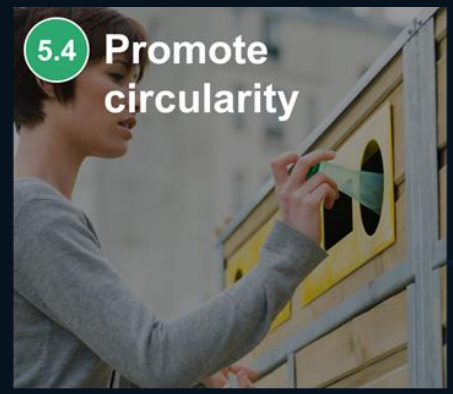
Strategic Thrust 3: Sustainable Mobility





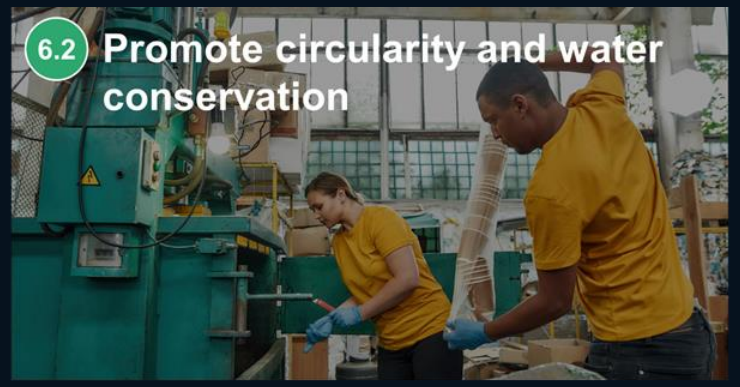
Minimize our waste and maximize resource efficiency

Strategic Thrust 4: Circular Economy



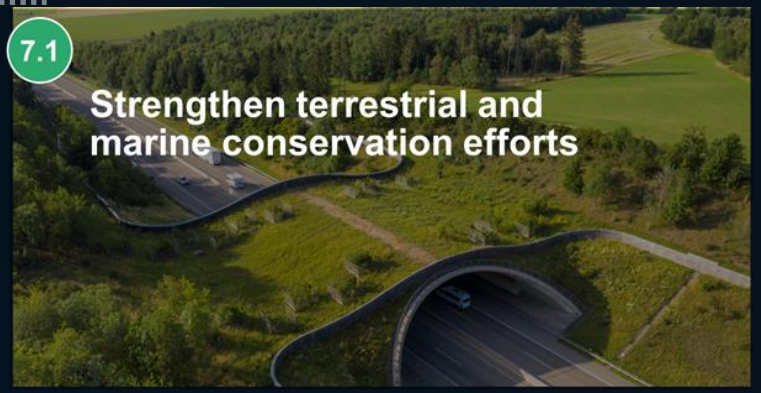
Reduce environmental impact, positioning Sarawak as a leader within the region

Strategic Thrust 5: Sustainable Manufacturing



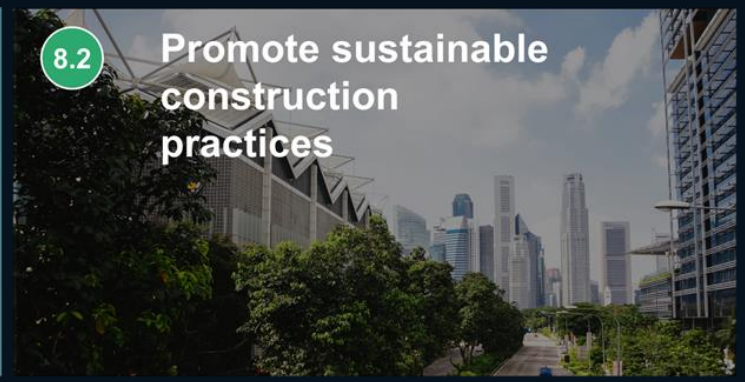
Balance economic growth with environmental protection

Strategic Thrust 6: Sustainable and Responsible Mining



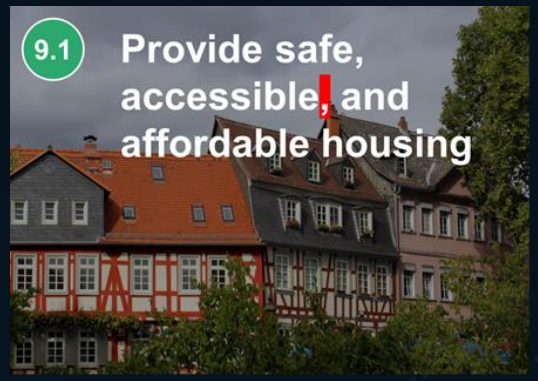
Conserve biodiversity to protect our forests, rivers, and wildlife for generations to come

Strategic Thrust 7: Protection and Enhancement of Natural Assets



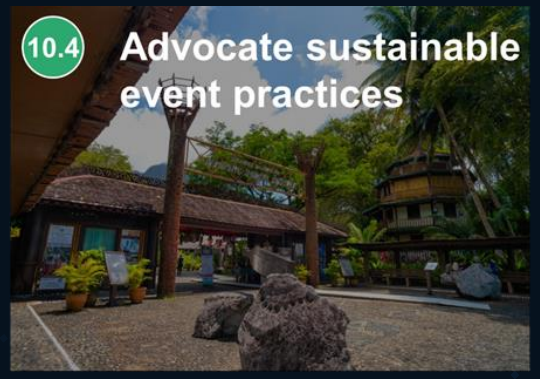
Promote smart city initiatives that integrate green spaces, smart mobility and renewable energy solutions

Strategic Thrust 8: Sustainable Cities



Support the community through targeted programs aimed at improving their quality of life, ensuring that no one is left behind

Strategic Thrust 9: Inclusive Social Equity



Showcase Sarawak's natural beauty whilst generating economic benefits for local communities as well as preserving both our cultural heritage and environment

Strategic Thrust 10: Eco Tourism


Kuching Sentral


SUSTAINABLE
Baltic

Community Engagement and Inclusivity

Source: Sarawak Energy Berhad

Collaborate Effectively as Partners in Progress


Thank you

Tan Sri Datuk Amar (Dr) Haji Abdul Aziz Bin Dato Haji Husain

Sarawak Economic Development Corporation (SEDC)

Sarawak Sustainability Insights (SSI) 2024

Topic: "Sustainable Energy Future for Sarawak"

Opening Remarks by:
YBhg. Tan Sri Datuk Amar (Dr) Haji Abdul Aziz Bin Dato Haji Husain

Chairman
Sarawak Economic Development Corporation (SEDC)

Post COVID-19 Development Strategy 2030 (PCDS 2030)

- *PCDS 2030 aims to reverse the far-reaching negative impacts of COVID-19 pandemic & transform Sarawak into a competitive and sustainable economy, powered by renewable energy such as hydropower, floating solar and hydrogen*

Hydrogen Value Chain

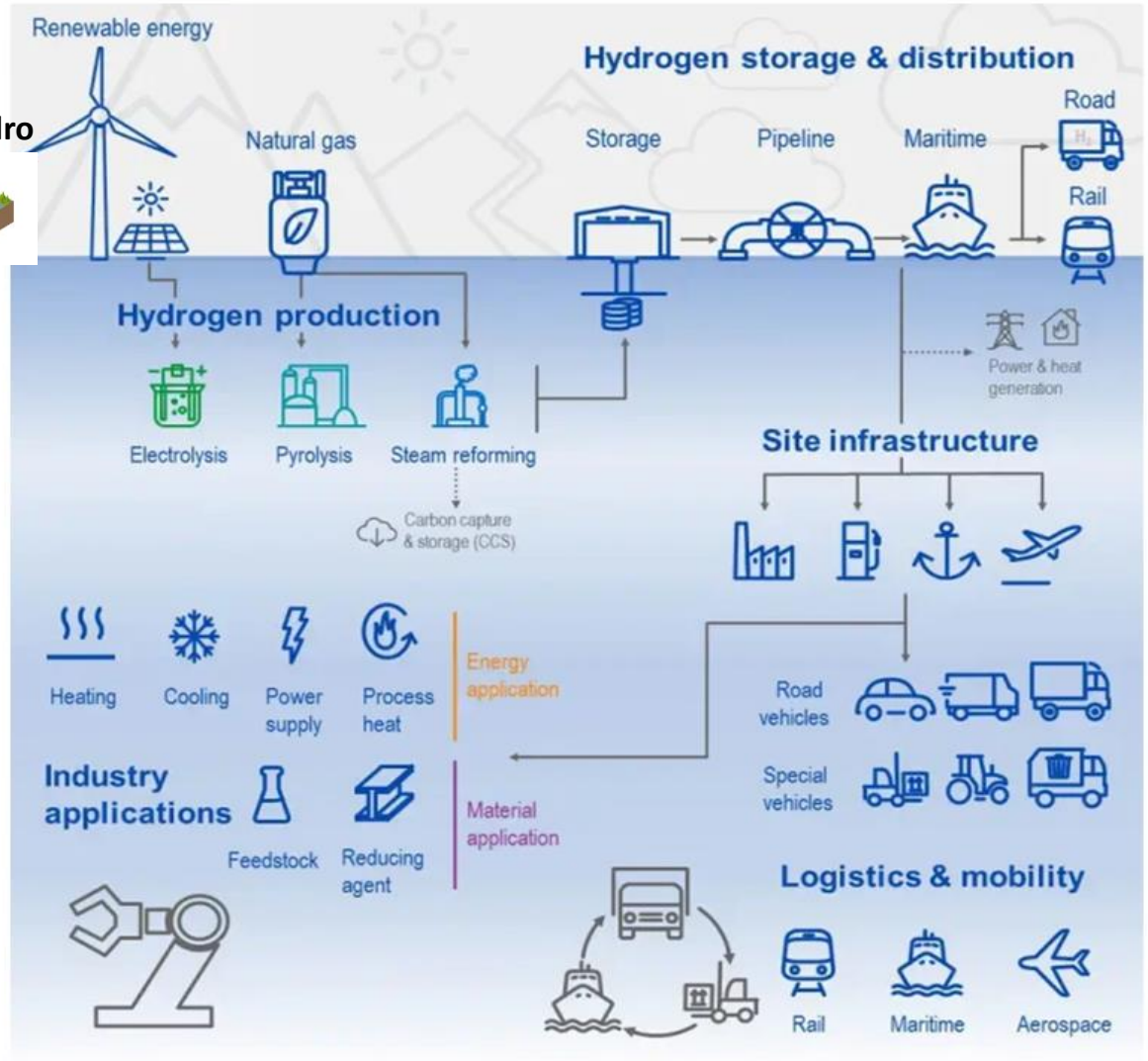
Sarawak Energy

Hydro

Sarawak Hydrogen Hub

- **Rembus**
- **H2ornbill**
- **H2biscus**

Decarbonizing local industrial players



SEDC Energy (SEDCE)

