



**TENAGA  
NASIONAL**

*Better. Brighter.*

# INVESTOR PRESENTATION



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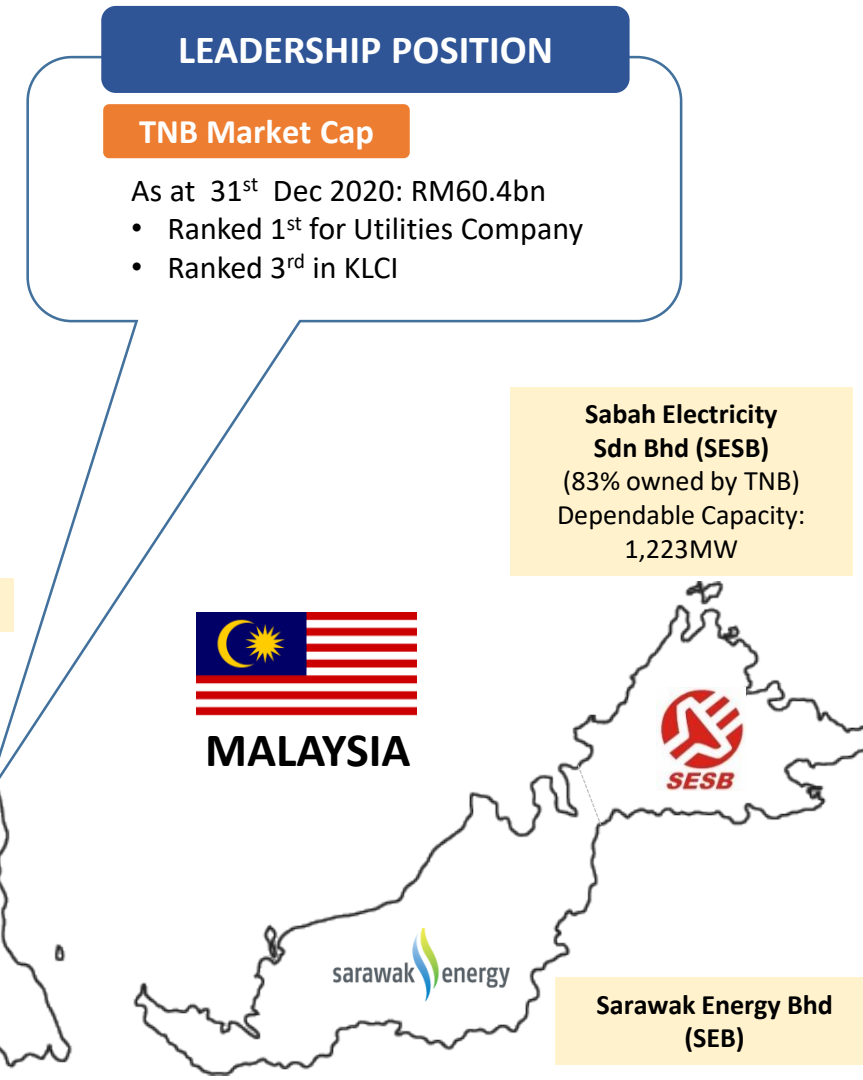
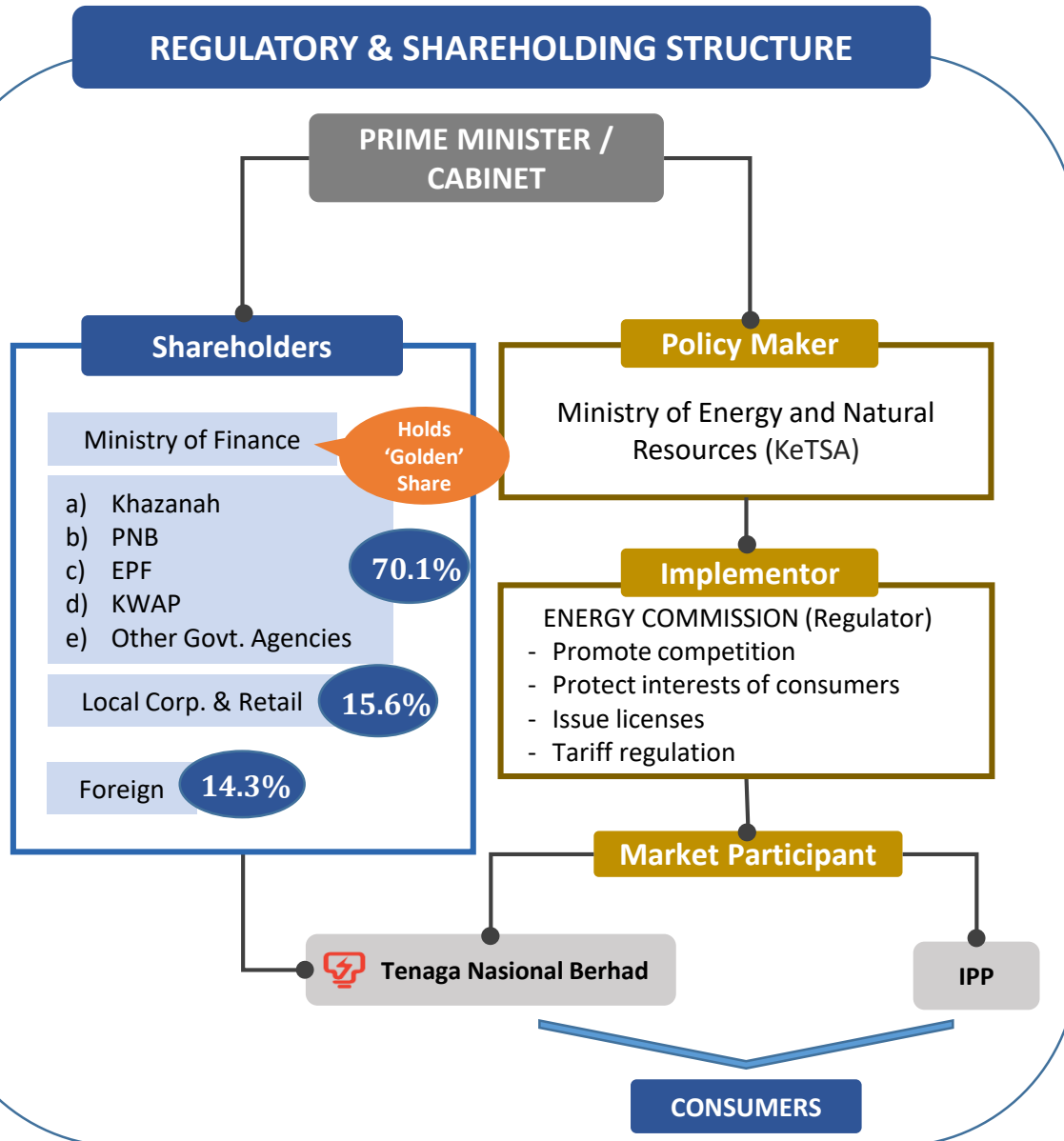
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# INTRODUCTION TO TENAGA

## Regulatory & Shareholding Structure



# INTRODUCTION TO TENAGA

## Regulated & Non-Regulated Business

Core Business	Generation	Grid/Transmission	Distribution Network & Retail
	Non-Regulated Business	Regulated Business	
	<p><b>TNB Generation Mix:</b></p> <div> <div> <div>Solar</div> <div>0.1%</div> </div> <div> <div>Hydro</div> <div>5.5%</div> </div> <div> <div>Gas &amp; LNG</div> <div>28.4%</div> </div> <div> <div>Coal</div> <div>65.9%</div> </div> </div> <p><b>Installed Capacity:</b> <b>25,122MW</b>  <small>TNB: 14,591MW @ 58.1%  IPP: 10,532MW @ 41.9%</small></p> <p><b>Generation Market Share:</b> <b>61.5%</b></p> <p><b>Equivalent Availability Factor (EAF):</b> <b>88.3%</b></p> <p><small>Note: TNB installed capacity &amp; Market Share are based on gross capacity</small></p>	<p><b>Transmission Network Length:</b> <b>23,964KM</b></p> <p><b>Transmission Substations:</b> <b>456</b></p> <p><b>Transmission System Minutes:</b> <b>0.05 mins</b></p>	<p><b>Distribution Network Length:</b> <b>683,008KM</b></p> <p><b>Distribution Substations:</b> <b>83,467</b></p> <p><b>SAIDI:</b> <b>33.9mins</b></p> <p><b>Customer Satisfaction Index (CSI):</b> <b>8.1</b></p>

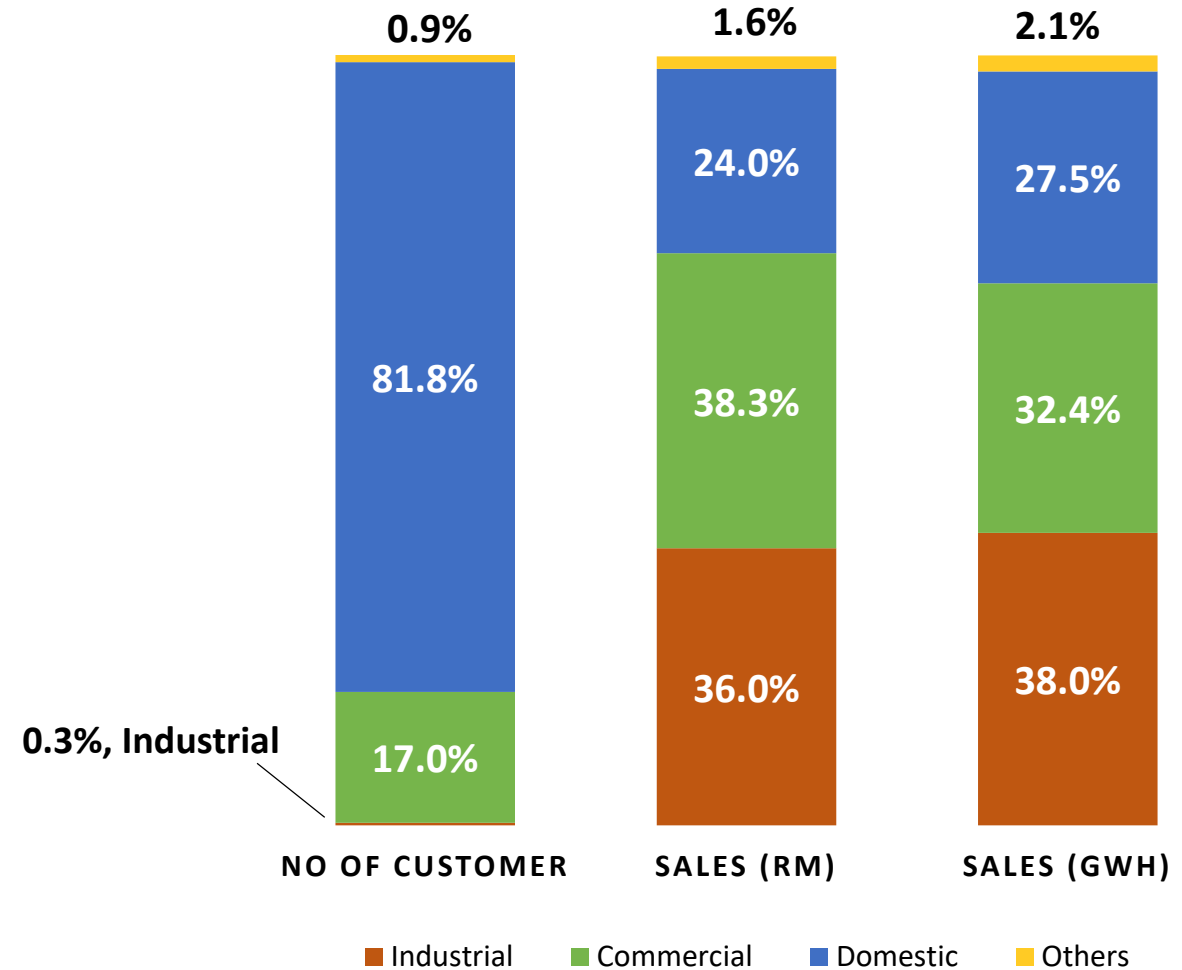
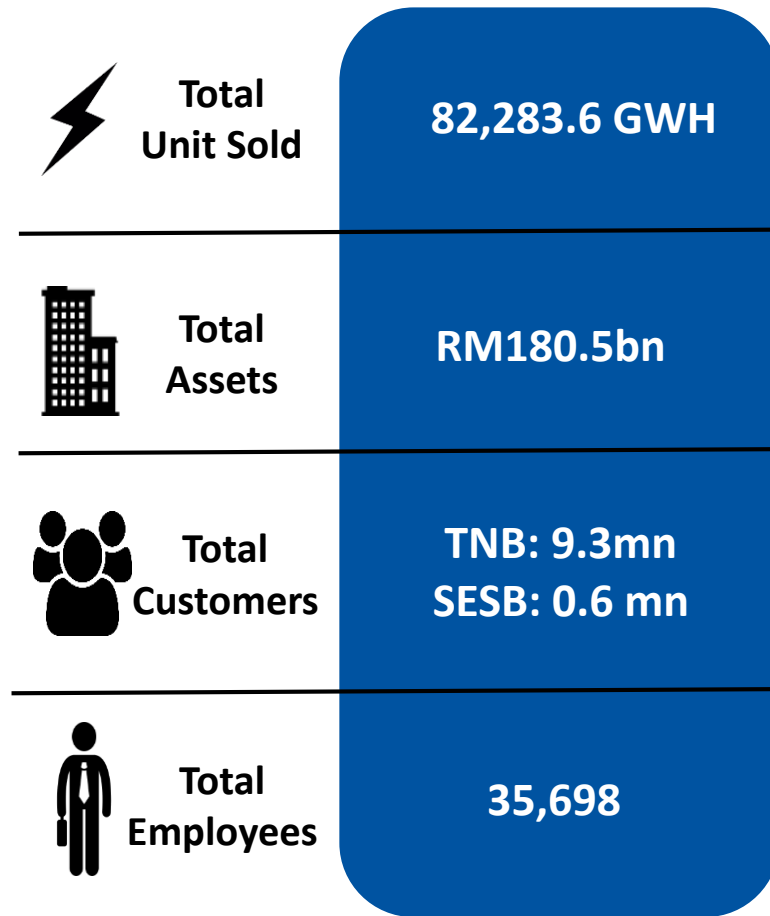
Source: TNB Data / Info as at Sept 2020

