

TNB HANDBOOK

MAYBANK NON DEAL ROADSHOW, SINGAPORE

4th - 6th FEBRUARY 2015

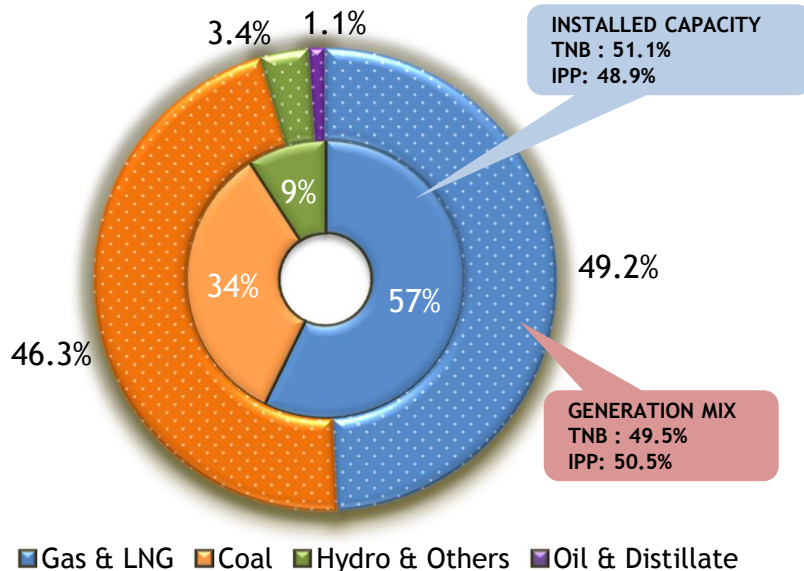
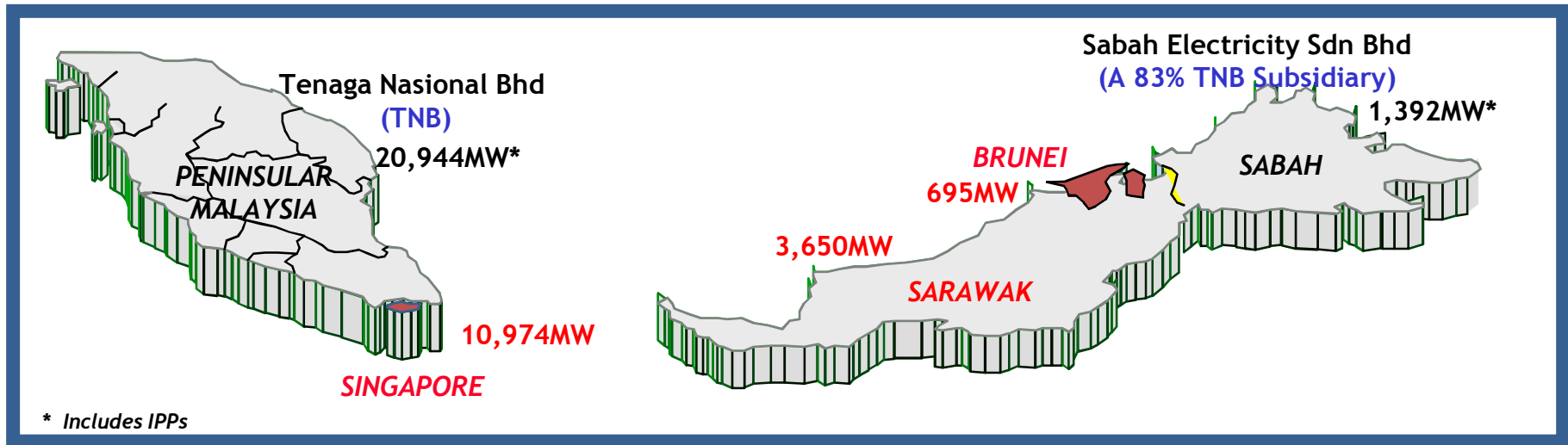


PART ONE

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

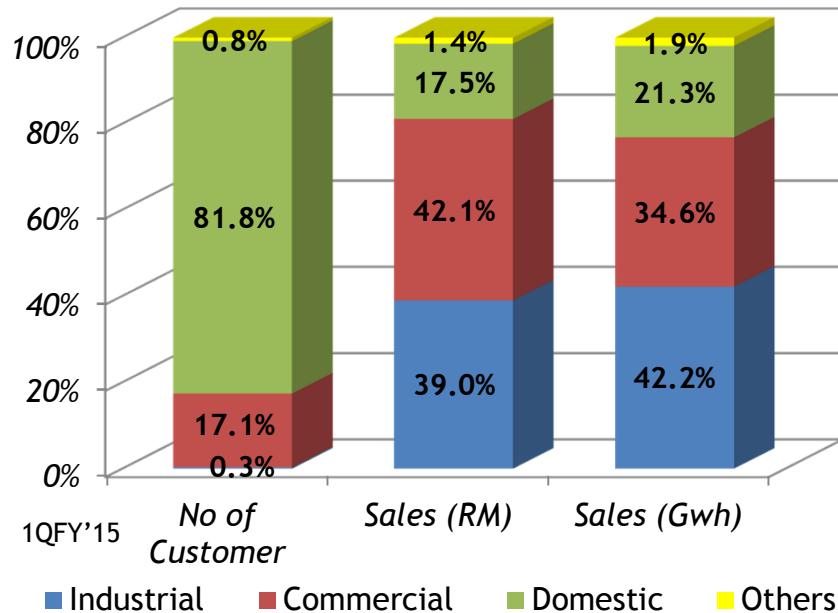


	FY'11	FY'12	FY'13	FY'14	1QFY'15
TNB - Peninsula Installed Capacity (MW)	11,530	11,462	11,462	10,814	10,698
Total units sold (Gwh)	97,888	102,132	105,479	108,102	27,431
Total customers (mn)	8.11	8.36	8.35	8.64	8.71
Total employees ('000)	31.9	33.6	35.0	36.1	36.1
Total assets (RM bn)	79.1	88.5	99.0	110.7	112.8

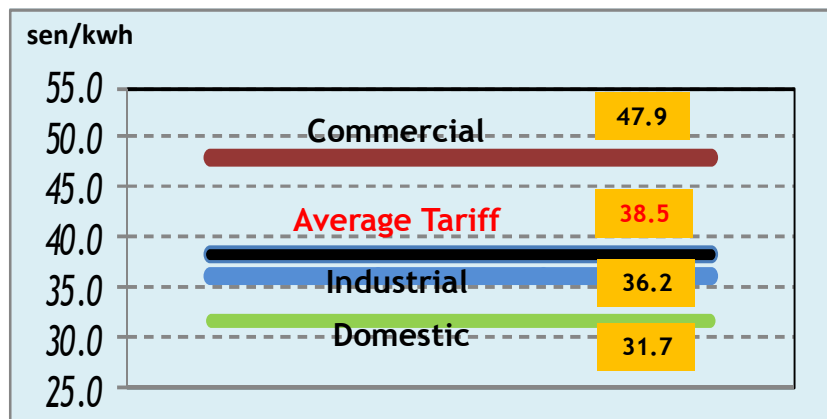
Installed Capacity vs. Generation mix

INTRODUCTION TO TENAGA

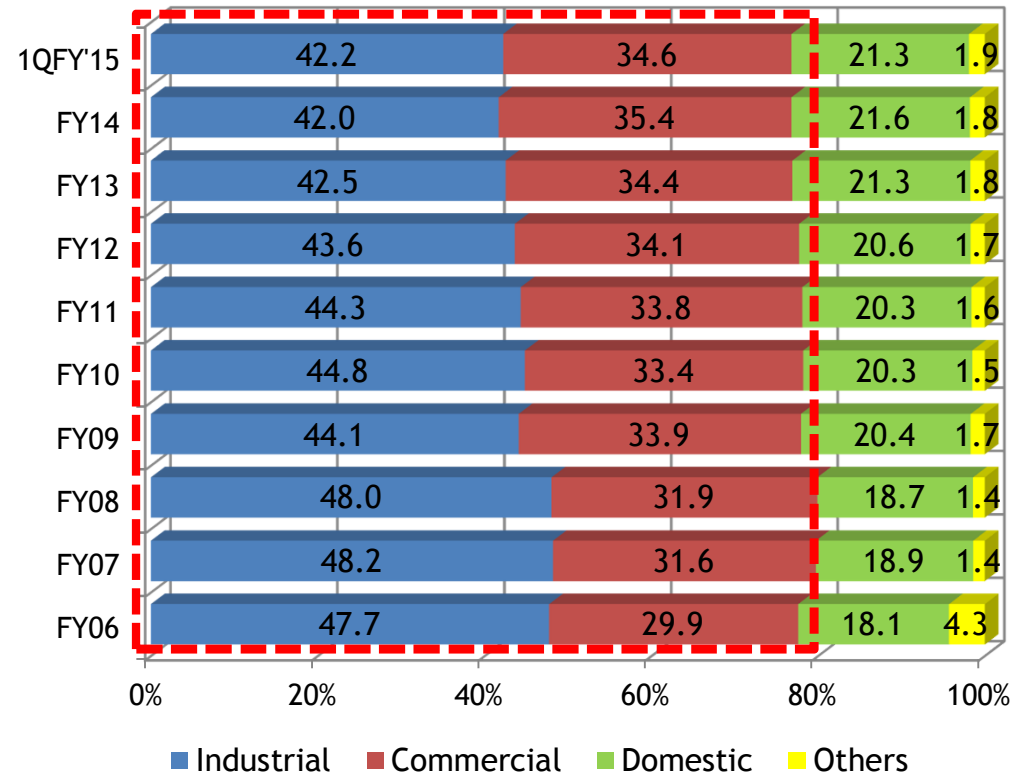
No of Customer vs. Sales Value vs. Unit Sales



Average Tariff by Sector



Sectoral Sales Analysis (Gwh)



- ~ Shift from Industrial-based to Service-based economy
- ~ Increasing market share from Commercial sector
- ~ Commercial sector contributes the highest electricity sales margin

