

Better. Brighter.

SUSTAINABILITY REPORT 2022

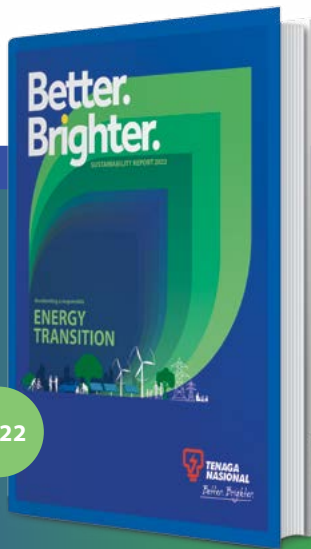
Accelerating a responsible

ENERGY TRANSITION



**TENAGA
NASIONAL**

Better. Brighter.



SR22

Highlight:



Accelerating Responsible Energy Transition



Decarbonisation Through Innovative Solutions: Carbon Capture



Enhancing the Well-Being of Orang Asli Communities

NAVIGATION ICON

The following icon is used in this Report to indicate where additional information can be found.



This icon tells you where you can find related information in this Report.

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About This Report

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This Sustainability Report (“Report”) was developed to share our sustainability performance for the financial year ended 31 December 2022 (FY2022), strategies, and targets moving forward. We plan to drive the country’s energy transition into cleaner, greener electricity, as reflected in our Energy Transition Plan (ET Plan) launched this year. Through our various efforts, TNB aspires to be a leading energy provider of sustainable energy solutions supported by our sustainability pillars – Environmental, Social, and Governance.

Framework and Guidelines

Our report maintains its incorporation of Bursa Malaysia’s Main Market Listing Requirements (MMLR) alongside other Malaysian and global frameworks and benchmarks within our disclosure:



- ▶ **Bursa Malaysia Sustainability Reporting Guide (3rd Edition)**



- ▶ **Global Reporting Initiative (GRI) Standards**

- ▶ **GRI Electric Utilities Sector Disclosures**



- ▶ **Task Force on Climate-related Financial Disclosures (TCFD) framework**



- ▶ **United Nations Sustainable Development Goals (UN SDGs)**



This report has been prepared with reference to the GRI Standards. The report content has been defined by applying the Reporting Principles of GRI:

Stakeholder Inclusiveness

Using insights gained from key stakeholders to inform sustainability expectations and the review of material matters.

Materiality

Focusing on issues that reflect TNB’s sustainability impacts and are of utmost importance to our stakeholders in light of enhancing energy transitions, revolving market context and our corporate strategy - Reimagining TNB 2025.

Sustainability Context

Showcasing our performance in the wider context of sustainability, including the impact of energy transition on TNB.

Completeness

Including coverage of material topics and boundaries that have significant ESG impact to enable stakeholders assess to TNB’s performance in the current reporting period.



About This Report

Reporting Scope and Period

The scope and boundary of sustainability disclosures covers the activities of TNB and its subsidiaries ("TNB Group"). Where information is unavailable, we will cover our core and non-core business operations in Peninsular Malaysia under the purview of TNB divisions ("TNB Company"). Wherever possible, we have disclosed four (4) years of historical quantitative data for meaningful comparison purposes of the selected indicators.

Independent Assurance

This Sustainability Report has not been subjected to an assurance process. Nevertheless, we are preparing for internal assurance in FY2023 and will continue to obtain external assurance in due course.

Stakeholders Input

We value the feedback of our esteemed stakeholders to inform and to continuously enhance our reporting and sustainability practices. Feedback on this report and any aspect of our sustainability practices and performance is most welcome. Kindly address any comments or queries at sustainabilityhq@tnb.com.my.

















