

TNB HANDBOOK



NON DEAL ROADSHOW, SINGAPORE

17 - 19th FEBRUARY 2014

1QFY'14



PART ONE

AGENDA

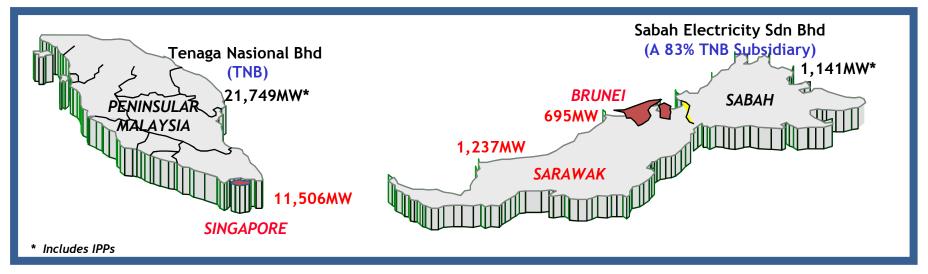


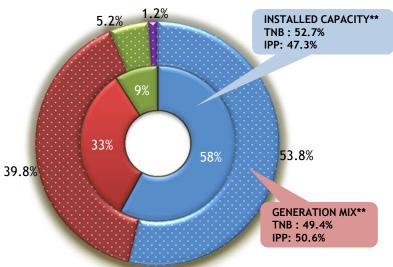
- 1. INTRODUCTION TO TENAGA
- 2. INTRODUCTION TO MESI
- 3. TARIFF
- 4. BUSINESS STRATEGY & DIRECTION
- 5. DIVIDEND POLICY
- 6. OUTLOOK KEY TAKEAWAYS

INTRODUCTION TO TENAGA



Three Major Utilities in Malaysia





	FY'10	FY'11	FY'12	FY'13	1QFY'14
TNB -Peninsula Installed Capacity (MW)	11,530	11,530	11,462	11,462	11,462
Total units sold (Gwh)	95,197	97,888	102,132	105,479	26,717
Total customers (million)	7.87	8.11	8.36	8.35	8.42
Total employees	30,535	31,935	33,568	34,972	35,377
Total assets (RM billion)	75.9	79.1	88.5	99.0	100.9

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

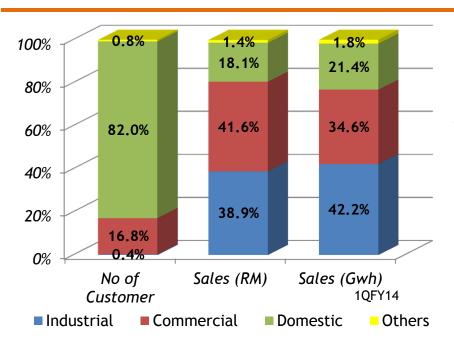
Installed Capacity vs. Generation mix

1QFY14**

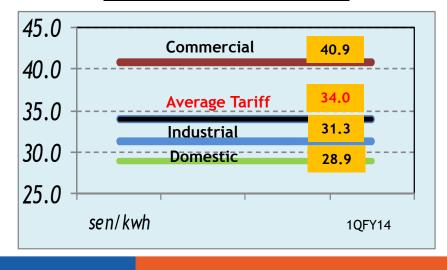
INTRODUCTION TO TENAGA



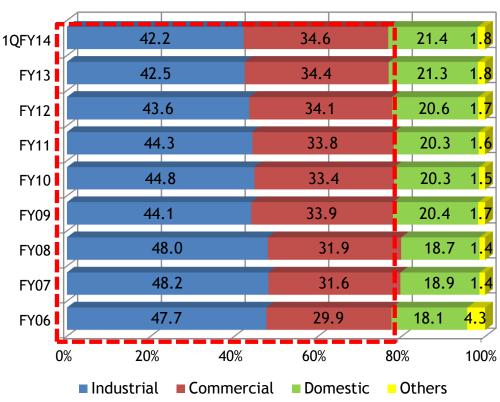
No of Customer vs. Sales Value vs. Unit Sales



Average Tariff by Sector



Sectoral Sales Analysis (Gwh)

