



**TENAGA  
NASIONAL**

*Better. Brighter.*

# INVESTOR PRESENTATION



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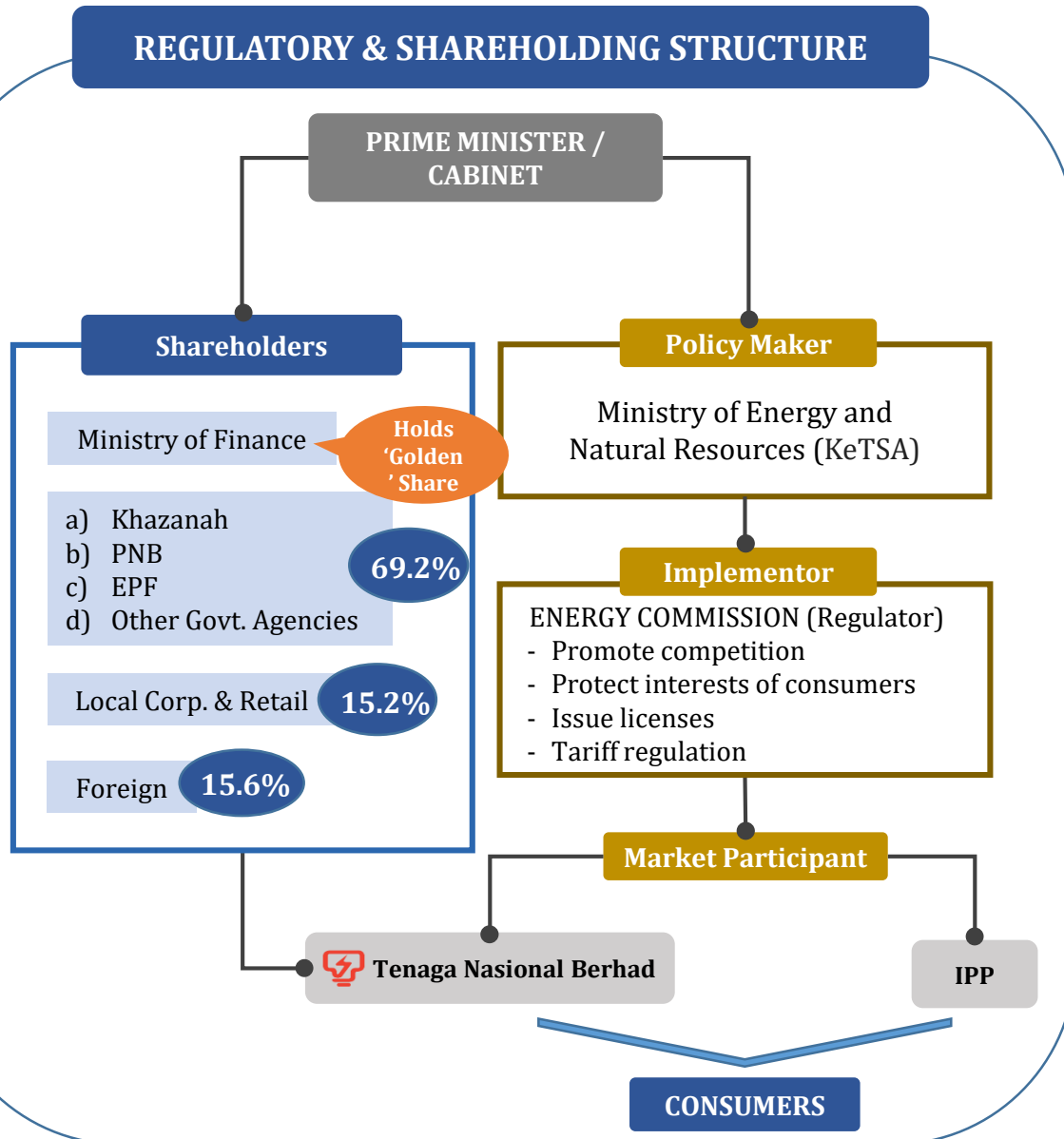
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# INTRODUCTION TO TENAGA

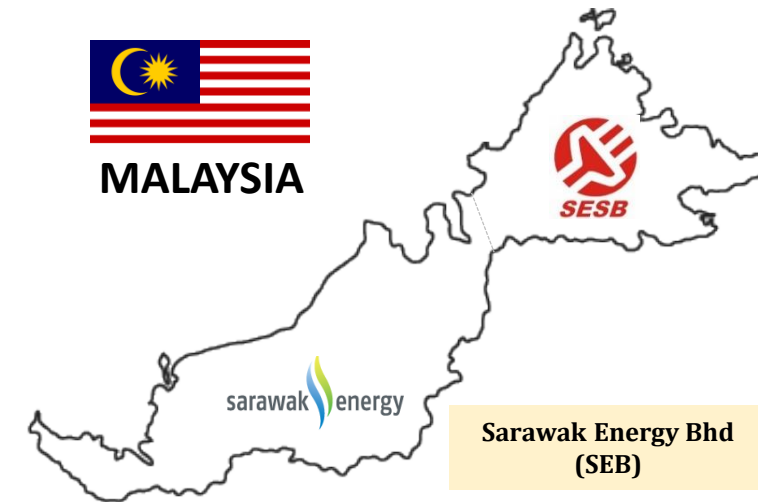
## Regulatory & Shareholding Structure



Tenaga Nasional Bhd (TNB)



**Sabah Electricity Sdn Bhd (SESB)**  
(83% owned by TNB)  
Dependable Capacity:  
1,223MW



**Sarawak Energy Bhd (SEB)**

# INTRODUCTION TO TENAGA

## Regulated & Non-Regulated Business

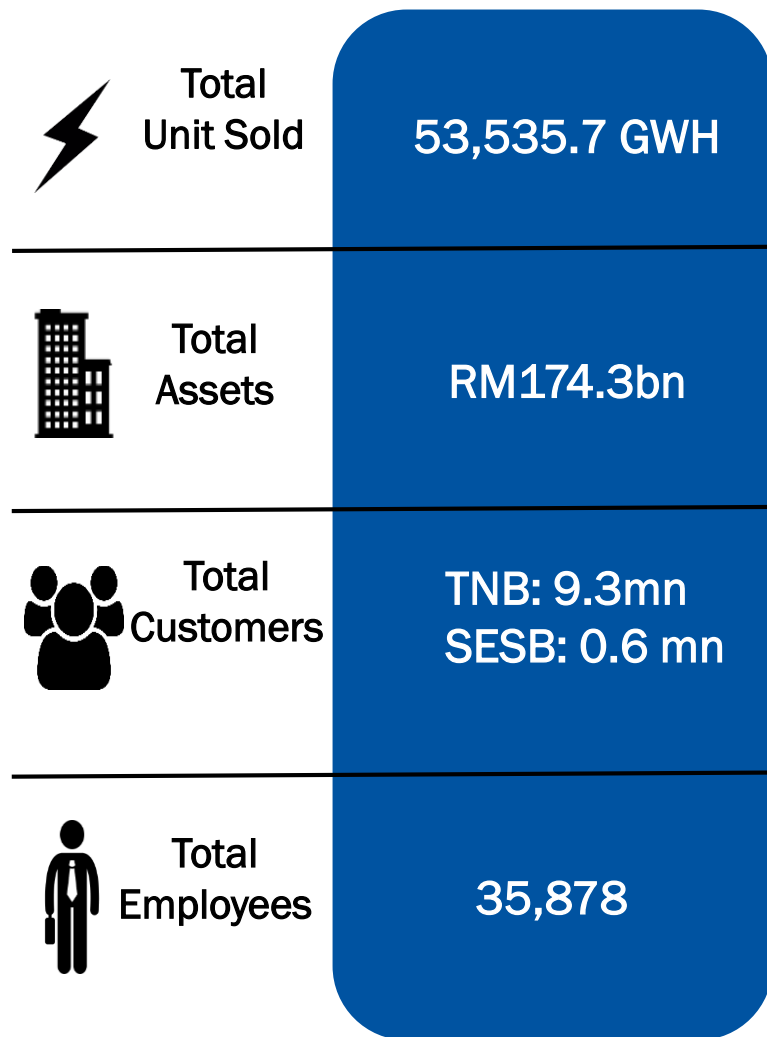
Core Business

Generation	Grid/Transmission	Distribution Network & Retail
Non-Regulated Business	Regulated Business	
<div><div><div>TNB Generation Mix:</div><div><div><div>Oil &amp; Distillate</div><div><div></div></div><div>0.00%</div></div><div><div>Solar</div><div><div></div></div><div>0.1%</div></div><div><div>Hydro</div><div><div></div></div><div>4.6%</div></div><div><div>Gas &amp; LNG</div><div><div></div></div><div>29.0%</div></div><div><div>Coal</div><div><div></div></div><div>66.3%</div></div></div></div><div><div>Installed Capacity:</div><div>25,414MW</div><div>TNB: 14,561MW @ 57.3%</div><div>IPP: 10,854MW @ 42.7%</div></div><div><div>Generation Market Share:</div><div>61.5%</div></div><div><div>Equivalent Availability Factor (EAF):</div><div>88.2%</div><div>Note: TNB installed capacity &amp; Market Share are based on gross capacity</div></div></div>	<div><div>Transmission Network Length:</div><div>23,964KM</div></div> <div><div>Transmission Substations:</div><div>456</div></div> <div><div>Transmission System Minutes:</div><div>0.01 mins</div></div>	<div><div>Distribution Network Length:</div><div>683,008KM</div></div> <div><div>Distribution Substations:</div><div>83,467</div></div> <div><div>SAIDI:</div><div>48.1mins</div></div> <div><div>Customer Satisfaction Index (CSI):</div><div>8.1</div></div>