Non-Core Business	Main Subsidiaries		
	Non-Regulated Business		
	<p><b>Operation &amp; Maintenance (O&amp;M)</b></p> <ul style="list-style-type: none"> <li>TNB Repair &amp; Maintenance Sdn. Bhd. (REMACO)</li> </ul> <p><b>Manufacturing</b></p> <ul style="list-style-type: none"> <li>Tenaga Switchgear Sdn. Bhd.</li> <li>Malaysia Transformer Manufacturing Sdn Bhd.</li> <li>Tenaga Cables Industries Sdn. Bhd.</li> </ul>	<p><b>Renewables, Energy Efficiency &amp; Other Services</b></p> <ul style="list-style-type: none"> <li>TNB Renewables Sdn. Bhd.</li> <li>GSPARX Sdn. Bhd.</li> <li>TNB Energy Services Sdn. Bhd.</li> <li>TNB Engineering Corporation Sdn. Bhd.</li> <li>Integrax Bhd.</li> <li>Allo Technology Sdn. Bhd.</li> </ul>	<p><b>Education &amp; Research</b></p> <ul style="list-style-type: none"> <li>TNB Integrated Learning Solution Sdn. Bhd. (ILSAS)</li> <li>TNB Research</li> <li>University Tenaga Nasional (UNITEN)</li> </ul>

# INTRODUCTION TO TENAGA

Vertically integrated utility company serving more than 9mil customers throughout Peninsula Malaysia

## TNB Sectoral Sales Analysis\*



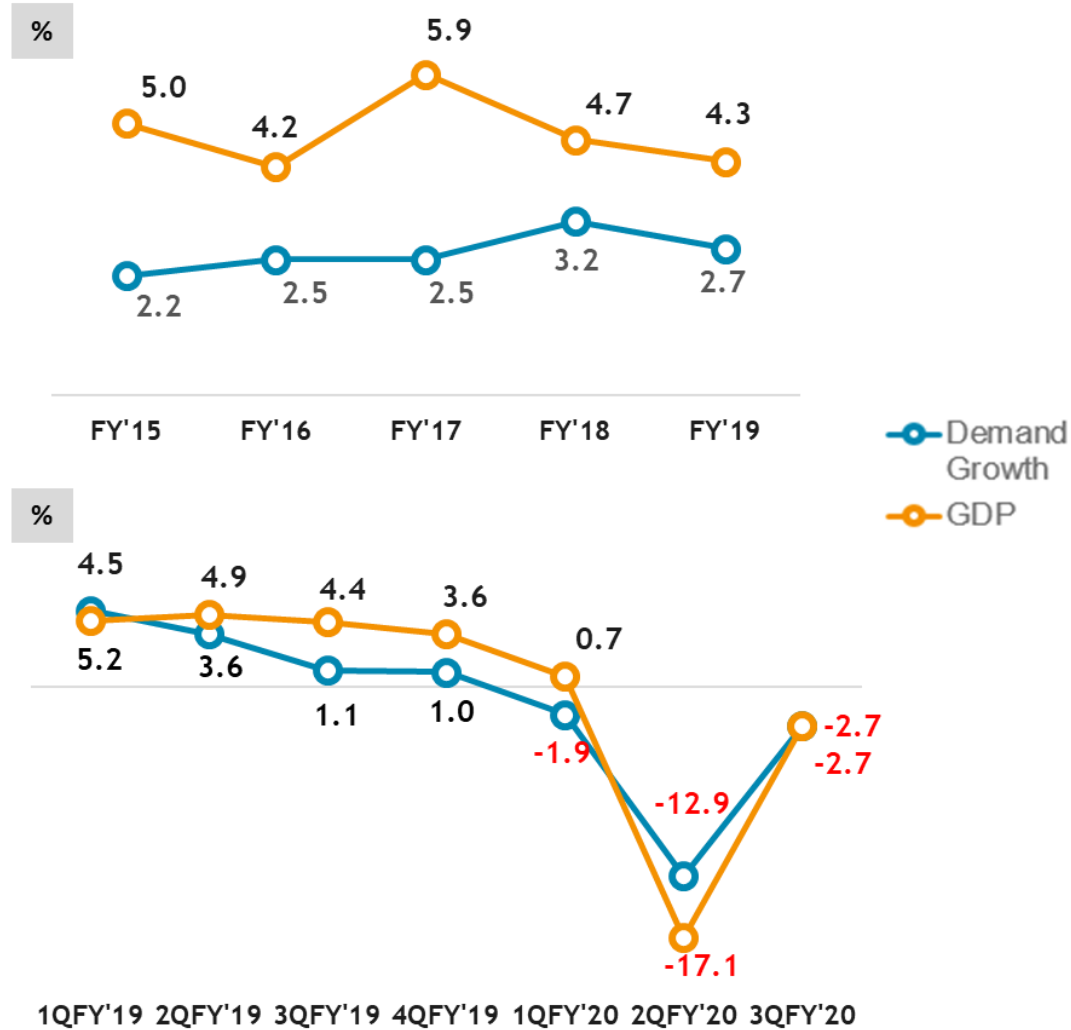
**Note:** Data / Info as at Sept 2020

\* Peninsular Malaysia only (TNB exclude SESB and other subsidiaries)

# INTRODUCTION TO TENAGA

Electricity demand is in line with GDP; 3QFY'20 maximum demand neared prior year level reflects improved economic traction

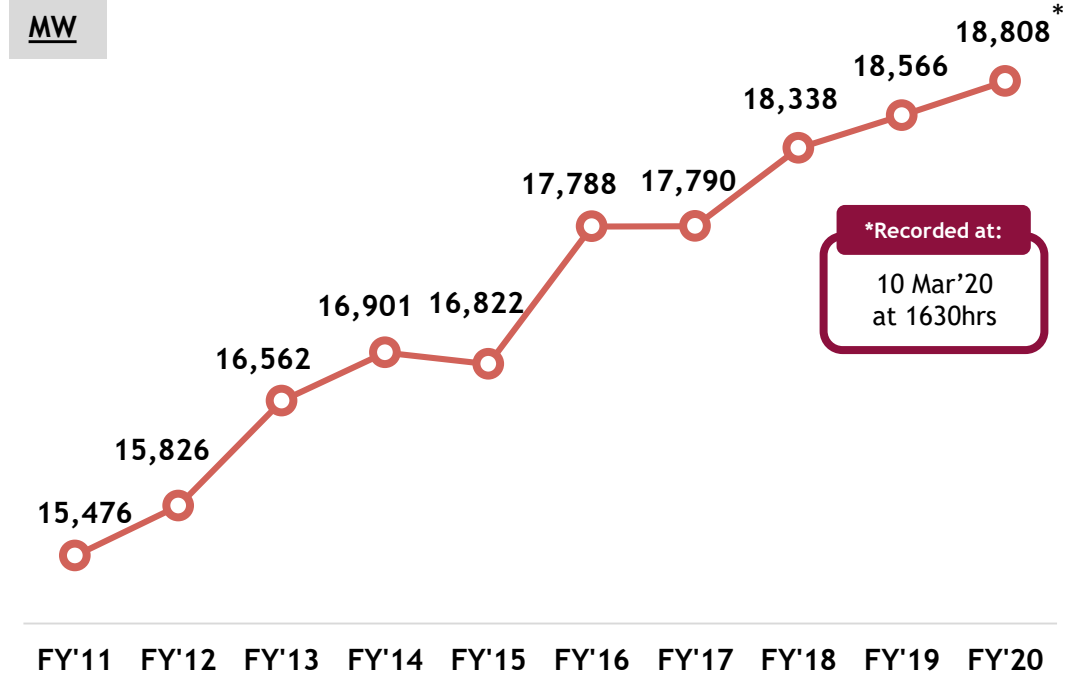
GDP & TNB (Peninsula) Demand Growth



TNB (Peninsula) Maximum Demand

	3QFY'20	3QFY'19	Variance (%)
Maximum Demand (GWh)	16,570	16,894	(1.9)

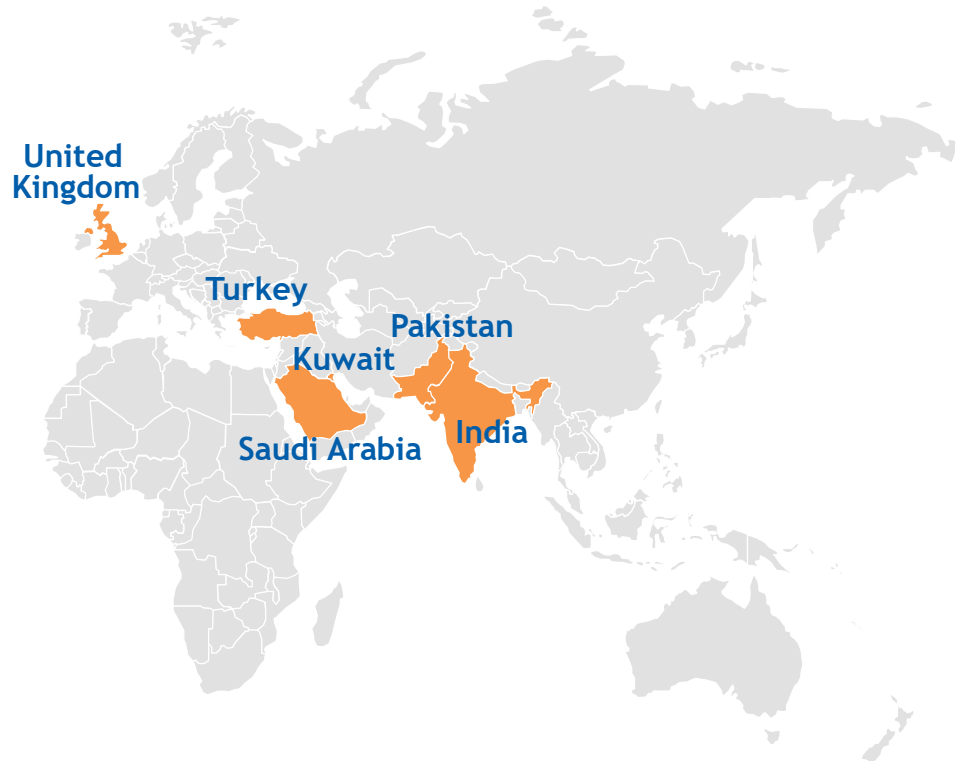
TNB (Peninsula) Yearly Peak Demand



- Note:**
- Data / Info as at Sept 2020
  - Peninsular Malaysia only (TNB exclude SESB and other subsidiaries)