Multifuel Station

Sarawak Metro - (KUTS)

Datuk Haji Sharbini Suhaili

Sarawak Energy

Sustainable Energy Future for Sarawak

Sarawak Sustainability Insights

Datuk Haji Sharbini Suhaili
Group Chief Executive Officer, Sarawak Energy

29 October 2024

Power to Grow

Powering Sarawak's Green Ambition

sarawak energy

2008

Launch of SCORE

SARAWAK CORE
CORRIDOR OF RENEWABLE ENERGY

2020

Sarawak Economic Action Council (SEAC) was formed to formulate the Post COVID-19 Development Strategy 2030

2021

Launch of Post COVID-19 Development Strategy 2030

- Digital Economy
- Sustainability
- Renewable Energy

2030

10GW Renewable Energy Capacity

Renewable Energy Targets

- 60% Renewable Energy Capacity Mix
- 600,000-Ton Annual Reduction in CO2 Emissions
- Over 15% Income From Foreign Markets

'102030'

About Us

Vertically integrated energy development company and power utility and Malaysia's largest renewable energy developer

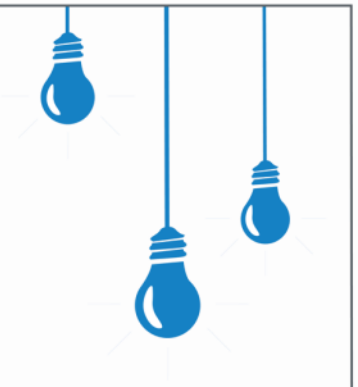
- **Power generation, transmission, distribution, retail and export**

Our Vision

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

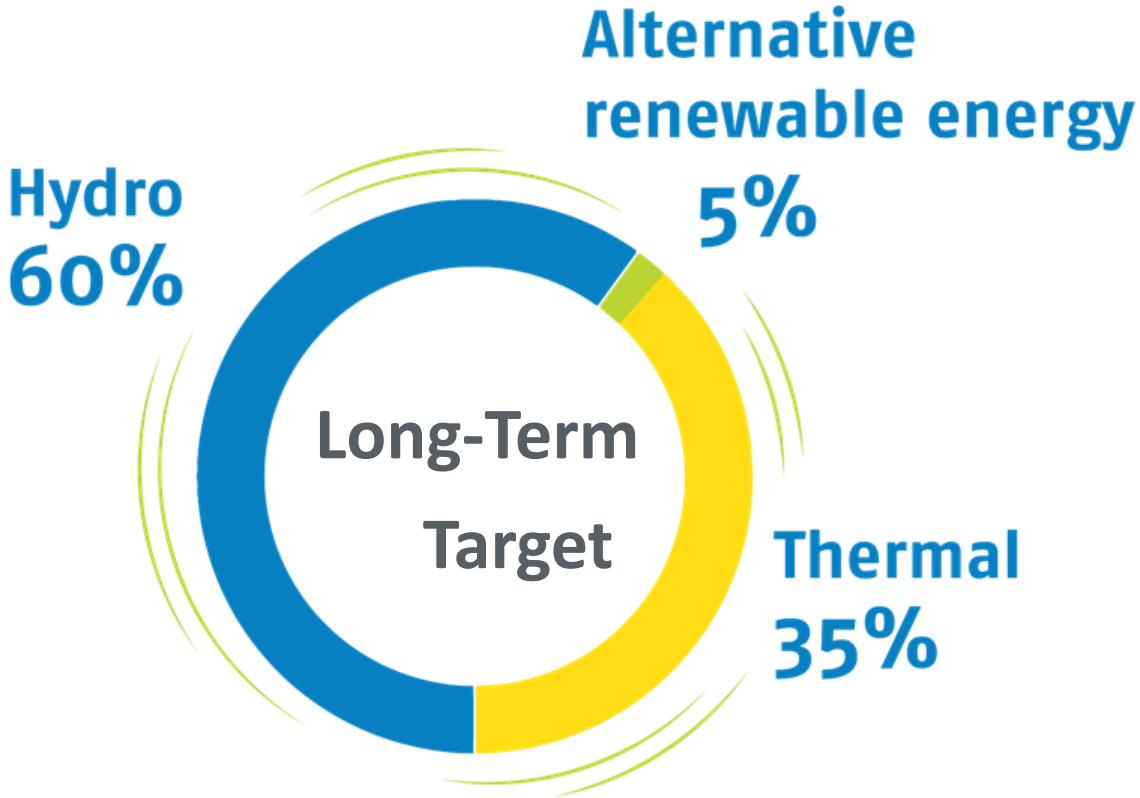
Lighting Up Communities

Towards Achieving Full Electrification by 2025



Advancing Renewable Energy

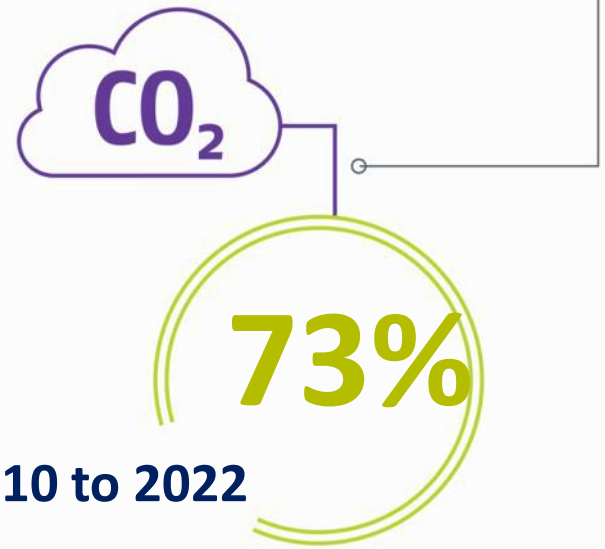
Balanced Capacity Mix



- Predominantly renewable hydropower
- Indigenous gas and coal resources for security of supply
- Advancing research into alternative renewable energy like solar

A Decarbonised Power System

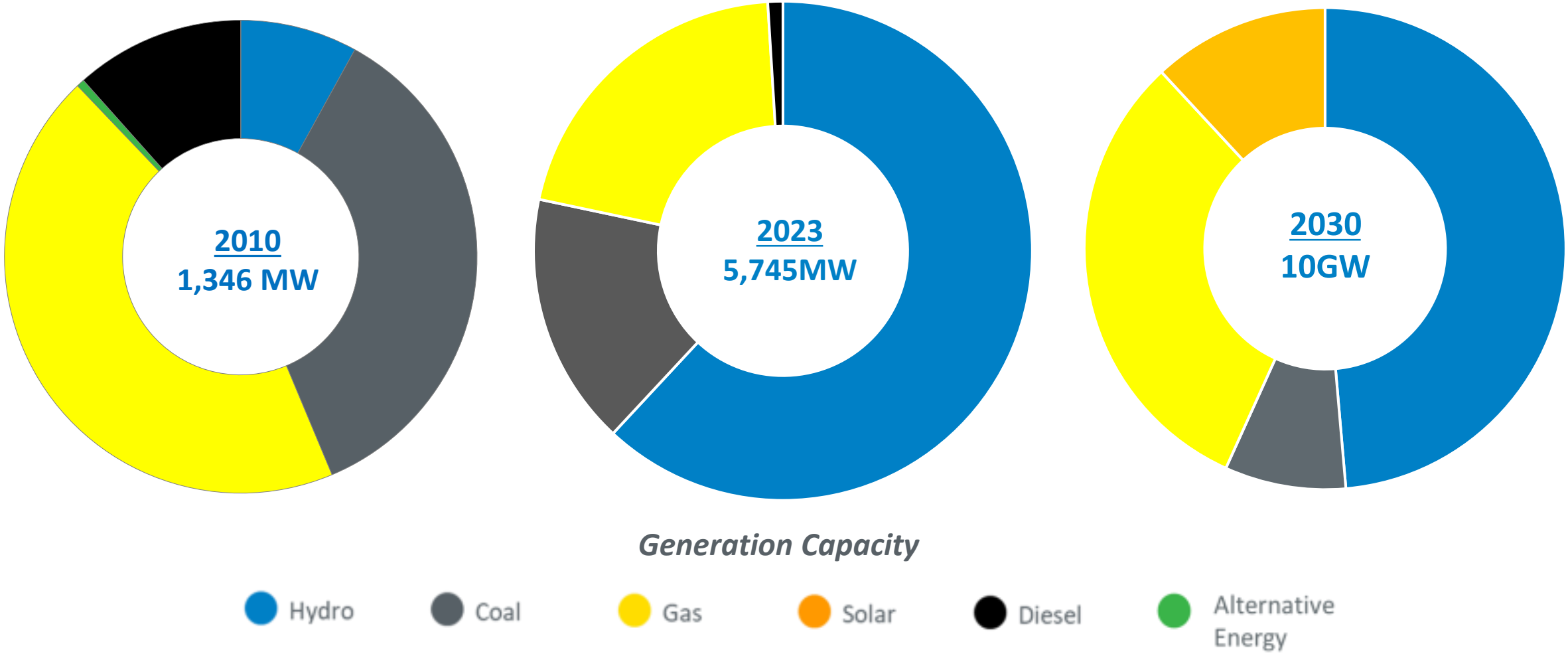
Reduction of carbon emission intensity



2010 to 2022

Sarawak's Energy Transition to 10GW by 2030

- Predominantly renewable hydropower and part of Malaysia's renewable energy target since 2021
- Balanced by indigenous thermal generation for energy security and diversify to include solar and other renewable energies