Industry Regulatory Framework

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

TRANSFORMATION INITIATIVES BY GOVERNMENT

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

Jun - Dec 2008
Khazanah's MESI Study

Jan - Dec 2009
KeTTHA-led syndication

4 Dec 2009
Cabinet endorsement to
transform ESI

Transformation Programme



A. Governance

1. Agency Roles
2. Ring-fencing



B. Market Structure

3. Competitive Bidding
4. PPA Renegotiation



C. Fuel Supply and Security

5. Fuel Supply and Security



D. Tariff

6. Value Chain Tariff
7. End User Tariff
8. Stabilization Fund
9. Accounts Unbundling

1st Gen IPP /
Restricted
Bidding

Subsidy
Rationalisation
Programme

FCPT
Mechanism

LNG
Importation

Nuclear Energy
Capacity
Building

National RE
Policy & Action
Plan

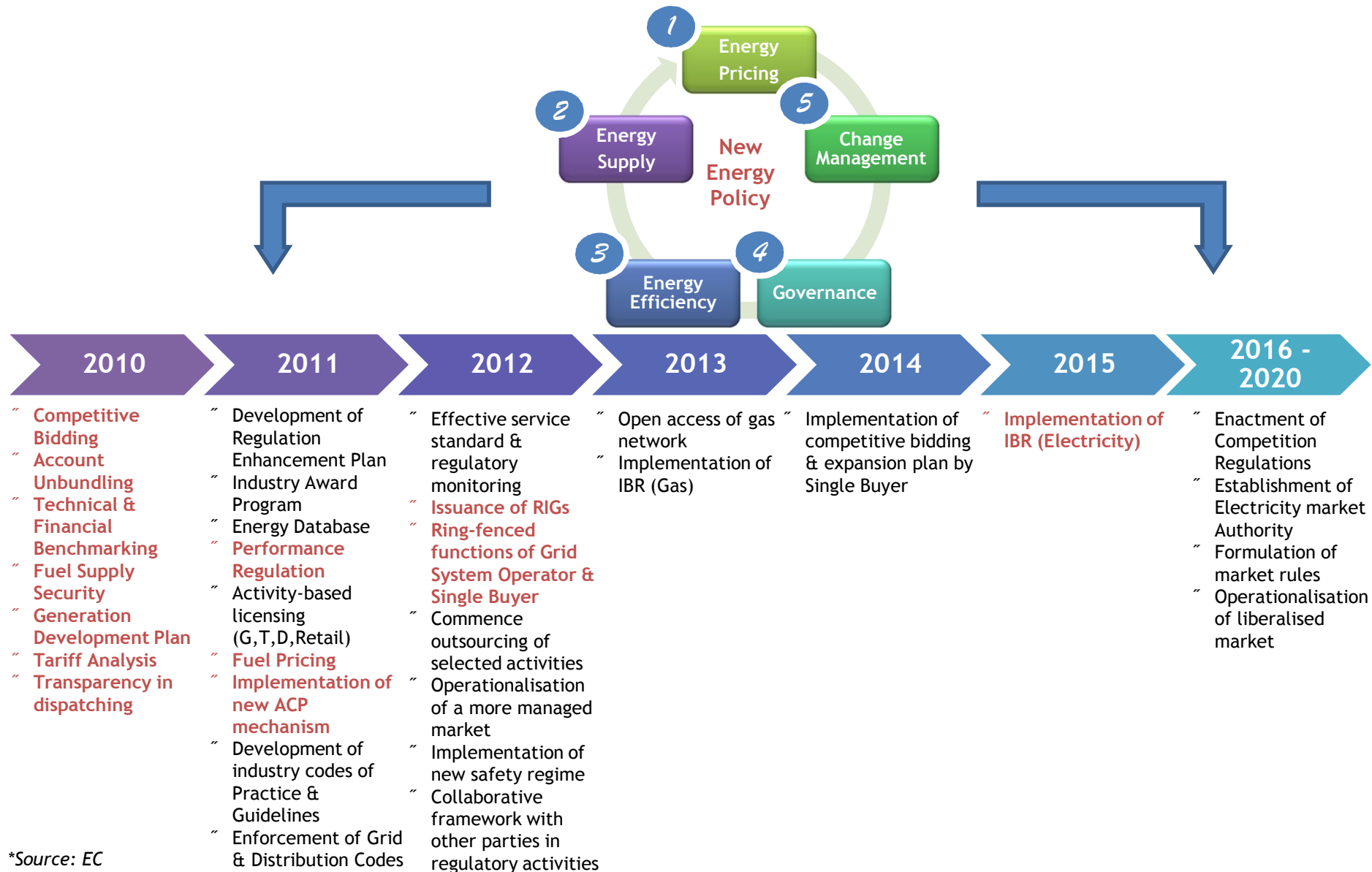
FIT & RE Fund

Legal &
Regulatory
Framework
Enhancement

*Source: MyPower

TRANSFORMATION PLAN : TIMELINE

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



1 ENERGY PRICING - COMPETITIVE BIDDING

Track 1 to Track 3

1	TRACK 1	1,071 MW CCGT PRAI	
	COD	January 2016	
	LEVELISED TARIFF	34.7 sen/kWh	
	STATUS	<p>TNB has signed agreements for:</p> <ul style="list-style-type: none"> 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 <p>TNB Northern Energy Sukuk has been issued out on 29 May 2013 for nominal value of RM1.625 billion.</p>	
	TECHNOLOGY	Siemens Super Critical H-Class technology gas turbine combined-cycle efficiency of greater than 60%	

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	
	STATUS	<p>TNB has signed agreements on 16 August 2013 for:</p> <ul style="list-style-type: none"> i. PPA with TNB Manjung Five Sdn Bhd “Manjung 5” to design, construct, own, operate & maintain the coal plant capacity (25 years term) ii. SFA “Shared Facilities Agreement” between TNB, Manjung 5 & TNB Janamanjung iii. CSTA “Coal Supply and Transportation Agreement” between TNB Fuel Services & Manjung 5. <p>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.</p> <p>TNB Western Energy Sukuk has been issued out on 30 January 2014 for nominal value of RM3.655 billion.</p>	
	TECHNOLOGY	Ultra Super Critical Boiler Technology OEM to EPC is Hitachi	

4	TRACK 3B	2 X 1,000 MW COAL-FIRED	
	COD	November 2018 & May 2019	
	LEVELISED TARIFF	25.33 sen/kWh	
	STATUS	<p>TNB has signed agreements on 22 July 2014 :</p> <ul style="list-style-type: none"> i. 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. ii. 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	