# INTRODUCTION TO TENAGA

## TNB's global presence in six countries



**FOCUS ON GROWING RENEWABLE ENERGY  
BUSINESS IN SPECIFIC MARKETS BY LEVERAGING  
ON ITS INTERNATIONAL AND DOMESTIC  
EXPERIENCE, CAPABILITIES AND ASSETS**



United Kingdom

- 55% equity ownership in Vortex Solar Investments S.à.r.l, 24 operational solar PV farm portfolio of 365MW (May 2017)
- Tenaga Wind Ventures UK Ltd, 53 operational onshore wind portfolio of 26.1MW (Feb 2018)



Turkey

- 30% equity ownership in GAMA Enerji A.Ş. (Apr 2016)
- Assets include 853MW (gas), 117.5MW (wind) & 131.3MW (hydro)



Saudi Arabia

- 6% equity ownership in Shuaibah Independent Water & Power Project (IWPP)(Aug 2005)
- REMACO O&M Services for 900MW Shuaibah IWPP (Jan 2010)



Kuwait

- REMACO O&M for 225MW Sabiya Power Generation & Water Distillation Plant (July 2014)
- REMACO O&M for Shuaiba North Co-Gen 900MW Power; 204,000 m3/day water (Sept 2013)
- REMACO O&M for 240MW Doha West Water Distillation Plant (Nov 2016)



Pakistan

- Liberty Power Ltd 235MW (Sept 2001)
- REMACO O&M Services - Bong Hydro Plant (May 2011)
- REMACO O&M Services - Balloki Power Plan (July 2018)



India

- 30% equity ownership in GMR Energy Ltd (Nov 2016)
- Assets include 1,915MW coal, gas and solar plants

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# INCENTIVE BASED REGULATION (IBR)

## A Mechanisms For Tariff Setting With Incentives To Improve Efficiency & Greater Transparency

Regulatory Environment:

### 1. Clear and Transparent Regulatory Framework

Clear and transparent regulatory framework governed by the Energy Commission provides investors with confidence in TNB's cash flow visibility

### 2. Consistent and Clear Returns

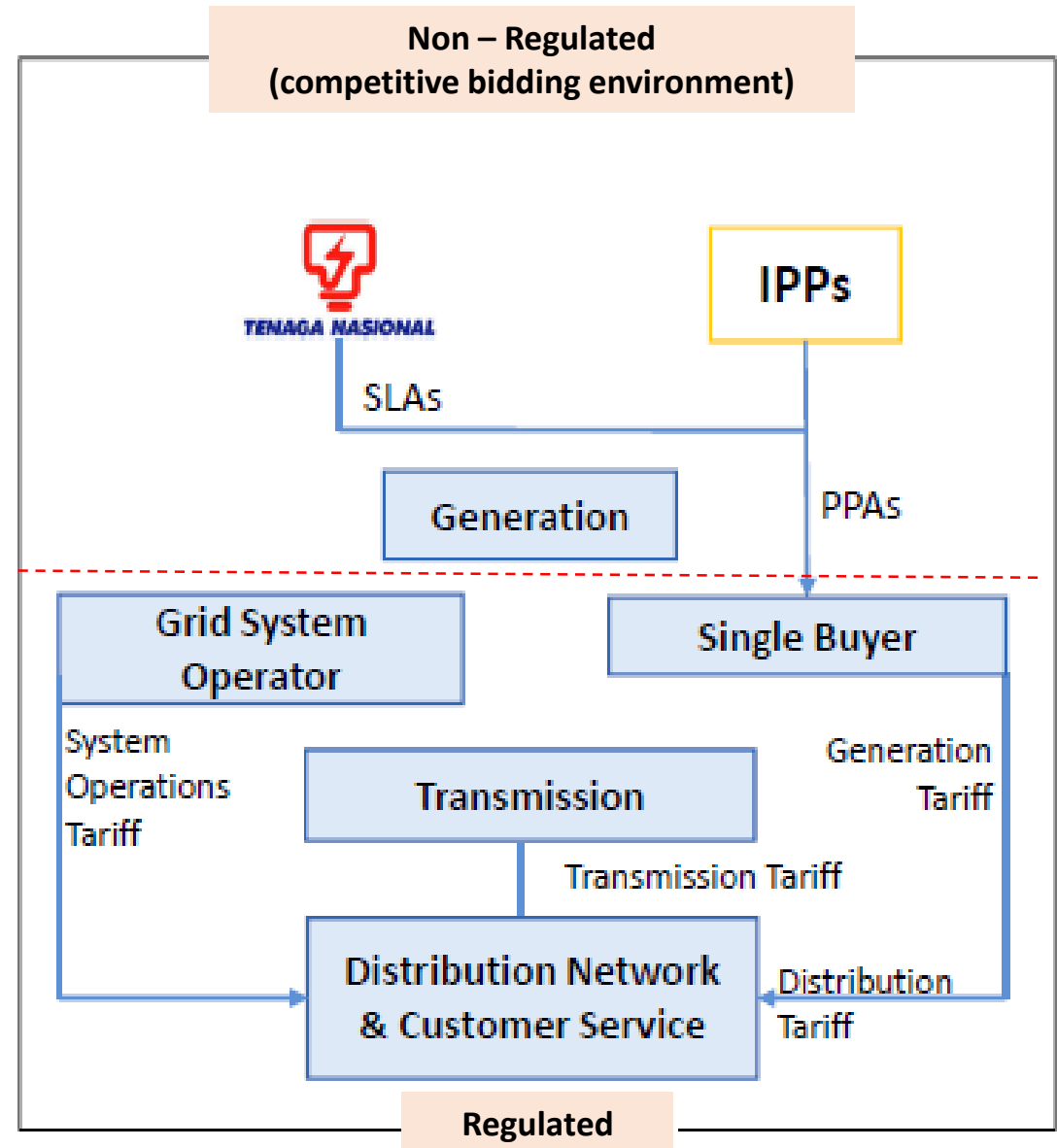
Regulatory WACC of 7.3% provides consistent and clear return to debt and equity holders

### 3. Shield against Uncontrollable Swings

Imbalance Cost Pass-Through mechanism shields Tenaga against uncontrollable swings in input costs, with a review every 6 months

### 4. Incentives for Operational Efficiencies

Incentive / Penalty mechanism provides clear incentives for TNB to achieve operational efficiencies

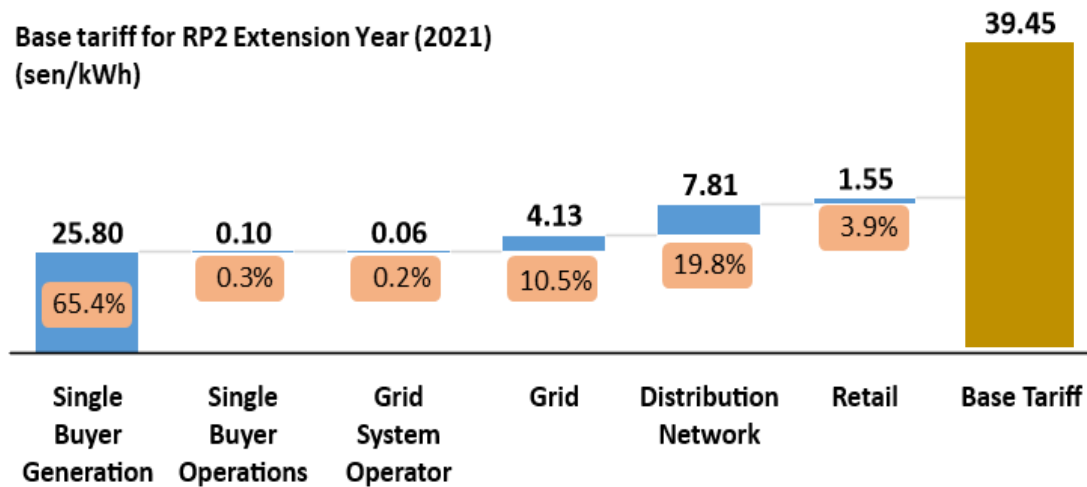


# INCENTIVE BASED REGULATION (IBR)

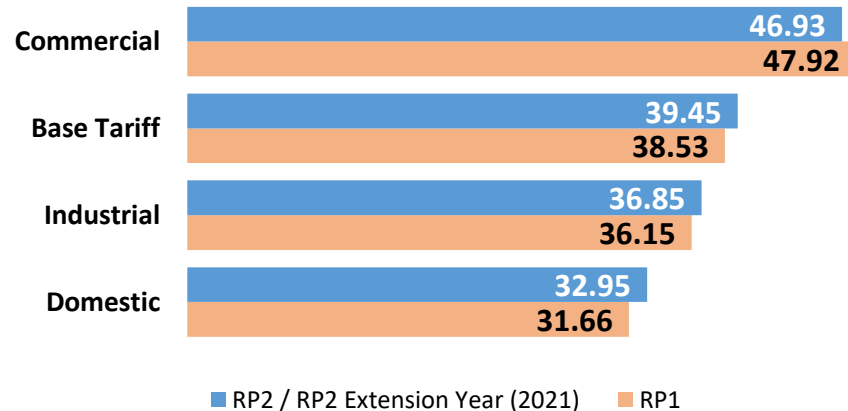
## Regulatory Period 2 (RP2) Extension Year (2021)

### Average Tariff by Entities (sen/kWh)

Base tariff for RP2 Extension Year (2021)  
(sen/kWh)



### Average Tariff by Sectors (sen/kwh)



### Fuel Parameters



COAL USD67.45/MT @ RM4.212/USD

RP2 : USD75.00/MT (RM14.47/mmbtu @ RM4.212/USD)

REGULATED  
GAS  
@1,000mmscfd

RM27.20/mmbtu (Jan'21 – Dec'21)

RP2 : RM24.20/mmbtu (Jan'18 - Jun'18)

RM25.70/mmbtu (Jul'18 - Dec'18)

RM27.20/mmbtu (Jan'19 - Dec'20)

### RP2 Extension Year (2021) Parameters

#### WACC

7.3%  
RP2 : 7.3%

#### OPEX

RM6.30bn  
(approved OPEX)

RP2 : RM18.2bn  
(Average per year: RM6.07bn)

#### TARIFF

39.45 sen/kwh  
RP2 : 39.45 sen/kwh

#### CAPEX

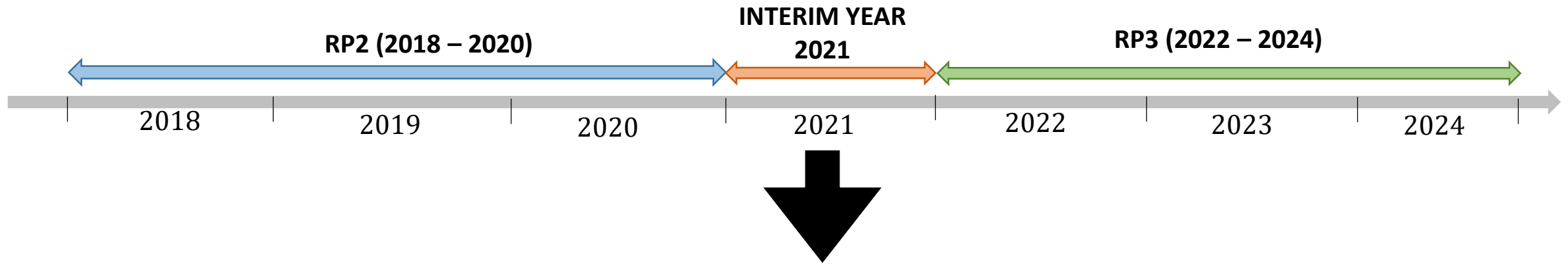
RM7.3bn  
(approved CAPEX)

RP2 : RM18.8bn  
(Average per year: RM6.63bn)

# INCENTIVE BASED REGULATION (IBR)

## Regulatory Period 2 (RP2) Extension Year (2021)

### Regulatory Period Timeline



- The Government has approved a one-year extension of the Second RP2 of the IBR for year 2021
- Beginning from 1 January 2021:
  - a) The current base tariff of 39.45 sen/kWh.
  - b) Electricity Tariff Schedule are maintained and will continue to be applicable until 31 December 2021.
- RP3 is shifted by one year to start on 1 January 2022 and ends on 31 December 2024. This decision was made following the uncertainty in demand outlook for 2021 and the instability of the current global fuel markets following the COVID-19 pandemic.

