

TNB HANDBOOK

CLSA ASEAN FORUM

GRAND HYATT ERAWAN BANGKOK, THAILAND

11th - 13th MARCH 2015





tenaga_ird@tnb.com.my GROUP FINANCE DIVISION

Prepared by: Investor Relations & Management Reporting Department





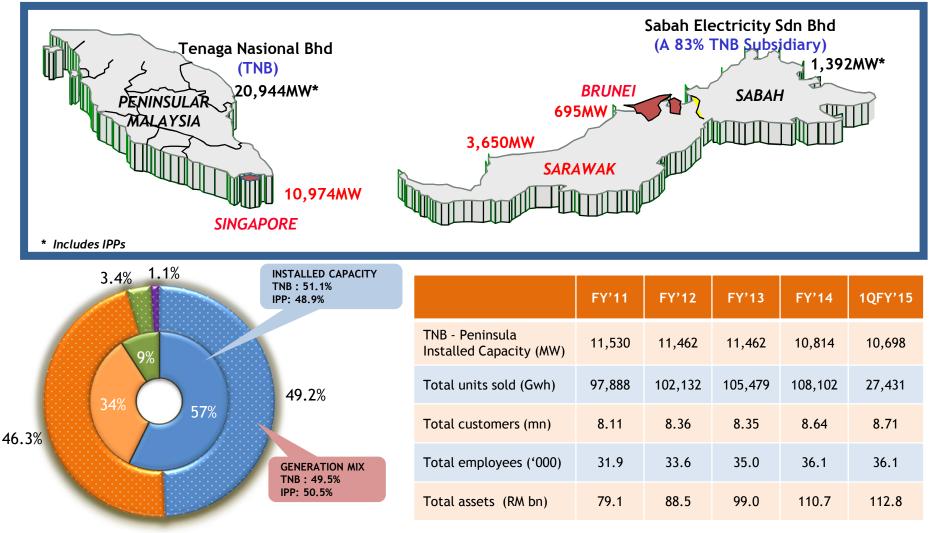
PART ONE

- 1. INTRODUCTION TO TENAGA
- 2. INTRODUCTION TO MESI
- 3. TARIFF
- 4. KEY PERFORMANCE INDICATORS (KPIs)
- 5. BUSINESS STRATEGY & DIRECTION
- 6. DIVIDEND POLICY
- 7. OUTLOOK

INTRODUCTION TO TENAGA



Three Major Utilities in Malaysia



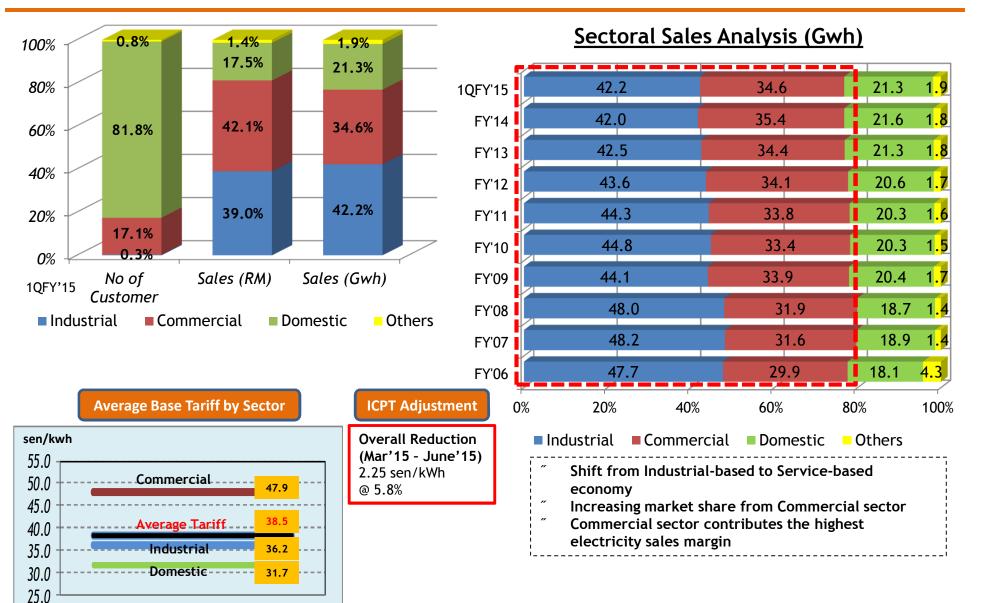
[■]Gas & LNG ■Coal ■Hydro & Others ■Oil & Distillate