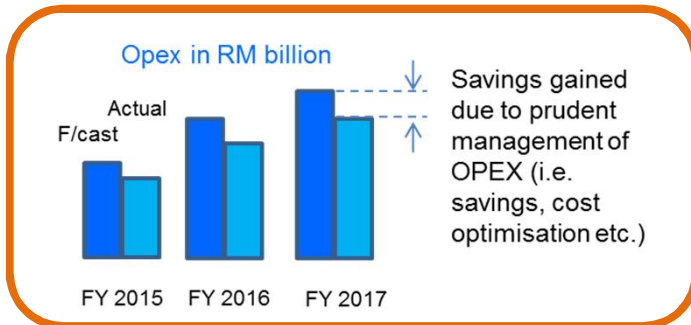
1 ENERGY PRICING

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	-

3 + 4 EFFICIENCY AND GOVERNANCE

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



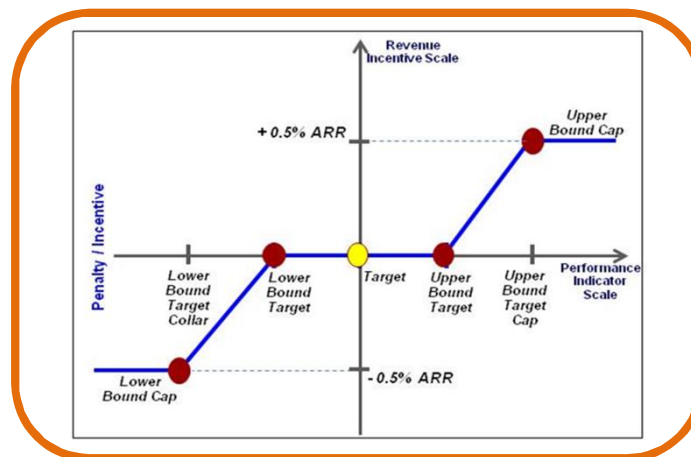
Operational Efficiencies

- Rewarded for seeking efficiencies in operational and capital expenditure



Financial Efficiencies

- Rewarded for maintaining an efficient capital structure



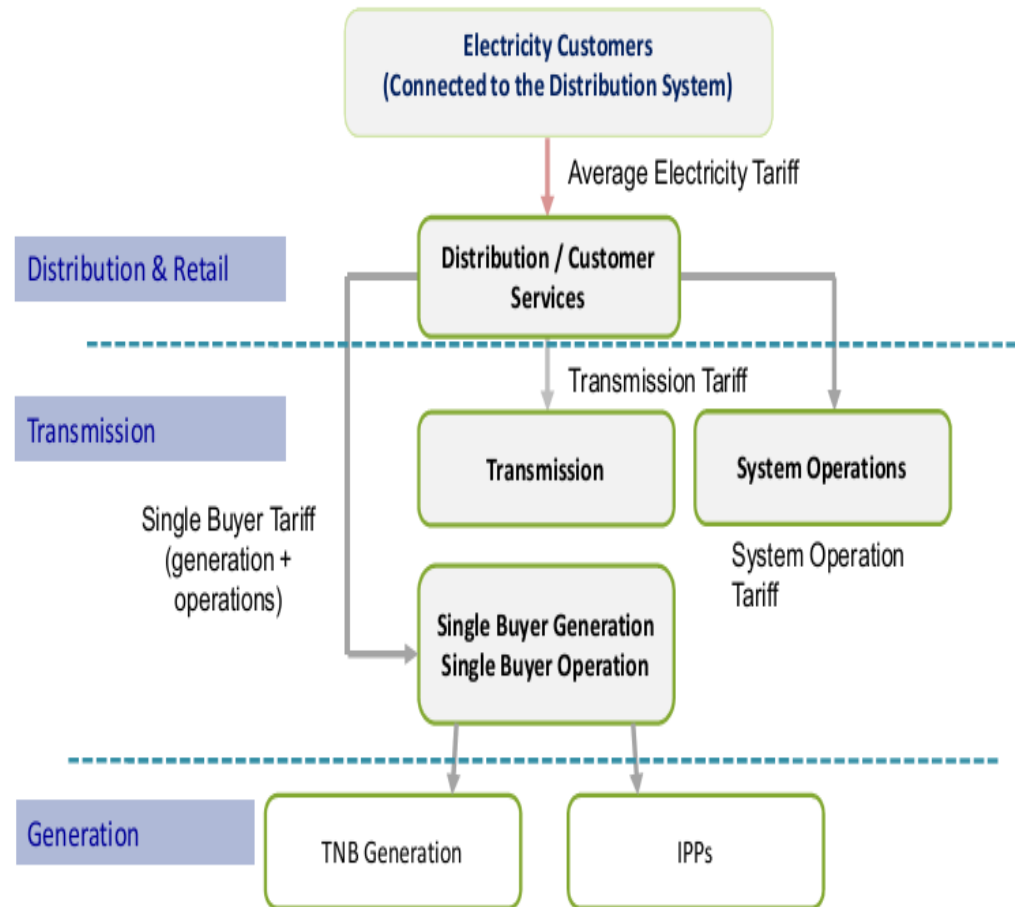
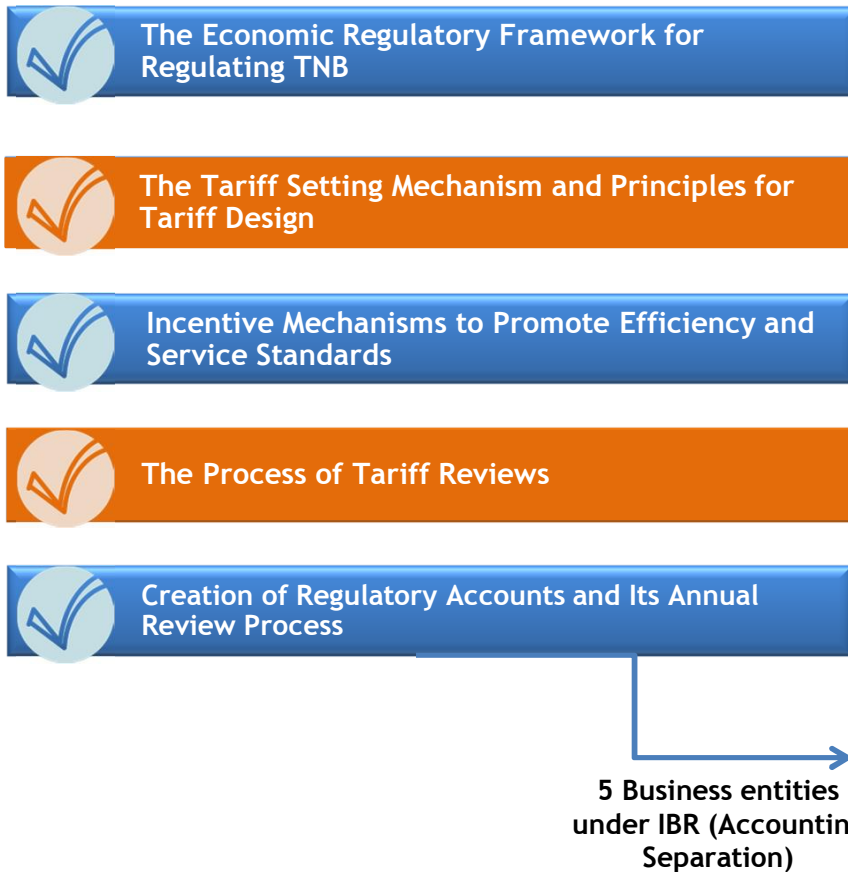
Performance Efficiencies

- Rewarded for delivering improvements in network performance

3 + 4 EFFICIENCY AND GOVERNANCE

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

IBR mechanism to strengthen the following:



11 Regulatory Implementation Guidelines (RIGS) were Developed for IBR Implementation

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

TARIFF

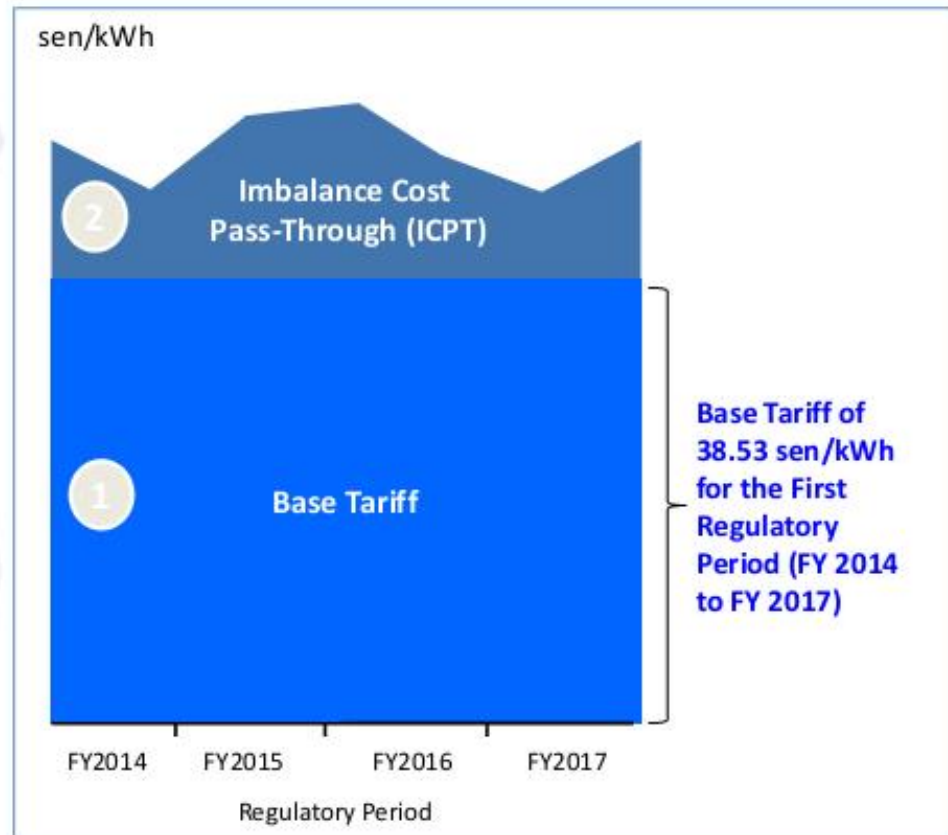
Electricity Tariff Review = Base Tariff + Imbalance Cost Pass-Through (ICPT)

Imbalance Cost Pass-Through (ICPT):

- Tariff adjustment to reflect uncontrollable 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:

- CAPEX and OPEX of
 - transmission, distribution, system operation (SO) and single buyer operation (SB)
- Power purchase cost charged by generators (including base price for fuel) to the SB
- Return on regulated asset (rate base) of transmission, distribution, SO and SB business units



Principle for ICPT Calculation

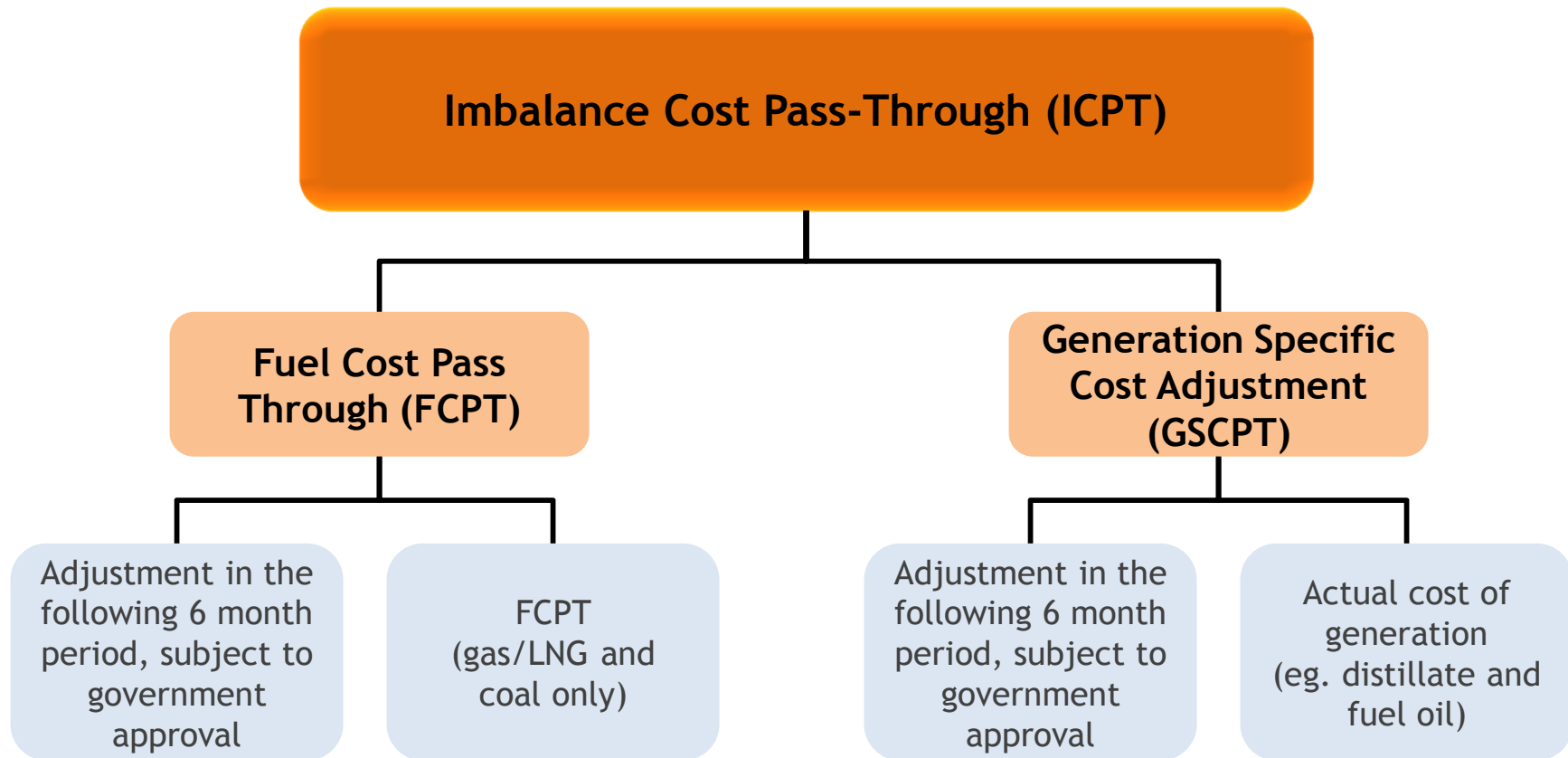
Cost components comprise of:

- 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

Note 2 : OPEX = Operational expenditure

Imbalance Cost Pass-Through (ICPT) Comprises Two Components

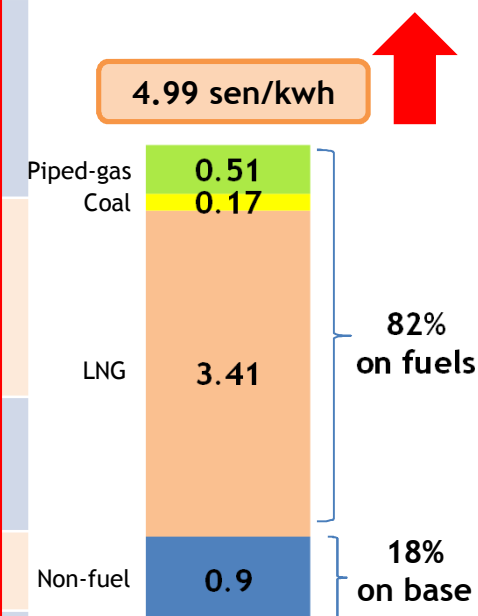


TARIFF

New Tariff of 38.53 sen/kwh is Effective from 1 January 2014

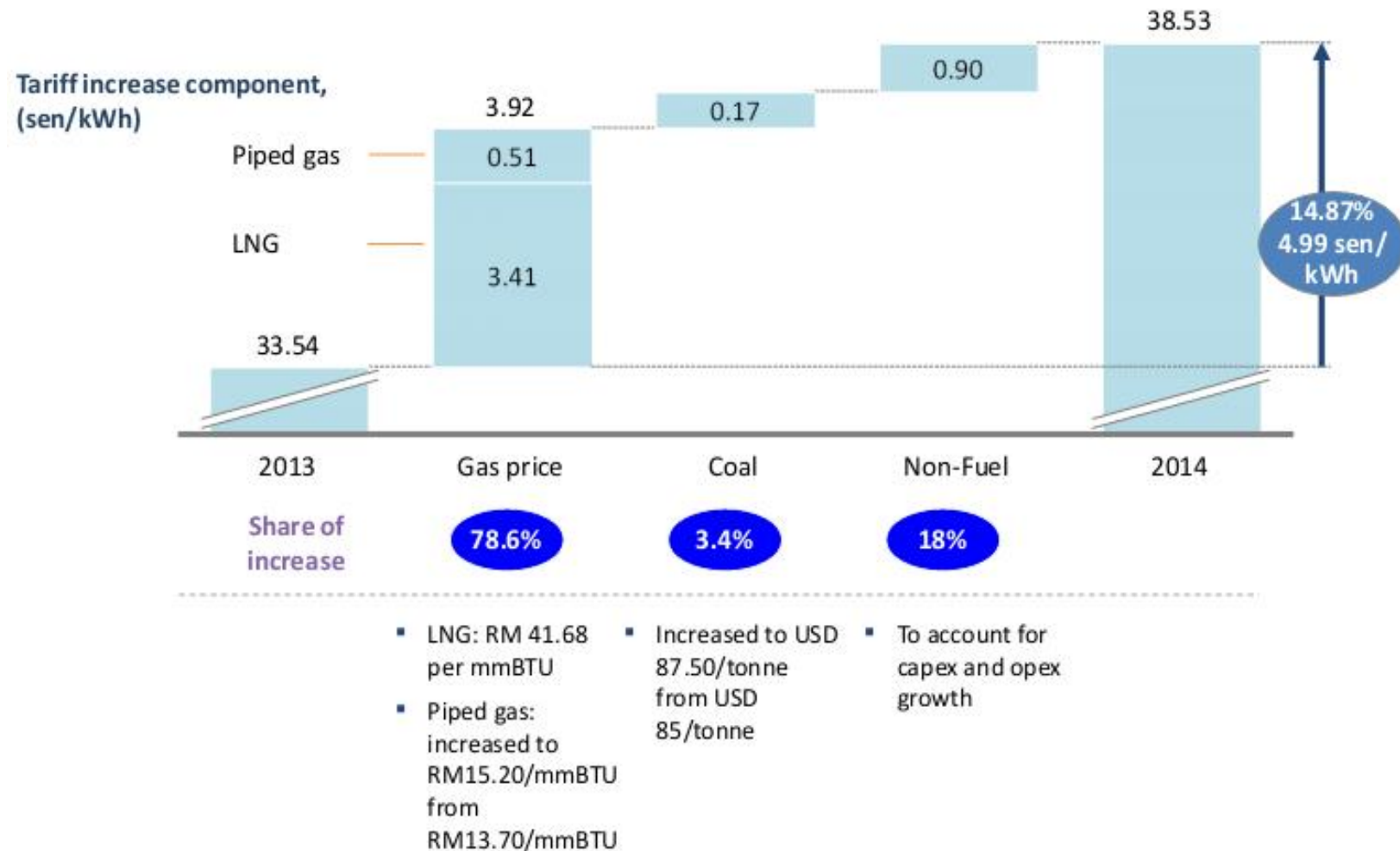
Average electricity tariff rate in Peninsular Malaysia is increased by **4.99 sen/kWh (14.89%)** from 33.54 sen/kWh to 38.53 sen/kWh, from 1st January 2014, to cover:

Tariff Components	sen/kWh	% increase
Current Overall Average Tariff	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
NEW AVERAGE TARIFF	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

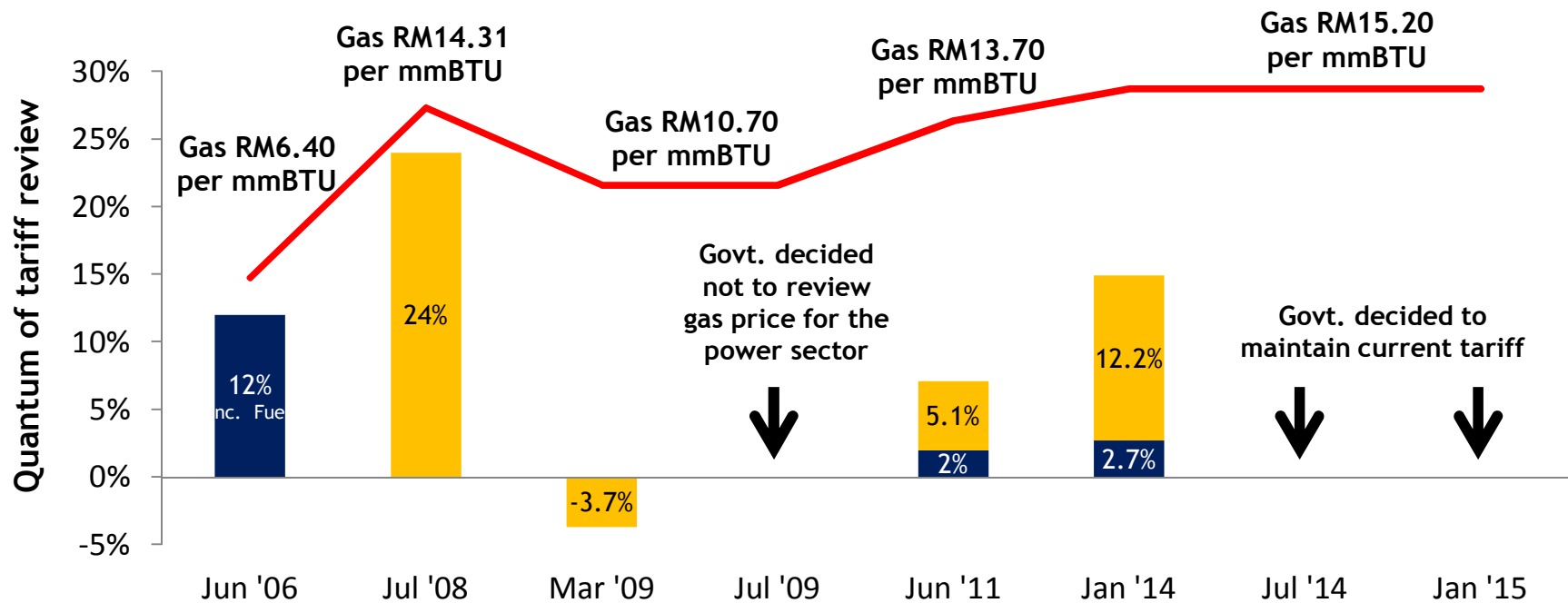


*Source: EC

TARIFF

Frequency of Review & Underlying Assumptions

Approval date	May 2006	Jun 2008	Feb 2009	Jun 2009	May 2011	Dec 2013	IBR Nov 2014	
Effective date	Jun 2006	Jul 2008	Mar 2009	Jul 2009	Jun 2011	Jan 2014	Jul 2014	Jan 2015
Quantum	12%	23 - 24%	(3.7%)	Neutral	7.1%	14.9%	Neutral	Neutral
Gas (RM/mmbtu)	6.40	14.31	10.70	10.70	13.70	15.20	15.20	15.20
Coal (USD/MT)	45.00	75.00	85.00	85.00*	85.00*	87.50 **	87.50 **	87.50 **
Average Tariff (sen/kWh)	26.2	32.5	31.3	31.3	33.5	38.5	38.5	38.5