Advancing Renewable Hydropower

Batang Ai	Bakun	Murum	Baleh
• 94MW Available Capacity • Commissioned in 1985	• 2,520MW Available Capacity • Commissioned in 2011	• 944MW Available Capacity • Commissioned in 2014	1,285MW Available Capacity Expected Commissioning Date: Q4 of 2030

Correct as of Q2, 2024

All hydropower facilities operated by Sarawak Energy are guided by the International Commission on Large Dams (ICOLD) and the Hydropower Sustainability Standard (HSS).

Increasing Our Share of Renewable Energy

Batang Ai Floating Solar Farm
50MW Available Capacity
Expected Commissioning Date: Q4 2024

Mini Hydroelectric Plant
Kota 2
11.1MW Available Capacity

Micro-Hydro Power Plant
Long Banga
400kW Available Capacity

Solar Hybrid Power Station
Bario Highlands
600kW Available Capacity

Correct as of Q2, 2024

Anchored on the 17 UN SDGs

"Managing our business to minimise any negative impact of our operations and our environment, and maximise the positive impact of what we do for our people and planet."

United Nations Sustainable Development Goals (UN SDGs)

- Our business practices are aligned to all UN SDGs with a focus on 8 goals

BUSINESS AMBITION FOR 1.5°C

UNITED NATIONS PARIS CLIMATE AGREEMENT SIGNING CEREMONY 22 APRIL 2016

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

- First Malaysian Company to Sign Pledge toUnited Nations Global Compact's 'Business Ambition for 1.5°Celsius' Pledge
- First large corporation in Malaysia to receive approved Science Based Targets initiative (SBTi)

SUSTAINABILITY & RENEWABLE ENERGY FORUM

SAREF 4.0

Mark Your Calendar: 23-24 September 2025

Kuching, Sarawak, Malaysia

Visit **www.saref.com.my** , email saref@sarawakenergy.com or scan this QR code for more information.

Join us at SAREF 4.0 in Malaysian Borneo, Kuching, Sarawak and be part of a movement towards a brighter, cleaner and more resilient energy landscape.

Thank You

sarawakenergy.com

Follow us on

Sarawak Energy Berhad

Sarawak Energy

1SarawakEnergy

Power to Grow

Dr. James Foo

PETROS

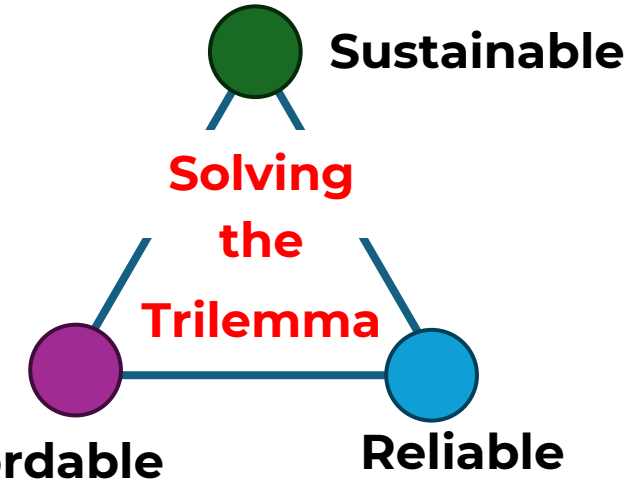
Who We Are, Our Mandate and Key Stakeholders

PETROS

Incorporated in 2017, **Petroleum Sarawak Berhad (PETROS)** is a state-owned oil and gas entity,

And engaged in the entire oil and gas value chain
(upstream, midstream, downstream).

PURPOSE:
Harnessing Resources for Sustainable Progress of Sarawak and Beyond



Key Stakeholder Groups

- **Sarawakians** – Improve *Rakyat*'s Quality of Life.
- **State Government** – One-stop champion O & G
- **Business Stakeholders** – Reliable Partner
- **Customers** – Top Service Provider
- **PETROS** – Local Employer of Choice

Realising Low-Carbon Economy Potential through Sarawak's Advantages

To create a low-carbon economy domestically, leveraging on our natural resources to attract and retain high-value investments

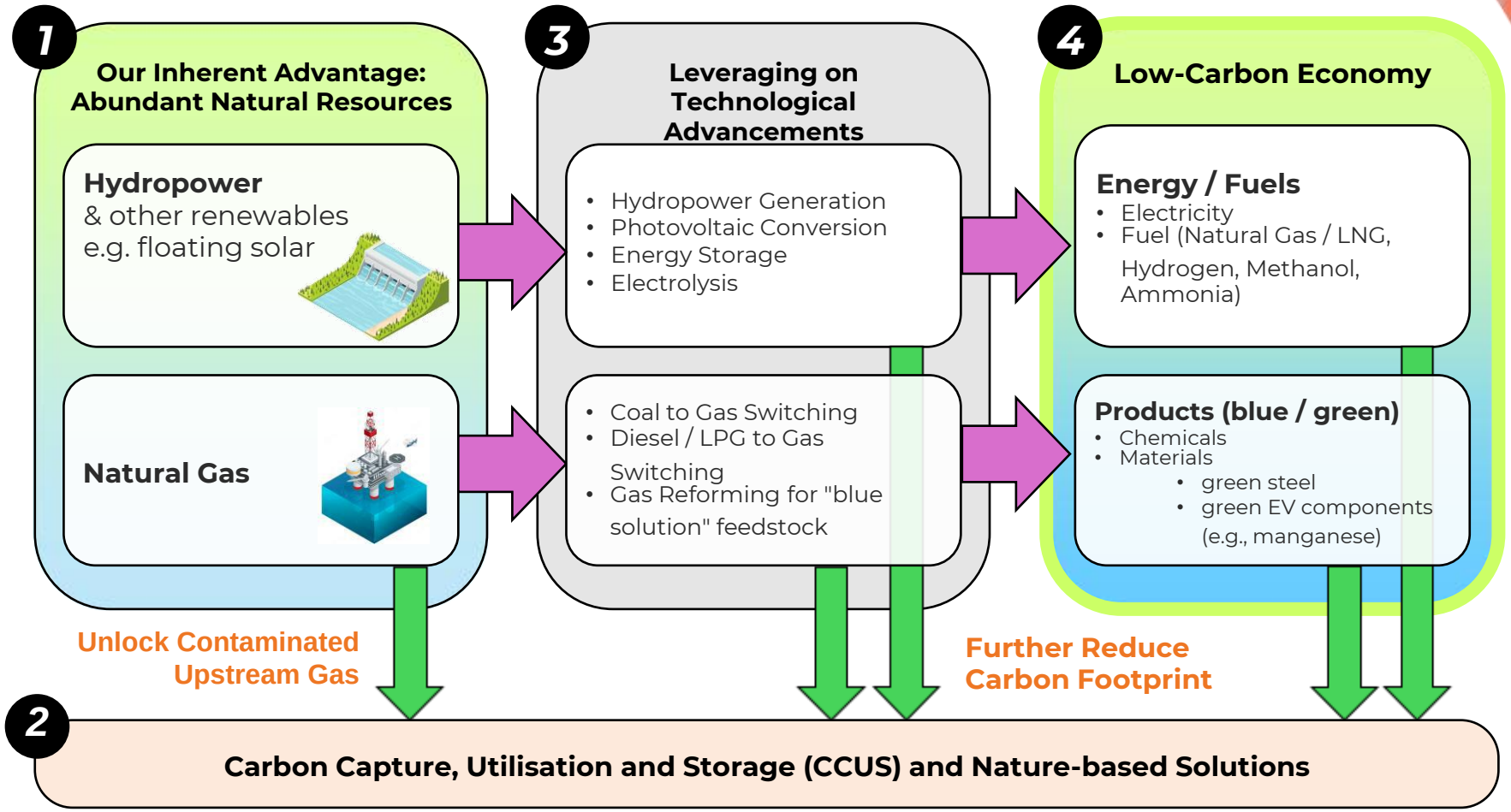
No. 1 in Natural Gas production and reserves in Malaysia (> 60% reserves)

No. 1 in CCS potential in Malaysia (> 65% CCS potential)