Installed Capacity vs. Generation mix

INTRODUCTION TO TENAGA

No of Customer vs. Sales Value vs. Unit Sales

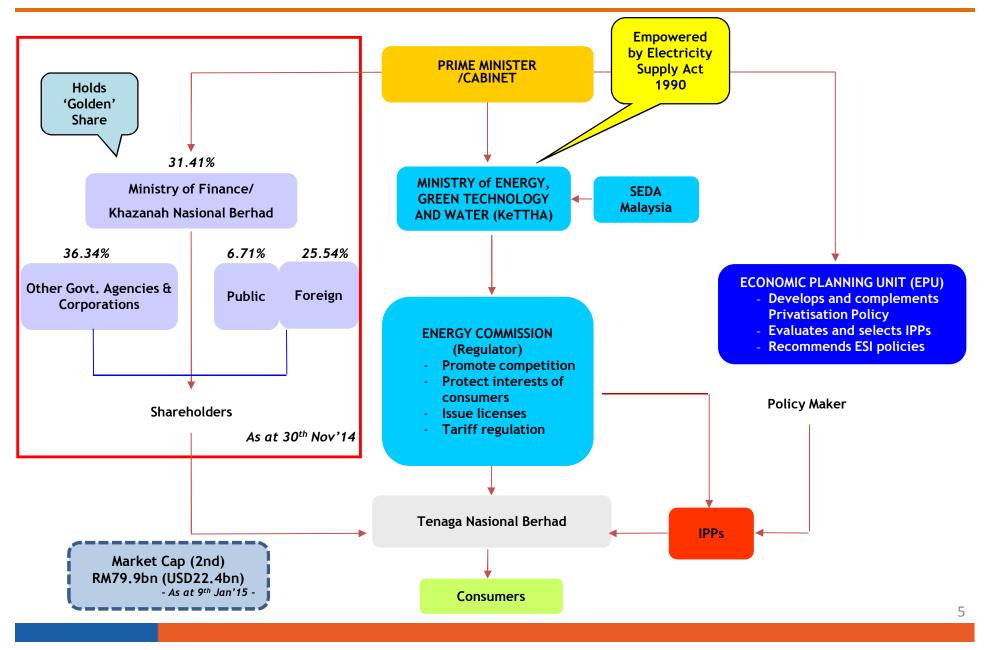




INTRODUCTION TO TENAGA



Industry Regulatory Framework



AGENDA

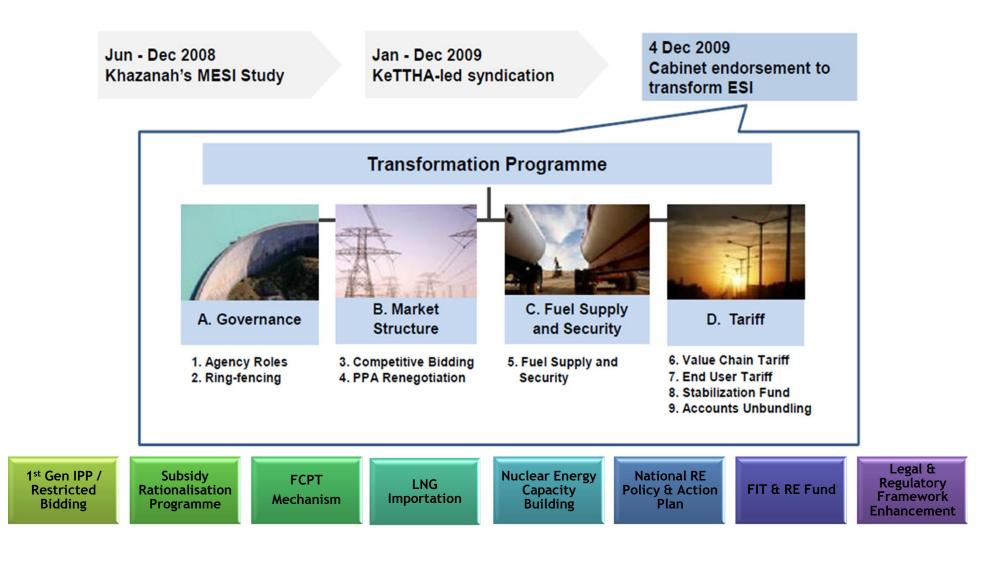


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TRANSFORMATION INITIATIVES BY GOVERNMENT



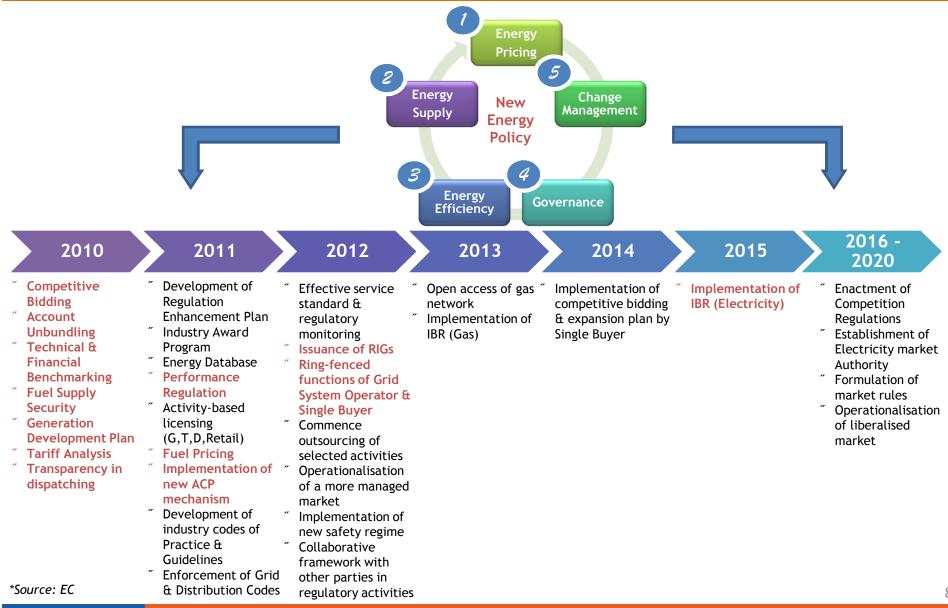
Aimed at Delivering a Reliable, Transparent, Efficient and Sustainable ESI



TRANSFORMATION PLAN: TIMELINE



The New Energy Policy Addresses, Economic Efficiency, Security of Supply and Social & Environmental Objectives



O ENERGY PRICING - COMPETITIVE BIDDING



Track 1 to Track 3

			TRACK 3
1	TRACK 1	1,071 MW CCGT PRAI 3	
4	COD	January 2016	COD
	LEVELISED TARIFF	34.7 sen/kWh	LEVELISED TARIFF
	STATUS	 TNB has signed agreements for: i. EPC - TNB Northern Energy Bhd & Samsung Engineering & Construction (M) Sdn Bhd ii. Long term Service - TNB Prai & Siemens AG iii. O&M - TNB Prai & REMACO TNB Northern Energy Sukuk has been issued out on 29 May 2013 for nominal value of RM1.625 billion. 	STATUS
	TECHNOLOGY	Siemens Super Critical H-Class technology gas turbine combined-cycle efficiency of greater than 60%	
			TECHNOL

2	TRACK 2 RENEWAL OF EXPIRING PLANTS : 2,253 MW CCGT				
	PLANTS	GENTING	SEGARI	TNB PASIR GUDANG	
	EXTENSION	10 years (to 2026)	10 years (to 2027)	5 years (to 2022)	
	LEVELISED TARIFF	35.3 sen/kWh	36.3 sen/kWh	37.4 sen/kWh	
	STATUS	Reduction rates of CP effective 1 March 2013 until expiry of current PPA			

3	TRACK 3A	1 X 1,000 MW COAL-FIRED
	COD	October 2017
	LEVELISED TARIFF	22.78 sen/kWh
	STATUS	 TNB has signed agreements on 16 August 2013 for: PPA with TNB Manjung Five Sdn Bhd "Manjung 5" to design, construct, own, operate & maintain the coal plant capacity (25 years term) SFA "Shared Facilities Agreement" between TNB, Manjung 5 & TNB Janamanjung CSTA "Coal Supply and Transportation Agreement" between TNB Fuel Services & Manjung 5. EPC contract signed on 21 August 2013 between: TNB Western Energy Bhd; a wholly owned subsidiary of Manjung 5 with Consortium of Sumitomo Corp, Daelim Industrial Co Ltd, Sumi-Power M'sia Sdn Bhd and Daelim M'sia Sdn Bhd. TNB Western Energy Sukuk has been issued out on 30 January 2014 for nominal value of RM3.655 billion.
	TECHNOLOGY	Ultra Super Critical Boiler Technology OEM to EPC is Hitachi
	TRACK 3B	2 X 1,000 MW COAL-FIRED
	COD	November 2018 & May 2019
		25.22 con/4/M/h

COD	November 2018 & May 2019
LEVELISED TARIFF	25.33 sen/kWh
STATUS	 TNB has signed agreements on 22 July 2014 : PPA with Jimah East Power Sdn. Bhd., the incorporated company of the consortium of 1MDB and Mitsui & Co. Ltd, to design, construct, own, operate and maintain the coal plant (25 years term) at Mukim Jimah, Port Dickson, Negeri Sembilan. CSTA "Coal Supply and Transportation Agreement" with TNB Fuel Services Sdn. Bhd.
TECHNOLOGY	2 units of IHI Ultra Super Critical Technology Steam Generator & 2 Units of Toshiba Turbo Generator