* Forex (RM/USD) = RM3.6

**Forex (RM/USD) = RM3.14

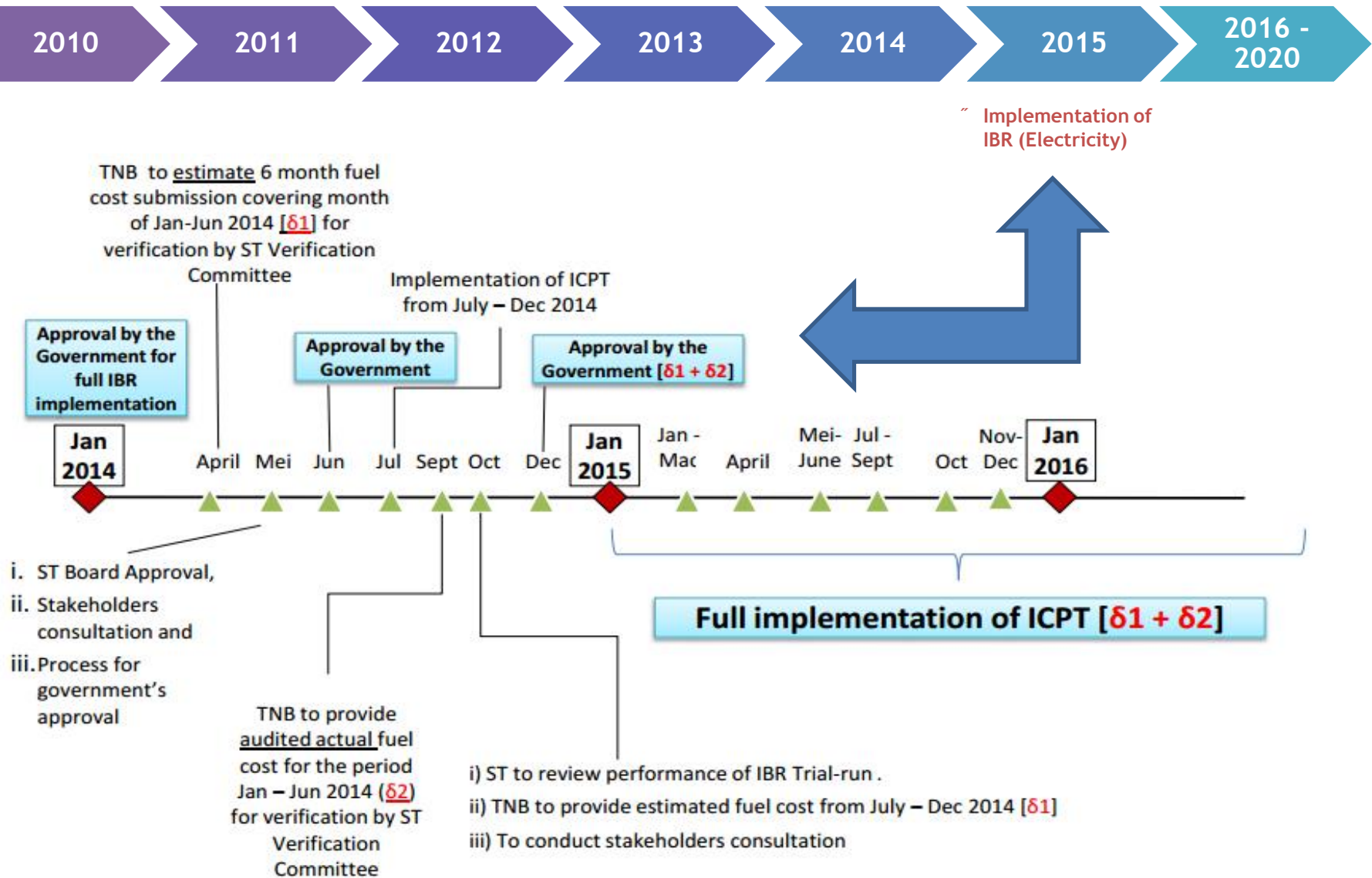
■ Base tariff adjustment

■ Fuel adjustment

— Gas price

TARIFF

IBR Timeline



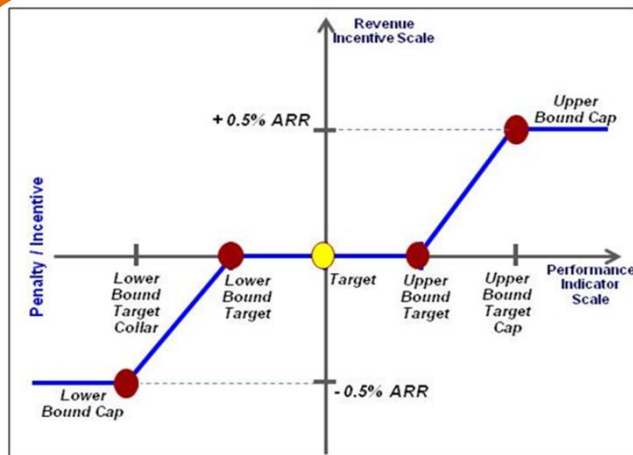
*Source: EC

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

KEY PERFORMANCE INDICATORS (KPIs)

Incentive Based Regulation (IBR) - Incentive and Penalty Mechanism Based on Performance Targets Determined by EC

PERFORMANCE KPIs



- “ 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

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
CSPI2	Average of Minimum Service Level Compliance Performance	%	25	84.11	94.11
CSPI3	Weighted Average Guaranteed Service Level (3, 4 and 5)	%	25	86.32	95.50
Transmission					
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 Operator					
SOP11	Wide Area Loss of Supply Event	No. of wide area system blackout incident	25	1	0
SOP12.1	Voltage Limit Compliance	%	25	90	96
SOP12.2	Frequency Limit Compliance	%	25	90	96
SOP13	Dispatch Adjustment	%	25	0.4	0.2
Single Buyer					
SBPI1	Dispatch Deviation	%	25	0.4	0.2
SBPI2	Compliance to Timely Settlement of Generators' Invoices	%	25	99.55	99.85
SBPI3	Compliance to Malaysian Grid Code	%	25	98.10	100
SBPI4	Compliance to Single Buyer Rules	%	25	95.00	100

*Source: EC

KEY PERFORMANCE INDICATORS (KPIs)

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

			1 ST PHASE : HEADLINE KPIs					
INITIATIVES		TARGET FY'10	ACTUAL FY'05	ACTUAL FY'06	ACTUAL FY'07	ACTUAL FY'08	ACTUAL FY'09	ACTUAL FY'10
Financial Indicators	Return on Assets (ROA) (%)	6.5	2.2	3.3	6.3	4.6	4.0	4.7
	Gearing (%)	< 60.0	64.9	58.1	49.9	46.9	46.5	42.5
	Company CPU (sen/kwh)							
	Revenue from Non-Regulated Business (RM bn)							
Technical Indicators	Unplanned Outage Rate (UOR)(%)	No target	6.1	4.7	2.2	3.3	2.9	2.7
	T & D Losses (%)	No target	10.5	11.0	10.0	9.5	9.7	9.5
	Transmission System Minutes (mins)	9.0	14.0	7.3	9.3	6.6	1.0	0.9
	Distribution SAIDI (mins)	< 100.0	148.0	101.6	83.0	78.0	68.6	65.0

Note:



Not track as TNB Headline KPI during 1st phase

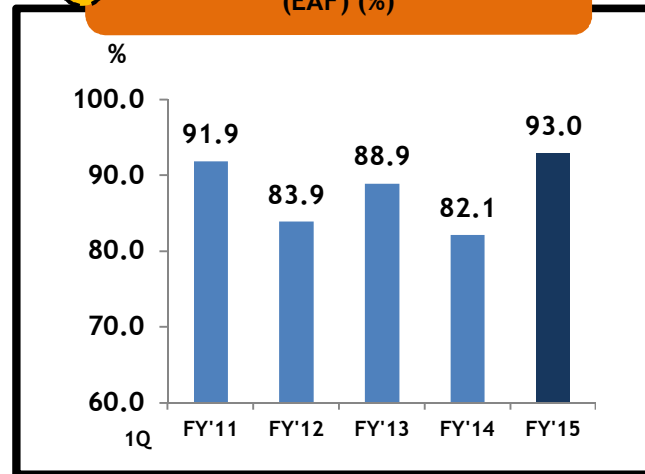
KEY PERFORMANCE INDICATORS (KPIs)

Technical Indicators

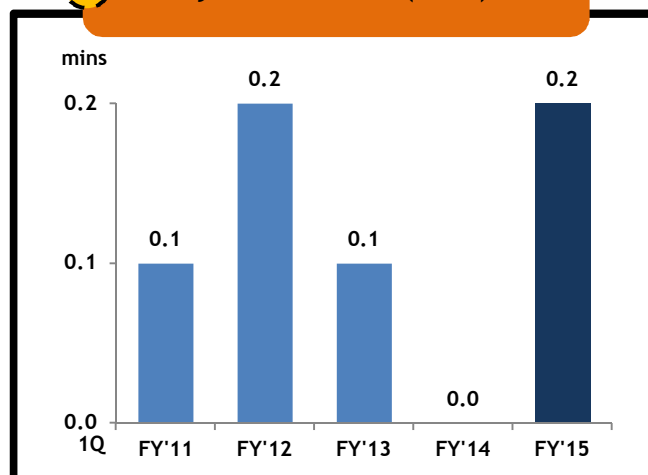
2nd PHASE : HEADLINE KPIs

Technical Indicators

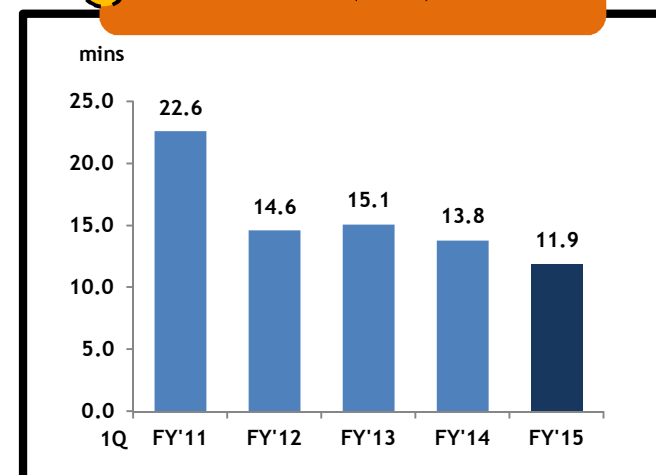
1 Equivalent Plant Availability Factor (EAF) (%)



2 System Minutes (mins)



3 SAIDI (mins)



KEY PERFORMANCE INDICATORS (KPIs)

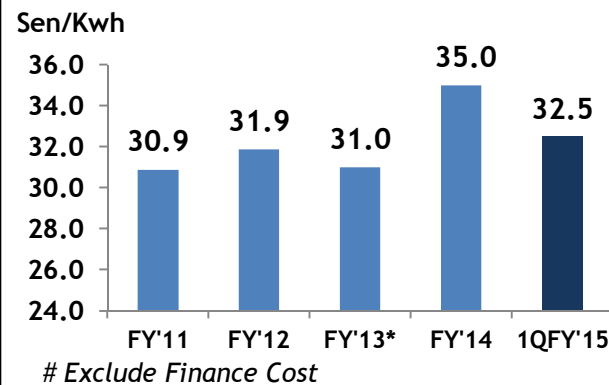
Financial Indicators

2nd PHASE : HEADLINE KPIs

Financial Indicators

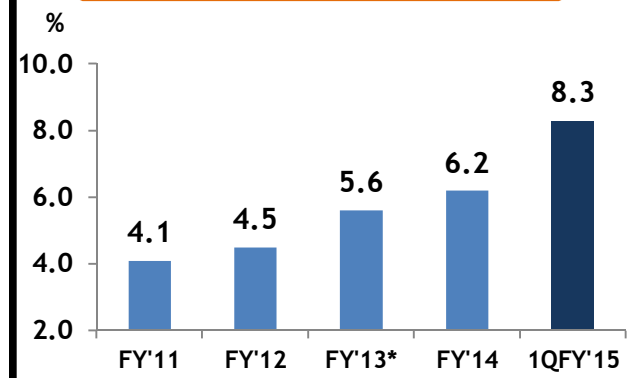
1

Company CPU (sen/kwh)