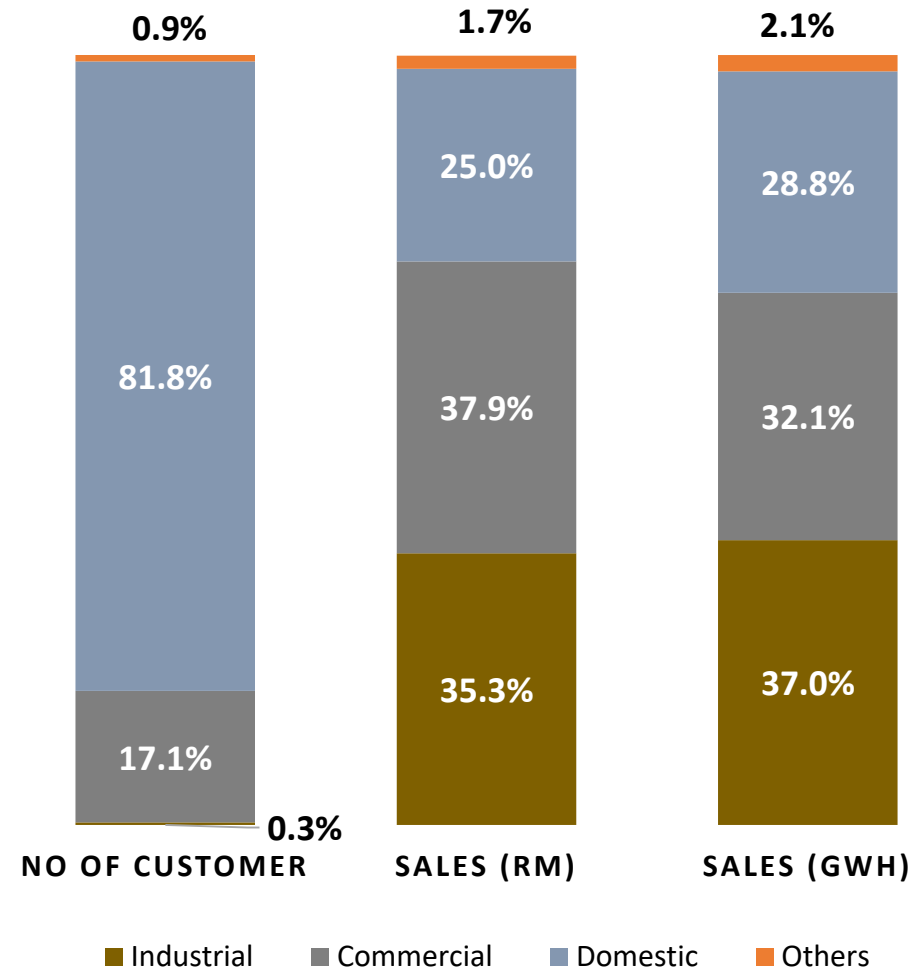
Source: TNB Data / Info as at June 2020

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



## TNB Sectoral Sales Analysis\*



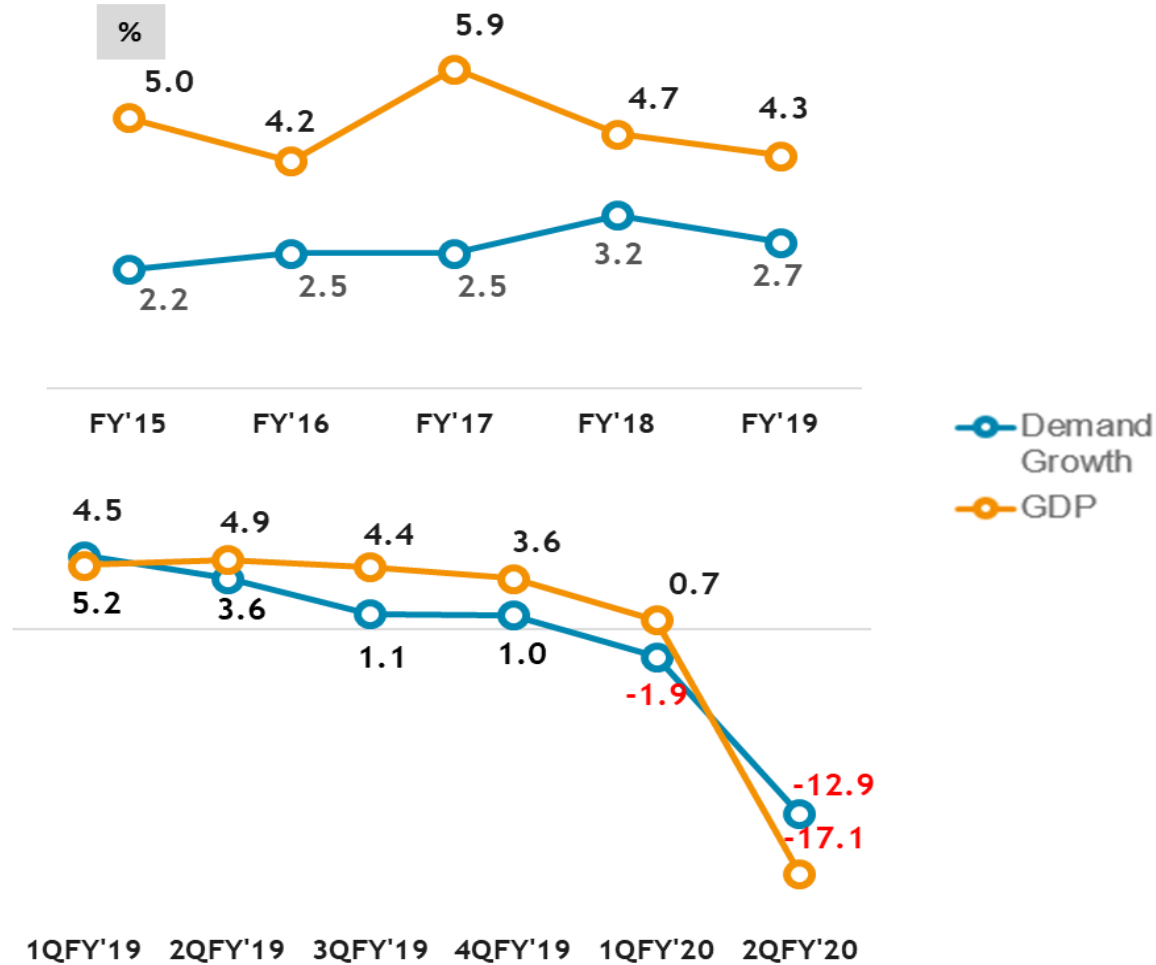
**Note:** Data / Info as at June 2020

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

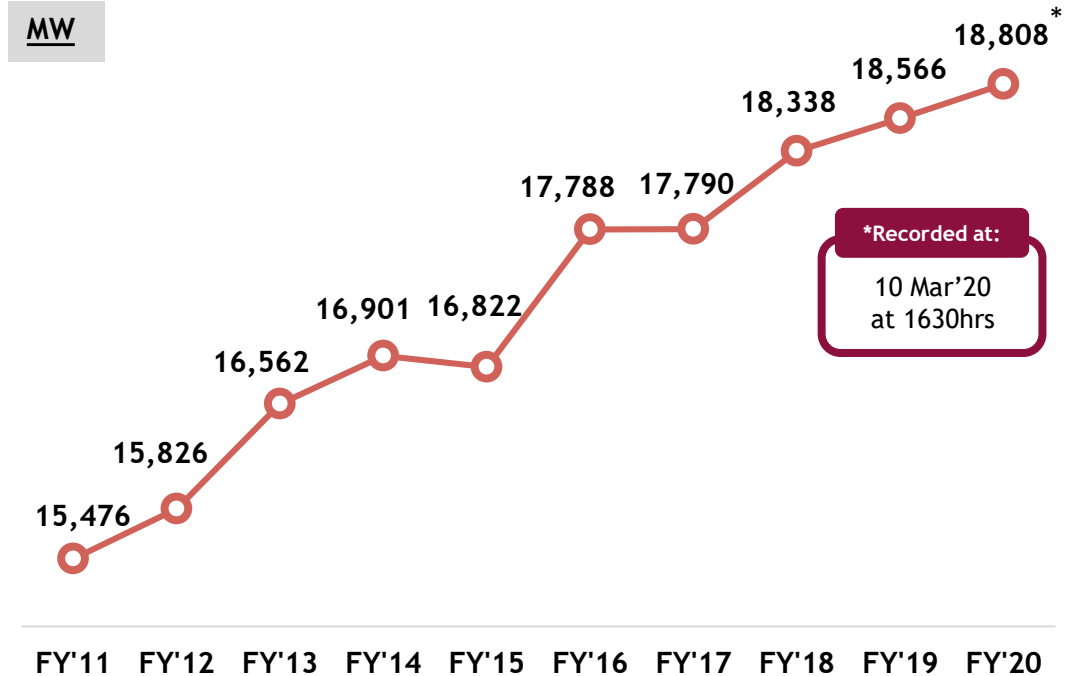
# INTRODUCTION TO TENAGA

## Electricity Demand in line with GDP Growth

GDP & TNB (Peninsula) Demand Growth



TNB (Peninsula) Yearly Peak Demand



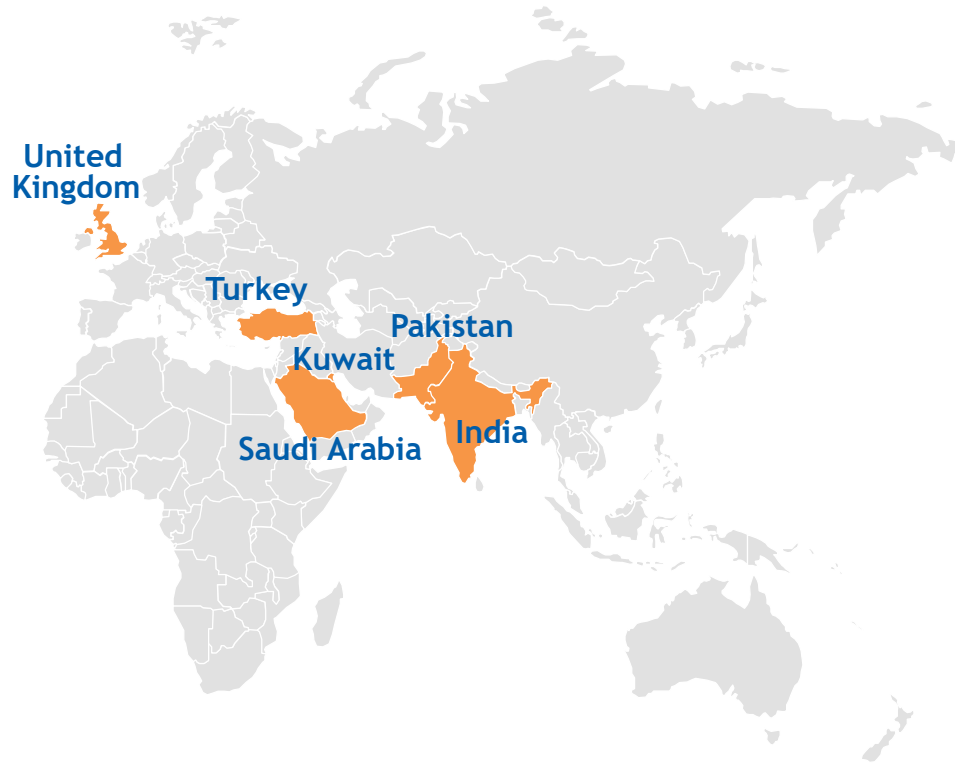
	2QFY'20	2QFY'19	Variance (%)
Maximum Demand (GWh)	14,998.3	16,931.12	(11.4)

### Note:

- Data / Info as at June 2020
- Peninsular Malaysia only (TNB exclude SESB and other subsidiaries)