No. 1 in Hydropower generation potential in Malaysia

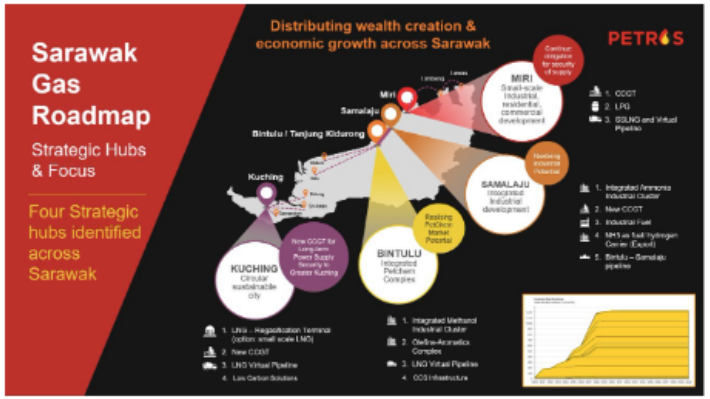
Abundant land and water resources for industrial development and utilities

Strategic location, well-positioned at the center of South China Sea covering 1/3 of global maritime traffic



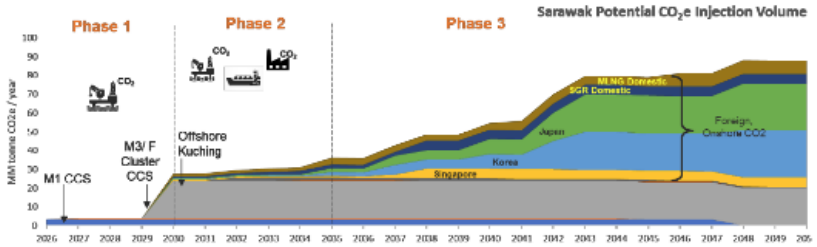
Plans for Sustainable Growth - In Execution

30% Domestic Gas by 2030



Sarawak Gas Roadmap

3 CCS Sites by 2030



Sarawak CCS Roadmap

Economic Impact	> RM21Bn + **RM15Bn** p.a GDP	~ 21 TCF HC Unlocked
Total Jobs Creation	> 75, 000 Jobs	> 60, 000 Jobs At Peak

Attracting >>100Bn significant FDI and DDI to further boost Economic growth

Enabled by PETROS & Strong State Advocacy for:

- Balance domestic/export, build strategic infrastructure, influence State "Power" and Energy Mix
- Orchestrate the development of CCUS infrastructure to underpin low-carbon economic growth

In partnership with Federal Agencies, Industry Investors and Solution providers.

Kaveta Chelliah

UEM Edgenta

Turning Challenges into Opportunities: Advancing Sustainability with Energy Efficiency and Green Building Solutions for Net Zero Goals

Sarawak's Commitment To Sustainability

Sarawak is committed to reducing environmental footprint and fortifying economic resilience

OPUS CONSULTANTS
AN EDGENTA COMPANY

Vision

- Net Zero emissions by 2050
- Low Carbon and inclusive green economy by 2030

Aspirations

- Sarawak to become the ASEAN "Battery"
- Sarawak aims to be the "Green Energy Hub" and boost talent pool

Key Initiatives

1 Sarawak Post Covid Development Strategy 2030 (PCDS 2030)

- Sustainable Building Development – GBI, IBS, BIM
- Green Infrastructure
- Smart / Low Carbon City
- Digital Assets Management

2 Environmental, Social & Governance (ESG)

- Global movement led to increase adoption of ESG by Governments and businesses globally

3 Sarawak Net Zero Target 2050

- Utilizes floating solar farm technology
- Aim for 4% large scale solar in generation mix by 2030
- Aim to provide the region with affordable and reliable renewable energy

4 Sarawak Green Policy Economy 2030

- Vision: Low carbon and inclusive green economy by 2030
- Focus sectors:
  - Energy
  - Transport & Mobility
  - Land Use
  - Waste and Water
  - Low Carbon Cities
  - Industrial

Benefits

- **Energy Savings & Cost Reduction**
- **Local Job Creation & Knowledge Transfer**
- **Climate Change Mitigation**
- **Attracting Investment**

Decarbonizing Buildings is a Low Hanging Fruit Transitioning to Low Carbon Economy

- Buildings are one of the **major contributor** to global carbon emissions
- **40% of global carbon emissions are generated by the built environment**, primarily through energy consumption…
- … out of which **30% arise from embodied carbon** in construction, and **70% from building operations**
- **Opportunity to accelerate to a low carbon economy through Green Building Retrofit and Energy Efficiency (EE) Solutions**

Huge Opportunity to Accelerate Sarawak's Net Zero Target with GBI Initiatives

Sarawak's unique situation present valuable opportunities for green growth

Where is Sarawak today?

>200
Sarawak Government Buildings

22 GBI buildings in Sarawak
3 Green RE buildings

5 Sarawak's Government Buildings are **GBI**
- 1 GBI Gold
- 1 GBI Silver
- 3 GBI Certified

- Currently, **low GBI adoptions** compared to the total number of buildings in the region
- Estimated **< 1% of Government buildings in Sarawak are rated green**
- **Huge opportunity** in the adoption of sustainable building practices

Prioritizing green building practices will accelerate the Sarawak Government aims to establish the state as a leading hub for sustainable development

Transforming GBI and EE Challenges into Financial Opportunities

Green practices and energy-saving solutions will ensure long-term profitability and sustainable environment

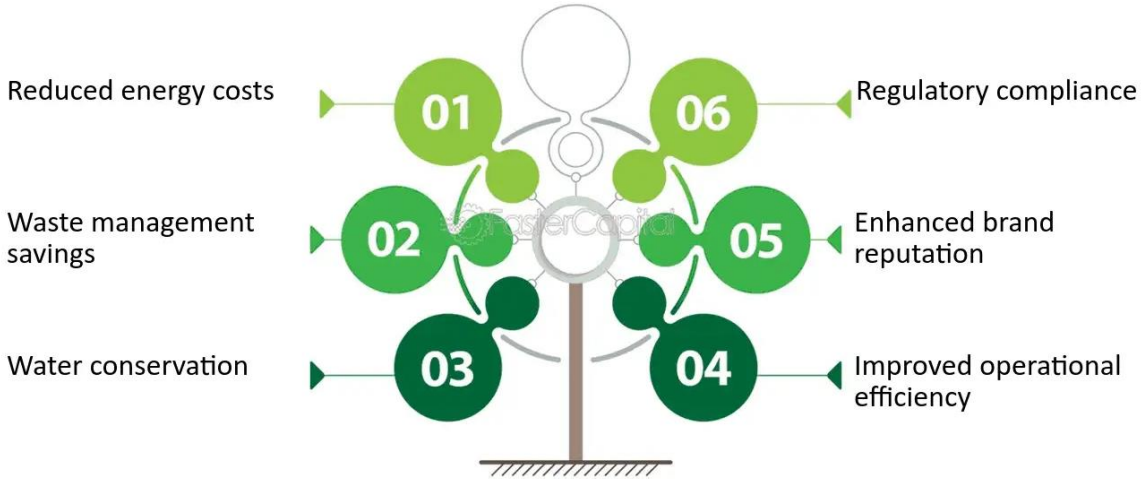
OPUS CONSULTANTS
AN EDGENTA COMPANY

Key Challenges

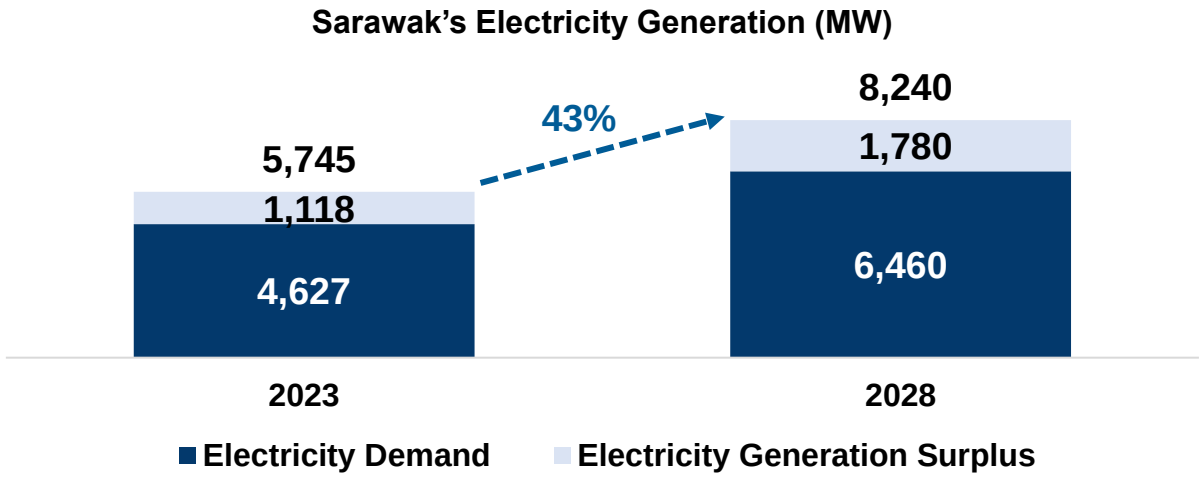
Sustainability Drives Strategic Financial Imperatives