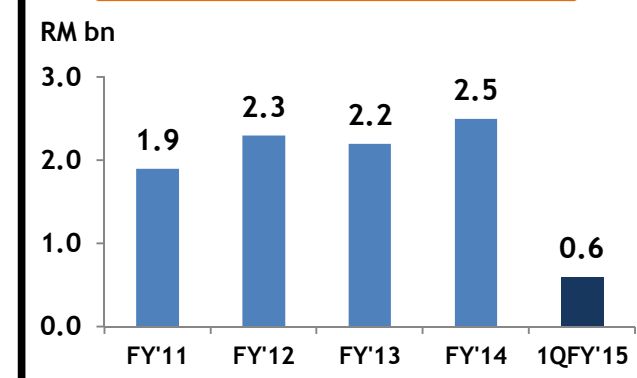
2

Return on Assets (ROA)(%)



3

Revenue from Non-Regulated Business (RM bn)



* FY2013 restated

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

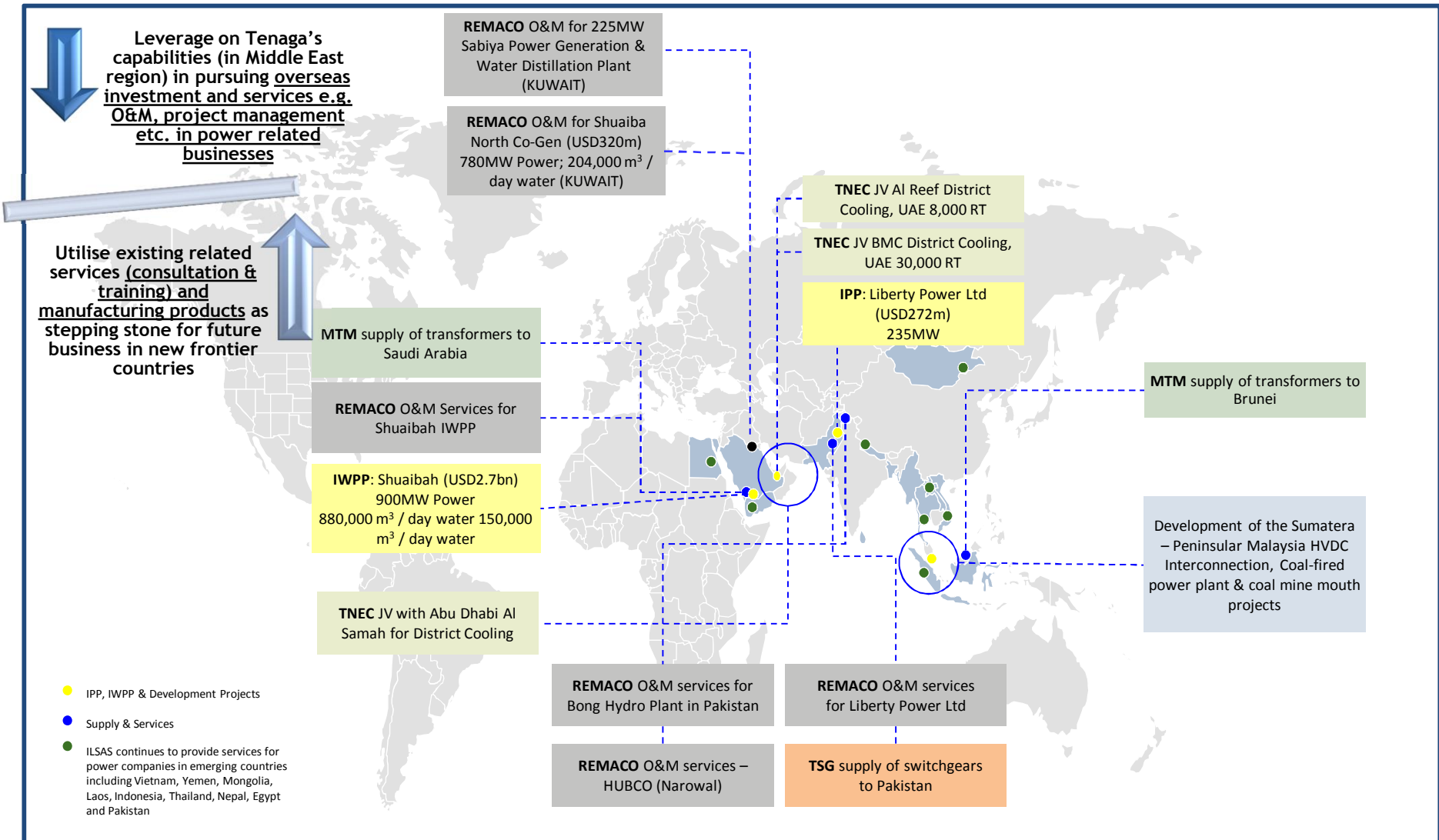
20-YEAR STRATEGIC PLAN

THE PLAN LAYS DOWN THE PATH TOWARDS
REALISING OUR VISION OF GLOBAL LEADERSHIP
It builds upon the progress of T7



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

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

DIVIDEND

Policy and Yield



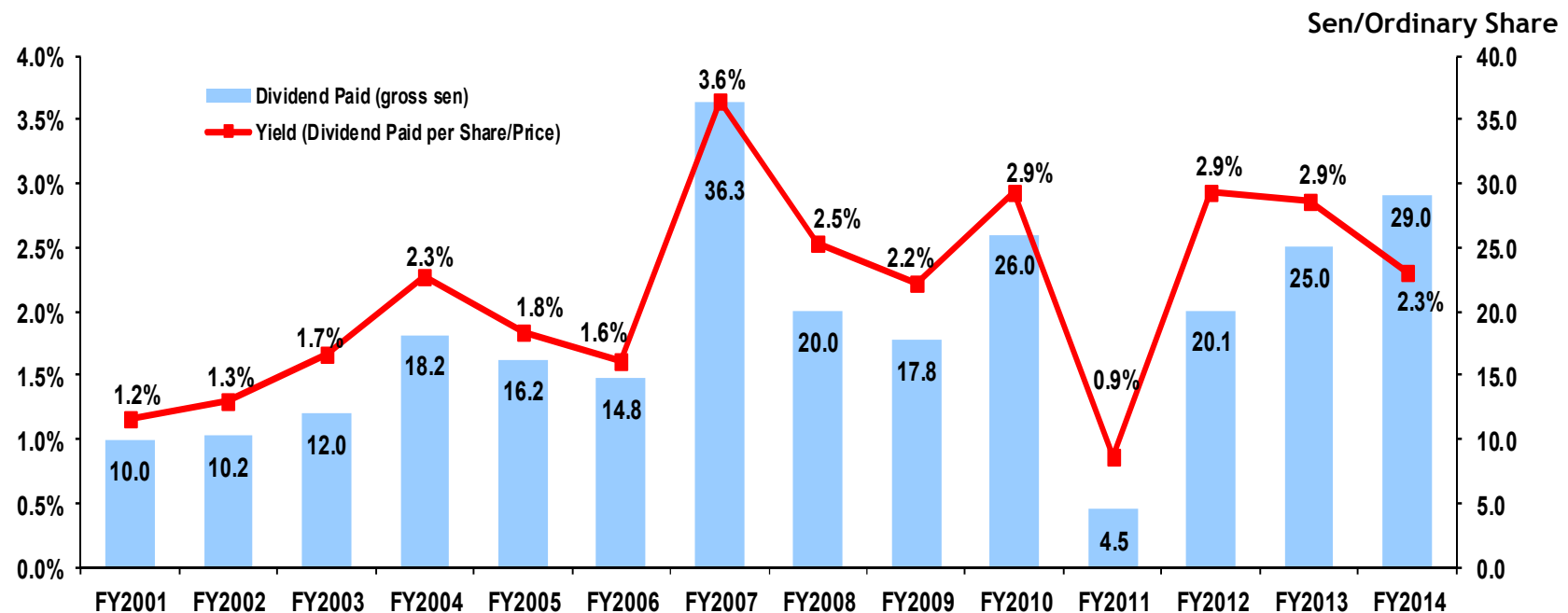
Tenaga is committed to pay out dividend based on its Dividend Policy whereby:
*Dividend is paid out based on **40%-60%** of its Company's Annual Free Cashflow;
Cashflow from Operations less Normalised Capex and Interest Servicing*

Interim Single-Tier Dividend
of 10.0 sen per ordinary share

Single-Tier Dividend
of 19.0 sen per ordinary share

Total FY'14: 29.0 sen
per ordinary share

58.3%
free cashflow



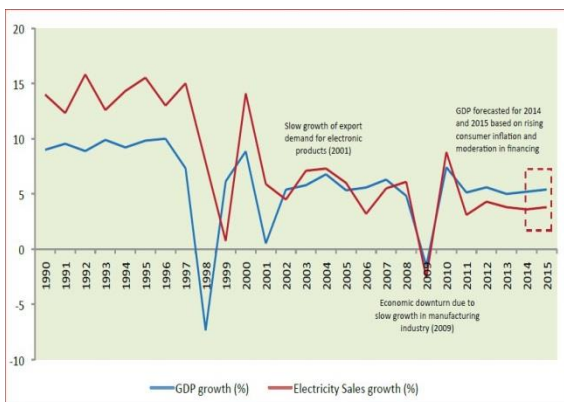
1. INTRODUCTION TO TENAGA
2. INTRODUCTION TO MESI
3. TARIFF
4. KEY PERFORMANCE INDICATORS (KPIs)
5. BUSINESS STRATEGY & DIRECTION
6. DIVIDEND POLICY
7. OUTLOOK

1 DEMAND

“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.