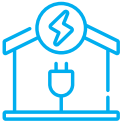


Report Content

We have enhanced our Report to better illustrate our sustainability performance and initiatives in TNB against our commitments and targets. The key enhancements for each section in this Report are as follows:

Section in this Report	Key enhancements
Championing Sustainability at TNB	<ul style="list-style-type: none"> Introduce the Energy Transition (ET) strategic plans and its integration with other key sustainability principles and corporate strategies. Disclose eight (8) United Nations Sustainable Development Goals (UN SDGs) with targets and mapping to TNB's material matters. Highlight TNB's current collaboration and partnerships in pursuing Energy Transition (ET).
Responsible Governance and Strengthening Business Resilience	<ul style="list-style-type: none"> Introduce Sustainability and Energy Transition Council (SETC) in TNB sustainability governance. Highlight TNB's digital solution to enhance customer experience and satisfaction.
Climate Change and Environment	<ul style="list-style-type: none"> Enhance TNB's disclosure on climate risk & opportunities in line with TCFD recommendations. Provide details of the ET strategic plans and initiatives across value chain.
Engaging Our People and Cultivating Talent	<ul style="list-style-type: none"> Highlight TNB's commitment for safe and healthy working conditions by focusing on the occupational health and safety management system.
Creating Shared Values with Communities	<ul style="list-style-type: none"> Highlight TNB's corporate social responsibilities (CSR) initiatives in FY2022.



Sustainability Performance Highlights for FY2022

Environmental	Social	Governance
Total renewable energy capacity 3,780 MW 	Total contribution to community development programmes RM 12.20 million 	Total Revenue RM 50.87 billion 
Greenhouse Gas (GHG) Emission (Scope 1 and 2) ¹ 38.90 MtCO₂e 	Learning and Development Investment RM 161 million 	Profit After Tax (PAT) RM 3.56 billion 
GHG Emissions Intensity ¹ 0.55 tCO₂e/MWh 	Employee Engagement Score (EES) 86.6% 	Women in senior management role 24.29% 
GHG Emission Intensity Reduction ¹ 2% reduction against baseline in 2020 	Lost-Time Injury Frequency Rate (LTIFR) 0.82 	Equivalent Availability Factor (EAF) ¹ 83.20% 
Avoided Emission 7,295,145 tCO₂e 	Fatalities 2 TNB contractors 	System Average Interruption Duration Index (SAIDI) ¹ 45.06 minutes/customer/year 
Scheduled Waste Generation 74,150 tonnes 		System Availability ¹ 99.79% 
		Customer satisfaction index ¹ 87% 
		Percentage spent on local suppliers ² 95.14% 

¹ For TNB operations in Peninsular Malaysia.

² For TNB Corporate Divisions, Grid Division, DN Division, Retail Division, New Energy Division, Grid System Operator (GSO) Division and TNB Power Generation Sdn. Bhd. and its subsidiaries, excluding fuel spend, spend by other TNB subsidiaries to their suppliers and Non-Purchase Order payments.

CEO Statement

GRI 2-22

Dear Stakeholders,

We are pleased to present our latest Sustainability Report, which reflects our achievements and significant progress in creating value to all our stakeholders. The report details our Environmental, Social, and Governance (ESG) performance, and ongoing efforts to create sustainable value. It also demonstrates our unwavering commitment to transparency, accountability, and sustainability as we continue to look ahead into the future and work together with our stakeholders in driving the Energy Transition for a Better, Brighter Future for all.

DATO' INDERA Ir. BAHARIN BIN DIN

President/Chief Executive Officer



As Malaysia's national electricity provider, we play a significant role in the nation's progress, recognising our duty towards our stakeholders. We are honoured and grateful for the opportunity to impact the lives of millions on a daily basis through our comprehensive range of services and extensive network, while ensuring security of supply for the nation. With utmost dedication, we strive to drive positive outcomes through our sustainability initiatives, carefully attuned to the concerns and aspirations of our valued stakeholders.

We continue to strive towards embedding sustainability in our company's operation and policies. We have made significant progress and remain committed to continuous improvement since the first publication of our Sustainability Report in 2017. In this report, we communicate our sustainability performance and key achievements for the fiscal year 2022.