# INTRODUCTION TO TENAGA

**Growing Renewable Energy Business– TNB is currently present in more than 5 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)

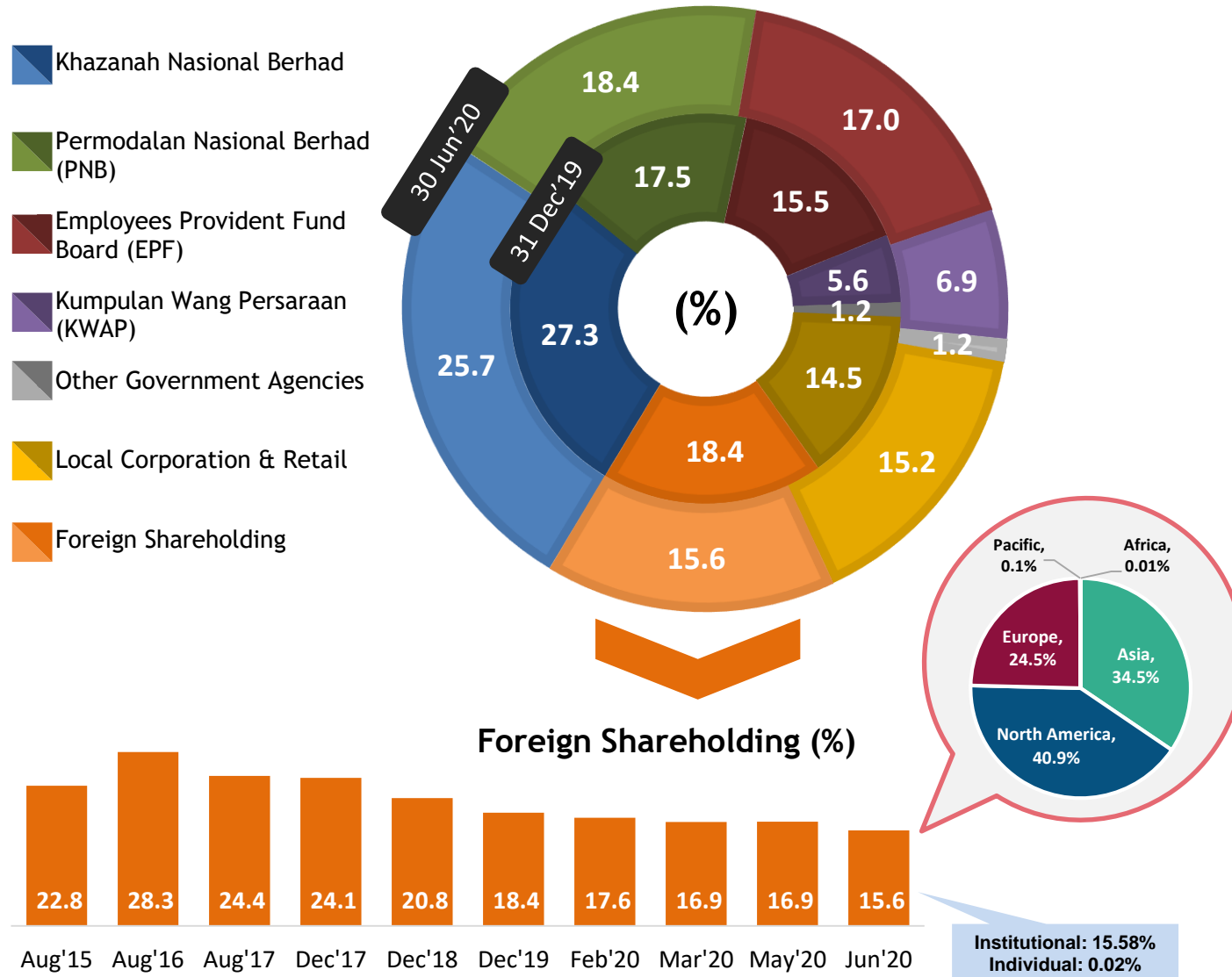


India

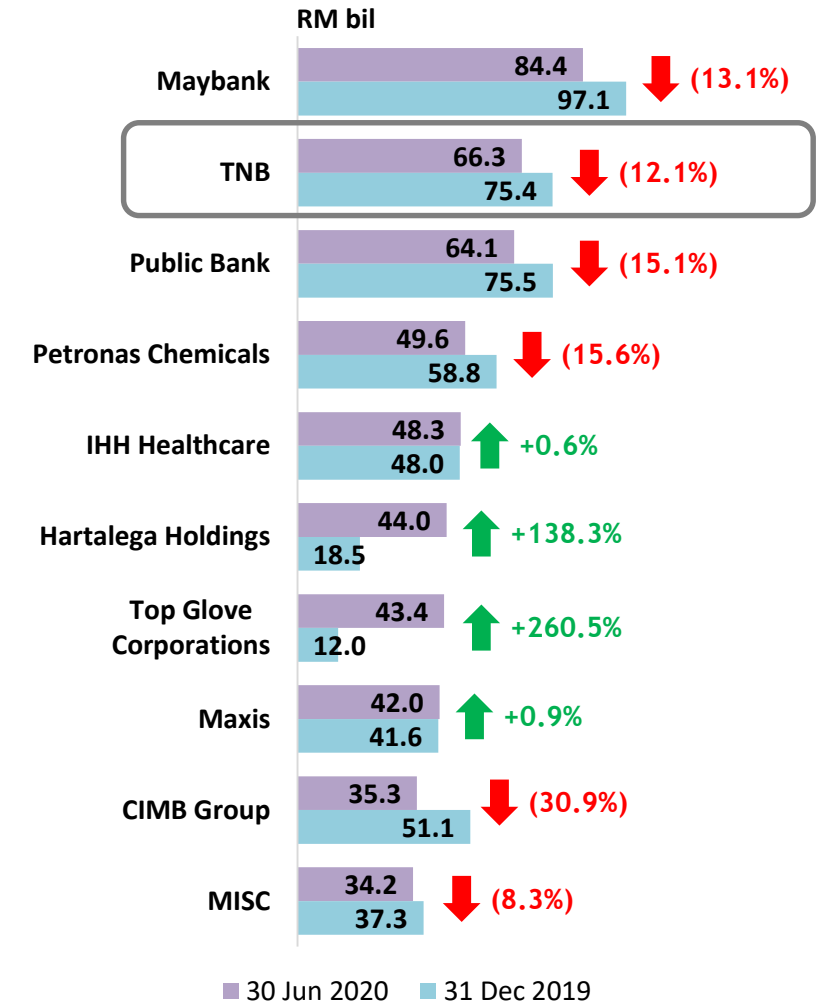
- 30% equity ownership in GMR Energy Ltd (Nov 2016)
- Assets include 1,915MW coal, gas and solar plants

# INTRODUCTION TO TENAGA

## TNB Shareholding Structure



## Top 10 KLCI Stocks by Market Capitalization



### Note:

- Top 10 KLCI ranking by Market Capitalization as at 30<sup>th</sup> June 2020
- TNB Latest Market Cap: RM63.8bil (3<sup>rd</sup>), as at 14<sup>th</sup> Sept 2020



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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

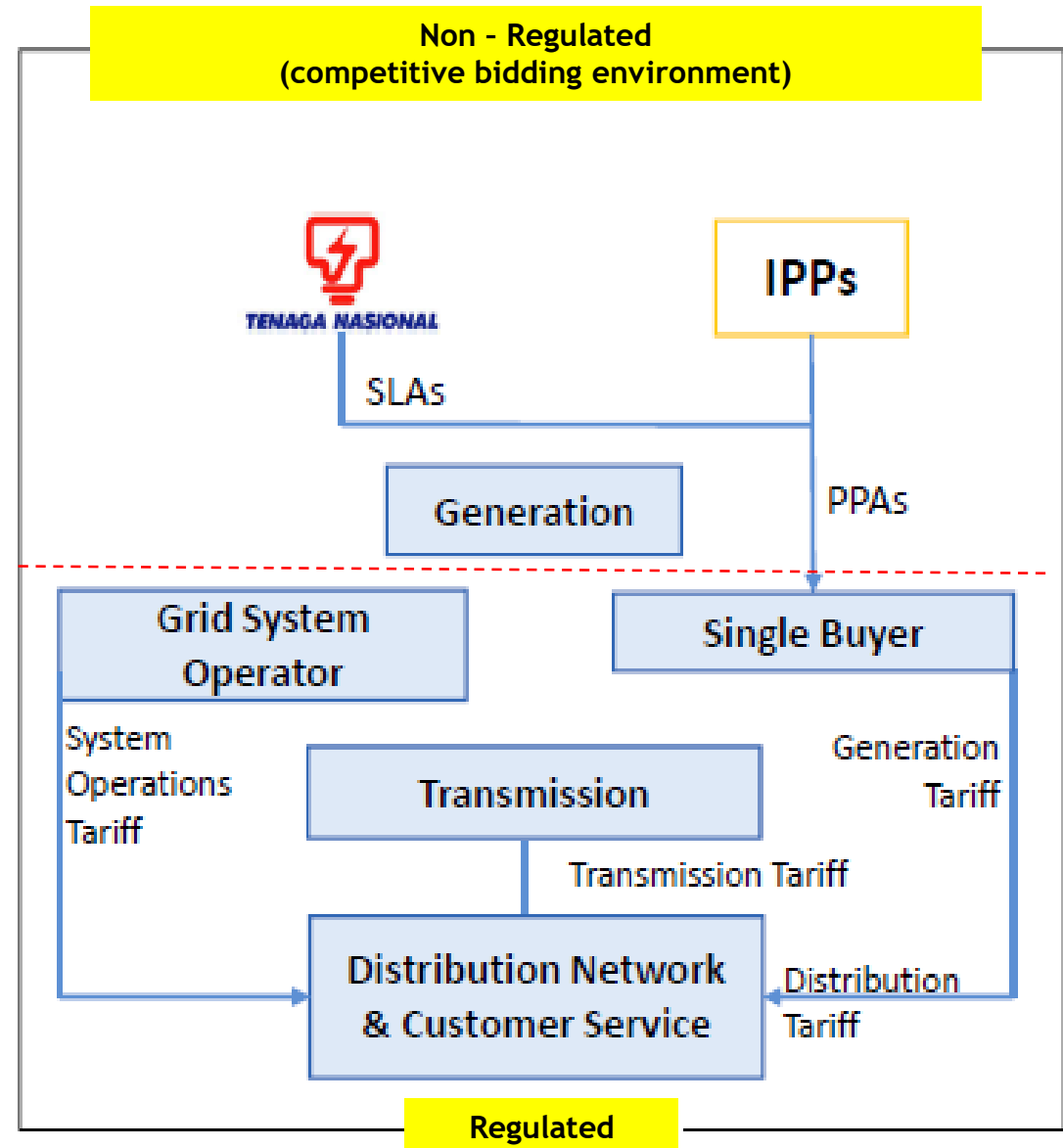
Regulatory WACC of 7.3% provides consistent and clear return to debt and equity holders