Track 4A



TRACK 4A	1,000 - 1,400 MW CCGT
COD	June 2018
STATUS	TNB has signed heads of agreement on 24 July 2014 with:i. SIPP Energy Sdn. Bhd., signifying the principal terms of the proposed joint venture which will undertake to build, own and operate a power plant of approximately 1000MW-1400MW on a land in Pasir Gudang, Johor.
TECHNOLOGY	-

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Incentive Based Regulation (IBR) - Economic Regulation Methodology to Promote Efficiency And Transparency

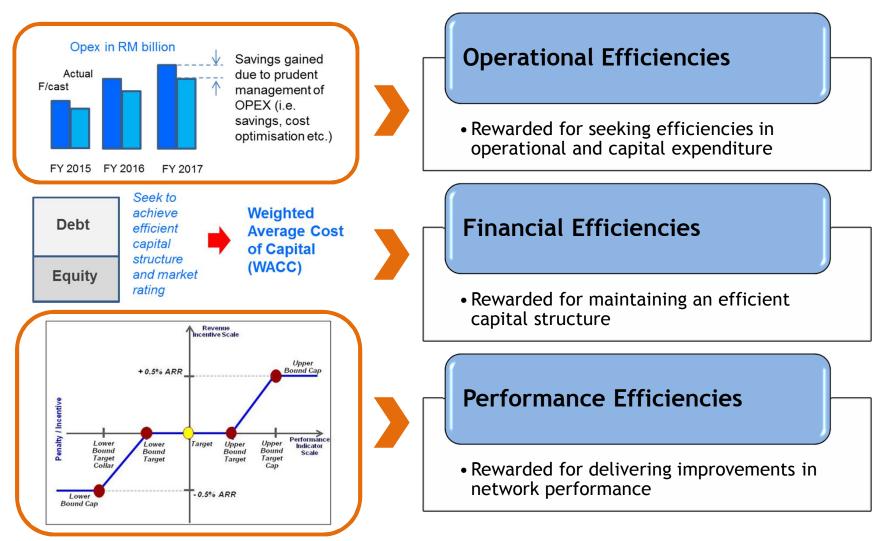
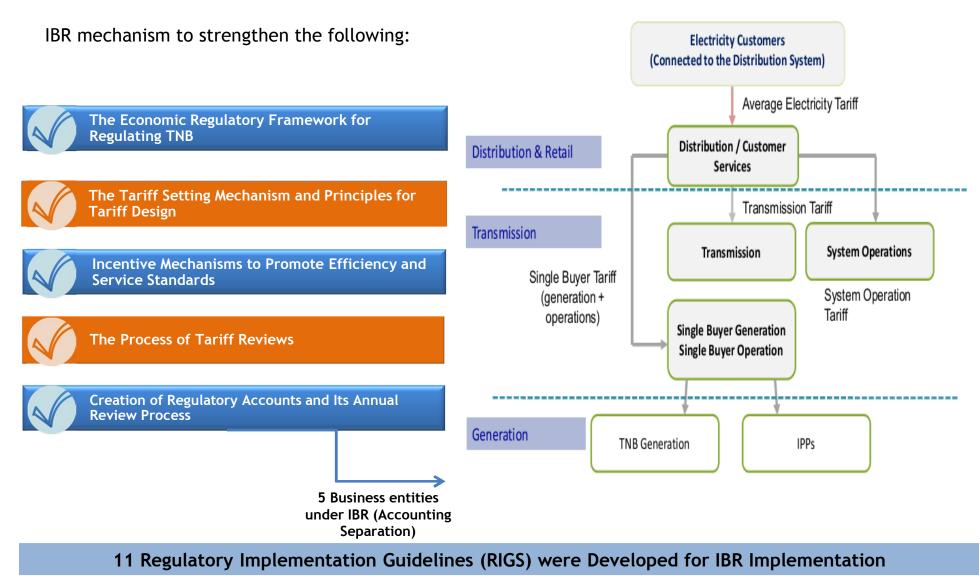


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Incentive Based Regulation (IBR) - The Move Towards Better Regulation



*Source: EC





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Imbalance Cost Pass-Through (ICPT): sen/kWh - Tariff adjustment to reflect uncontrollable **Imbalance** Cost Pass-Through (ICPT) **Base Tariff of** 38.53 sen/kWh for the First **Base Tariff** Regulatory Period (FY 2014 to FY 2017) FY2014 FY2015 FY2016 FY2017 **Regulatory Period**

fuel costs and other generation costs (difference between forecast and actual cost of procuring electricity that is beyond the control of utility)

Base Tariff under IBR framework reflects:

a) CAPEX and OPEX of

- transmission, distribution, system operation (SO) and single buyer operation (SB)

- b) Power purchase cost charged by generators (including base price for fuel) to the SB
- c) Return on regulated asset (rate base) of transmission, distribution, SO and SB business units

Principle for ICPT Calculation

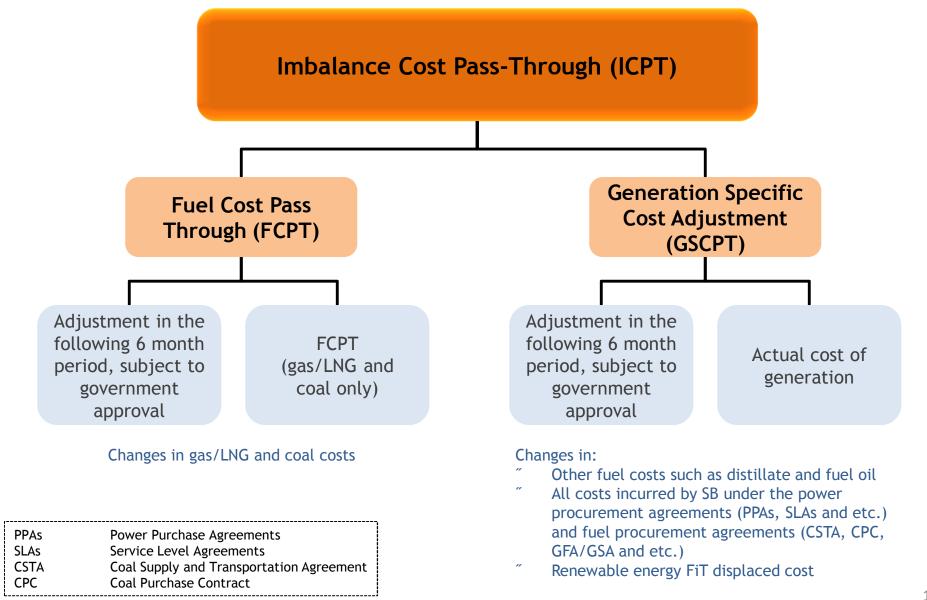
Cost components comprise of:

- · Actual vs forecast cost of fuels & other generation costs for the preceding 6-month period; and
- Piped gas price increase of RM1.50/mmBtu for the next 6-month period

Note 1 : CAPEX = Capital expenditure 2 : OPEX = Operational expenditure



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





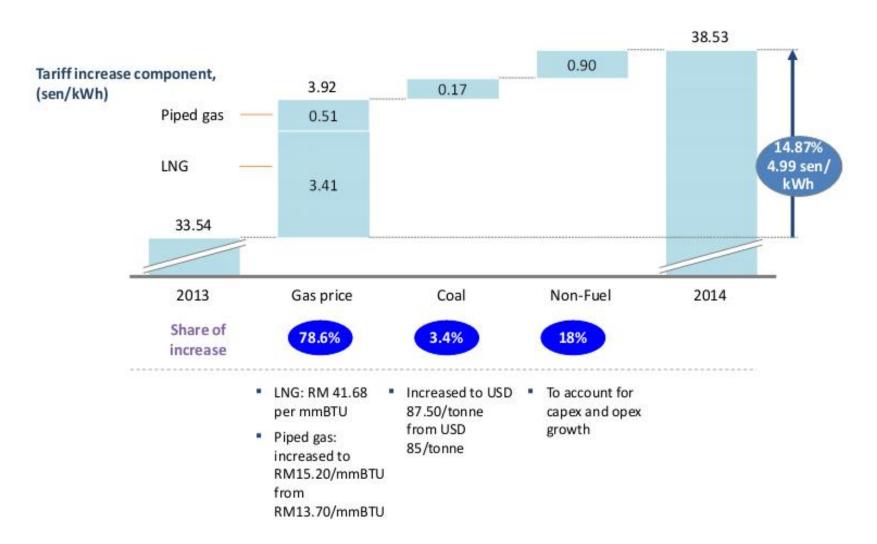
Average Base Tariff of 38.53 sen/kwh is Effective from 1st January 2014

Tariff Components	sen/kWh	% increase
Average Tariff (Jun 2011)	33.54	
Fuel Components:		
 Piped-gas regulated price (from RM13.70/mmBTU to RM15.20/mmBTU @1,000 mmscfd) 	0.51	1.52
Coal (market price) (from USD85/tonne to USD87.5/tonne CIF@CV 5500kcal/kg)	0.17	0.51
LNG RGT market price at RM41.68/mmBTU (for gas volume > 1000 mmscfd)	3.41	10.17
Non-fuel component (TNB Base Tariff)	0.90	2.69
AVERAGE BASE TARIFF EFFECTIVE 1 st JANUARY 2014	38.53	14.89

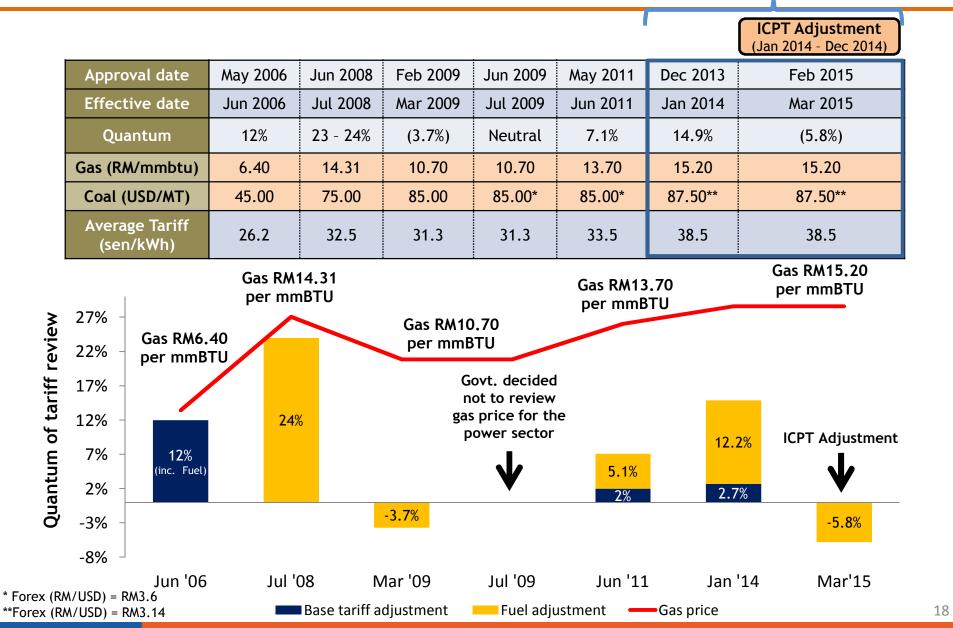
TARIFF



82% of Tariff Increase in January 2014 is due to Reduction of Gas Subsidy, Introduction of LNG at Market Price and Increase in Coal Benchmark Market Price



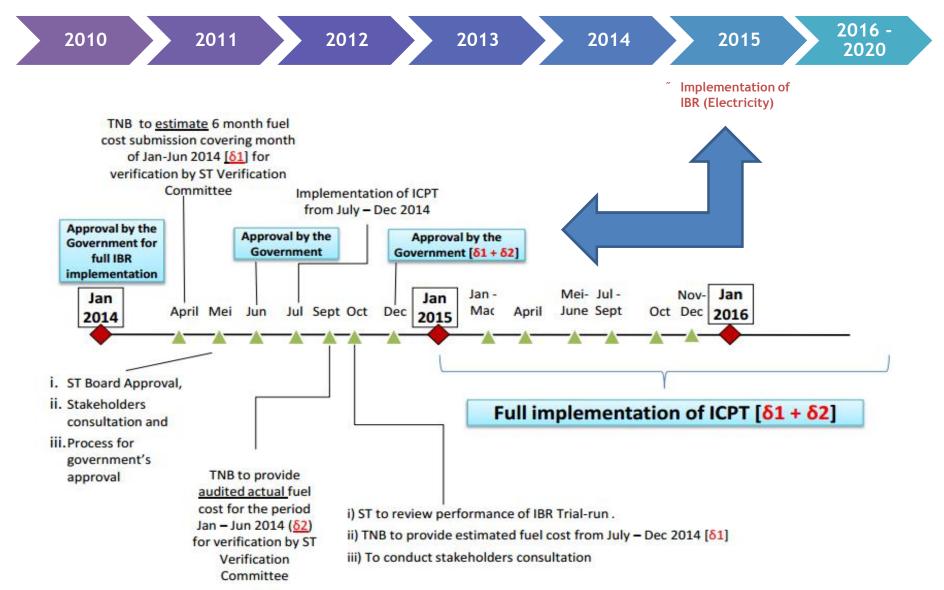




TARIFF

IBR Timeline







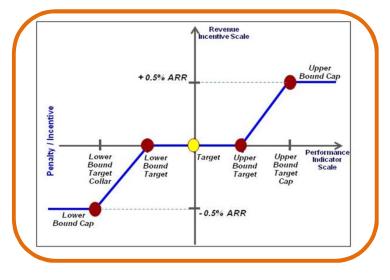


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KEY PERFORMANCE INDICATORS (KPIs) Incentive Based Regulation (IBR) - Incentive and Penalty Mechanism Based on