CHAMPIONING SUSTAINABILITY AT TNB

At TNB, sustainability is at the core of our business strategy and operations. We firmly believe that our success lies in our ability to balance economic growth, social progress, and environmental stewardship. Over the past year, TNB has made significant strides towards achieving our sustainability goals. We have continued to prioritise our efforts in reducing greenhouse gas emissions, promoting renewable energy sources, and enhancing energy efficiency across our operations. By investing in cleaner technologies and adopting innovative practices, we are actively contributing to mitigating the impacts of climate change and fostering a greener future.

We embrace the belief that sustainability is a collective endeavour that thrives on collaboration and partnerships which is crucial in driving meaningful change. We have actively engaged with various stakeholders, including customers, employees, government agencies, and communities at large to foster a shared vision of sustainability. By working together, we can create lasting solutions that address the challenges of today and pave the way for a sustainable tomorrow.

Our commitment to sustainability extends beyond environmental considerations. We are dedicated to creating positive social impact in the communities we serve. Through various corporate social responsibility initiatives, we have been actively supporting education, healthcare, and community development programmes. We understand the importance of empowering local communities and fostering inclusive growth, and we are proud to be making a difference in people's lives.

CEO Statement

Transparency and accountability are fundamental to our sustainability journey. We have strengthened our reporting mechanisms and implemented robust monitoring and evaluation processes to ensure that our sustainability goals are being effectively pursued. We believe in being transparent about our progress, successes, and areas for improvement, as it is through this transparency that we build trust with our stakeholders.

Numerous accolades and awards were conferred to TNB in the past year, as a testament of our achievements. These include winning the Smart Grid Award at PowerGen Awards by Enlit Asia 2022, Industry Excellence Award for Corporate Governance Disclosure at Minority Shareholders Watch Group (MSWG) ASEAN Corporate Governance Award 2021, and winner of HR ASIA Best Companies to Work For In Asia 2022. These awards mark TNB's continued ability to meet the highest standards in all aspects of its operations, both in terms of technical excellence as well as best practices in managing our people's welfare.

RESPONSIBLE GOVERNANCE AND STRENGTHENING BUSINESS RESILIENCE

Sustainability impacts every part of our operation, and hence it is key to ensure that the integration of ESG factors is undertaken through a gradual approach, starting with good governance to drive the changes. In tandem with TNB's agenda to lead the energy transition while building up the pathway in realising our net zero aspiration, the Sustainability and Energy Transition Committee (SETC) has been formed to deliberate on both sustainability and energy transition simultaneously under a common platform. While our primary focus is on ensuring that we stay on track with our energy transition journey, our key objective is to foster value for all our stakeholders. We recognise that upholding human rights plays a crucial role in our pursuit of sustainable success.

We believe that embracing sustainability will enable TNB to navigate the financial challenges arising from the nationwide inflation and the worldwide effects of the Russian-Ukraine war among others. In the face of this challenge, our revenue has remained resilient, which increased from RM48.12 billion in FY2021 to RM50.87 billion in FY2022 (5.2% year-on-year growth at Group level). However, persistently higher fuel costs, exacerbated by geopolitical tensions as well as the pressure to decarbonise, remain as a challenge that we continue to navigate.

Upholding our purpose and aspiration, TNB is fully committed in ensuring a reliable supply of energy to our customers, as well as put forth initiatives to decarbonise our operation through the application of green technologies and digitalisation. Expansion of our renewable energy portfolio, both domestic and globally, are part of our strategy in producing greener and cleaner electricity supply while unlocking the environmental benefits. As it stands now, thermal fuels provide us secure and affordable energy. However, we have conducted various research and development on the latest carbon

capture and utilisation (CCU) technologies, in hopes of managing carbon emissions from our current generation fleet. We will continue to seek opportunities and expand our collaborations through partnerships to reduce our carbon footprint.