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# REIMAGINING TNB

TNB's strategic aspiration – a key enabler is the corporate structure

## 4 STRATEGIC PILLARS



### Future Generation Sources

- Growing TNB's renewable capacity
- Expansion of capacity into selected international strategic markets with strong growth prospects
- Improving performance of existing generation fleet

**TNB Power Generation  
Sdn Bhd (TPGSB)**

**Operation Date:  
October 2020 (completed)**



### Grid of the Future

- Upgrading existing network infrastructure into a smart, automated and digitally-enabled network
- Optimising network's productivity, efficiency and reliability
- Leveraging innovation in the network to transform customer experience



### Winning the Customer

- Enhance experience through all customer journeys
- Growth through innovation of new solutions and service offerings
- Strengthen digital presence via digital solutions, interactions and enterprise

**TNB Retail  
Sdn Bhd**

**Operation Date:  
January 2021 (completed)**



### Future Proof Regulations

- Working together with key stakeholders towards a stable and sustainable regulatory landscape

# REIMAGINING TNB

## TPGSB's three key uplift strategies focusing on performance, growth & efficiency

### Performance & Growth

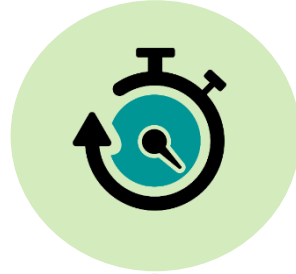


#### Performance

- Achieve high reliability for key assets
- Ensure no forced outages

#### Growth

- Capture new plantup and repowering opportunities
- Deliver plants in pipeline
- Grow Operation & Maintenance (O&M)



#### Turnaround

- Unlock asset potential and enhance performance of TNB's generation power plants through:
  - cost savings
  - cost avoidance
  - better inventory management

### Efficiency



#### Digital

- Implement digital strategy and deploy efficiency measures to contribute to group sustainability
- Optimise heat rate through digital levers and drive intelligent asset operations to achieve cost savings



#### Productivity

- Enhance workforce productivity
- Reskill and re-deployment of workforce

### Other Strategic Priorities



#### Build growth story

Prepare for repowering to support system post 2025



#### Procurement excellence

Drive cost savings from commercial & process levers

# TO BE A LEADING PROVIDER OF SUSTAINABLE ENERGY SOLUTIONS IN MALAYSIA AND INTERNATIONALLY

Our pledge in powering the lives of our customers and communities through renewable energy, supporting Malaysia's commitment in reducing the GHG emission intensity and environmental impact

## Government Green Development Plan



### Malaysia RE Target by 2025

**20%\***

of total Installed Capacity

\*exclude large hydro

Reduction up to 45% in GHGs  
emission intensity of GDP compared  
to 2005 level by 2030

## TNB Sustainability Commitments



### TNB RE Target of 8,300MW by 2025

#### TNB RE Capacity

As at November 2020:

Total: **3,390MW**

- Domestic : 2,724MW
- International : 666MW

Note: 8,300MW includes domestic and international RE assets, including large hydro

### The Group aspires to ensure that the revenue from the coal generation plants does not exceed 25%



- The major coal plants' PPA are expiring with no like-to-like replacement, therefore our coal related revenue will not exceed 20% by 2030
- TNB has pledged **not to invest in greenfield coal plant** (Jimah East Power which was commissioned in 2019 is the last new coal plant for TNB)

# TO BE A LEADING PROVIDER OF SUSTAINABLE ENERGY SOLUTIONS IN MALAYSIA AND INTERNATIONALLY

Our journey towards transitioning into a cleaner and sustainable energy provider

## TNB's RE Capacity

**WIND**  
144 MW



### International:

- UK (TNB Wind Ventures): 26 MW
- Turkey (GAMA): 118 MW

### Update:

Completed the acquisition of the remaining 20% stake in TNB Wind Ventures, UK in March 2020 with a total combined capacity of 26.1 MW

**SOLAR**  
544 MW



### International:

- UK (Vortex): 365 MW
- India (GMR): 26MW

### Domestic:

- Large scale solar: 80 MW
- Rooftop PV: Total 73 MW (secured capacity)

### Updates:

- Completed the acquisition of additional 5% controlling stake in Vortex Solar, UK in September 2020
- Participated in the bidding for Large Scale Solar (LSS) 4 with maximum capacity of 50MW in Malaysia

**BIOGAS & BIOMASS**  
13 MW



### Domestic:

- Biogas: 3MW
- Biomass: 10MW

**HYDRO**  
2,689 MW



**International:** Turkey (GAMA): 131 MW

### Domestic:

- Large Hydro: 2,536 MW
- Mini Hydro: 22 MW

### Updates (Upcoming Domestic Mini Hydro):

- Sg. Tersat, Kuala Berang (4MW), to be COD in June 2021
- Sg. Telom, Lemoi, Jelai Kecil (45 MW) – currently in negotiation
- Sg. Pelus (26 MW) – currently in negotiation

## TNB's RE Strategy

### International

- 1) Renewable Energy Driver (UK / Europe)
- 2) Growing TNB's utility business in South East Asia (SEA)
- 3) Technology Catalyst

### Focus Market

- TNB's growth strategy will focus on selected growth markets and regions where we have presence (UK, Europe and South East Asia) and specific asset classes/technology that are key to the Energy transition.
- The country selection is based on fit to TNB strategy, elimination of high-risk countries, power growth, market attractiveness and openness to foreign investments.





### Domestic

- 1) **Win LSS** - Largest driver which focuses on winning local LSS bids, exploration of new entry points through NEDA and Green Corporate PPA as well as expansion on Asset Management Services.
- 2) **Secure Small RE** - Focus on mini hydro, biogas and Waste to Energy through the existing Feed-In Tariff Scheme and other initiatives.
- 3) **GSPARX** – To be the top solar distributed generation provider in Malaysia with end to end delivery.



# TO BE A LEADING PROVIDER OF SUSTAINABLE ENERGY SOLUTIONS IN MALAYSIA AND INTERNATIONALLY

**Towards 2025, TNB will aim to grow its renewable energy business in specific markets by leveraging on its international and domestic assets, capabilities and experience**

0	 <b>Ground Zero</b> Value Protection & Creation for Existing Assets	Value Protection or Value Creation for existing assets
1	 <b>Ambition #1</b> Renewable Energy Driver (UK / Europe)	<ul style="list-style-type: none"><li>• Driving sustainability for TNB group within the RE market by establishing a Renewable Asset Co (RACo) platform with a higher capacity target through acquisitions leveraging on existing assets, capabilities and experience.</li><li>• Developing greenfield RE projects under a RE Developer Co (ReDevCo) platform and provide a pipeline of future operational assets to RACo</li></ul>
2	 <b>Ambition #2</b> Growing TNB's utility business in South East Asia	Grow revenue and returns through greenfield development and M&A across the utility value chain (RE, conventional generation and utility type business) leveraging of TNB's core business experience and capabilities.
3	 <b>Ambition #3</b> Technology Catalyst	Future proofing TNB with the right technologies within the Energy transition landscape

# TNB'S ENVIRONMENTAL INITIATIVES

TNB board of directors is cognisant of the importance of ensuring sustainability is integrated in the strategic direction of the organisation, decision making processes and operational performance

The latest coal generation plants using **ultra-supercritical technology** consume less **fuel per MWh electricity** produced in comparison to conventional coal power plant further contributing to **lower carbon emissions**.

50MW Large Scale Solar (LSS), **cut emissions** by approx. **57,174 tCO<sub>2</sub>e/year**, additional 30MW LSS to **further reduce emissions about 35,840 tCO<sub>2</sub>e/year**



Development on microalgae initiative to reduce carbon dioxide (CO<sub>2</sub>)



Developed Green House **Gas Emission Management System (GEMS)**, an online system to record and analyse raw emission data from TNB assets

Promoting green energy by introducing optional green tariff (myGreen+) and tradable RE Certificate (MGATS)

myGreen<sup>+</sup>

- Able to purchase green energy without having to install their own solar rooftop
- Total Subscription **106,400 kWh** with a total of 131 customers as at 24th November 2020

mGats

- Meets Carbon Disclosure Project (CDP) standard and RE100 best practice guideline
- Renewable Energy Certificates of **1,653,630.273 MWh tradable units as at September 2020**

Note : tCO<sub>2</sub>e (tonnes of carbon dioxide equivalent )

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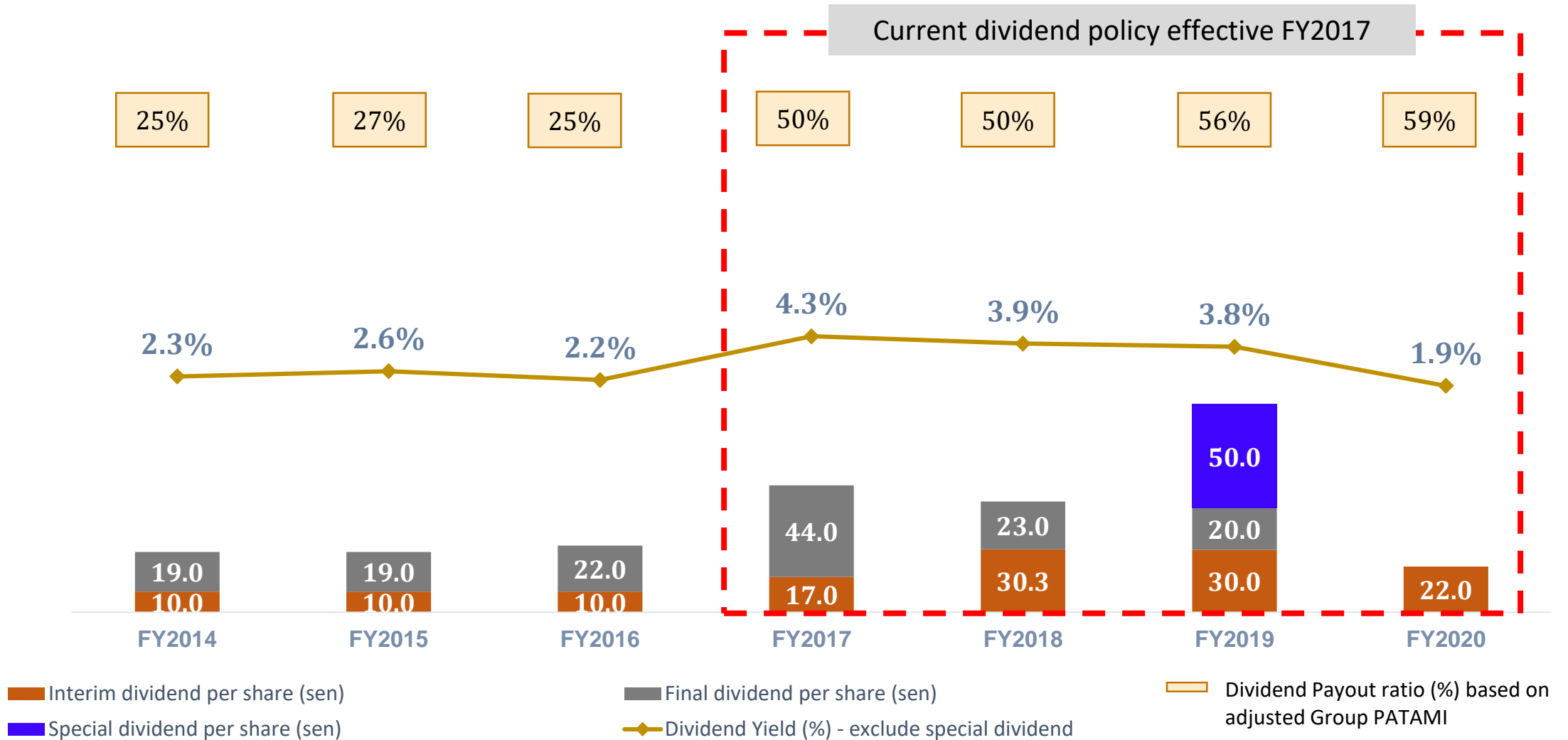
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## DIVIDEND POLICY

Distribution of dividend is based on 30% to 60% dividend payout ratio, based on the reported Consolidated Net Profit Attributable to Shareholders After Minority Interest, excluding Extraordinary, Non-Recurring items



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# FY2021 OUTLOOK



## Electricity Demand

- Under RP2 extension year, our approved demand forecast is 113,909 GWh or 2.9% growth compared to JPPPET revised FY2020 forecast.
- Given that most of the Industrial and Commercial sectors are allowed to run at full capacity, we expect the impact of Covid-19 to the electricity demand to be less severe than in FY2020.
- Nevertheless, earnings of our regulated revenue cap entities are guaranteed at demand growth as stipulated by the IBR guidelines in RP2 extension.



## Cash Flow

- Our cash flow is resilient supported partly by the recent capital drawdown. Furthermore, we commanded good rates in the exercise due to our robust and strong balance sheet.