*Source: EC

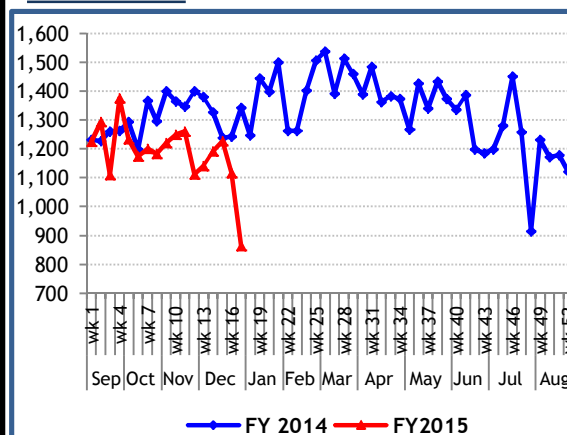
2 GAS VOLUME

Daily average gas volume (mmscfd)

1QFY'14	1,321
2QFY'14	1,383
3QFY'14	1,405
4QFY'14	1,217
1QFY'15	1,218

Average Gas Volume (mmscfd)		CY2014 Average LNG Price (RM/mmbtu)	
FY'14	1,332mmscfd	1Q	46.019
FY'13	1,121mmscfd	2Q	47.649
		3Q	48.772
		4Q	46.041

GAS SUPPLY



3 COAL PRICE

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

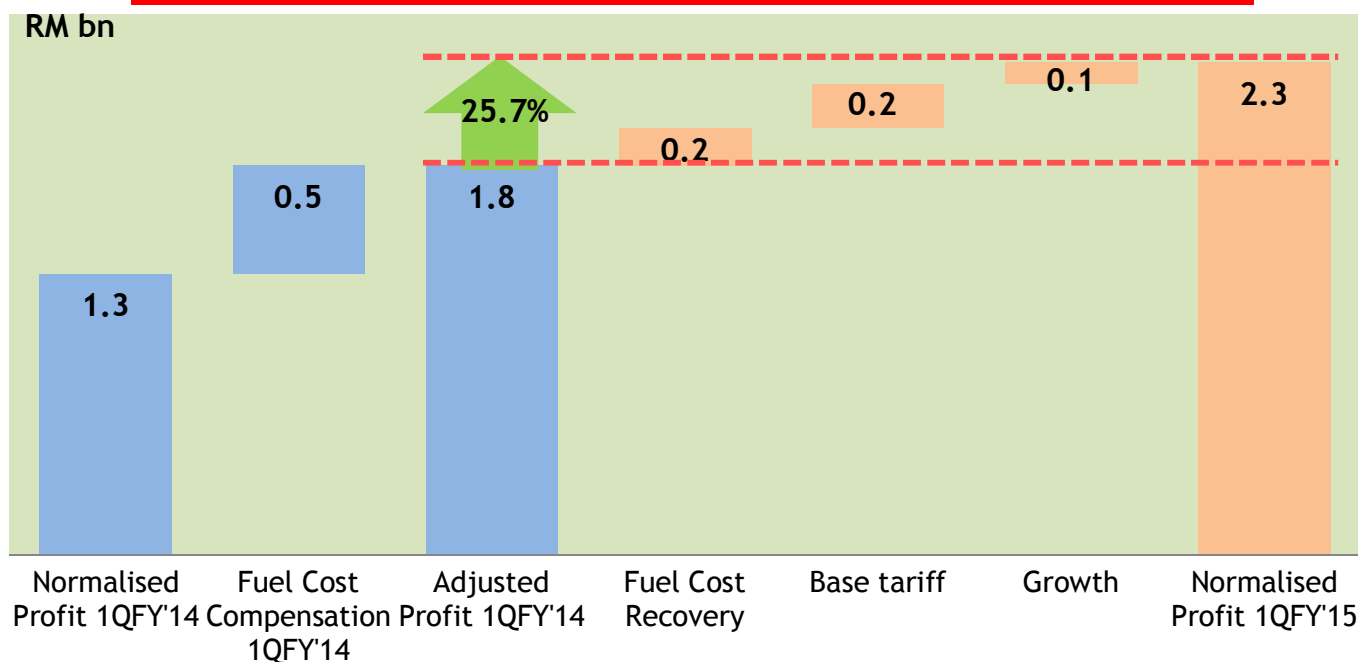
3-Month Ended 30th Nov 2014

- “ 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



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%	15.9%
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	1,750.3
Non-controlling Interest	(0.9)	(17.9)

Table 2:

COAL PRICE & CONSUMPTION	1QFY'14	1QFY'15	Var (%)
Average Coal Price Consumed (USD/MT)			
FOB	67.5	60.4	-10.5%
Freight	9.1	9.3	2.2%
Others	0.6	0.5	-16.7%
CIF	77.2	70.2	-9.1%
Average Coal Price Consumed (RM/MT) (CIF)	249.0	230.2	-7.6%
Coal Consumption (mn MT)	4.7	5.6	19.1%

QUARTERLY ANALYSIS: GENERATION MIX (PENINSULA)

Fuel Mix Shifting Back to Coal

Table 1:

UNIT GENERATED

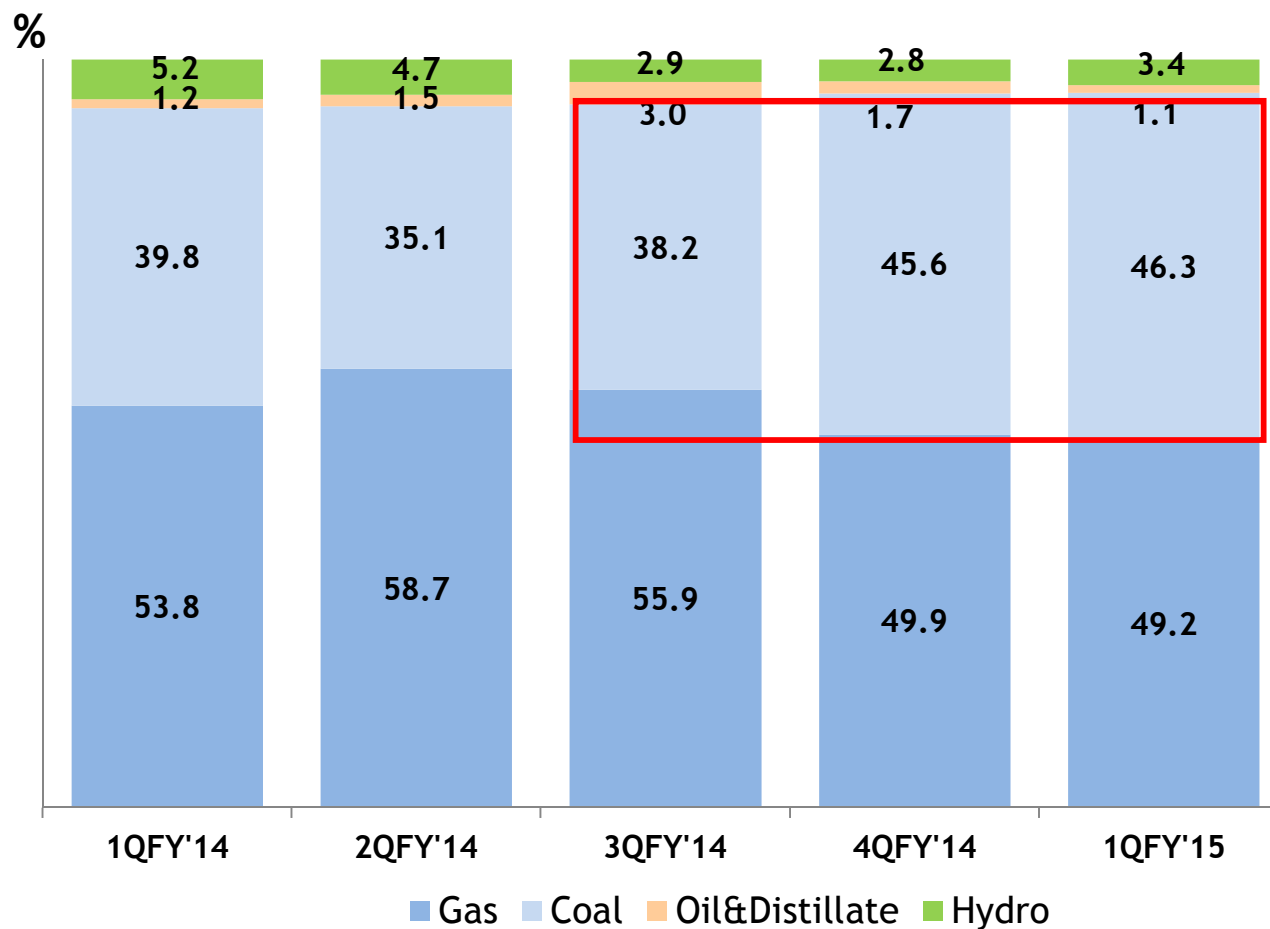


Table 2:

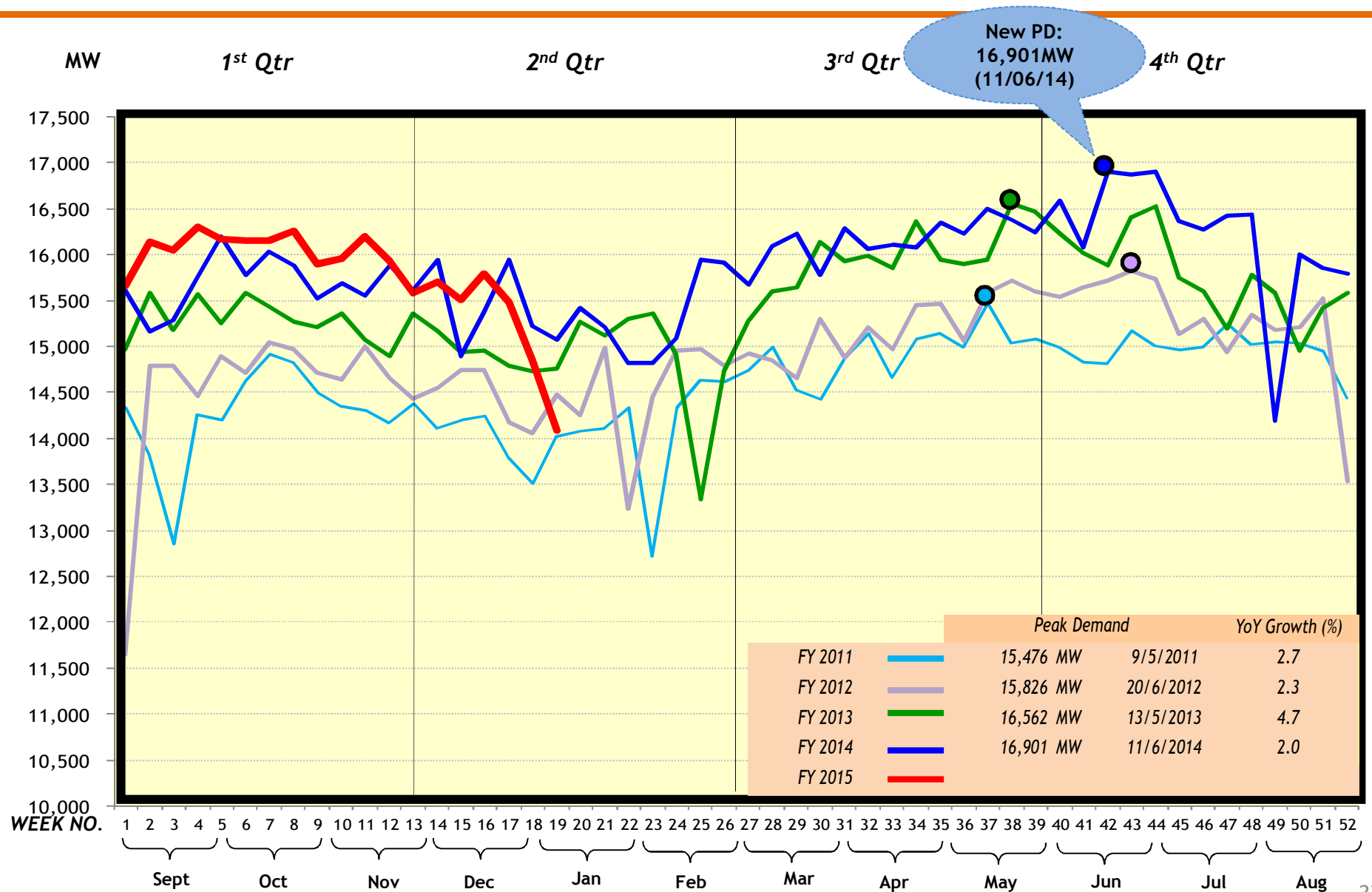
Average Gas Volume (mmscfd)	
1QFY'14	1,321
2QFY'14	1,383
3QFY'14	1,405
4QFY'14	1,217
1QFY'15	1,218