CLIMATE CHANGE AND ENVIRONMENT

TNB is actively committed to playing a vital role in decarbonisation and addressing climate change through various strategies and actions. TNB's Energy Transition Plan (ET Plan) was developed as our guiding light in paving a clear transition pathway from a fossil-fuel based energy mix to low carbon energy sources. Expansion of our renewable energy assets and exploration of green technologies including CCU and hydrogen among others are our targeted initiatives. We anticipate the need for substantial investment in materialising these initiatives, but we believe that these investments are critical as cost of inaction potentially outweighs the value created from these efforts. These investment not only contribute to diversifying our energy mix but also demonstrate our dedication to sustainable practices and our role in combating climate change. Reducing our emission intensity by 35% by 2035 is our first milestone towards realising our net zero aspiration.

Furthermore, TNB is actively involved in promoting energy efficiency and conservation among our customers and stakeholders. Through educational campaigns, energy management programmes, and technical facilitation (i.e., providing services such as energy audit, energy performance contracts), we aim to raise awareness and encourage sustainable energy consumption practices. We take pride in empowering customers towards transitioning to cleaner and sustainable energy consumption by supporting various RE and Energy Efficiency (EE) programmes, such as Green Electricity Tariff (GET), Supply Agreement for Renewable Energy (SARE) and Net Energy Metering (NEM) Scheme. This includes adding more Electric Vehicle (EV) charging stations across the country through TNBX and the installation of solar panels on rooftops via GSPARX. By empowering individuals and businesses to make energy-efficient choices, we collectively contribute to reducing our carbon emissions and mitigating the impact of climate change.

We have been making progress in rolling out the adoption of a Smart Grid as part of our Grid of the Future (GoTF) initiatives. GoTF aims to improve the grid flexibility with two-pronged objectives - to allow for better services to our customers and enable higher growth of Variable Renewable Energy (VRE) and Distributed Energy Resources (DER). TNB has achieved a Smart Grid Index (SGI) score of 71.4% in FY2022, which demonstrates significant improvement of 19.4% from 2019. Moving forward, under our Smart Utility 2025 Masterplan, we target to achieve a score of 85% by 2025. Through the establishment of this ambitious target, we aim to facilitate the integration of clean energy into our electricity grid and enable efficient management and utilisation of resources. These endeavours will help drive the pace of our decarbonisation efforts and renewable energy initiatives to achieve our net zero aspiration.

CEO Statement

Additionally, TNB actively participates in national and international forums, partnerships, and collaborations focused on climate change mitigation and sustainability. By engaging with stakeholders, policymakers, and industry peers, we contribute our expertise and insights to advocate policies and practices that prioritise decarbonisation, resilience, and sustainable development.

ENGAGING OUR PEOPLE AND CULTIVATING TALENT

We acknowledge the importance our people play in ensuring smooth operations of the company. It is important to maintain a harmonious relationship through continuous engagement to sustain a high performing culture and enhance employee experience. These include providing employees with a safe working environment, facilitating capability building to drive the the ET Plan and developing a compelling Employee Value Proposition (EVP), consisting of competitive remuneration and benefits packages. Part of the EVP includes childcare facilities and nurseries, accommodation for employees, counselling services, and career development opportunities.

In driving the nation's energy transition, consideration has been taken to grow our talents and future leaders. Under ILSAS, our established training centre, various upskilling and reskilling programmes have been conducted to help nurture and grow our people. These include introducing the latest tools and equipment, running simulation programmes, and developing online modules to equip our workforce with the right skills and capabilities necessary to deliver our climate commitment. We are dedicated to developing our workforce, equipping them for our energy transition journey, while prioritising their career growth and development.

CREATING SHARED VALUES WITH COMMUNITIES

TNB ensures Malaysians in rural and remote areas have access to electricity by conducting specific programmes that help to address this. Under the Rural Electrification (BELB) Programme, power is supplied to rural areas such as villages and Indigenous People settlements that are not within the operational area of local authorities. Another long-running programme, the Village Street Lighting (LJK) Programme, ensures public areas in remote villages are well lit at night by installing streetlights with higher efficiency.

We also contribute to the nation's capital development by supporting students from various backgrounds through scholarships and various other educational programmes. We have spent RM6.81 million to support a total of 1,361 recipients through Universiti Tenaga Nasional (UNITEN), and provided RM101 million in financial aid and scholarships to assist 5,753 recipients through Yayasan Tenaga Nasional (YTN).