## International Business

- We will be executing a strategy aimed at either protecting or creating value, mainly focusing on growing TNB's international Renewable Energy business leveraging on existing assets, capabilities and experience.
- Our immediate strategy is to grow TNB's international Renewable Energy business to sizeable portfolio through :
  - a) acquisitions of operational assets
  - b) greenfield development
- Our focus on Renewable energy is further supported by our observations of the global energy market during Covid-19 induced lockdowns. During this period, RE has shown to be a resilient source, where it has even increased market share amidst changing demand and supply dynamics of the sector.



## Dividend Policy

We will continue to honour our dividend policy of 30% to 60% dividend payout ratio, based on the reported Consolidated Net Profit Attributable to Shareholders After Minority Interest, excluding Extraordinary, Non-Recurring items.



## CAPEX

**RM9.5 bil**



- Regulated Recurring : RM7.3bil
- Others : RM2.2bil

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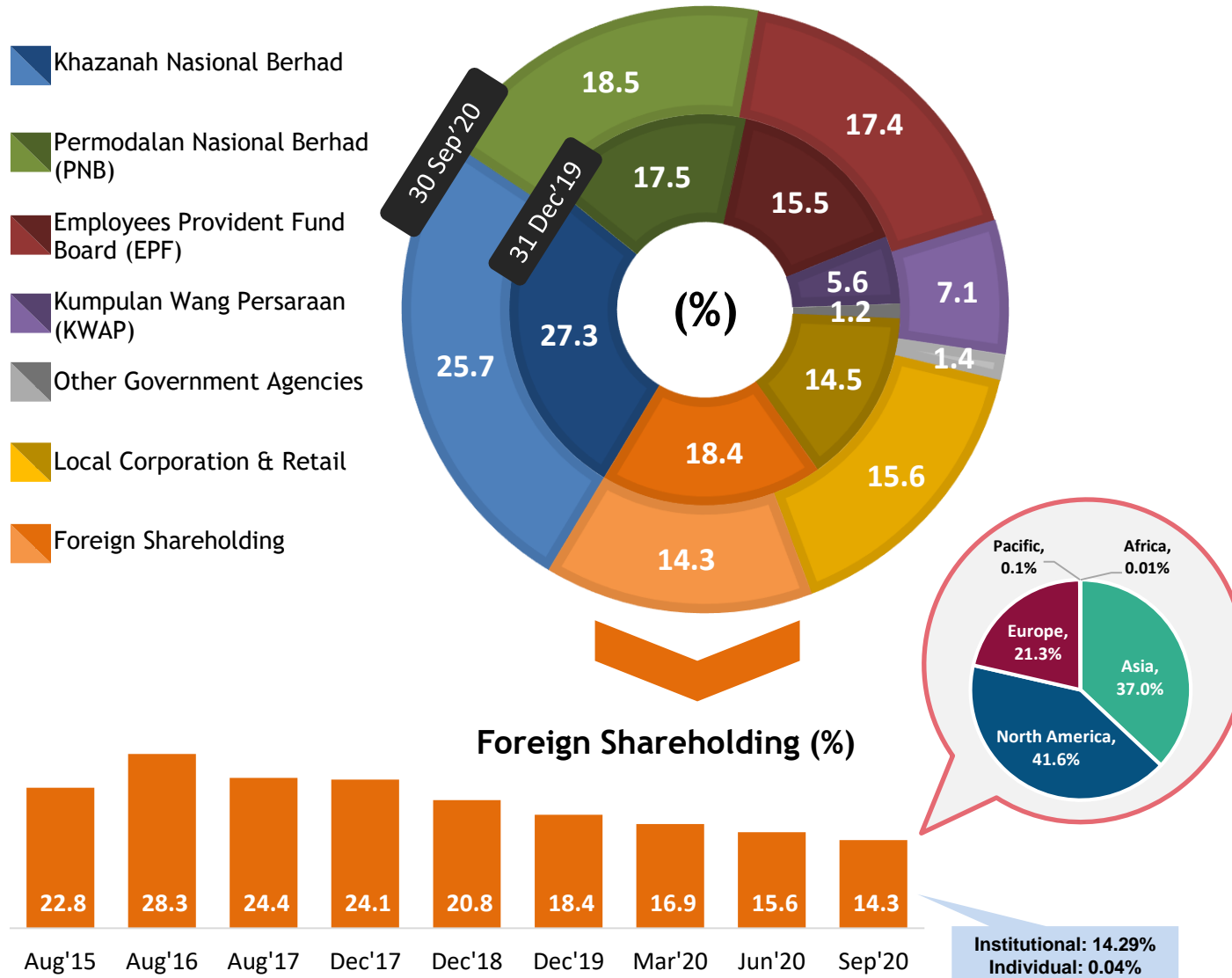
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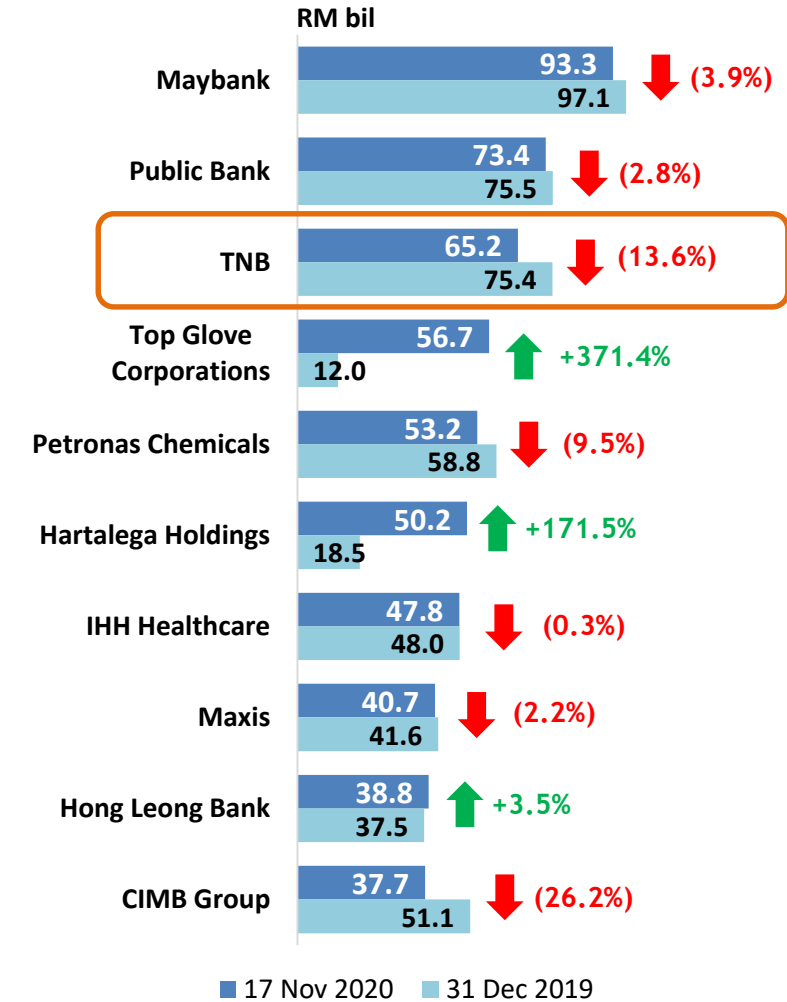
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## TNB Shareholding Structure



## Top 10 KLCI Stocks by Market Capitalisation



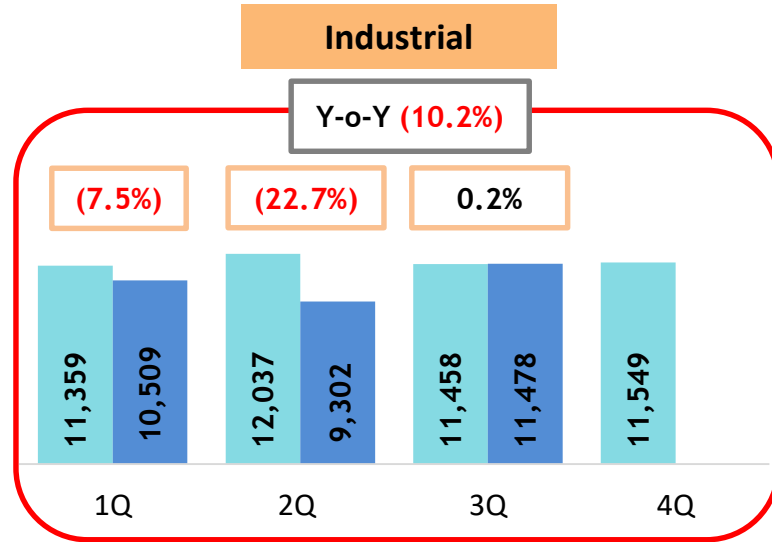
### Note:

- Top 10 KLCI ranking by Market Capitalisation as at 31<sup>st</sup> December 2020
- TNB Latest Market Cap: RM60.4bil (3<sup>rd</sup>), as at 31<sup>st</sup> December 2020



# APPENDIX

## Higher electricity demand was supported by industrial and commercial sector in 3Q



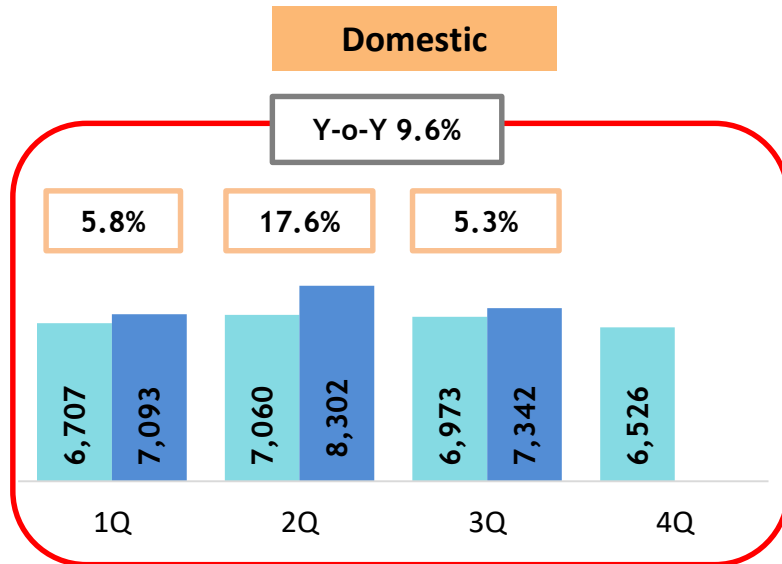
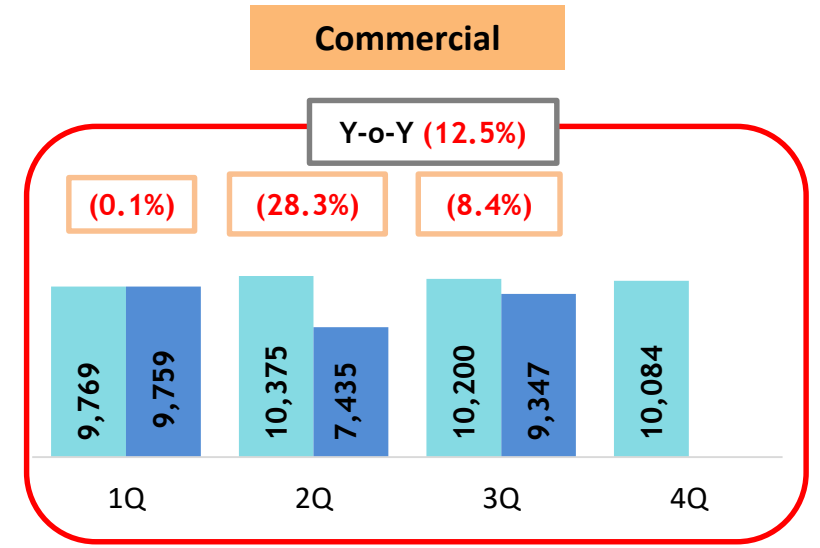
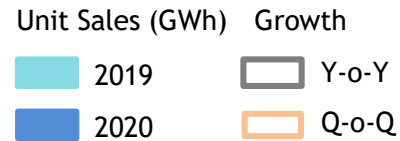
### 3Q main contributors for the drop