### 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

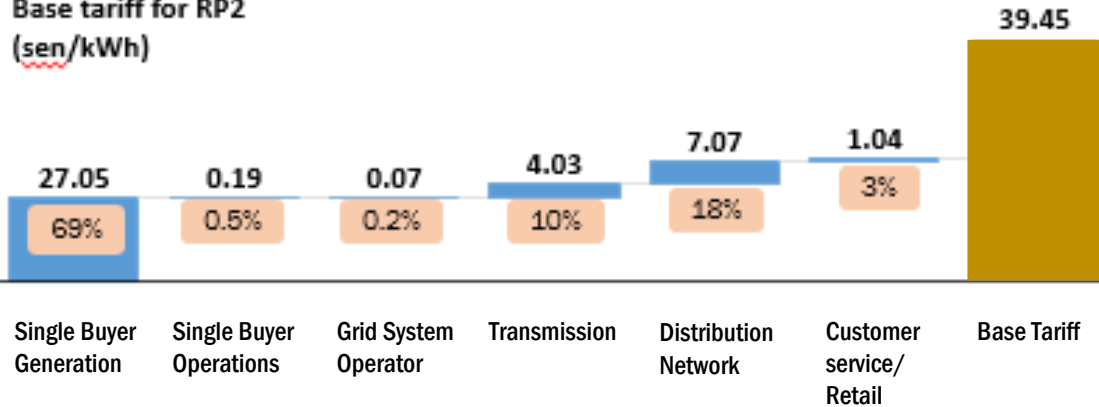


# INCENTIVE BASED REGULATION (IBR)

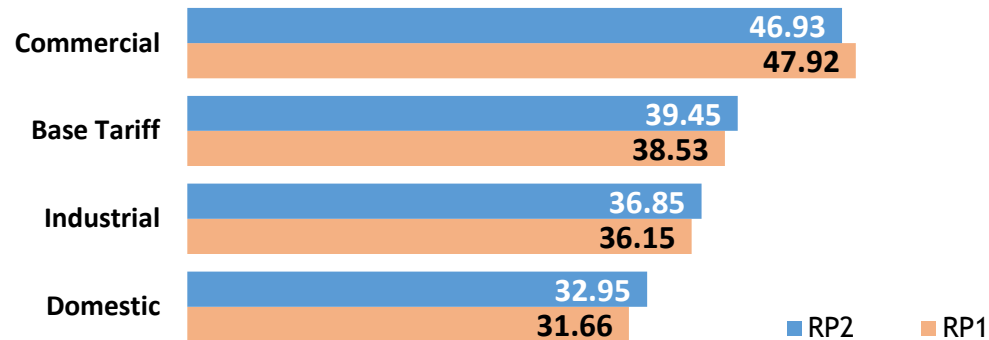
## Regulatory Period 2

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

Base tariff for RP2  
(sen/kWh)



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



### Fuel Parameters

COAL



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

RP1 : USD87.5/MT @ RM3.100/USD

LNG



RM35/mmbtu

RP1 : RM41.68/mmbtu

REGULATED  
GAS  
@1,000mmscfd

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

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

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

RP1 : RM15.20/mmbtu - RM22.70/mmbtu

RP2 Forecasted Gas  
Utilization: 840 mmcsfd

### RP2 Parameters

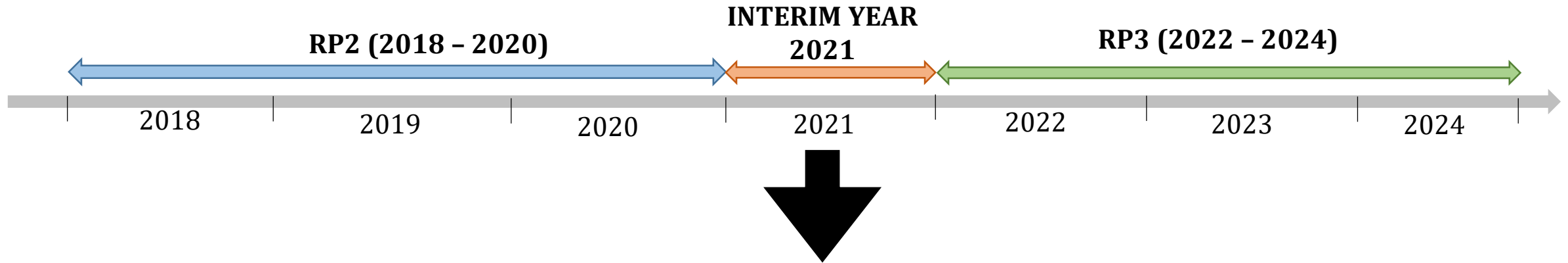
WACC	TARIFF	CAPEX
7.3% RP1 : 7.5%	39.45 sen/kwh RP1 : 38.53 sen/kwh	RM18.8bn* (approved CAPEX) RP1 : RM15.7bn (Closing CAPEX)
OPEX	AVG. RAB	*Special project approved ➢ 1.5 million smart meters in homes ➢ 367,00 LED streetlights ➢ Fibre Optic network development for energy security & reliability
RM18.2bn (approved CAPEX) RP1 : RM16.9bn (Closing CAPEX)	RM54.8bn (avg. RAB in 2020) RP1 : RM43.6bn (Closing RAB)	

RAB : Regulated Asset Based

# INCENTIVE BASED REGULATION (IBR)

Interim Year 2021

## Regulatory Period Timeline



- Energy Commission (EC) has agreed for RP3 to be in 2022-2024, and RP2 to be extended (FY2021 – Interim year).
- TNB is in discussion with EC on the parameters for the interim year in FY2021.
- This is to allow TNB and EC to understand and determine:
  - a) The starting base of demand and CAPEX for the next RP.
  - b) Better fuel prices forecast to minimise huge fluctuation in the ICPT.

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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**

**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**



### Future Proof Regulations

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

# 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 1,700MW by 2025

TNB RE Capacity

As at September 2020:

Total: **837MW**

- International – 666MW
- Domestic - 171MW

Note: 1,700MW includes domestic and international RE assets, excluding domestic large hydro.  
**Current RE capacity inclusive of large hydro is 3,373MW:** Domestic - 2,707MW; International - 666MW

**The Group is committed to ensure that the revenue from the coal generation plants does not exceed 25%**



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  
527 MW



#### International:

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

#### Domestic:

- Large scale solar: 80 MW
- Rooftop PV: Total 56 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

MINI HYDRO +  
INTERNATIONAL: 153 MW

LARGE HYDRO: 2,536 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 Dec 2020
- 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 Growth Strategy:** Grow TNB's Renewable Energy business with a capacity target of 1000MW by 2021 through
  - i. acquisitions leveraging on existing assets, capabilities & experience
  - ii. develop greenfield RE project
- 2) **Grow Utility in South East Asia (SEA):** Grow revenue and returns through greenfield development and M&A across the utility value chain (RE, conventional generation, beyond the meter business) leveraging of TNB's core business experience and capabilities
- 3) **Tech Catalyst:**
  - Invest in new technologies that improve and value add to TNB's core business both domestic and international.
  - Invest in Energy transition technologies to prepare TNB for a future decarbonized energy landscape

#### Focus Market

TNB's growth strategy will focus on selected growth markets and regions where we have presence (UK, Europe and South East Asia such Vietnam & Singapore) and specific asset classes/technology that are key to the Energy transition

#### Domestic

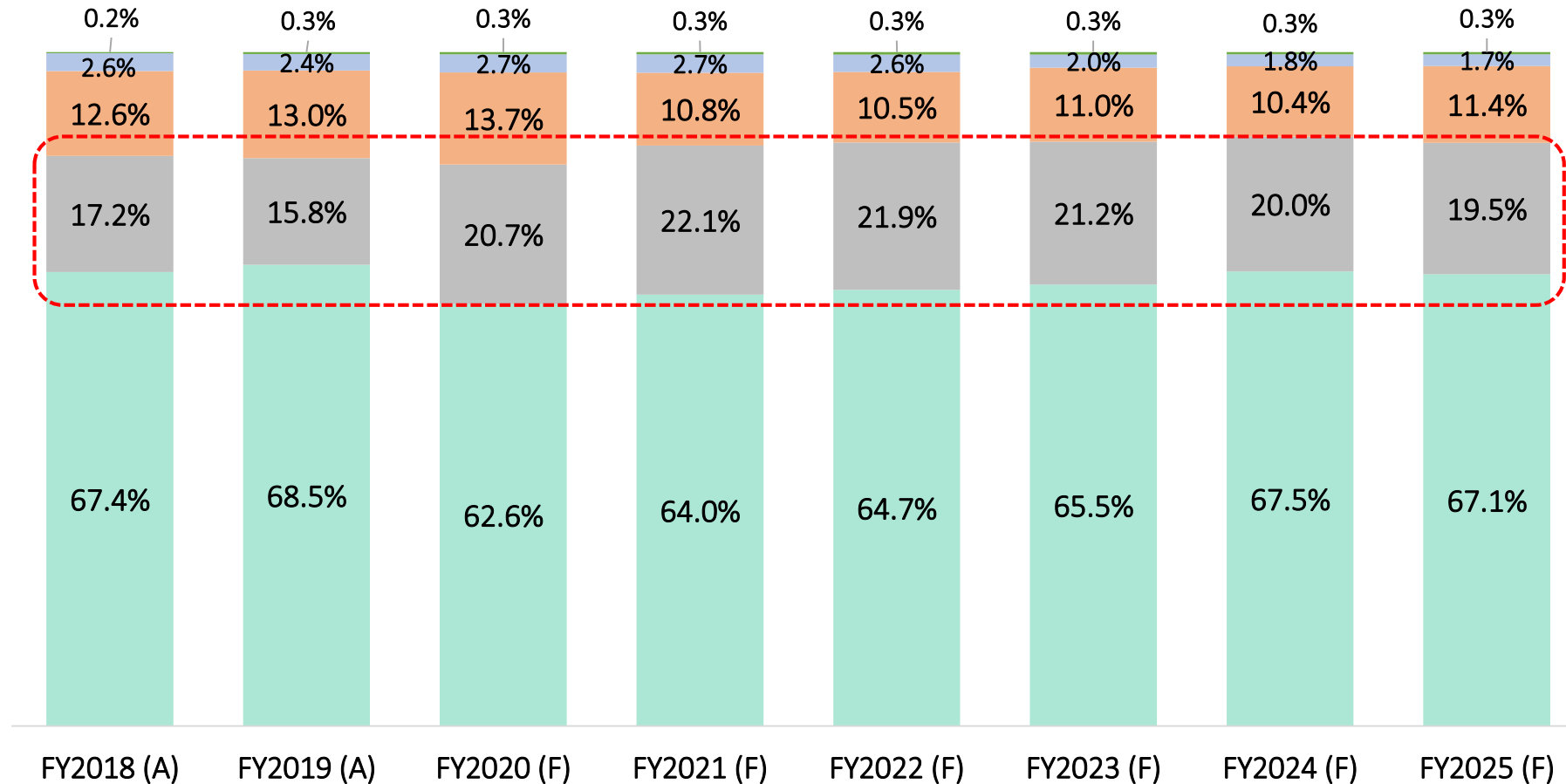
- 1) **Win LSS** - Largest driver which focuses on winning local LSS bids, exploration of new entry points through NEDA and Green Corporate PPA as well as expansion on Asset Management Services.
- 2) **Secure Small RE** - Focus on mini hydro, biogas and Waste to Energy through the existing Feed-In Tariff Scheme, unlock value through rooftop solar and other initiatives.