Performance Targets Determined by EC



- Incentive/penalty is capped at +/- 0.3% to 0.5% of annual revenue requirement
- No incentive/penalty if performance between upper and lower bound targets
- Any incentive/penalty to be given in the next regulatory period

PERFORMANCE KPIs

Code	Performance Incentive Scheme	Unit	Weightage (%)	Lower Bound Target	Upper Bound Target
Customer	Services				
CSPI1	System Average Interruption Duration Index (SAIDI)	Mins./cust./year	50	70	55
CSP12	Average of Minimum Service Level Compliance Performance	%	25	84.11	94.11
CSP13	Weighted Average Guaranteed Service Level (3, 4 and5)	%	25	86.32	95.50
Transmiss	ion		i		
TXPI1	System Minutes	Minutes	40	5.1	1.5
TXPI2	System Availability	%	30	99.04	99.48
TXPI3	Project Delivery Index	Delayed month	30	5.47	0
System Op	perator				
SOPI1	Wide Area Loss of Supply Event	No. of wide area system blackout incident	25	1	0
SOPI2.1	Voltage Limit Compliance	%	25	90	96
SOPI2.2	Frequency Limit Compliance	%	25	90	96
SOPI3	Dispatch Adjustment	%	25	0.4	0.2
Single Buy	ver			• • •	
SBPI1	Dispatch Deviation	%	25	0.4	0.2
SBP12	Compliance to Timely Settlement of Generators' Invoices	%	25	99.55	99.85
SBP13	Compliance to Malaysian Grid Code	%	25	98.10	100
SBPI4	Compliance to Single Buyer Rules	%	25	95.00	100

*Source: EC

21

KEY PERFORMANCE INDICATORS (KPIs)



TNB Has Been Improving its Performances Over the Years and Now in Line with World Standards



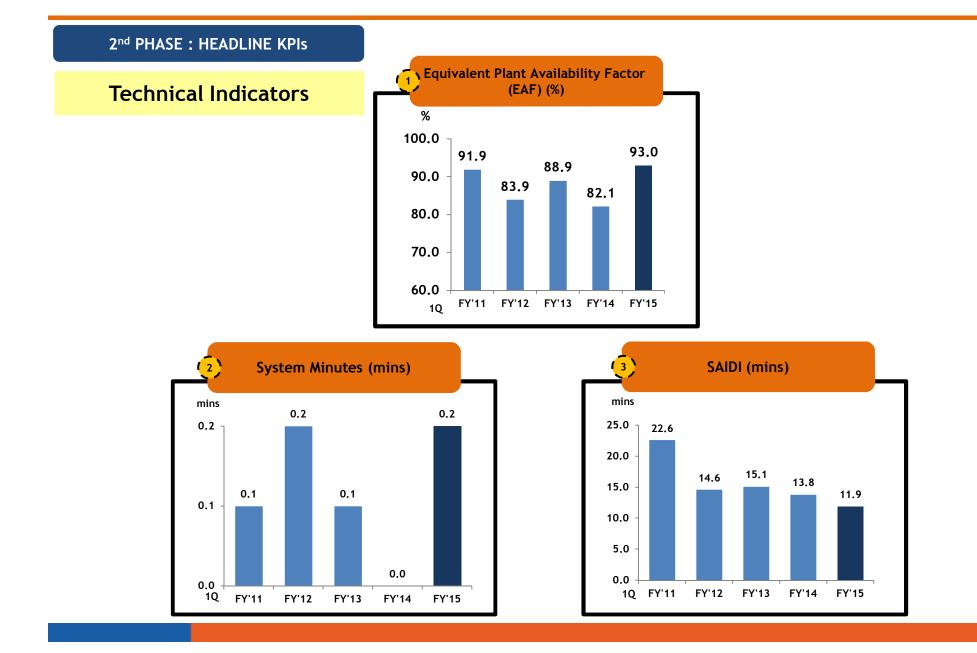
Note:

Not track as TNB Headline KPI during 1st phase

KEY PERFORMANCE INDICATORS (KPIs)



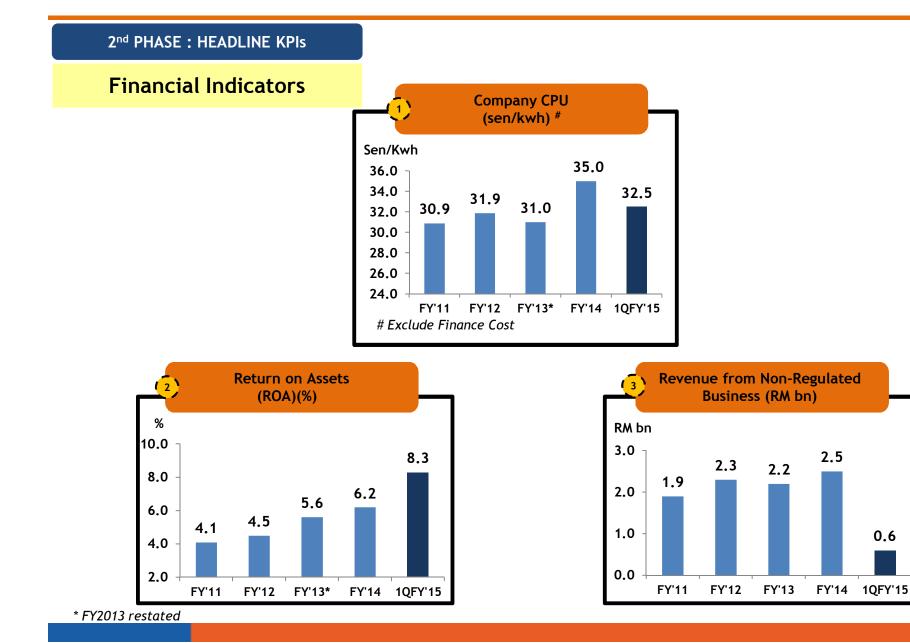
Technical Indicators



KEY PERFORMANCE INDICATORS (KPIs)