#### Industrial:

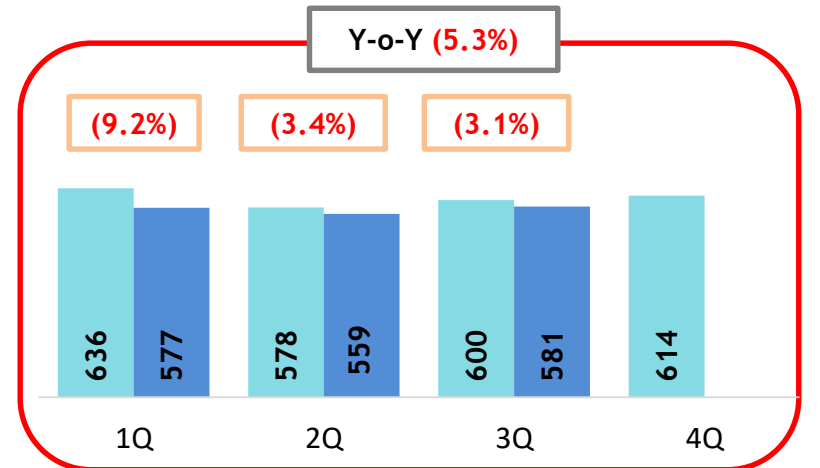
- Iron and steel
- Cement products
- Electric & electronic

#### Commercial:

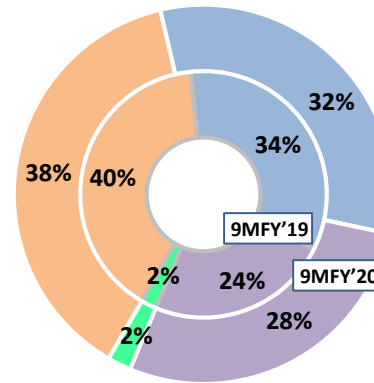
- Retails
- Accommodation
- Educational



### Others\* \*includes Agriculture, Mining & Public Lighting



### Sector Mix (%) 9MFY'20 vs 9MFY'19



Industrial Commercial Domestic Others

**Note:** Data / Info as at Sept 2020

\* Peninsular Malaysia only (TNB exclude SESB and other subsidiaries)

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### Incentive Based Regulation (IBR) – Imbalance Cost Pass-Through (ICPT) Mechanisms Ensures TNB Remain Neutral

#### Base Tariff under IBR framework comprises of:

- Opex, Depreciation of Regulated Assets & Tax Expenses of Business Entities
  - transmission, grid system operation, Single Buyer operation, distribution network and customer services
- Power purchase cost charged by generators to the Single Buyer
- Return on regulated assets (rate base) of Business Entities
  - Reviewed every 3 years

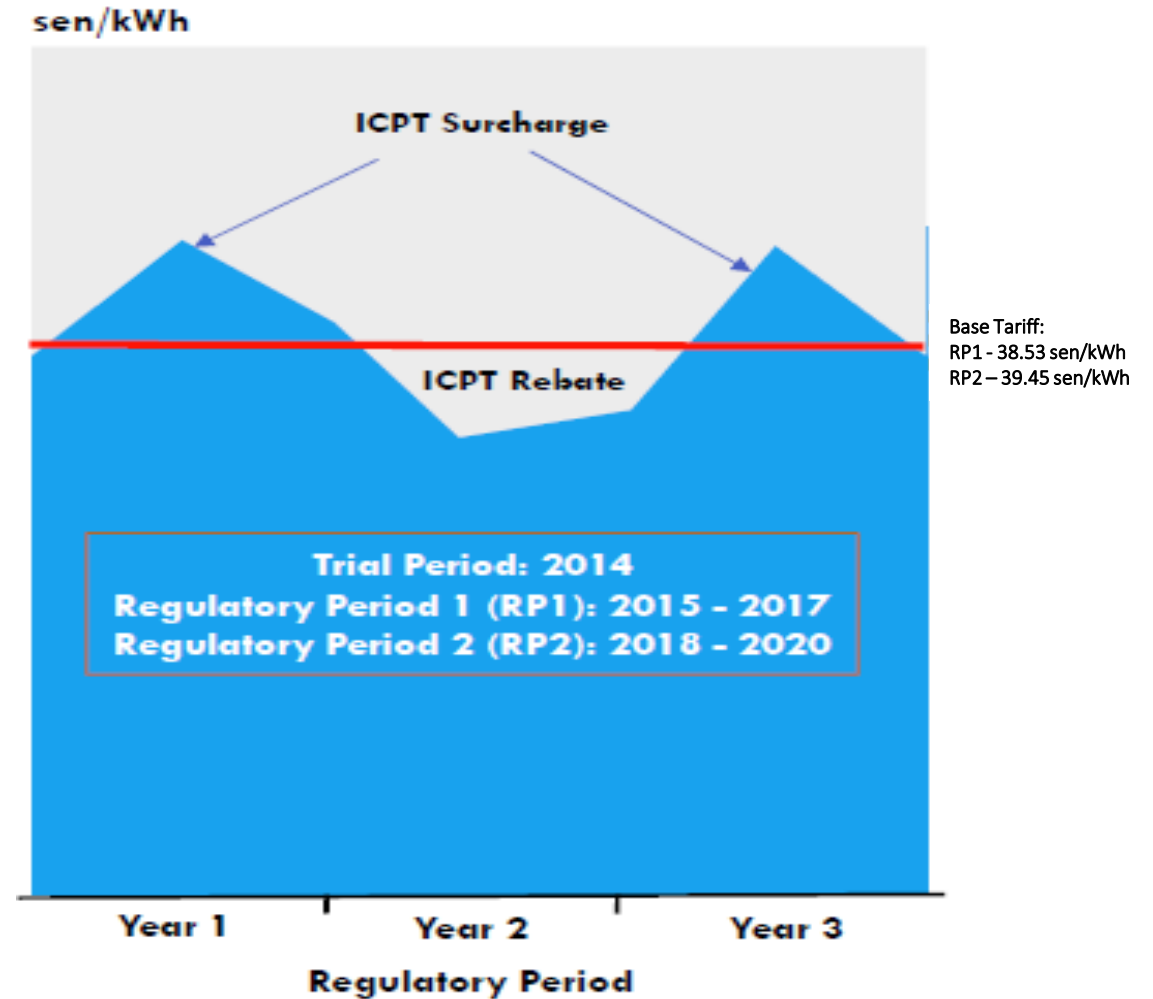
#### Imbalance Cost Pass-Through (ICPT):

- ICPT is 6-monthly pass-through of variations in uncontrollable fuel costs and other generation specific costs (imbalance cost) incurred by utility for the preceding 6-month period
  - Reviewed every 6 months

#### Principle for ICPT Calculation

Cost components comprise of

- The ICPT is calculated based on an estimated actual fuel cost and generation specific costs for a particular six (6) months period against the corresponding baseline costs in the Base Tariff.



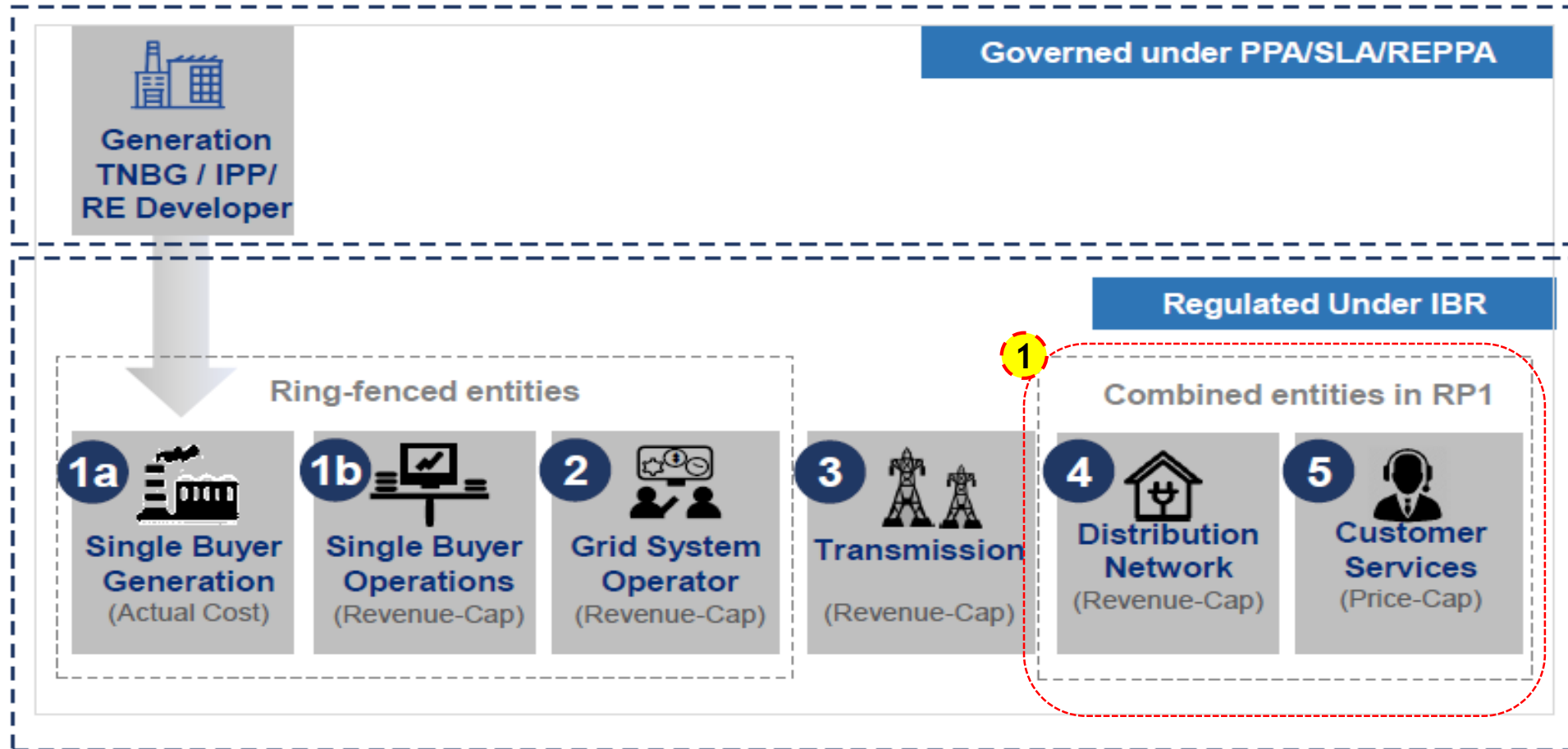
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## Incentive Based Regulation (IBR) – New Features in Electricity Tariff Review for RP2 (2018-2020)

More efficient and reliable electricity supply	Support Government's initiatives and aspirations	New addition in Key Performance Indicators	Separation of Distribution Networks and Customer Services
<ul style="list-style-type: none"><li>• Efficient and reliable electricity supply at the lowest efficient cost;</li><li>• Enhancement in safety and reliability with smart grid capabilities.</li></ul>	<ul style="list-style-type: none"><li>• Supporting Government's initiatives in green energy and sustainability for example AMI, Distribution Automation, Group Relamping of streetlight, etc.</li><li>• Continue the gas price subsidy rationalization by gradual removal of gas price subsidy;</li></ul>	<ul style="list-style-type: none"><li>• New performance indicators on each business entity that are in line with Government's policies;</li><li>• Enhancement on KPI mechanisms and principles (symmetric and asymmetric).</li></ul>	<ul style="list-style-type: none"><li>• Separation of these business entities will enhance the system reliability and consumer experience;</li><li>• This will increase the productivity and consumer satisfaction.</li></ul>

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## Incentive Based Regulation (IBR) – IBR Entities