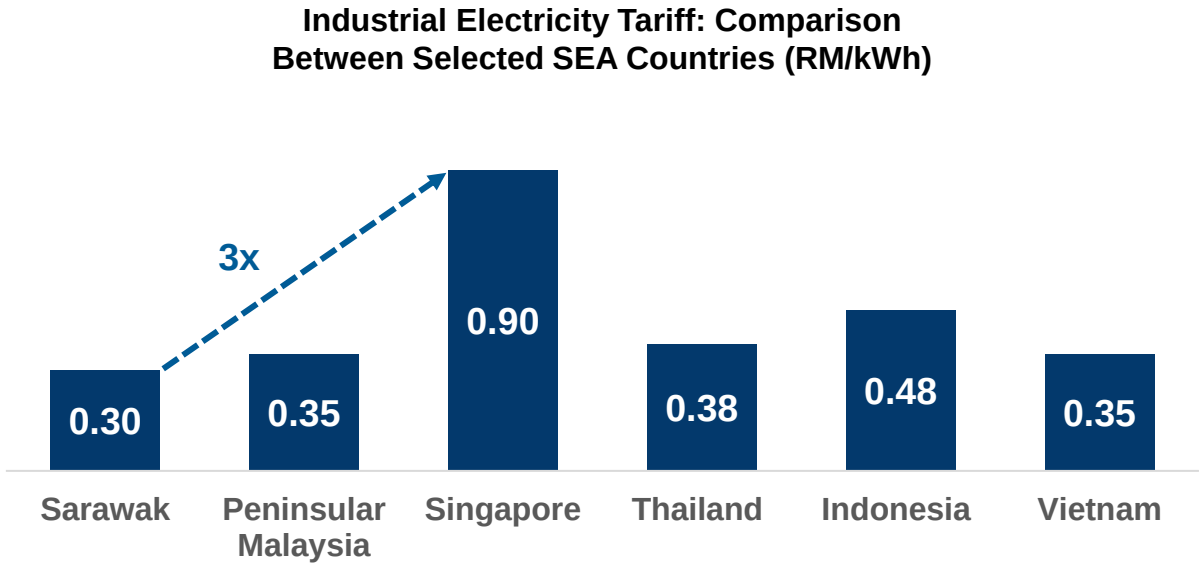
- **More than just an ethical choice—sustainability drives cost efficiencies and long-term growth**
- **Aligns with cost efficiency**: Reduces waste, lowers energy consumption, and enhances operational efficiency.
- **Future-proofs the business**: ESG practices ensure resilience and compliance with evolving regulations.
- **A license to operate**: Compliance with IFRS S1, IFRS S2, EECA, and Carbon Tax regulations ensures business continuity and competitive advantage.

Tangible Cost Benefits of Sustainable Practices



Green Retrofit and EE Solutions Will Reduce Energy Consumption, Providing More Headroom for Energy Export Opportunity





- Sarawak has 3 hydropower dams with a total capacity of 3,452MW and other sources (hydro, thermal, RE, etc) which makes up of total capacity of 5,745MW
- **Despite a 43% increase in power generation, spare capacity remains within 1,000-2,000 MW** due to rising demand and economic activity
- Compared to local rates and the energy costs of neighboring countries, there is an **opportunity for energy exports at better rates**
- **Reducing electricity demand through Green Building initiatives and EE measures will further increase surplus capacity, allowing Sarawak to capitalize on the price difference**

Source: 1. Malay Mail, 2023 2. Sarawak Energy, 2024

RM100 Million Commitment to Sarawak's Sustainable Future

Understanding CAPEX is a significant challenge, Edgenta/OPUS has allocated RM100mil to empower asset owners with EE and green building solutions, with a focus on benefiting the local community

BUSINESSTODAY

OPUS Consultants Launches RM100 Million Sustainable Zero-Capex Program for Green Building Transformation in Sarawak

By **Cynthia Ignatius** - September 6, 2023

WEEKLY WECHO

NEWS ENVIRONMENT LIFESTYLE VIDEOS OPINION SPECIAL EVENTS PRESS RELEASES

Home / News / UEM Edgenta's RM100m Green&Smart Initiative for Sarawak Gov't Buildings

UEM Edgenta's RM100m Green&Smart Initiative for Sarawak Gov't Buildings

September 6, 2023 12:19 pm

(Third from the left) Datuk Patinggi Tan Sri (Dr) Abang Haji Abdul Rahman Zohari Tun Datuk Abang Haji Openg, the Premier of Sarawak presenting the 'Outstanding World ESG Impact Award' to Syahrunizam Samsudin, the Managing Director/Chief Executive Officer of UEM Edgenta at the recent 2023 World Green & Sustainability Summit.

KUCHING, Sept 6: OPUS Consultants (M) Berhad, an asset management and infrastructure solutions subsidiary of UEM Edgenta Berhad, and EPR (Kuching) Sdn Bhd will be involved in a RM100 million 'Sustainable Zero-Capex Program' to convert existing government buildings in Sarawak into smart/green buildings.

As a **dedicated partner**, OPUS aims to align its solutions with Sarawak's key sustainable development goals:

- Edgenta/ OPUS is committed to driving positive change and fostering environmental sustainability. To support this mission**, OPUS pledges RM100 million for the 'Zero-Capex Program'**
- **Over 60% of our workforce engaged in Sarawak projects are local Sarawakians**, demonstrating our commitment to fostering local talent and contributing to the region's sustainable development
- OPUS' commitment includes **prioritizing local supply-chain, partnerships and talent to maximize the positive impact on Sarawak's communities**

Holistic Green Retrofits and Energy Efficiency for Maximum Impact

Achieving sustainability through OPUS's integrated approach. Enhancing operational efficiency, achieving green building certifications and future-proofing assets as pathway to Net-Zero

OPUS CONSULTANTS
AN EDGENTA COMPANY

Key Net Zero Energy Building Initiatives

1. **Energy Efficiency (EE)**
   (HVAC, Chiller, Air Conditioning)
   10% - 30% energy savings
2. **Lighting**
   75% energy savings
3. **Renewable Energy**
   5% - 20% energy savings
4. **Water Efficiency**
   10% - 20% water savings

Green Building Compliance & Certifications

Green Building Index (GBI)

LEEDs

Others green building certifications

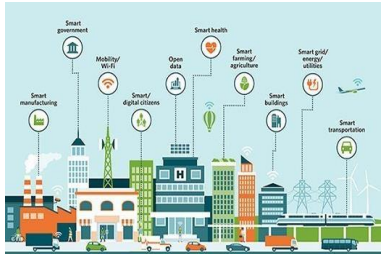
Smart Building

Enhance asset value while maximizing asset performance and optimizing maintenance cost

- Customizable Dashboards
- Command & Contact Centre
- Real-Time Monitoring System
- Smart Technology Solutions

Future-Proof Assets

Empower cities for a Net Zero Future / Smart City



- Reduce emissions
- Enhance energy efficiency
- GBI compliance buildings
- Digitalization

Empowering Sustainable Development through Comprehensive ESG Initiatives

Our solutions, including Green Building and EE, are tailored to support Sarawak's unique sustainability goals and can be customized to fit specific regional needs (for existing or new development)

OPUS End-To-End Sustainability Solutions

Consultancy & Advisory

- ESG Program Assessment
- Net Zero Strategy and Target-Setting
- Carbon Footprint Assessment
- Energy Efficiency
- Project Development
- Green Building

Assessment & Baselining

- Energy Baselining
- Energy Performance Benchmarking
- Product Valuation & Solution
- Lifecycle Analysis

Implementation & Integration

- Engineering & Technical Services
- Holistic Value Assessment
- Detailed Value Engineering
- Project Management Consultancy
- Modular Project Management
- Installation

OPUS Zero Capex Program

- Energy Performance Contracting (EPC)
- Green Performance Contracting (GPC)
- Power Purchase Agreement (PPA)

Operation & Maintenance

- Asset Management Strategy
- Preventative Maintenance
- Performance & Optimization
- Monitoring & Reporting
- Digital Solutions

OPUS Strategic Collaboration with MEESty & MIPD

OPUS is committed to support Sarawak in advancing its journey toward sustainable development

Key Focus Area:

1 Energy Efficiency & Green Building

- Advancing energy efficiency initiatives for Government buildings
- Supporting green building compliance and certifications, along with low-emission retrofits, to drive sustainable development in Sarawak
- Currently working on several pilot projects focused on energy efficiency and green buildings

2 Zero-Capex Program

- Exploring a Zero-Capex model to help Government assets achieve net-zero goals without upfront costs

Zero-Capex Program

- Backed by RM100 million, Zero-Capex initiative **eliminates upfront capital costs**, enabling asset owners across sectors to pursue green retrofits without significant initial investments
- Key Sectors:
  - Government
  - Industrial
  - Hospitality
  - Healthcare
  - Commercial buildings
  - Malls

Summary: Advancing Sarawak's Vision for a Sustainable Future

- **Strategic Alignment with Sarawak's Goals**
  Opus is committed to supporting Sarawak's journey toward Net Zero by 2050 and a low-carbon, green economy by 2030
- **Optimizing Sarawak's Energy Potential**
  While energy efficiency and green building initiatives may have a longer payback due to lower electricity costs, these measures align with Sarawak's vision to be ASEAN's "Battery."
  Reducing internal electricity demand, increases surplus capacity, allowing Sarawak to capitalize on energy exports (at higher price)
- **Local Impact and Commitment**
  Through investments in local talent, partnerships, and the RM100 million Zero-Capex Program, Opus aims to support and foster economic resilience and environmental sustainability for the people of Sarawak
- **Long-Term Support and Partnership**
  Opus is here to support Sarawak's journey with innovative, sustainable solutions for a greener future

Thank You

OPUS CONSULTANTS
AN EDGENTA COMPANY

OPUS International (M) Berhad 198601004999 (154159-T)
Level 6, Menara UEM
Tower 1, Avenue 7
The Horizon, Bangsar South City
No. 8 Jalan Kerinchi
59200 Kuala Lumpur
Malaysia
+603 2725 6688 | T
+603 2725 6888 | F
cs@opusbhd.com | E

The Edgenta Way
FIRST
FUTURE FOCUSED · IMAGINE NEW WAYS · RESPECT FOR ALL · SOLUTIONING MINDSET · TRUE TO OUR WORD

www.uemedgenta.com/opus-consultants

Haji Zafrin Bin Zakariah

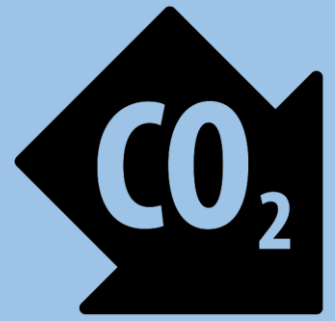
Kuching Urban Transportation System (KUTS)

Transformative impact of Kuching Urban Transportation System (KUTS)

Relieve traffic congestion, improve productivity and quality of life

Increase accessibility by linking residential, commercial, industrial, public amenities, parks and greens as well as places of interest

Catalyst to economic spillover, creating opportunities, enabling trade and facilitate access to markets and services



Lower Kuching city's per capita carbon footprint & transport related pollution

Aligning Sustainability Goals with Economic Growth

Cutting down carbon emissions through a hydrogen—powered public transport system

A cleaner and healthier city, supporting Kuching's growth as a smart city.