Financial Indicators



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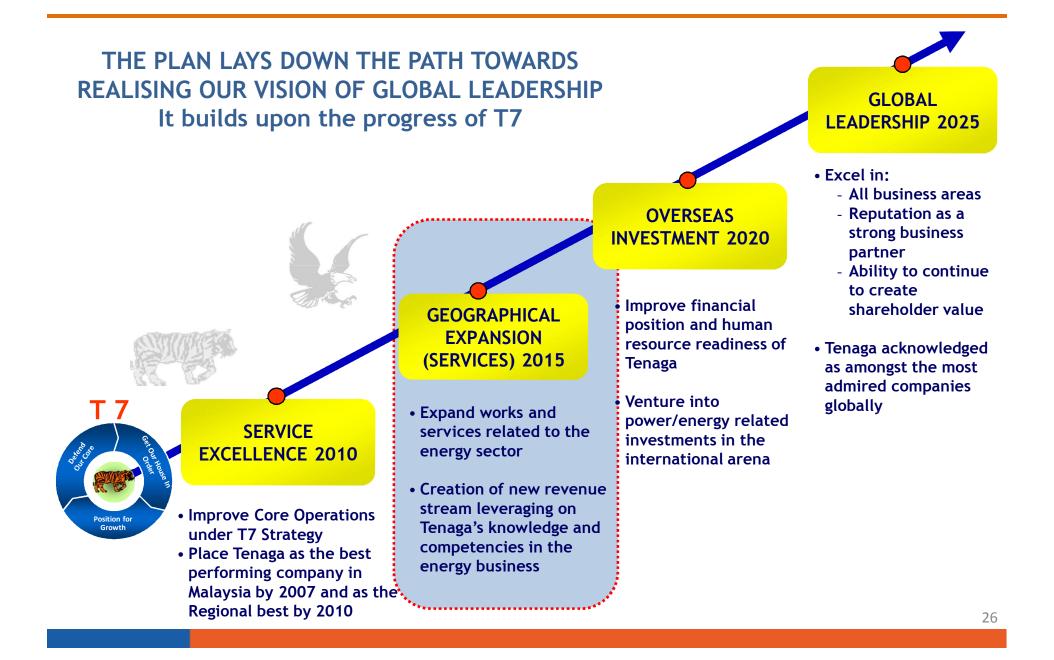




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20-YEAR STRATEGIC PLAN

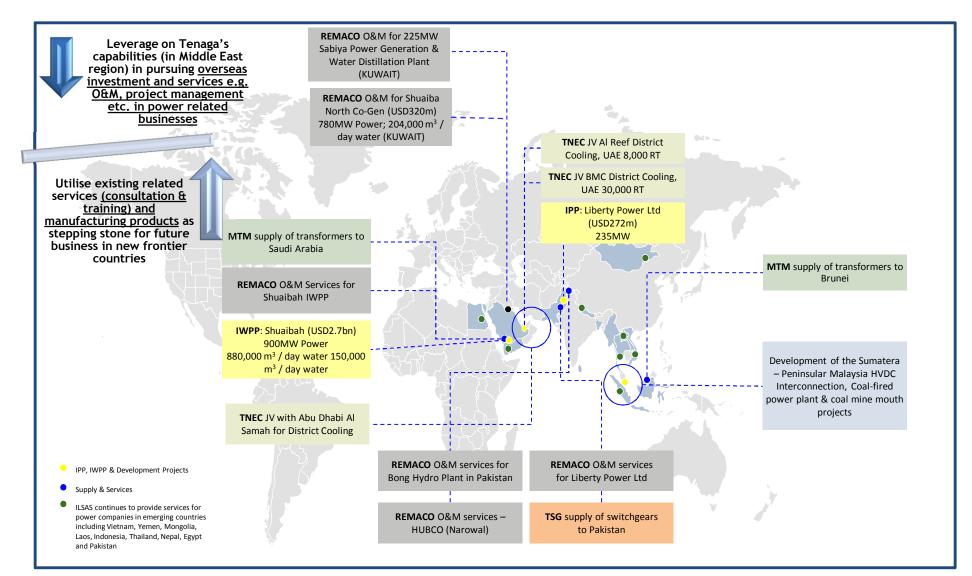




INTERNATIONAL FOOTPRINT

Business Expansion in Energy Related Businesses





Source: Company presentation; Note: REMACO is a 100% owned subsidiary with a focus on O&M; MTM is a wholly owned subsidiary manufacturing transformers; TSG is a subsidiary manufacturing high voltage switchgears; TNEC is a wholly owned subsidiary providing project services and developing energy related projects





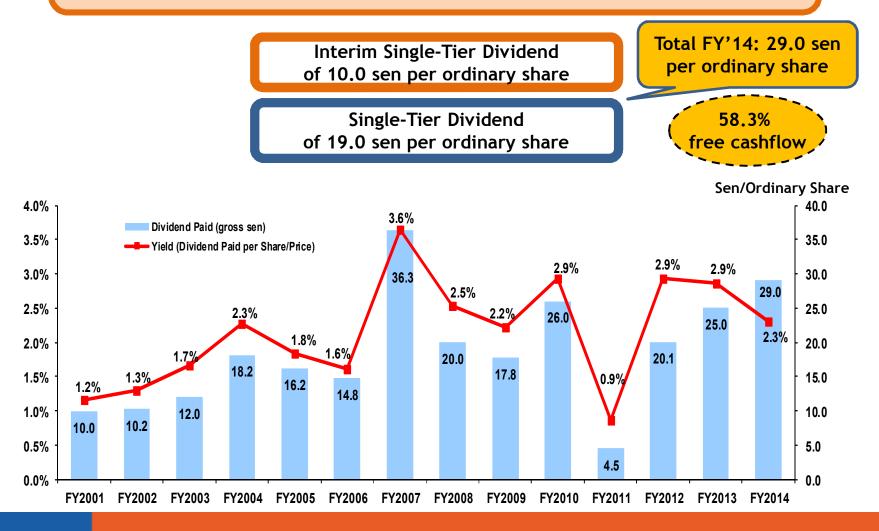
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DIVIDEND Policy and Yield



29

Tenaga is committed to pay out dividend based on its Dividend Policy whereby: Dividend is paid out based on 40%-60% of its Company's Annual Free Cashflow; Cashflow from Operations less Normalised Capex and Interest Servicing







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OUTLOOK FY2015

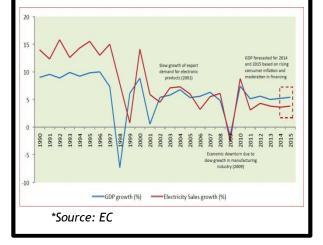


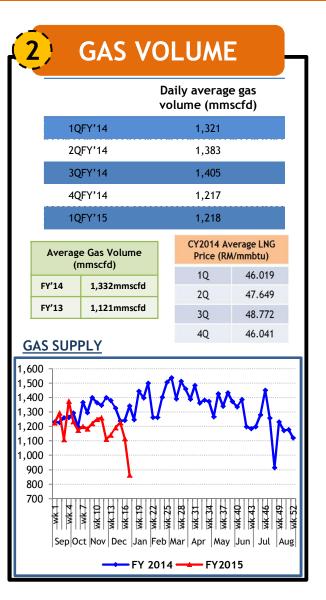


"The growth is expected to remain on a strong trajectory with revised GDP growth in the range of 4.5% - 5.5% for 2015".