# TRANSITIONING AWAY FROM COAL RELATED REVENUE

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

Breakdown of TNB's Group Revenue



■ Other Revenue (Regulated Entities, Subsidiaries & Other Group Revenue)  
■ Coal  
■ Gas  
■ Hydro  
■ Solar & Wind

Revenue from TNB Generation Plants by fuel type (Domestic & International)

FY2021 forecast numbers have included the full potential of the last coal plant for TNB and Malaysia (Jimah East Power).

FY2022 onwards, coal contribution to the Group's Revenue will potentially diminish as new and more efficient gas plants are commissioned in Malaysia.



TNB has pledged **not to invest in any new greenfield coal plant** (Jimah East Power which was commissioned in 2019 is the last new coal plant for TNB)

The coal related revenue is anticipated to reduce further as the PPA for major coal plants are expiring in 2030

# 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 tCO2e/year**, additional 30MW LSS to **further reduce emissions about 35,840 tCO2e/year** after COD in Dec 2020



Development on microalgae initiative to reduce carbon dioxide (CO2)



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+**

Total Subscription **319,600 kWh** with a total of 146 customers as at 25<sup>th</sup> October 2020

**mGats**

Renewable Energy Certificates of **1,568,488.197** tradable units as at September 2020

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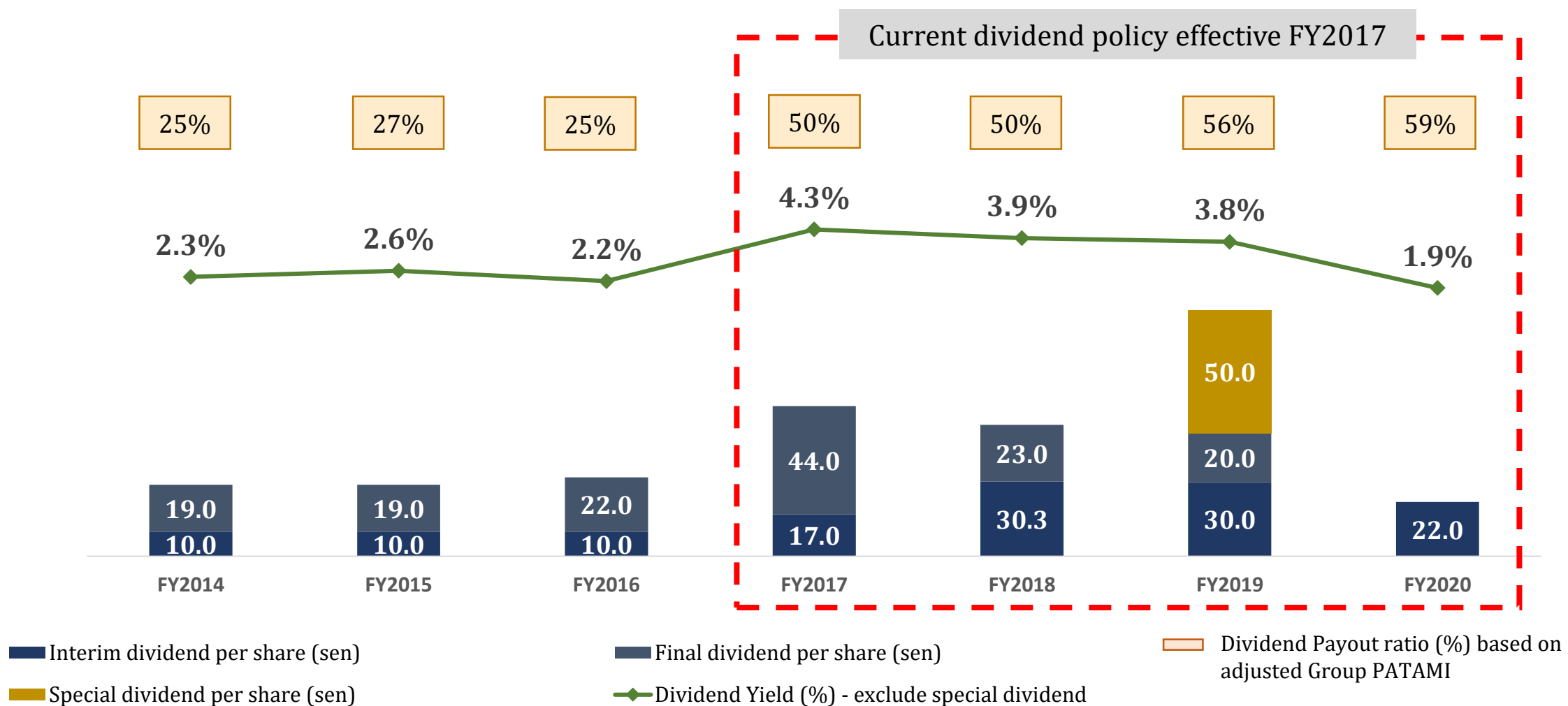
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## DIVIDEND POLICY

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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# FY2020 OUTLOOK



## Electricity Demand

- Due to the MCO and Covid-19 pandemic, demand for Apr'20 fell by 15.7%.
- Since the implementation of Conditional Movement Control Order (CMCO), demand has started to pick up as more businesses were allowed to operate.
- Moving forward, demand and sales are expected to further improve due to the implementation of Recovery Movement Control Order (RMC0).
- For the full year, we expect the overall electricity consumption to drop between 7-15% Y-o-Y.
- Nevertheless, earnings of our regulated revenue cap entities are guaranteed at demand growth of 1.8% - 2.0% as stipulated by the IBR guidelines in RP2.



## Cash Flow

- Our cash flow is resilient supported by the recent capital drawdown. Furthermore, we commanded good rates in the exercise due to our robust and strong balance sheet.
- For 1HFY'20, the allowance for doubtful debt is RM137.7mil.
- As part of our capital management, the recent 2 programs (IMTN : RM10bil - 50 years program, ICP : RM2bil - 7 years) announced in June 2020 will provide us further flexibility to raise fund when required. On 12th August 2020, we have issued RM3.0 billion Sukuk Wakalah in relation to the IMTN Program.
- We expect the collection to improve as the country navigates through the recovery phase highlighted under PENJANA six-phase approach. We continue to prudently monitor the collection on a regular basis.

# FY2020 OUTLOOK



## International Business

- For 2020, we will be executing a strategy aimed at either protecting or creating value from existing assets.
- Part of this strategy involves executing a growth strategy focusing on growing TNB's international Renewable Energy (RE) business leveraging on existing assets, capabilities and experience.
- Our immediate strategy is to grow TNB's international RE business through :
  1. acquisitions of operational assets
  2. greenfield development.
- The 2020 lockdown recession was expected to hugely impact energy industry in terms of demand and supply shifts. Within this new setting, we see RE being a resilient energy source, where it has increased its market share during the lockdown period. The resilience of RE is contributed by market model dynamics and RE's low marginal costs.



## CAPEX

**RM9.5 – 10.0 bil**



- Regulated Recurring : RM5.0 – 5.5bil
- Others : RM4.0 - 5.0bil



## 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.

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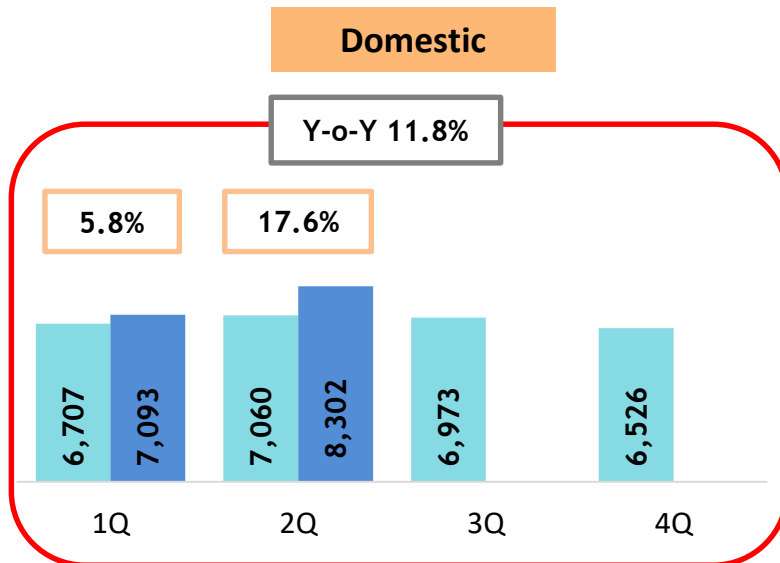
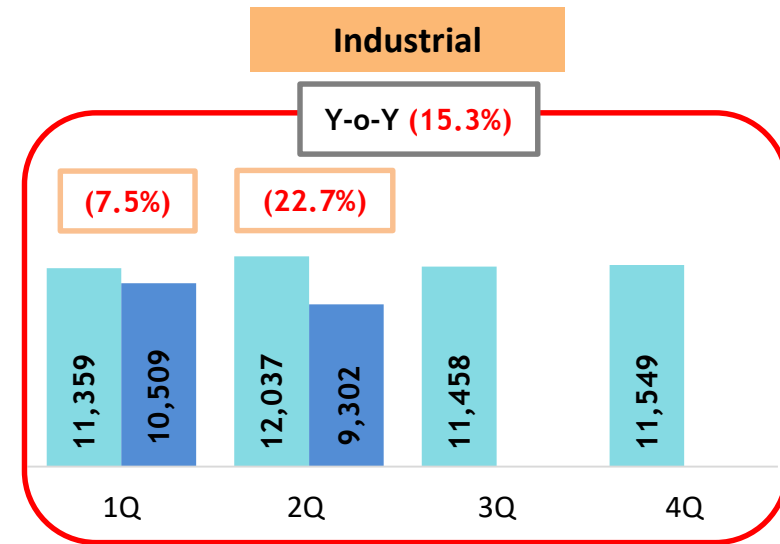
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## Electricity Demand by Sector - Lower electricity demand mainly from sluggish industrial and commercial sectors