KUTS will make commuting easier, boost local businesses, and create new jobs in green technology sector, supporting a stronger more sustainable economy.

Sustainable City

"Sustainable cities are resilient cities that are able to adapt to, mitigate, and promote **economic, social, and environmental change**"

The World Bank

Development of Sustainable Transport Frameworks

Socio Economic Enhancement Development (SEED) Programme

Generate Employment & Economic Opportunities

Create Added Value from Investments

Generate a More Capable Workforce

Export Knowledge and Expertise Globally

Capitalise on Emerging Markets & Technology

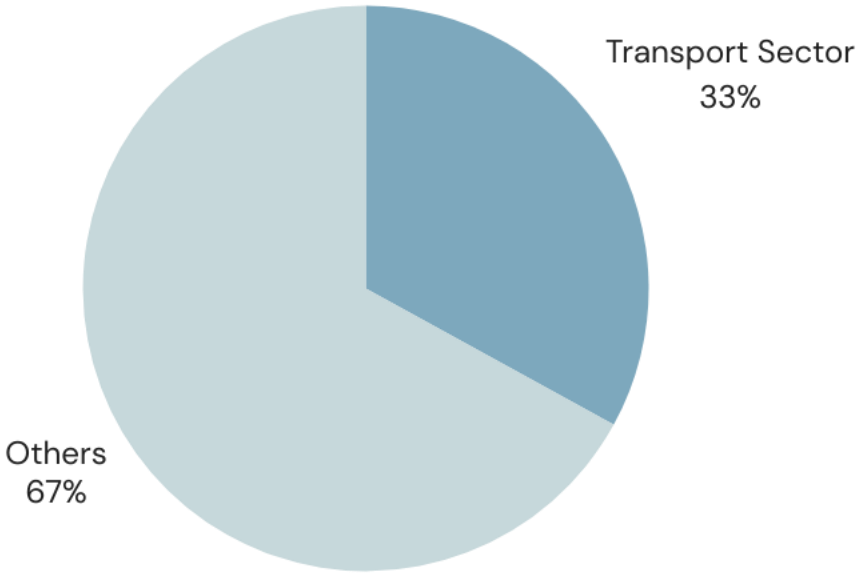
Strengthen Sarawak's Public Transport System

Natasha Zulkifli

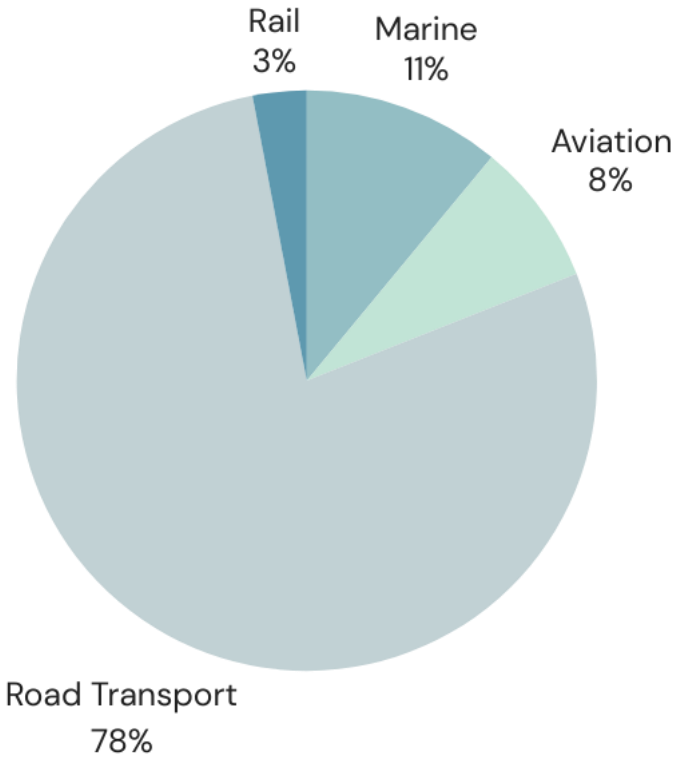
Rail Malaysia Group

2021

Total Energy Demand for end uses



Transport-related energy



Traveling by HSR emits 12x less CO2 per KM than an electric car

26x less than a combustion-powered car

HSR produces 90% less CO2 per passenger km compared to air travel

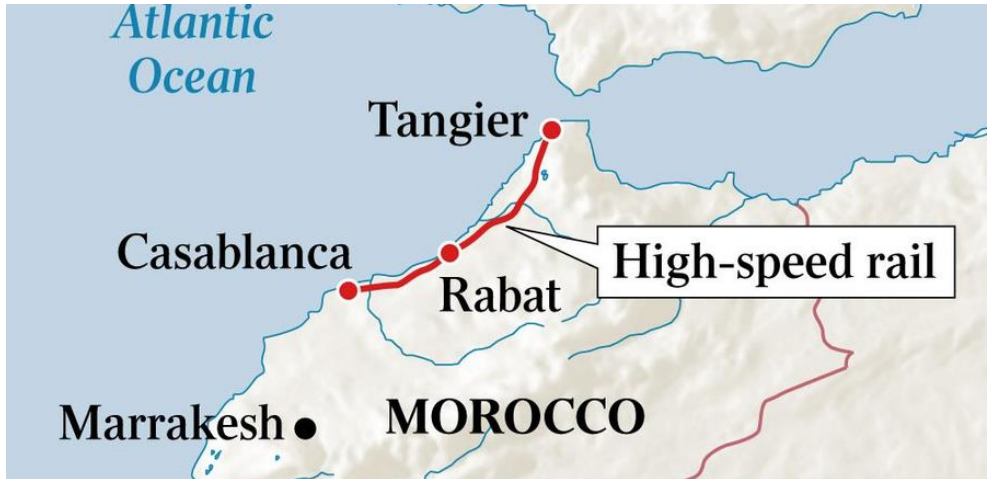
Source: Renewable Global Stats Report

Transport sector has the fastest growing energy consumption
But the lowest share of renewable energy use at 4%

Morocco – A Case Study

Al Boraq High Speed train started operations in 2018

Morocco Map – Phase 1 HSR: 320km/h



Eventually – 1500 km HSR network in Morocco

Green Power!

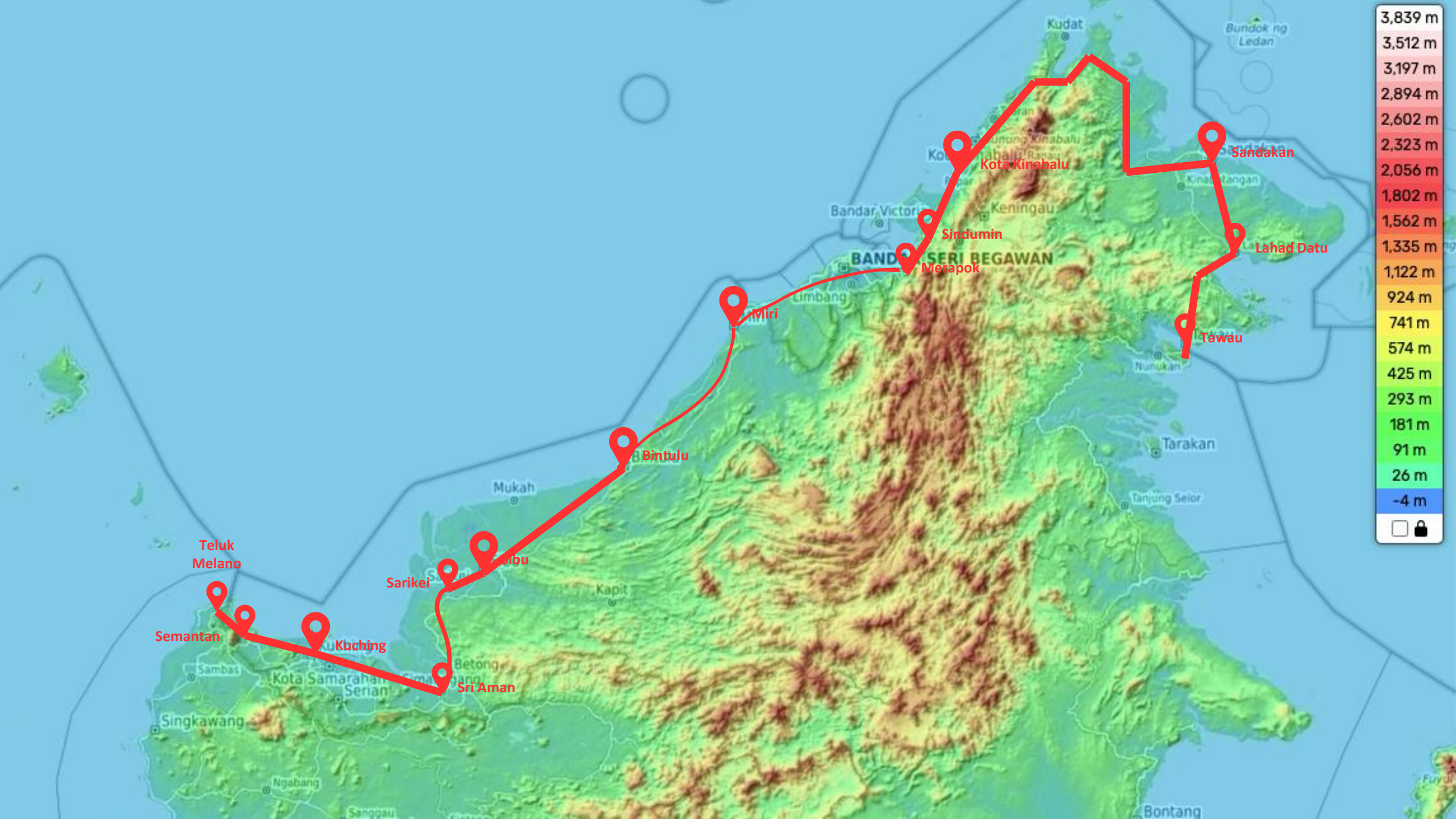
Morocco is a leader in Renewable Energy (RE)