We also strive to engage with underrepresented segments, such as the *Orang Asli* community, through various engagement sessions in their villages and providing scholarships to students through YTN's *Biasiswa Khas TNB for Orang Asli* children. The constant engagement conducted with *Orang Asli* communities living near TNB operating centres has helped us identify problems affecting the communities and rectify them swiftly. Through our bespoke initiatives tailored to each respective community, we have also been able to empower them effectively.

OUTLOOK

Moving forward, we are fully committed to enhancing our decarbonisation initiatives through our Energy Transition Plan. This involves expanding our renewable energy portfolio and adopting low-carbon technologies, such as hydrogen, Carbon Capture, Utilisation, and Storage (CCUS), and energy storage. We are also fully supporting the growth of the Electric Vehicle (EV) ecosystem in Malaysia. By pursuing these endeavours, we aim to contribute towards our nation's ambitious objective of attaining carbon neutrality by 2050. We recognise that achieving sustainable and decarbonised energy systems requires collaboration and cooperation from various sectors. We value the active involvement of stakeholders from government, public, and private entities in advocating policies, supporting renewable energy projects, promoting energy efficiency, and driving innovation in the energy sector. Along with decarbonisation initiatives, we will continue to reskill and upskill our people to specialise in new technologies and systems that will be introduced in the future. By fostering a skilled workforce, we aim to drive innovation and meet the challenges of a sustainable energy future.

Thank you.



DATO' INDERA Ir. BAHARIN BIN DIN
President/Chief Executive Officer

About TNB

GRI 2-1

As Malaysia’s primary electricity utility company headquartered in Kuala Lumpur, we take pride in delivering affordable and reliable services to a diverse customer base across Peninsular Malaysia, Sabah, and Labuan. In recent years, we have successfully expanded our business operations and extended our brand’s reach on the global stage. We have established ourselves as an international utilities sector player, with presence in the United Kingdom (UK), Kuwait, Turkey, Saudi Arabia, India, and Indonesia.

Our commitment lies in elevating our endeavours and further integrating sustainability into our business strategy. We aim to achieve not only economic success but also bring about positive societal and environmental outcomes.

Our Core Values and Behaviours

Our Aspiration

To be a leading provider of sustainable energy solutions in Malaysia and internationally



Our Purpose

Together we brighten lives through innovative and sustainable solutions towards a better world

- We know who we are and we stand by our values.
- We are empathetic, respectful and compassionate to others and the environment.
- We protect the safety and promote the well-being of our people and the public.



- We are bold, challenge the status quo, and encourage agility and innovation.
- We commit to ensuring the sustainability of TNB in all aspects.
- We make informed decisions and learn from our mistakes.



- We seek to truly understand customers’ needs and always stay a step ahead.
- We continue to build trust by delivering on our promises.
- We look for unexpected ways to delight our customers.



- We uphold the highest ethical standards and do what is right all the time.
- We are fair, honest and transparent - in everything we do.
- We always seek to achieve mutual benefit for the country, company and customers.



- We trust each other, believe in teamwork, and win together as one company.
- We proactively help each other, communicate clearly and provide constructive feedback.
- We embrace diversity and inclusivity, and we value outside-in perspectives.



- We take full ownership and accountability for our actions.
- We consistently demonstrate high performance and productivity.
- We are result-focused and carry out our duties with discipline.



TNB identity, comprising our Purpose, Aspiration, Culture and Behaviours aligns with the Reimagining TNB (RT) goal and aspiration to drive our business transformation.