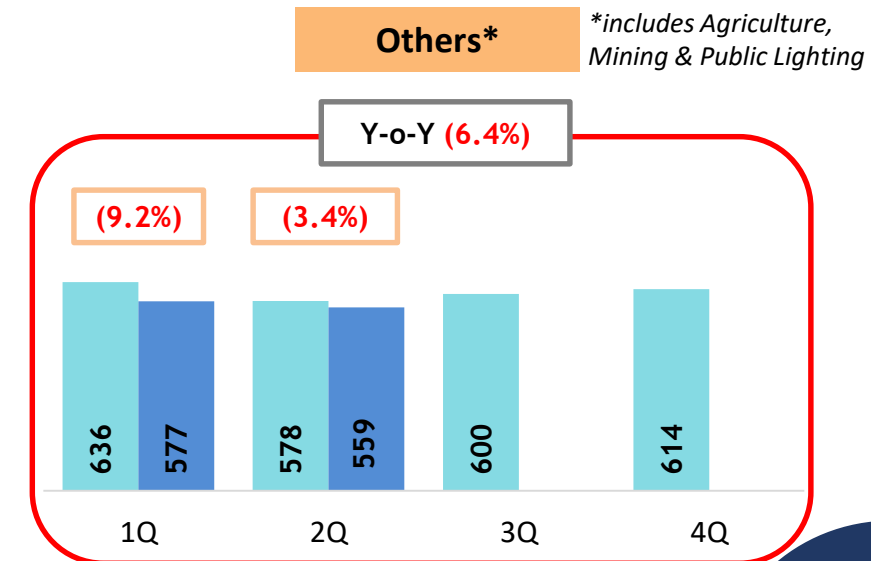
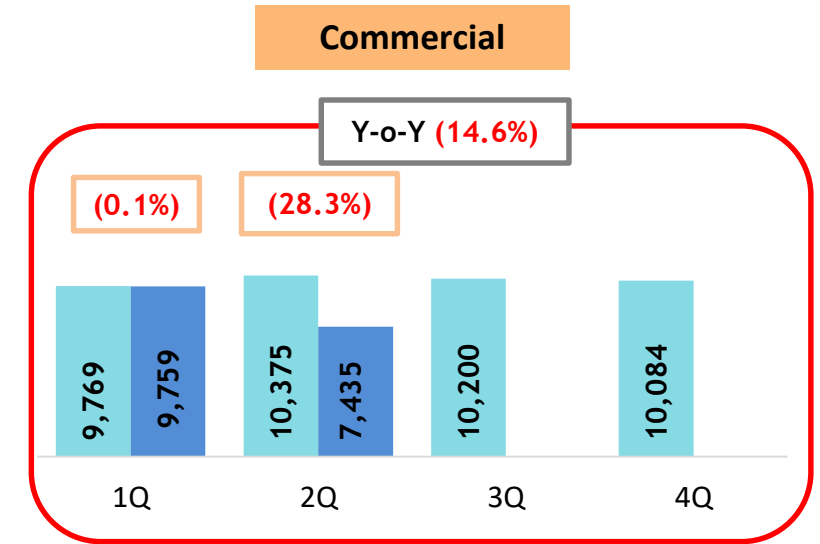
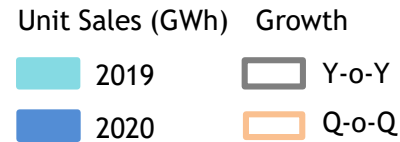
2Q main contributors for the drop

Industrial:

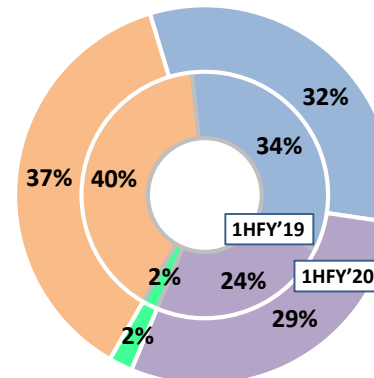
- Iron and steel
- Cement products
- Electric & electronic

Commercial:

- Retails
- Educational
- Accommodation



Sector Mix (%) 1HFY'20 vs 1HFY'19



Industrial Commercial Domestic Others

Note: Data / Info as at June 2020

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

# APPENDIX

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

### Base Tariff under IBR framework comprises of:

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

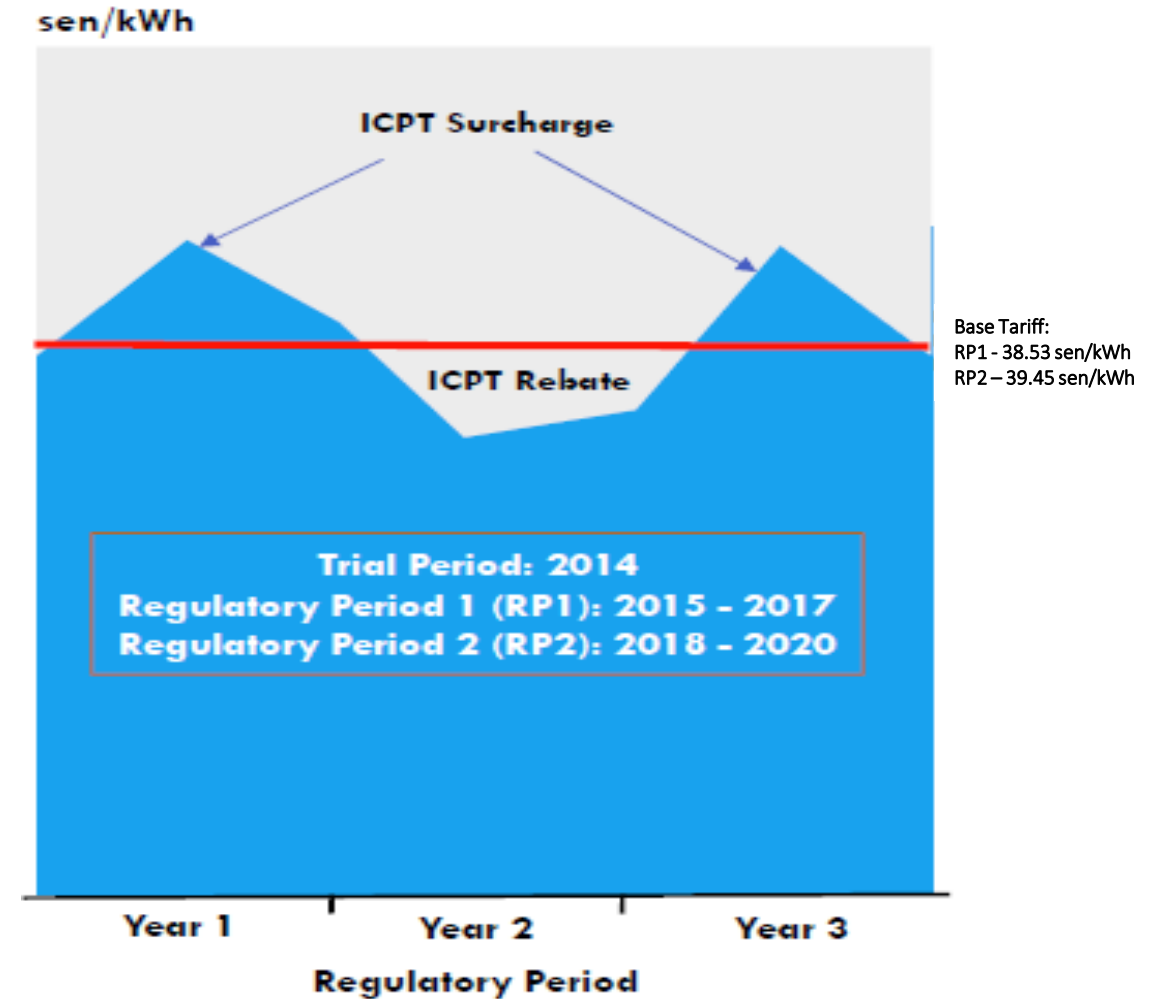
### Imbalance Cost Pass-Through (ICPT):

- a) 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

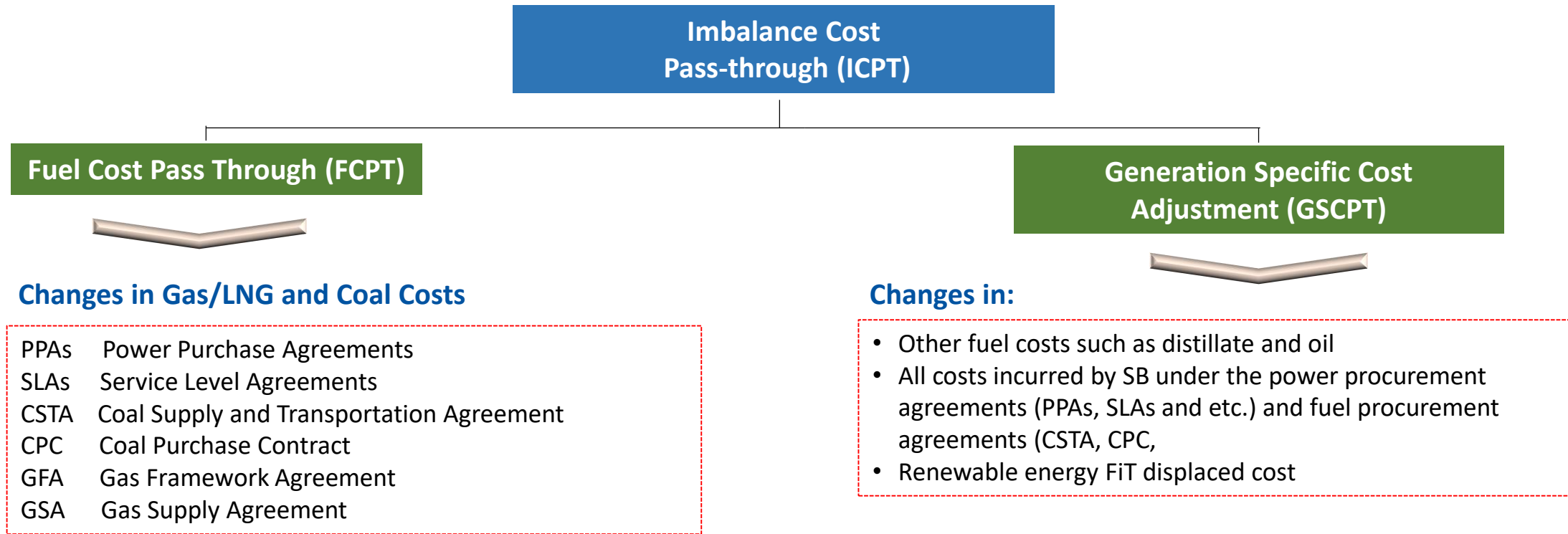
Cost components comprise of

- 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) – Imbalance Cost Pass-Through (ICPT) Comprises Two Components