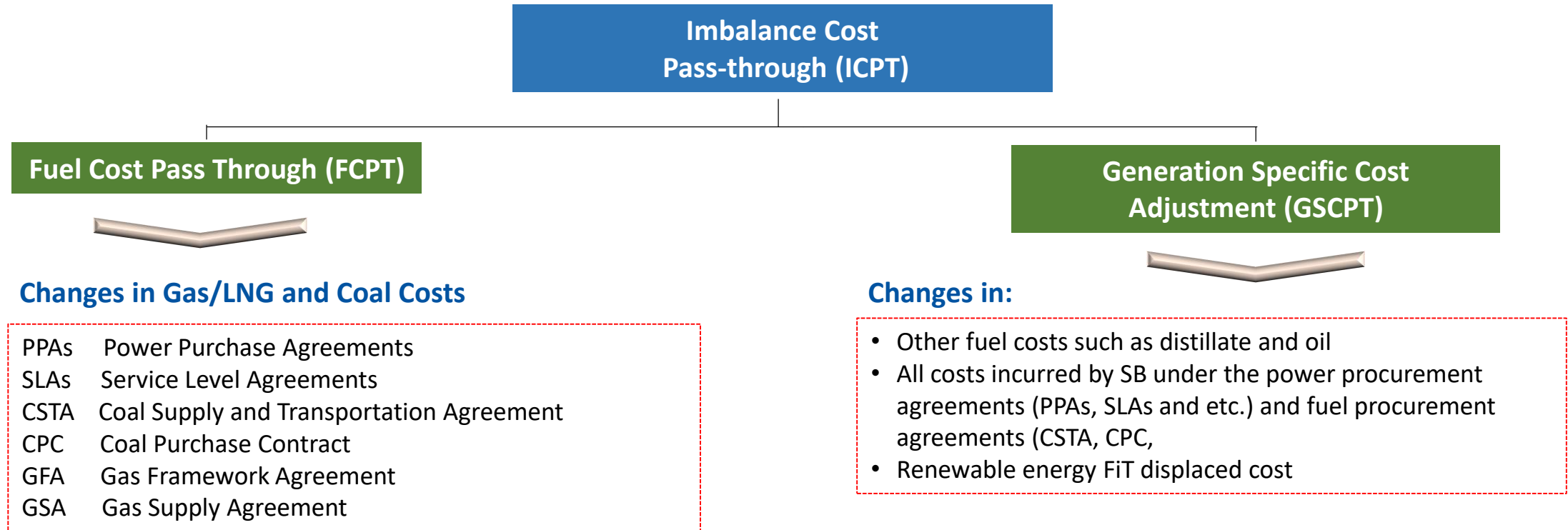


1

In RP1, these 2 entity are grouped as Price -Cap entity

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## Incentive Based Regulation (IBR) – Imbalance Cost Pass-Through (ICPT) Comprises Two Components



### RP2

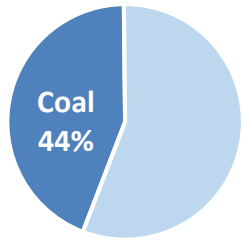
ICPT	Surcharge / Rebate	Implementation Period
Jul – Dec'18	2.15sen/kWh	Jan – Jun'19
Jan – Jun'19	2.55sen/kWh	Jul – Dec'19
Jul – Dec'19	2.00sen/kWh	Jan – Jun'20
Jan – Jun'20	0.00sen/kWh	Jul – Dec'20
Jul – Dec'20	2.00sen/kWh	Jan – Jun'21

# APPENDIX

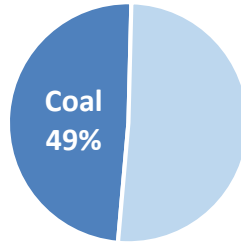
## Incentive Based Regulation (IBR) – Generation and Customer Mix

### Generation Mix RP1 vs RP2

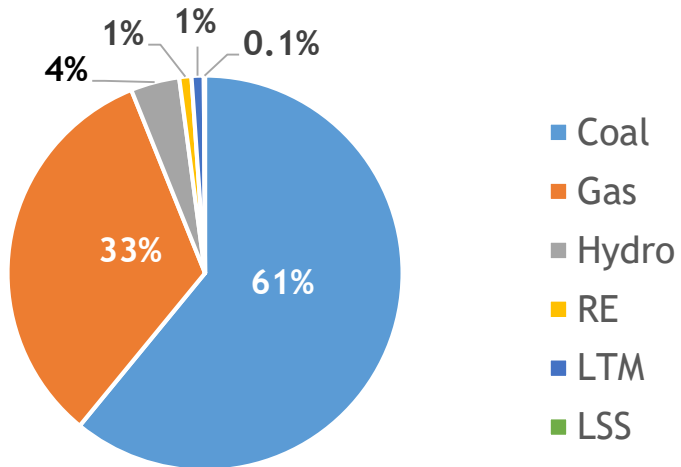
RP1 Base



RP1 Actual



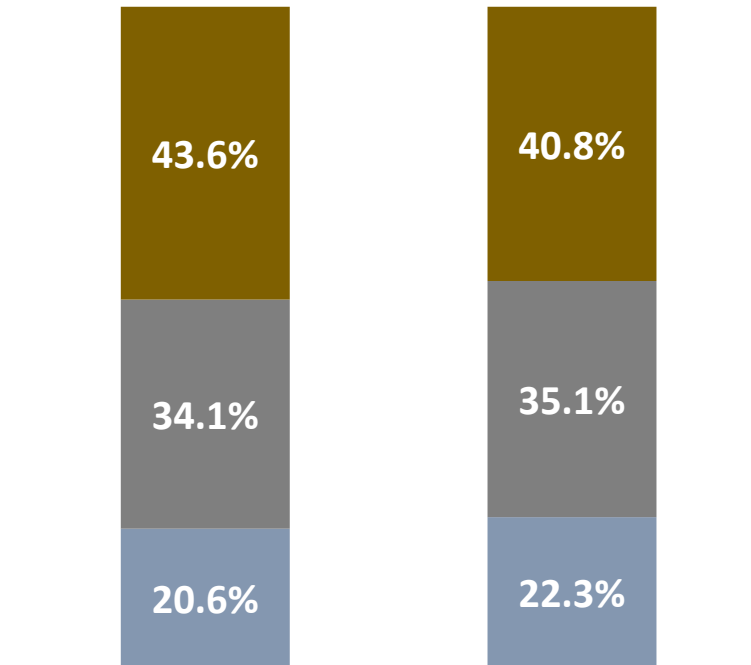
RP2



- Coal
- Gas
- Hydro
- RE
- LTM
- LSS

Made possible by improved coal plants performance and additional commissioning of coal plants.

### Changes in Customer Mix (%) in RP1 (2015-2017)



Base IBR RP1

Average Actual IBR RP1

Domestic Commercial Industrial

RP2 Forecasted Demand Growth: 1.8 – 2.0%

Note:

LTM – Laos, Thailand & Malaysia Interconnection; LSS – Large Scale Solar

Source: Energy Commission (EC)

# APPENDIX

## Existing - TNB's Renewable Energy (RE) Assets

### Domestic (Peninsular Malaysia)

#### Others

- Mini Hydro (22MW)
  - GSPARX Rooftop Solar (73MW)
- (Total secured)

#### Kedah

- Large Scale Solar**
- TNB Bukit Selambau (30MW)

#### Perak

- Large Hydro**
- SJ Temengor (348MW)
  - SJ Bersia (72MW)
  - SJ Kenering (120MW)
  - SJ Chenderoh (41MW)
  - SJ Sg. Piah (67MW)

#### Selangor

- Large Scale Solar**
- TNB Sepang Solar (50MW)
- Solar PV**
- Floating solar in Sg Labu WTP (108kWp)

#### Kelantan

- Large Hydro**
- SJ Pergau (600MW)

#### Terengganu

- Large Hydro**
- SJ Kenyir (400MW)
  - SJ Hulu Terengganu (265MW)

#### Pahang

- Large Hydro**
- SJ WOH (150MW)
  - SJ JOR (100MW)
  - SJ Ulu Jelai (372MW)
- Biomass**
- JV with Felda (10MW)

#### Johor

- Biogas**
- JV with Sime Darby (3.2 MW)

### International

#### United Kingdom

- Solar**
- TNB Vortex Solar (365.0MW)
- Wind**
- TNB Wind Ventures (26.1MW)

#### Turkey

- Wind**
- GAMA Wind (117.5MW)
- Hydro**
- GAMA Hydro (131.3MW)

#### India

- Solar**
- GMR Solar (26.0MW)

## APPENDIX

### International Acquisition - Four International Acquisitions to Support Aspiration



**30%**

Equity interest of GAMA Enerji A.S.

Assets include a 853MW natural gas-fired plant, 117.5MW wind plants and 131.3MW hydro plants



**30%**

Equity interest of GMR Energy Limited.

Assets include 1,915MW coal, gas and solar plants.

#### **Vortex Solar UK**

**55%**

Equity interest of Vortex Solar Investments S.a.r.l.

Assets include 24 operational solar PV Farm across England and Wales with net installed capacity of about 365MW

#### **Tenaga Wind Ventures**

**100%**

Equity interest of GVO Wind Limited & Blumerang Capital Limited

Assets include 53 operational onshore medium wind turbines with a total combined capacity of 26.1MW



## TNB's Environmental Initiatives - Green Development

### ❑ UNITEN's Smart UniverCity

- ✓ To create a sustainable ecosystem which provide competitive advantage for TNB in moving into smart city environment.
- ✓ The project focuses on 6 smart initiatives which are smart energy, smart facilities, smart mobility, smart security, smart lifestyle and smart education.



### ❑ TNB Centre of Excellence (CoE) for Solar Energy at the Large Scale Solar (LSS) site in Sepang

- ✓ The CoE will become a training centre for solar energy development and technology, catering for TNB employees and external participants from public and private sectors



### ❑ Introduction of Electric Buses for UNITEN

- ✓ The project aims to develop a feasible business model for the operation of electric buses within the campus, such as vehicle leasing between the Fleet Management and UNITEN.



### ❑ Expansion of Electric Vehicle Charging Network

- ✓ To expand the existing charging station infra (around 250 stations) under the ChargeEV programme (managed by MGTC).



### ❑ Maverick - Showcase of Net Zero Energy Home

- ✓ Showcasing Net Zero Energy Home Living in residential areas in Cyberjaya, the project provides a physical experience for customers to visualise how to self generate their own electricity.



### ❑ Smart Street Light Showcase Project at UNITEN Putrajaya Campus

- ✓ A street lighting system integrated with communication facilities that allow it to perform various functions such as brightness control, surveillance and digital street signs.



# APPENDIX

## TNB's Social Initiatives



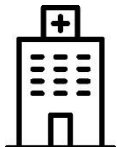
### Economic & Social



**212 households** benefitted from Projek Baiti Jannati and Program Mesra Rakyat by refurbishing or building new homes through a total contribution of **RM9.96mn**



TNB's contribution of **RM6mn** including sponsorships to the Malaysian Hockey Confederation



Approximately **RM3.49mn** has been allocated to Better Brighter Shelter programme, provide accommodation via dormitories whose members are undergoing treatment in the hospitals



### Education



**700 students** awarded YTN scholarship with a total amount of **RM66.1mn**



**RM21.2mn** for **3,564 students** from low-income families in the fields of Science, Technology, Engineering and Mathematics through Dermasiswa My Brighter Future (MyBF) Programme



TNB has contributed a total of **RM2.19mn** to 18 schools under the Pintar Schools Adoption Programme



### Career Development



More than **RM183mn** contributed in training & development



**RM10mn** spent to cultivate **705 youth** potentials through PROTÉGÉ



**38,000** hours for Leadership Training & Total **1,085,160** training hours

# APPENDIX

## TNB's Governance Initiatives

TNB is committed to operating in an ethical, transparent and responsible manner given the critical role we play in national development and the number of stakeholders who are impacted by our business

### TNB Board Committees

- Board Audit Committee
- Board Risk Committee
- Board Finance And Investment Committee
- Board Long Term Incentive Plan Committee
- Board Tender Committee
- Board Integrity Committee
- Board Nomination And Remuneration Committee