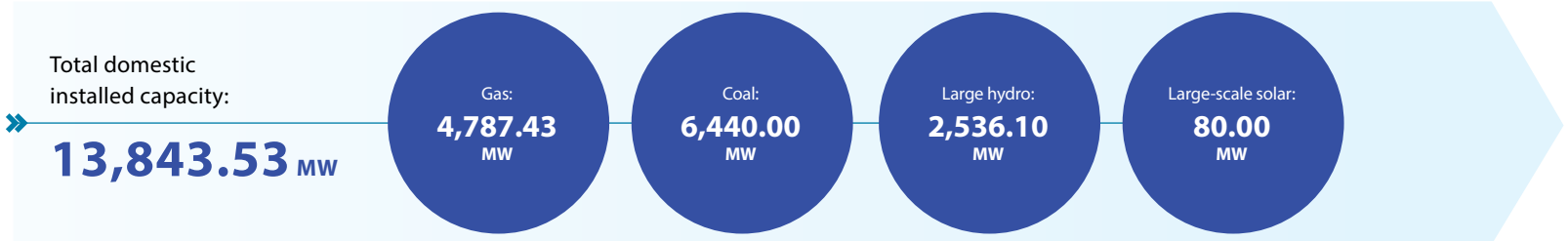
Our Value Chain

GRI 2-6 | EU1 | EU3 | EU4 |

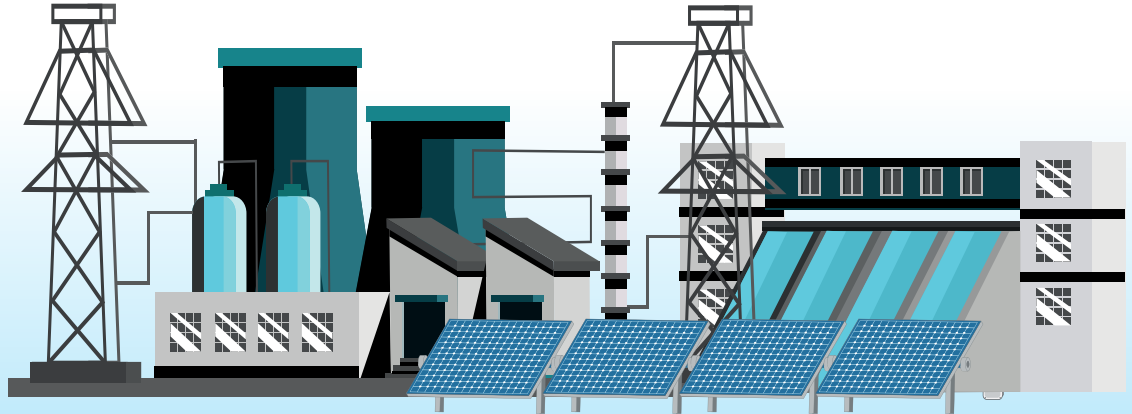
Our value chain represents our core business which comprises an end-to-end electricity supply chain including generation, grid, distribution, and retail. We place emphasis on reducing our environmental impact throughout our value chain and assets and continue to engage our key stakeholders.

Generation

TNB Power Generation Sdn. Bhd. (TPGSB) also known as TNB GenCo, operates and maintains TNB's portfolio of power generating assets, comprising thermal generation facilities and large hydro-generation schemes in Peninsular Malaysia.

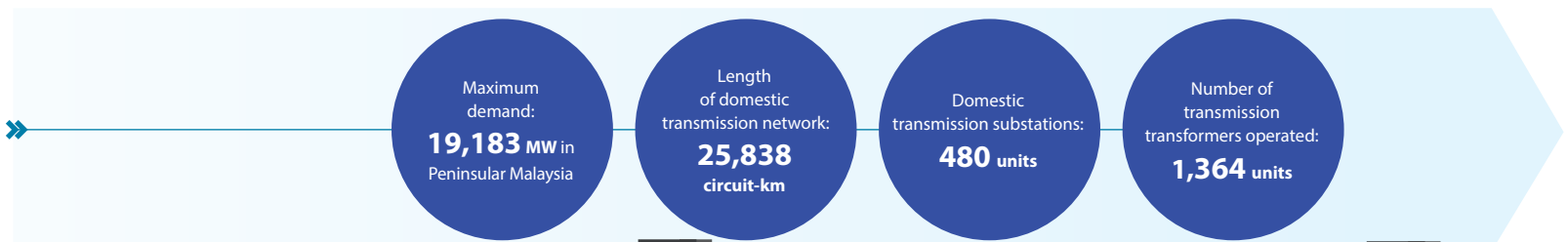


* For wholly-owned and majority owned (equity basis) generating assets in Peninsular Malaysia.