### RP2

ICPT	Surcharge	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

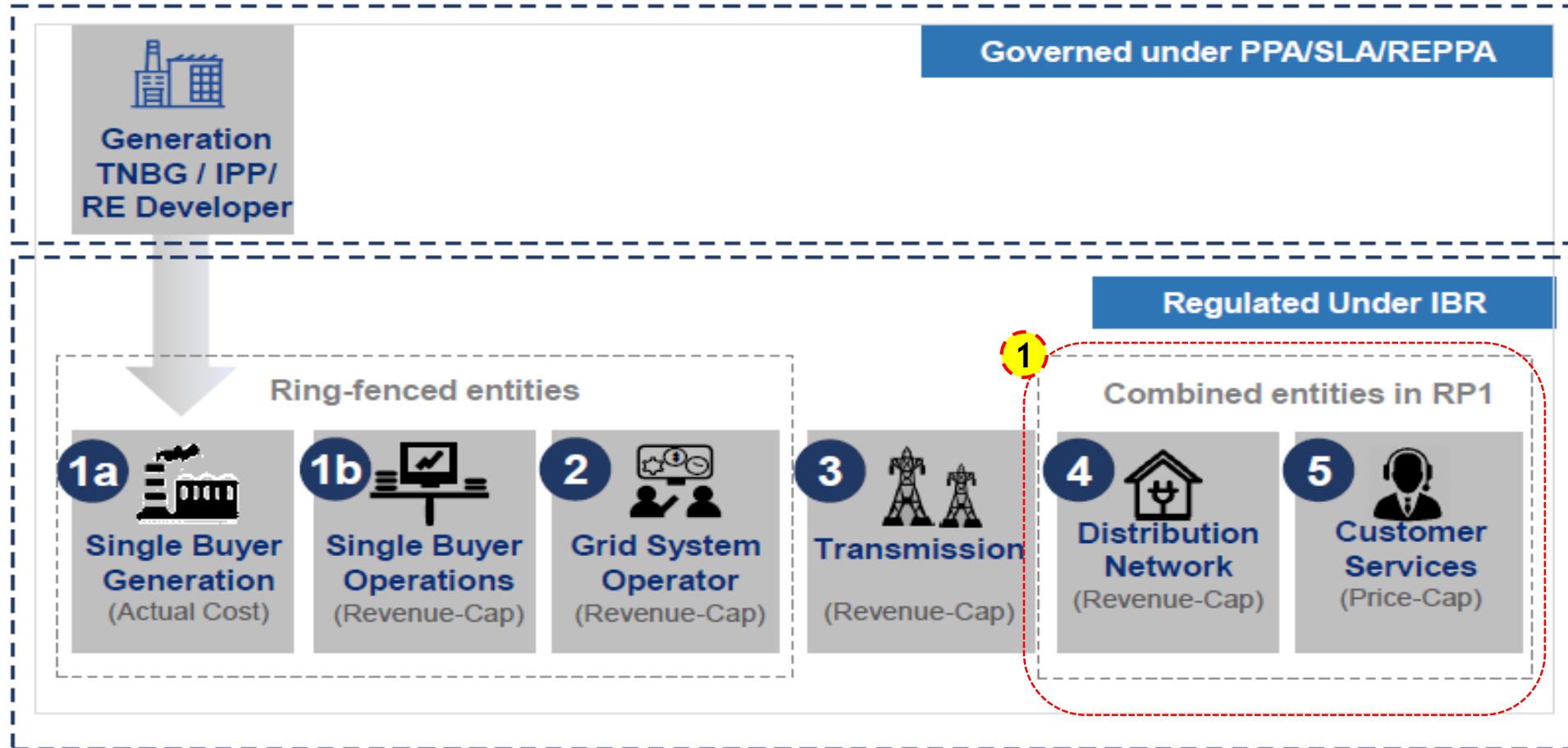
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## Incentive Based Regulation (IBR) – New Features in Electricity Tariff Review for RP2 (2018-2020)

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>

# APPENDIX

## Incentive Based Regulation (IBR) – IBR Entities



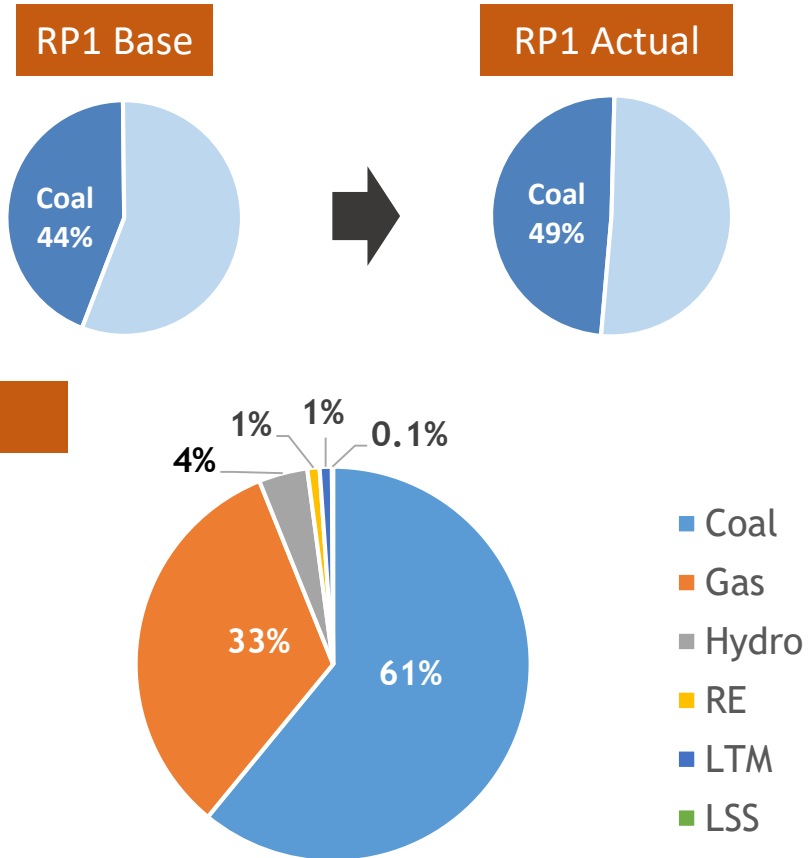
1

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

# APPENDIX

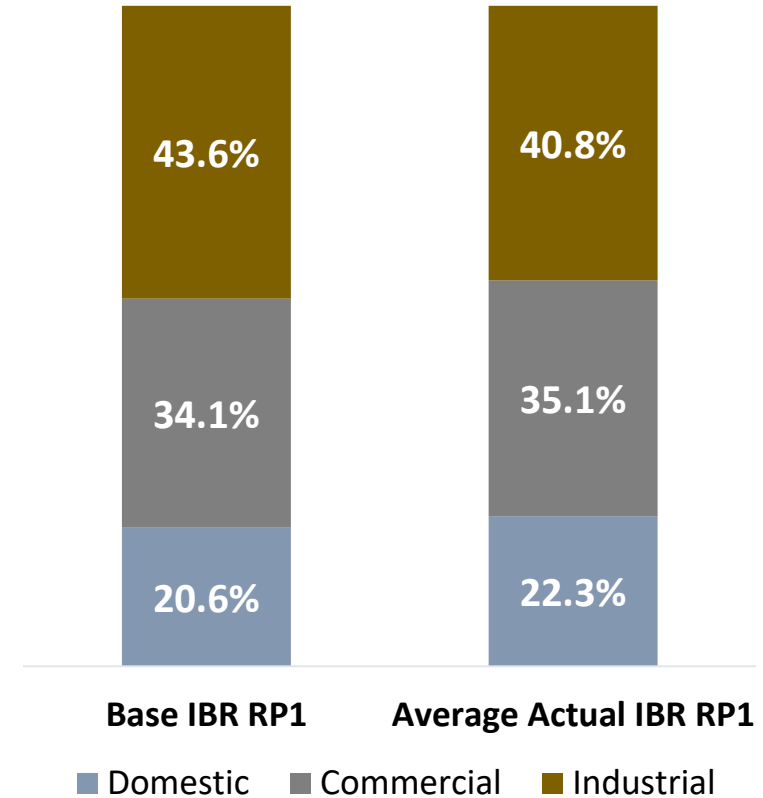
## Incentive Based Regulation (IBR) – Generation and Customer Mix

### Generation Mix RP1 vs RP2



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

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



RP2 Forecasted Demand Growth: 1.8 – 2.0%

## 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

# APPENDIX

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

### Domestic (Peninsular Malaysia)

#### Others

- Mini Hydro (22MW)
  - GSPARX Rooftop Solar (56MW)
- (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

## 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



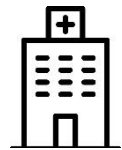
### Economic & Social



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



TNB's contribution of **RM6 million** including sponsorships to the Malaysian Hockey Confederation



Approximately **RM3.49 million** 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 **RM66.1 million**



**RM21.2 million** 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 **RM2.19 million** to 18 schools under the Pintar Schools Adoption Programme



### Career Development



More than **RM183 million** contributed in training & development



**RM10 million** 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)



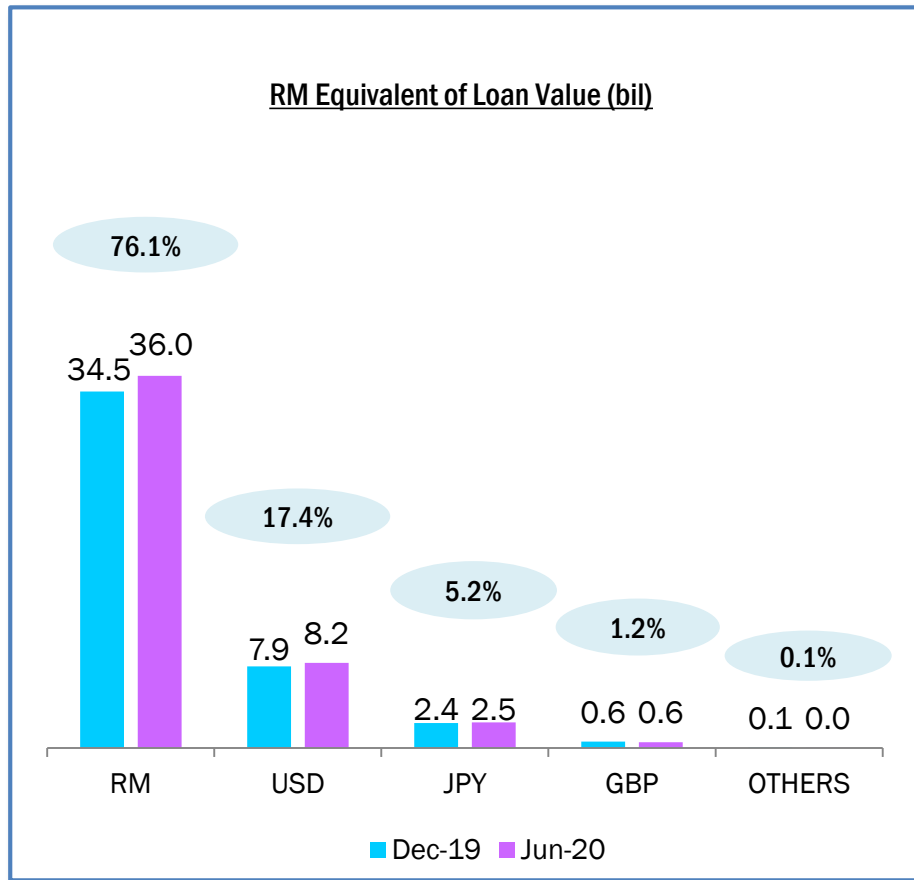
**AMRAN HAFIZ BIN AFFIFUDIN**  
(Khazanah)