### Governance Pillars



**Leadership & Effectiveness**



**Internal Audit Function**



**Relations with Stakeholders**



**Statement on Risk Management & Internal Controls**



**Ethics, Integrity & Trust**

# APPENDIX

## TNB's Governance Initiatives - Composition of BOD



**CHAIRMAN**  
**DATO' SERI DIRAJA MAHDZIR KHALID**



**EXECUTIVE DIRECTOR / CEO**  
**DATUK SERI AMIR HAMZAH BIN AZIZAN**

### Independent Non-Executive Directors (Total = 7)



**NORAINI BINTI CHE DAN**  
Expertise: Audit & Finance



**ONG AI LIN**  
Expertise: Audit & Finance



**GOPALA KRISHNAN A/L  
K.SUNDARAM**  
Expertise: Law



**DATUK RAWISANDRAN  
A/L NARAYANAN**  
Expertise: Business



**JUNIWATI BINTI RAHMAT HUSSIN**  
Expertise: Project Management, Corporate  
Planning and Human Resource



**DATO' ROSLINA BINTI  
ZAINAL**  
Expertise: Business



**DATO' IR NAWAWI BIN  
AHMAD**  
Expertise: Engineering

### Non-Independent Non-Executive Directors (Total =2)



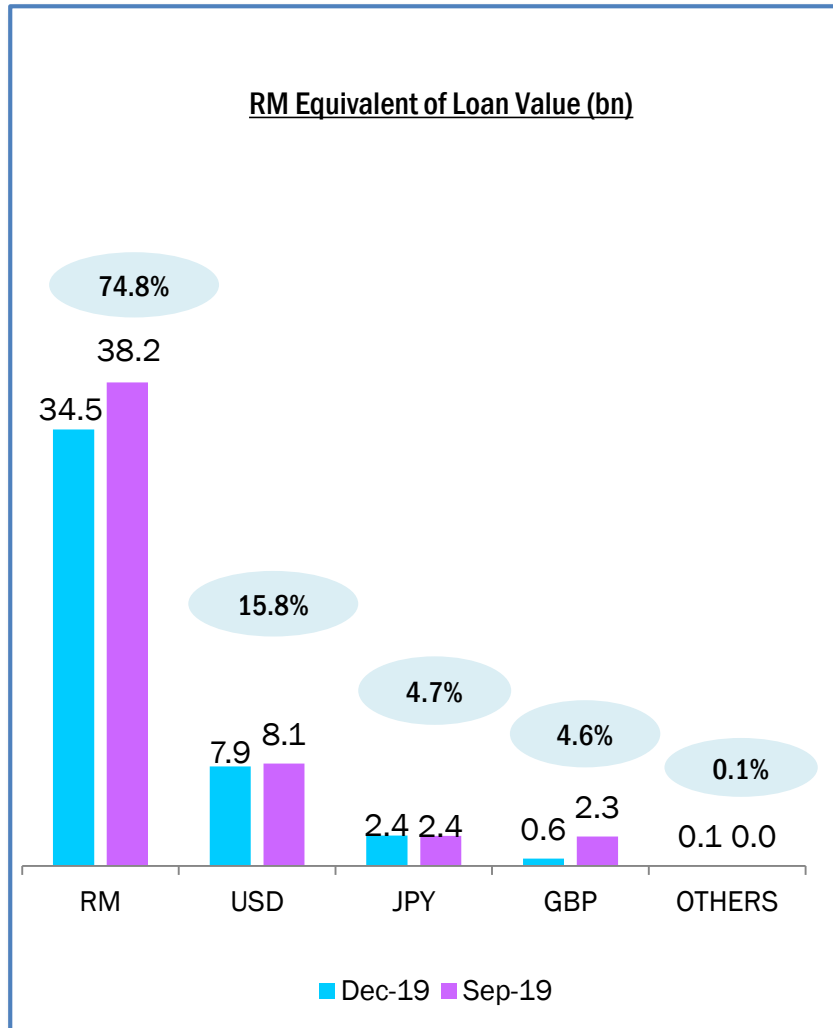
**AMRAN HAFIZ BIN AFFIFUDIN**  
(Khazanah)



**DATO' ASRI BIN HAMIDIN @ HAMIDON**  
(MoF)

## APPENDIX

Increased in total debt due to drawdown of new sukuk, however gearing within optimal level



Note:  
Debt consists of Principal + Accrued Interest

Statistics		30 <sup>th</sup> Sept'20	31 <sup>st</sup> Dec'19
1	Total Debt (RM' Bil)	51.1	45.4
	Net Debt (RM' Bil)*	35.5	31.2
1	Gearing (%)	47.8	43.4
	Net Gearing (%)	33.3	29.8
	Fixed : Floating	95:5	98:2
	Final Exposure	95:5	98:2
2	Effective Average Cost of Borrowing (based on exposure) **	4.83	5.06

\* Net Debt excludes deposits, bank and cash balances & investment in UTF

\*\* Inclusive of interest rate swap

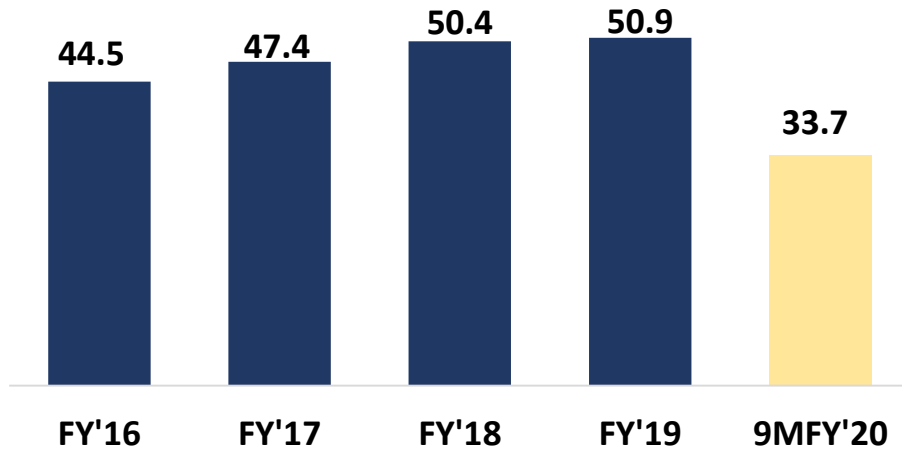
- 1 Increase mainly due to :
  - Issuance of Sukuk Wakalah IMTN of RM3bil on 12<sup>th</sup> August 2020
  - Loan in Vortex of RM1.5bil due to change of accounting treatment from associate to subsidiary
  - Banker's acceptance of RM1bil for working capital purposes in 1Q'FY20
- 2 Reduced due to lower interest rate of the new drawdown.

Closing FOREX	30 <sup>th</sup> Sept'20	30 <sup>th</sup> Jun'20	31 <sup>st</sup> Mar'20	31 <sup>st</sup> Dec'19
USD/RM	4.18	4.28	4.29	4.09
100YEN/RM	3.93	3.98	3.96	3.77
GBP/RM	5.53	5.25	5.30	5.37
USD/YEN	106.36	107.68	108.24	105.40

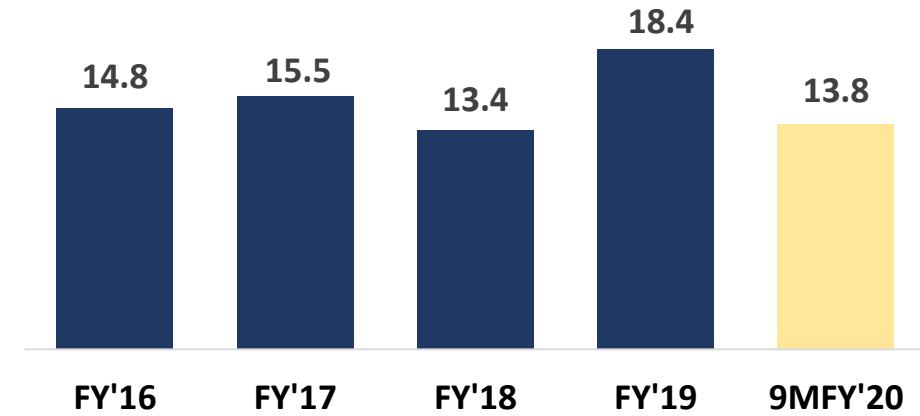
# APPENDIX

## Financial Highlights

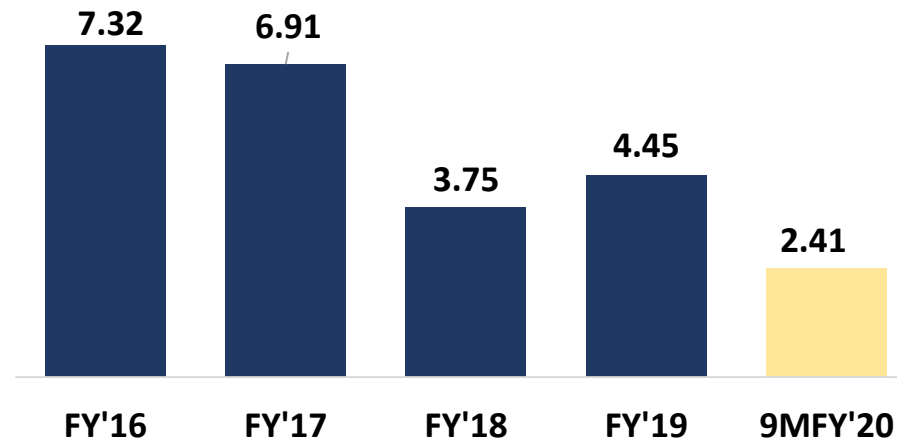
REVENUE (RM bil)



EBITDA (RM bil)



PAT (RM bil)

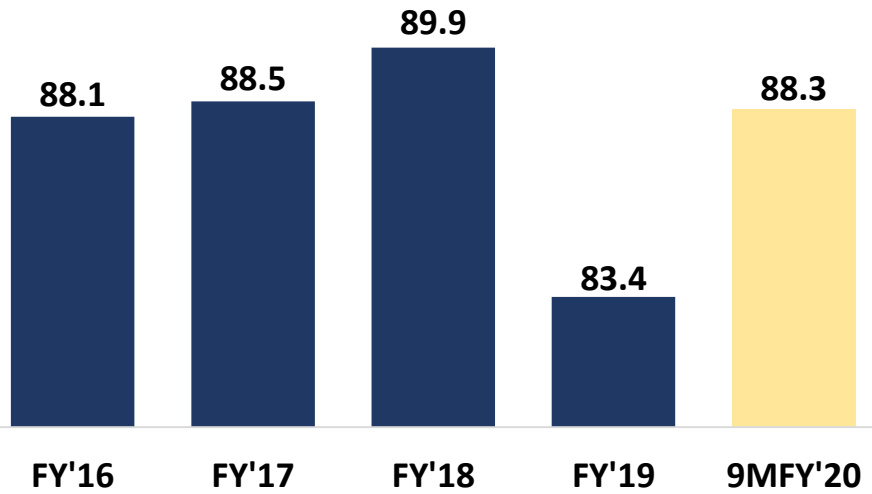


Note: FY2019 is after MFRS16 implementation

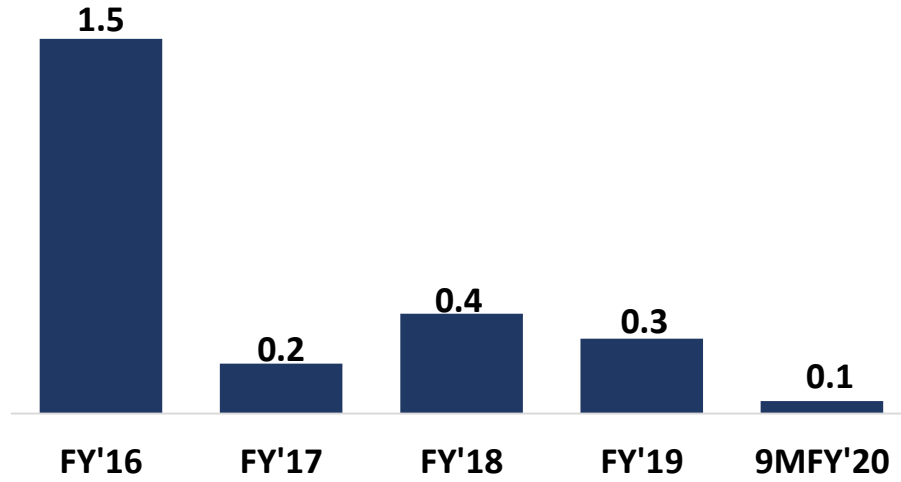
## APPENDIX

### Technical Highlights

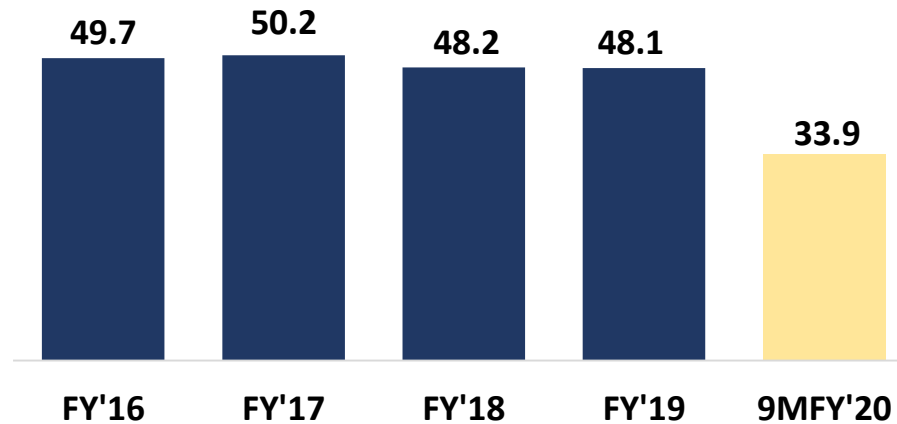
EAF (%)



Transmission System Minute (mins)



Distribution SAIDI (mins)



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