SYSTEM WEEKLY MAXIMUM DEMAND (PENINSULA)

For FY2011 to FY2015

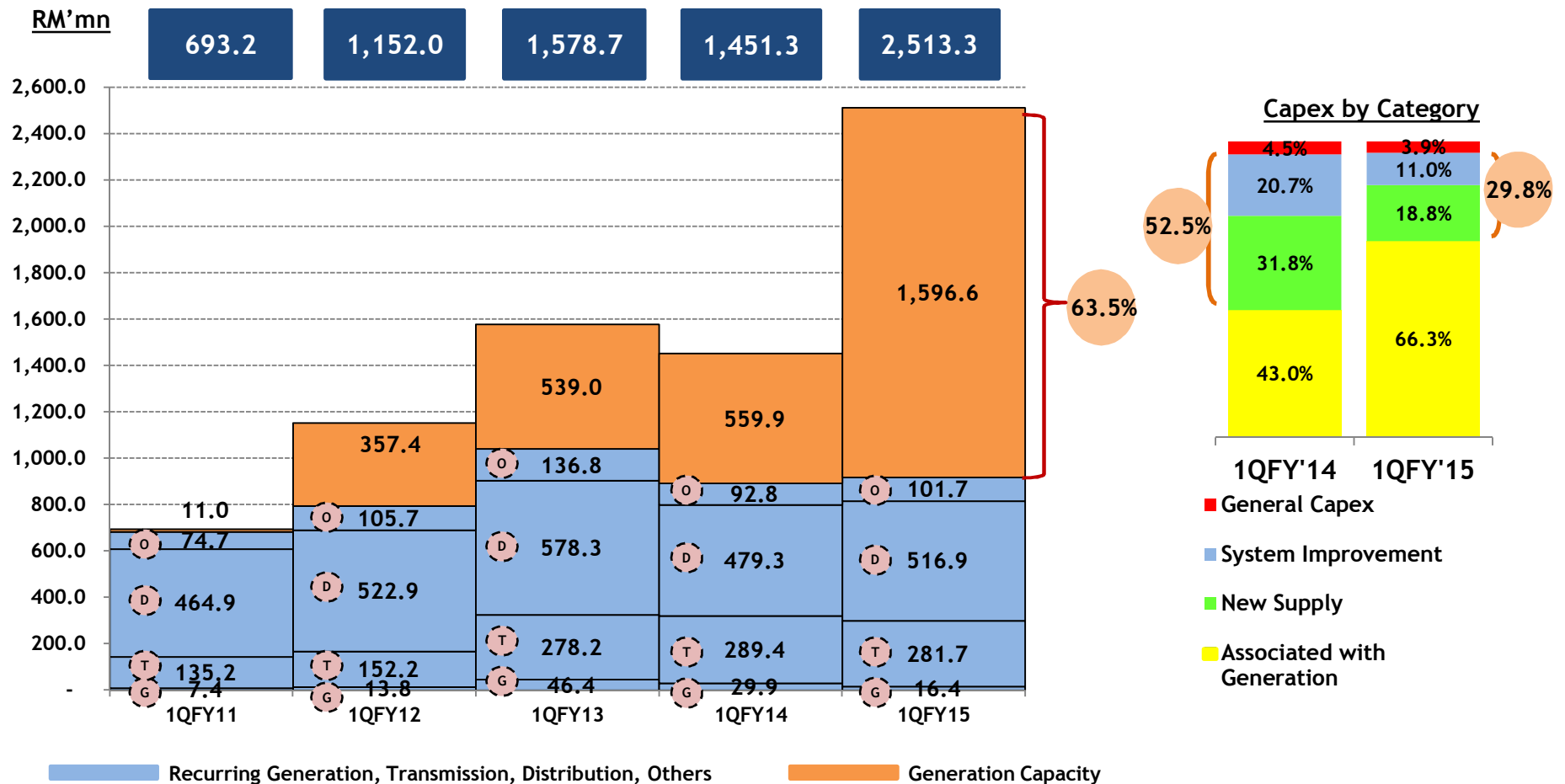


Nov 2014



CAPITAL EXPENDITURE

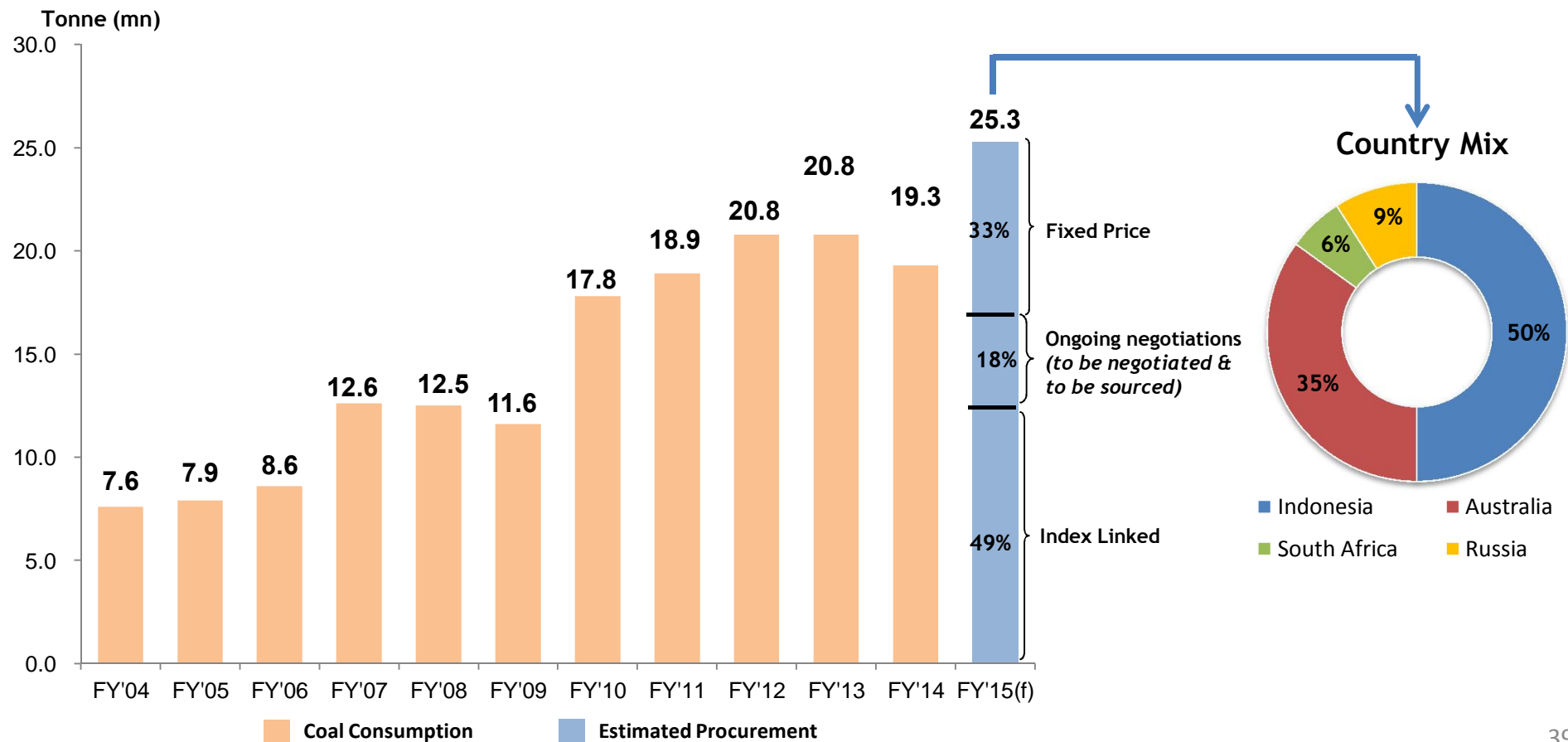
Major Projects Represent 63.5% of Total CAPEX



COAL REQUIREMENT

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

	FY'05	FY'06	FY'07	FY'08	FY'09	FY'10	FY'11	FY'12	FY'13	FY'14	1QFY'15
Average Coal Price (CIF) (USD/metric tonne)	49.8	52.8	45.3	76.4	90.2	88.2	106.9	103.6	83.6	75.4	70.2



DEBT EXPOSURE & FOREX



30th Nov'14

31st Aug'14

■ RM ■ YEN ■ USD ■ Others

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



All information contained herein is meant strictly for the use of this presentation only and should not be used or relied on by any party for any other purpose and without the prior written approval of TNB. The information contained herein is the property of TNB and it is privileged and confidential in nature. TNB has the sole copyright to such information and you are prohibited from disseminating, distributing, copying, re-producing, using and/or disclosing this information.



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:

<i>Anida</i>	+603 2296 6077	anidai@tnb.com.my
<i>Sherleen</i>	+603 2296 6183	sherleenaa@tnb.com.my
<i>Effa</i>	+603 2296 6647	effarizamn@tnb.com.my
<i>Nadia</i>	+603 2296 6787	nuranadiaah@tnb.com.my



THANK YOU