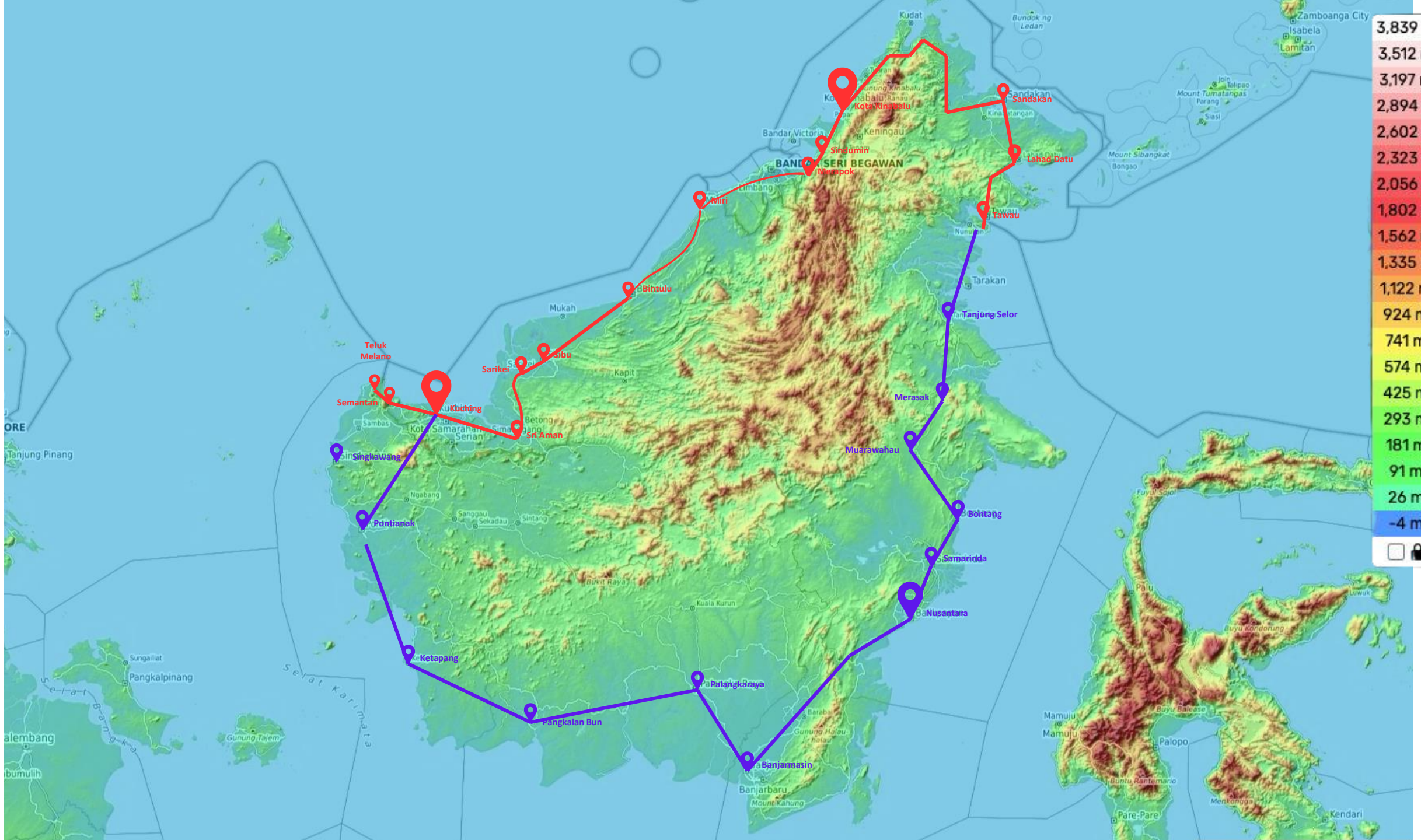
Since 2024:

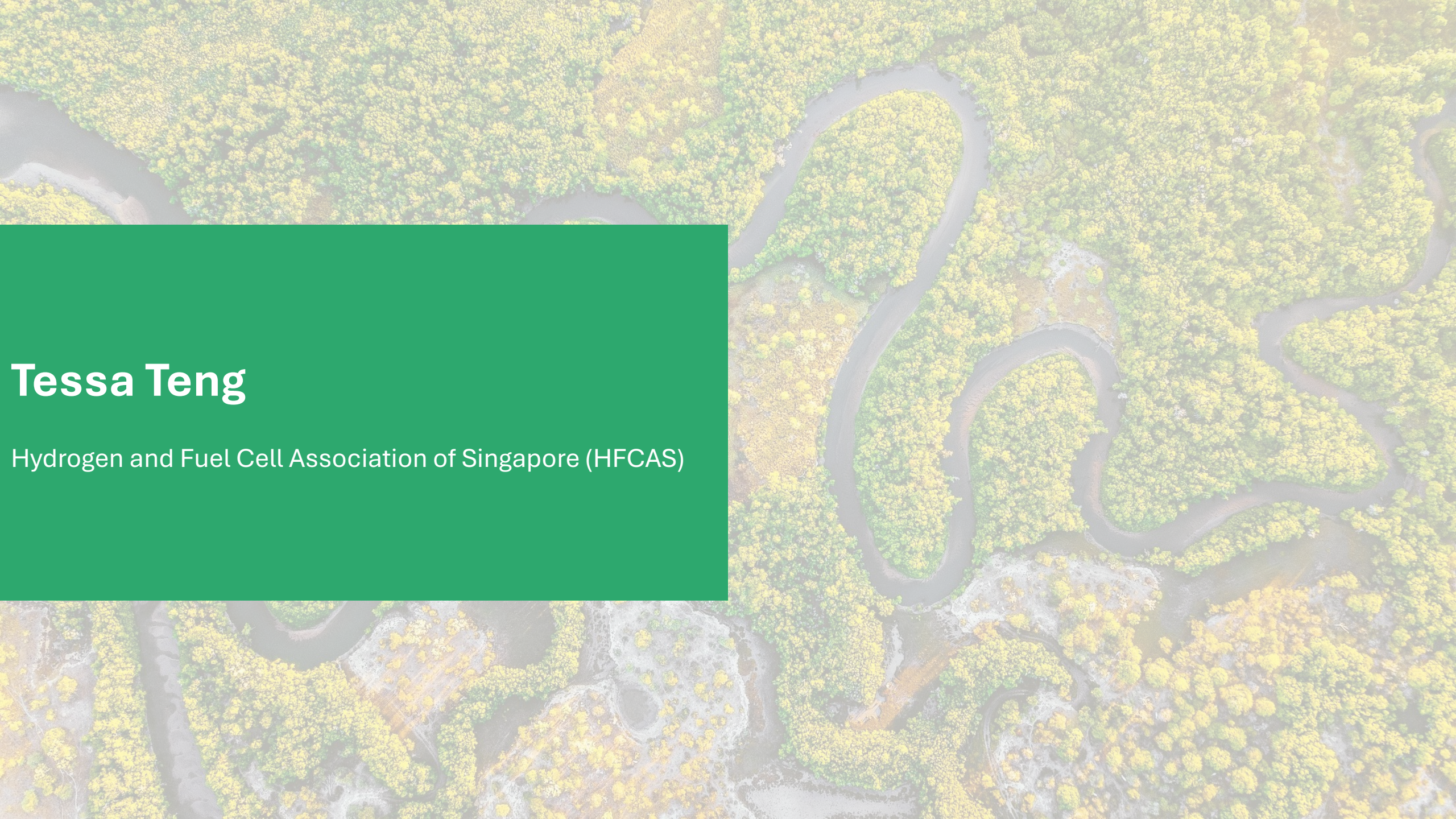
- 90% of electric trains use wind power
- Buildings & stations: use solar