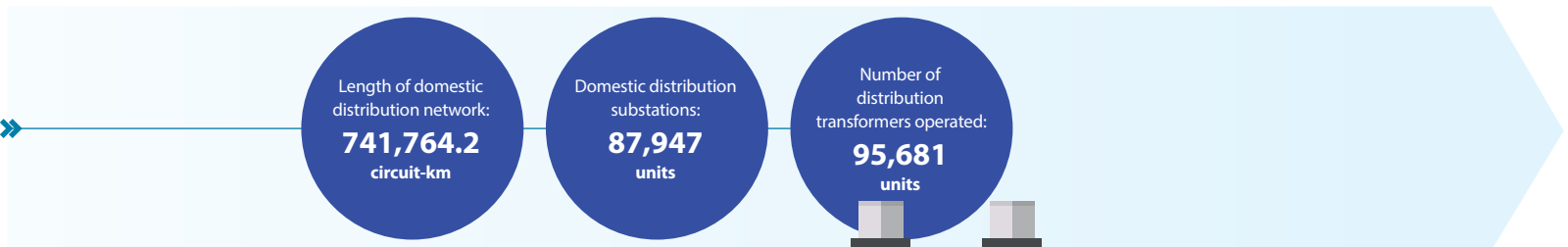
Grid

The Grid Division manages and operates the 132kV, 275kV and 500kV transmission network (National Grid) in Peninsular Malaysia.



Distribution Network

The Distribution Network Division is responsible for the asset lifecycle of the Nation's 33kV, 22kV, 11kV, 6.6kV, 0.415kV and 0.24kV distribution network to end users ensuring reliable electricity supply to businesses and homes.



* For wholly-owned distribution network in Peninsular Malaysia.



Retail

The Retail Division operates a network of state and area offices to provide products and services to customers. We strive to win our customers by building long-term and meaningful relationships through continuous ongoing customer-centric approaches.



Our International Footprint

01

UNITED KINGDOM

POWER PLANT

Total Capacity: **530.4 MW**

TENAGA WIND VENTURES UK LTD

100% Equity

Capacity: **26.6 MW**

CLEAN ENERGY AND INFRASTRUCTURE UK LIMITED

100% Equity

Capacity: **97.3 MW**

VANTAGE SOLAR INVESTMENTS S.A.R.L.

55% Equity

Capacity: **365 MW**

BLYTH OFFSHORE DEMONSTRATOR LIMITED

49% Equity

Capacity: **41.5 MW**

Energy Source:



Wind Solar

01

KUWAIT

POWER PLANT

Total Capacity: **170 MW**

SABIYA POWER GENERATION & WATER DISTILLATION PLANT

Capacity: **252 MW**

DOHA WEST POWER GENERATION AND WATER DISTILLATION PLANT

Capacity: **170 MW**

OPERATIONS & MANAGEMENT SERVICES

Total Capacity: **422 MW**

Maintenance Services Agreement Mechanical Works

- DOHA WEST PLANT

Instrumentation & Control Systems

- SHUWAIKH POWER PLANT
- DOHA WEST PLANT

Energy Source:



Natural Gas Distillate

02

TÜRKIYE

POWER PLANT

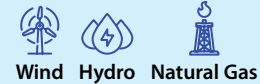
Total Capacity: **1,134.1 MW**

GAMA ENERJI A.S.

30% Equity

Capacity: **1,134.1 MW**

Energy Source:



Wind Hydro Natural Gas

03

INDIA

POWER PLANT

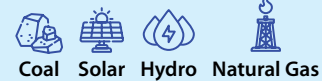
Total Capacity: **2,244.1 MW**

GMR ENERGY LTD

30% Equity

Capacity: **2,244.1 MW**

Energy Source:



Coal Solar Hydro Natural Gas

04