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

# APPENDIX

## Capital Management - New drawdown & FOREX translation increased the gearing, but within the optimal level



Note:  
Debt consists of Principal + Accrued Interest

	Statistics	30 <sup>th</sup> Jun'20	31 <sup>st</sup> Dec'19
1	Total Debt (RM' Bil)	47.3	45.4
	Net Debt (RM' Bil)*	35.9	31.2
1	Gearing (%)	45.8	43.4
	Net Gearing (%)	34.8	29.8
	Fixed : Floating	98:2	98:2
	Final Exposure	98:2	98:2
2	Effective Average Cost of Borrowing (based on exposure) **	5.00	5.06

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

\*\* Inclusive of interest rate swap

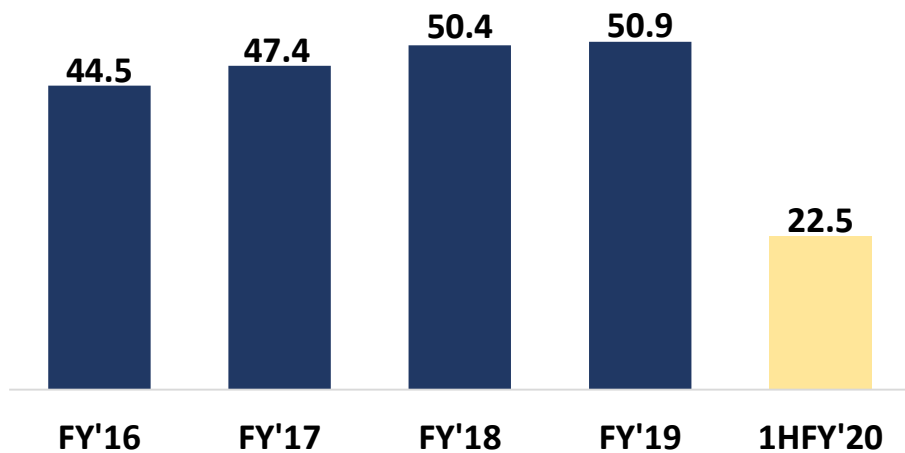
- 1 New drawdown of RM1bil for working capital purposes
- 2 Reduced due to lower interest rate of the new drawdown.

Closing FOREX	30 <sup>th</sup> Jun'20	31 <sup>st</sup> Dec'19
USD/RM	4.28	4.09
100YEN/RM	3.98	3.77
GBP/RM	5.25	5.37
USD/YEN	107.68	105.40

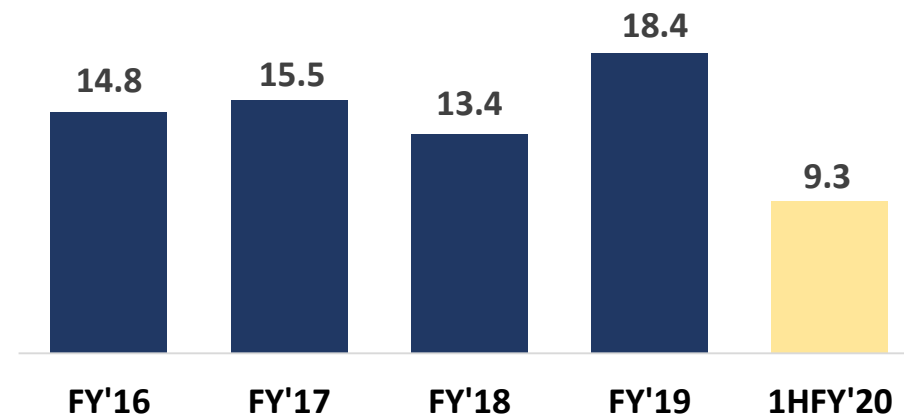
# APPENDIX

## Financial Highlights

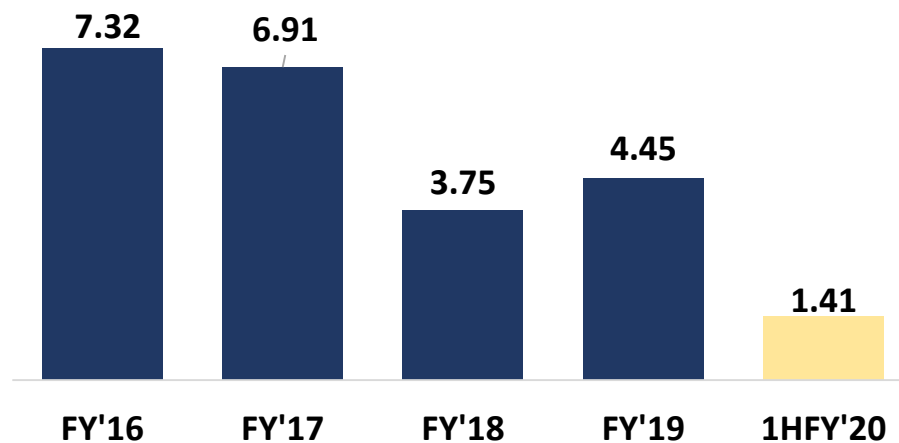
REVENUE (RM bil)



EBITDA (RM bil)



PAT (RM bil)

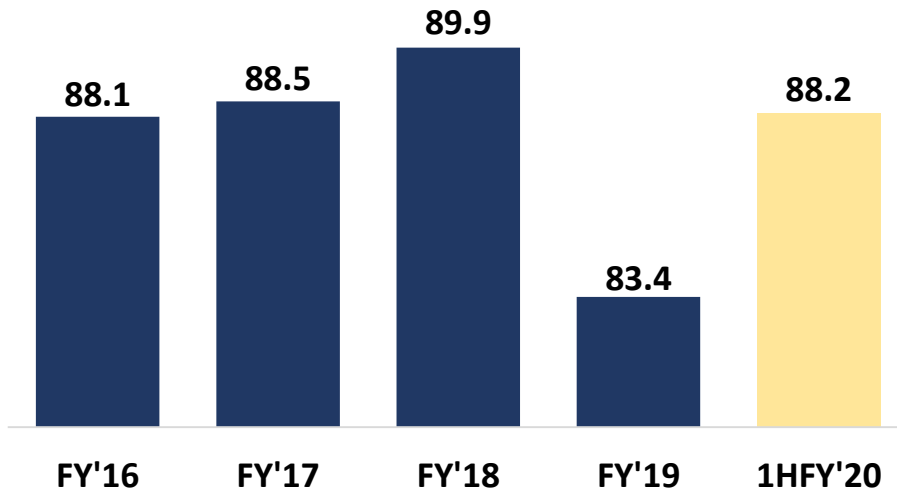


Note: FY2019 is after MFRS16 implementation

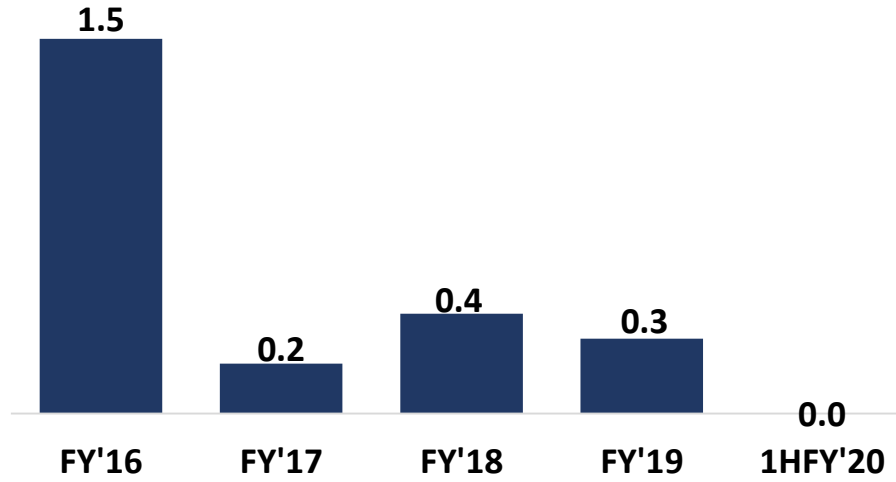
# APPENDIX

## Technical Highlights

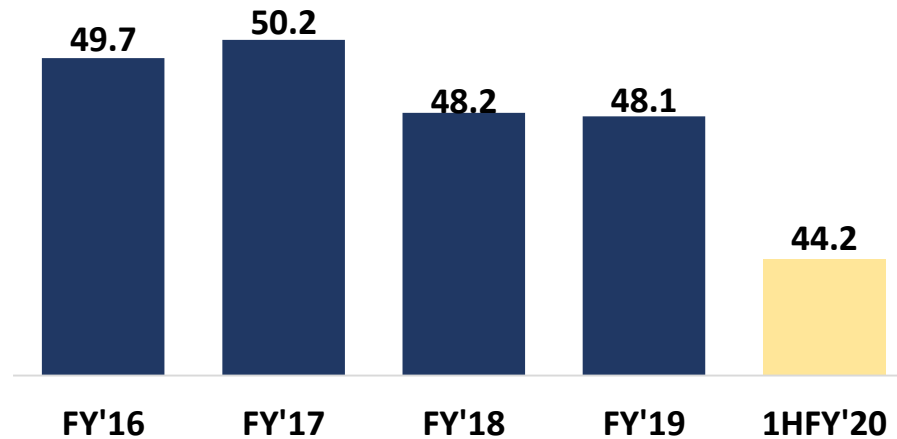
EAF (%)



Transmission System Minute (mins)



Distribution SAIDI (mins)



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