> Prime Minister -Special Address, 20th Jan 2015

The electricity demand growth is expected to be in line with the projected economic growth.





COAL PRICE

3)

Coal price is expected to remain stable for the next 1 year.

Average Coal Price (CIF) (USD/MT)

FY'11	106.9
FY'12	103.6
FY'13	83.6
FY'14	75.4
1QFY'15	70.2





PART TWO

1QFY2015 RESULTS HIGHLIGHTS

1QFY2015 RESULTS HIGHLIGHTS

3-Month Ended 30th Nov 2014



- " Profit After Tax of RM2.35 billion (1QFY2014: RM1.73 billion).
- 73.2% increase in Capital Expenditure; total amount of RM2.51 billion (1QFY2014: RM1.45 billion).
- 3.3% unit electricity demand growth in Peninsular Malaysia.
- 3.6% increase in Operating Expenses; total amount of RM8.42 billion (1QFY2014: RM8.12 billion).

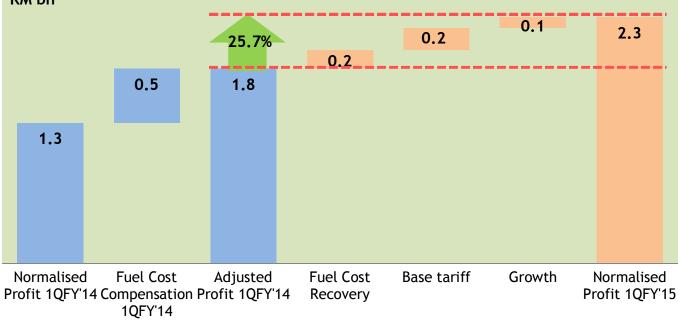
GROUP PROFIT ANALYSIS



Higher Normalised Profit due to Growth and Tariff Review

(RM mn)	1QFY'14 (Restated)	1QFY'15
Profit After Tax	1,732.4	2,351.0
Less: Forex Translation Gain	252.7	45.9
Profit Before Forex & After Tax	1,479.7	2,305.1
Adjustments for Non-Comparative Items:		
Change in Corporate Tax Rate	(186.7)	
Normalised Profit Before Forex and After Tax	1,293.0	2,305.1

RM bn



QUARTERLY & YEARLY ANALYSIS



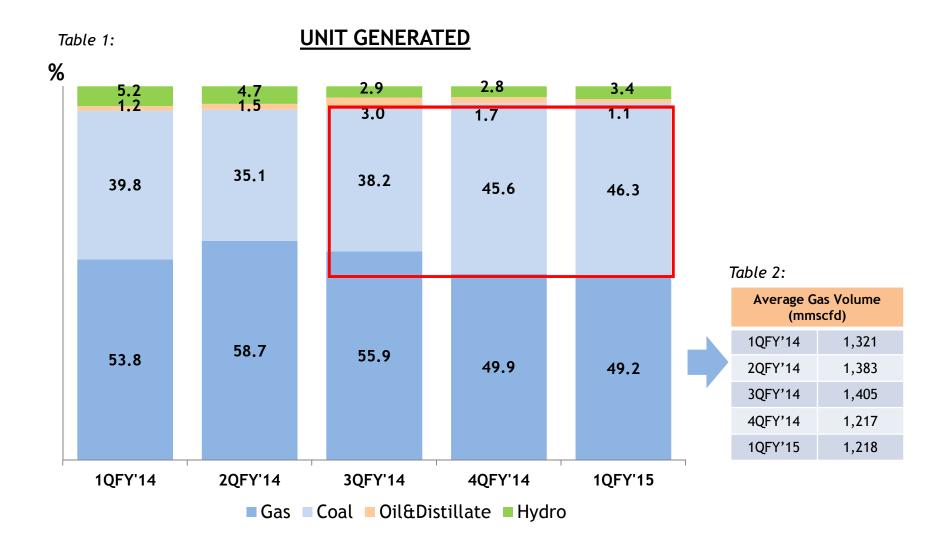
Higher OPEX Mainly due to Higher LNG Cost, Mitigated by Lower Coal Price

Table	1: RM mn	1QFY'15	1QFY'14 (Restated)
	Total Units Sold (GWh)	27,431.2	26,717.4
	Revenue	11,027.1	9,572.4
	Operating Expenses (before depreciation)	7,161.8	6,966.4
	Operating Income	136.9	69.4
	EBITDA	4,002.2	2,675.4
	EBITDA Margin (%)	36.3%	27.9%
	Depreciation and Amortisation	1,257.4	1,157.9
	EBIT	2,744.8	1,517.5
	EBIT Margin (%)	24.9%	
	Finance Cost	253.9	227.5
	Profit Before Tax & Forex Translation	2,574.9	1,363.9
	Net Profit Before Forex Translation	2,306.0	1,497.6
	Translation Gain	45.9	252.7
	Net Profit attributable to :		
	Owners of the Company	2,351.9	
	Non-controlling Interest	(0.9)	(17.9)
	COAL PRICE & CONSUMPTION 1	QFY'14 1QI	<u></u>
e 2:	Average Coal Price Consumed		
	(USD/MT) FOB	67.5 60	0.4 -10.5%
	Freight	9.1 9	2.2%
	Others	0.6 0	.5 -16.7%
	CIF	77.2 70	0.2 -9.1%
	Average Coal Price Consumed (RM/MT) (CIF)	249.0 23	·0.2 -7.6%
	Coal Consumption (mn MT)	4.7 5	.6 19.1%

Table 2:

QUARTERLY ANALYSIS: GENERATION MIX (PENINSULA) **TENAGA** NASIONAL Nov 2014

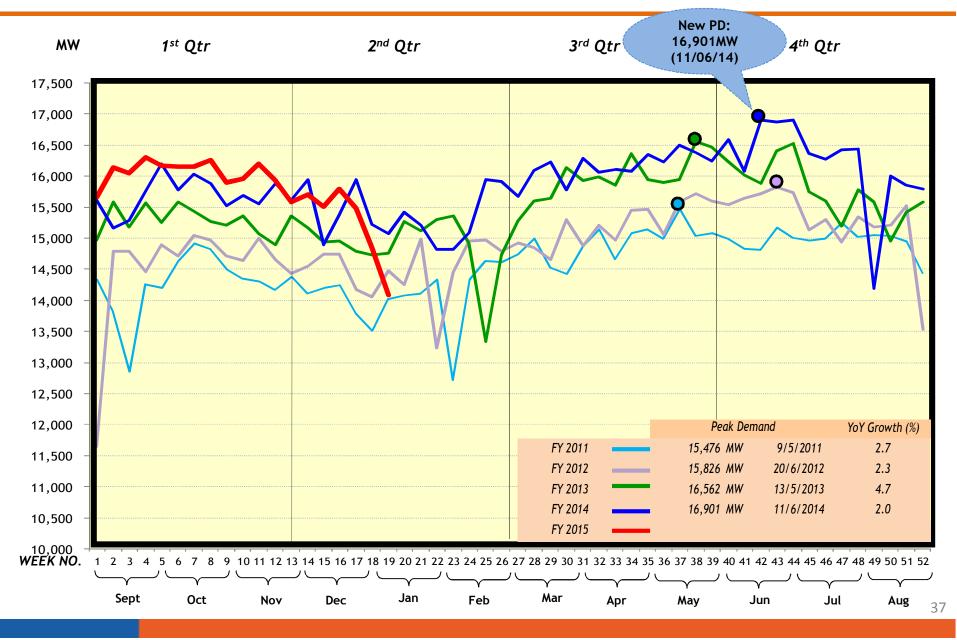
Fuel Mix Shifting Back to Coal



SYSTEM WEEKLY MAXIMUM DEMAND (PENINSULA)