Morocco installed capacity of RE: 9GW

Morocco's goal: Carbon Neutral by 2035


Kudat
Kota Kinabalu
Sandakan
Keningau
Sindumin
Lahad Datu
Merapok
Miri
Tawau
Bintulu
Tarakan
Mukah
Teluk Melano
Sarikei
Kapit
Semantan
Kuching
Sri Aman
Singkawang
Kota Samarahan
Serian
Sambas
Betong
Ngabang
Tanjung Selor
Bontang
3,839 m
3,512 m
3,197 m
2,894 m
2,602 m
2,323 m
2,056 m
1,802 m
1,562 m
1,335 m
1,122 m
924 m
741 m
574 m
425 m
293 m
181 m
91 m
26 m
-4 m

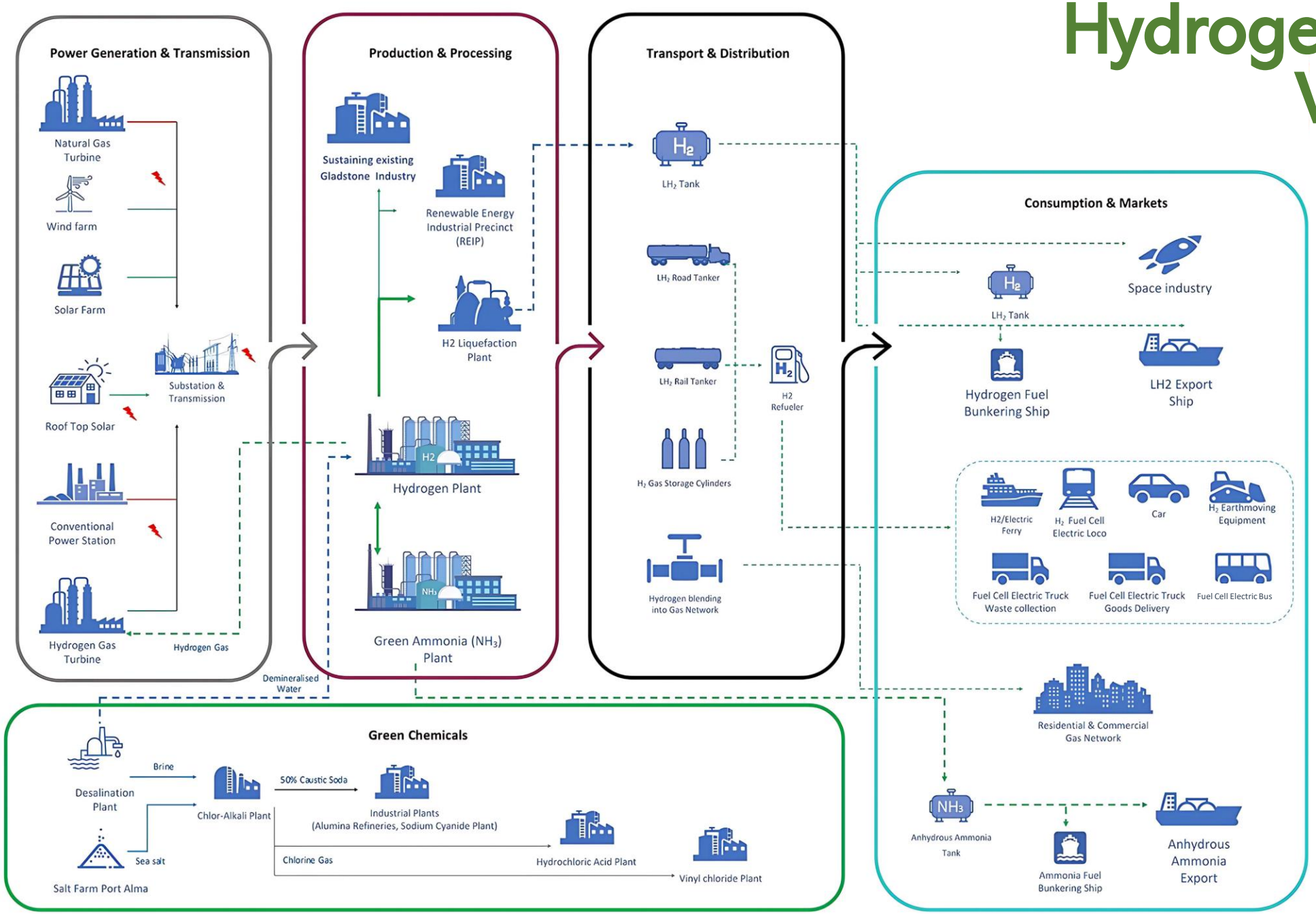

3,839 m
3,512 m
3,197 m
2,894 m
2,602 m
2,323 m
2,056 m
1,802 m
1,562 m
1,335 m
1,122 m
924 m
741 m
574 m
425 m
293 m
181 m
91 m
26 m
-4 m
Kota Kinabalu
Sandakan
Lahad Datu
Tawau
Sipitang
Merapok
Miri
Bintulu
Tarakan
Tanjung Selor
Teluk Melano
Sarikei
Sibu
Semantan
Kuching
Sri Aman
Merasak
Muarawahau
Singkawang
Pontianak
Bontang
Samarinda
Nusantara
Ketapang
Palangkaraya
Pangkalan Bun
Banjarmasin
Tanjung Pinang
Pangkalpinang
Selat Karimata
Selat Bangka
Palu
Mamuju
Palopo
Pare-Pare
Kendari
Zamboanga City
Isabela
Lamitan



Tessa Teng

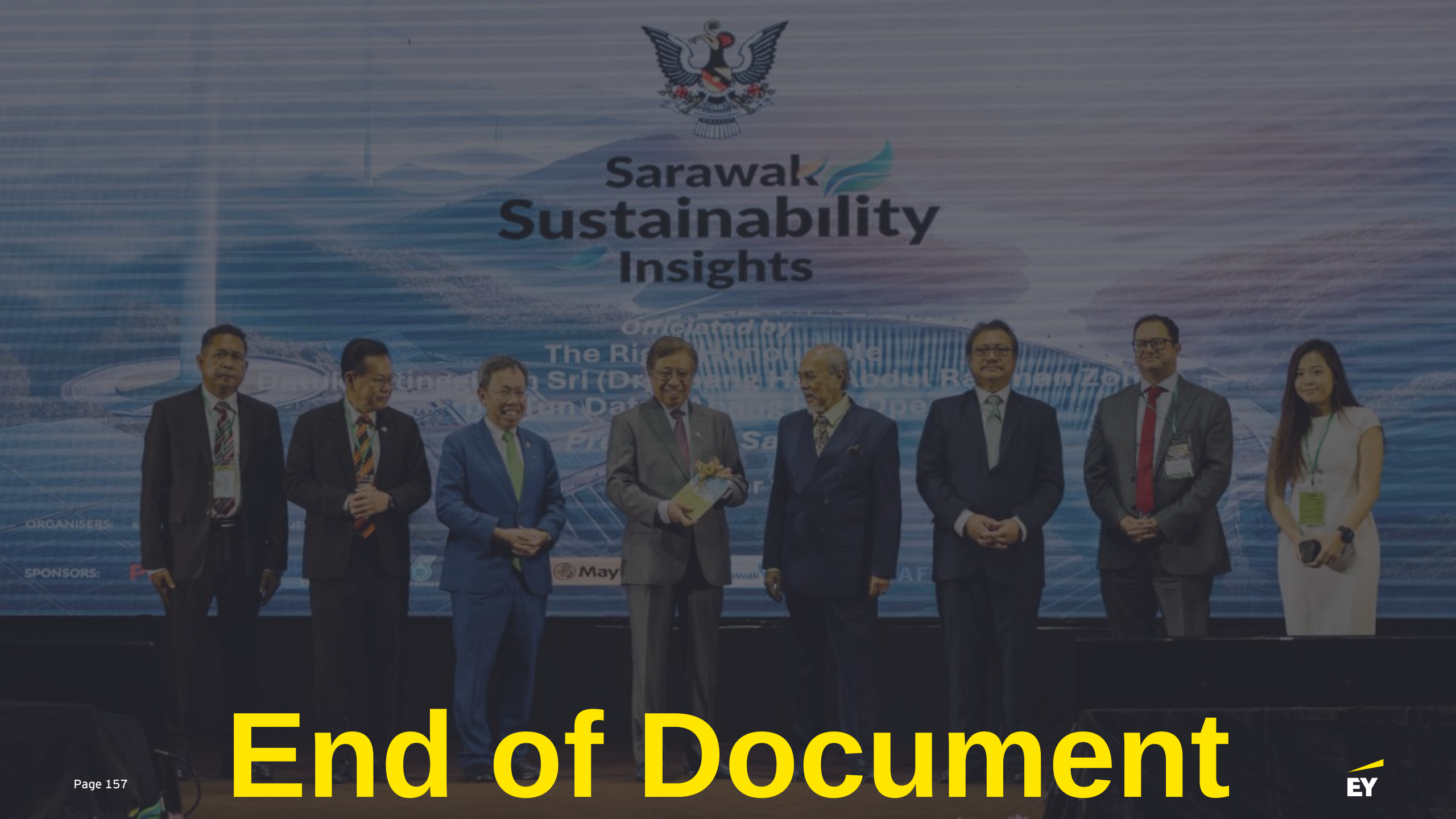
Hydrogen and Fuel Cell Association of Singapore (HFCAS)

Hydrogen Economy Value Chain



Source: https://www.cqh2.org.au/cqh2-ecosystem-map/

HFCAS



End of Document