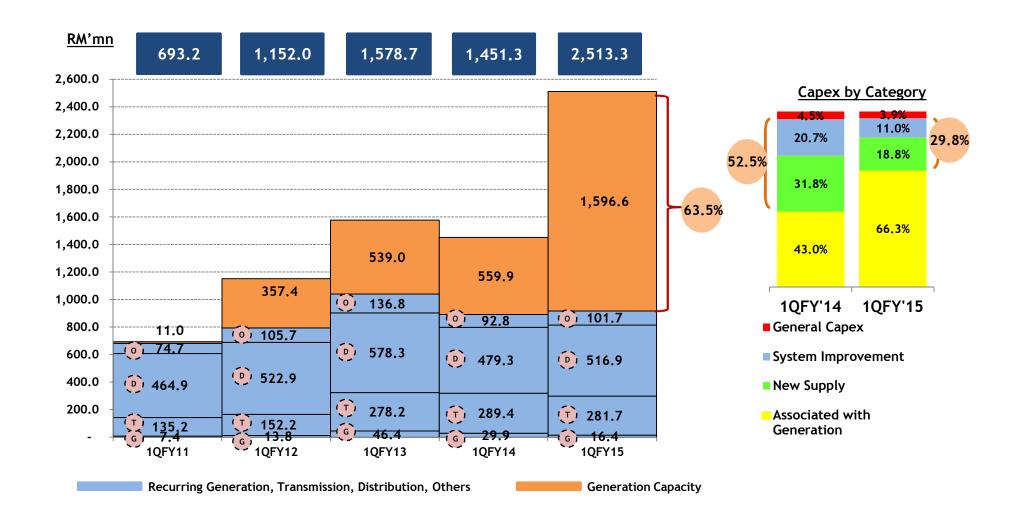
For FY2011 to FY2015



CAPITAL EXPENDITURE

Major Projects Represent 63.5% of Total CAPEX

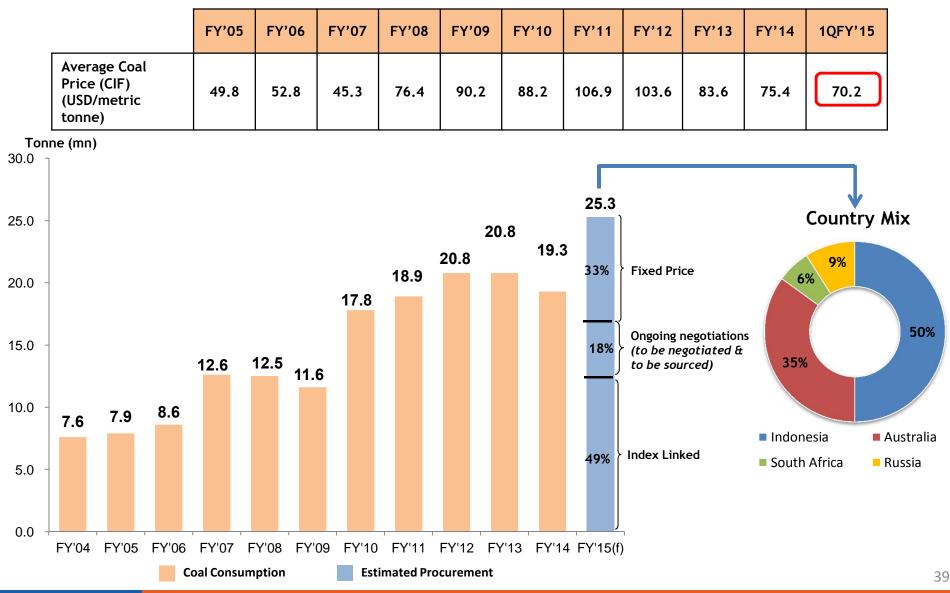




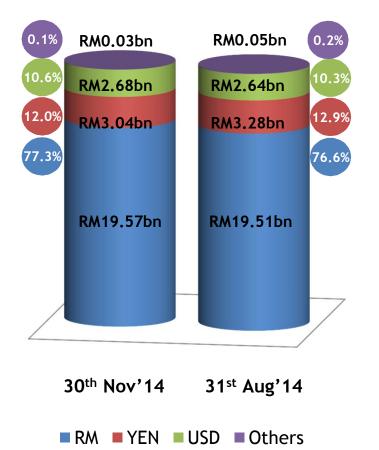
COAL REQUIREMENT

AGA NASIONAL Nov 2014

Average Coal Price for 1QFY'15 was at USD70.2/MT







Statistics	30th Nov'14	31st Aug'14
Total Debt (RM bn)	25.3	25.5
Net Debt (RM bn)	20.4	17.3
Gearing (%)	35.6	36.9
Net Gearing (%)	28.7	25.2
Fixed : Floating (%)	99.6:0.4	99.3:0.7
Final Exposure (%)	100.0 : 0.0	100.0 : 0.0
Weighted Average Cost of Debt (%)	4.91	4.86
Final Exposure (%)	4.96	4.92

	30th Nov'14	31st Aug'14
USD/RM	3.38	3.15
100YEN/RM	2.86	3.04
USD/YEN	118.18	103.62

DISCLAIMER



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CONTACT DETAILS



For further enquiries, kindly contact us at:

INVESTOR RELATIONS & MANAGEMENT REPORTING DEPARTMENT Tenaga Nasional Berhad 4th Floor, TNB Headquarters No. 129, Jalan Bangsar, 59200 Kuala Lumpur, MALAYSIA Tel : +603 2296 5566 Fax : +603 2284 0095 Email : tenaga_ird@tnb.com.my Website : www.tnb.com.my

IR OFFICERS:	
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Anida	+603 2296 6077	anidai@tnb.com.my
Sherleen	+603 2296 6183	sherleenaa@tnb.com.my
Nadia	+603 2296 6787	nuranadiaah@tnb.com.my



THANK YOU