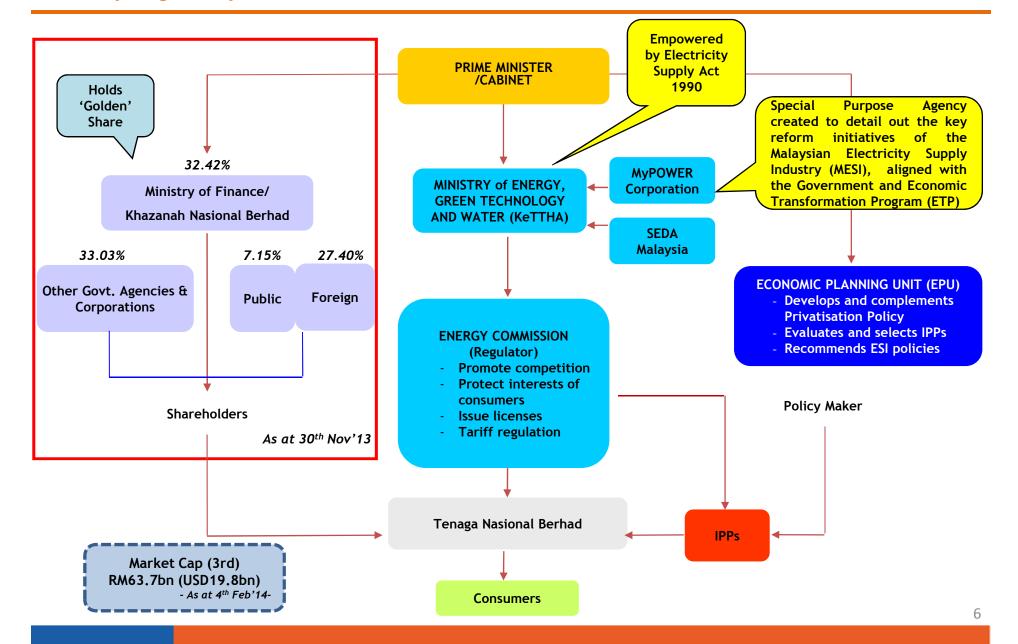


- Shift from Industrial-based to Service-based economy
- Increasing market share from Commercial sector
- Commercial sector contributes the highest electricity sales margin

INTRODUCTION TO TENAGA







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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



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

TRANSFORMATION PLAN: TIMELINE



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



• Competitive Bidding

2010

- Account Unbundling
- Technical & Financial Benchmarking
- Fuel Supply Security
- Generation Development Plan
- Tariff Analysis
- Transparency in dispatching

 Development of Regulation Enhancement Plan

2011

- Industry Award Program
- Energy Database
- Performance Regulation
- Activity-based licensing (G,T,D,Retail)
- Fuel Pricing
- Implementation of new ACP mechanism
- Development of industry codes of Practice & Guidelines
- Enforcement of Grid & Distribution Codes

 Effective service standard & regulatory monitoring

2012

- Issuance of RIGs
- Ring-fenced functions of GSO & SB
- Commence outsourcing of selected activities
- Operationalisation of a more managed market
- Implementation of new safety regime
- Collaborative framework with other parties in regulatory activities

Open access of gas • network

2013

- Implementation of IBR (Gas)
- Implementation of competitive bidding & expansion plan by SB

2014

Implementation of IBR (Electricity)

2015

 Enactment of Competition Regulations

2020

- Establishment of Electricity market Authority
- Formulation of market rules
- Operationalisation of liberalised market

*Source: EC

ENERGY PRICING - COMPETITIVE BIDDING



1	TRACK 1	1071 MW CCGT PRAI
,	COD	January 2016
	LEVELISED TARIFF	34.7 sen/kWh
	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 Notice to Proceed (NTP) issued on 2 May 2013

2	TRACK 3A	1 X 1000 MW COAL-FIRED	COMP
	COD	October 2017	COMPLETEL
	STATUS	TNB has signed agreements on 16/8/13 for: i. PPA with TNB Manjung Five Sdn Bhd design, construct, own, operate & maintreaction (25 years term) ii. SFA "Shared Facilities Agreement" between 5 & TNB Janamanjung iii. CSTA "Coal Supply and Transportate between TNB Fuel Services & Manjung 5. EPC contract signed on 21/8/13 between: TNB Western Energy Bhd; a wholly owned subs 5 with Consortium of Sumitomo Corp, Daelim Sumi-Power M'sia Sdn Bhd and Daelim M'sia Sdn TNB Western Energy Sukuk has been issued on 2014 for nominal value of RM3.655 billion.	"Manjung 5" to ain the coal plant een TNB, Manjung tion Agreement" sidiary of Manjung Industrial Co Ltd, n Bhd.
	TECHNOLOGY	Ultra Super Critical Boiler Technology OEM to EPC is Hitachi	

TRACK 2	RENEWAL OF EXPIRING PLANTS: 2253 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							

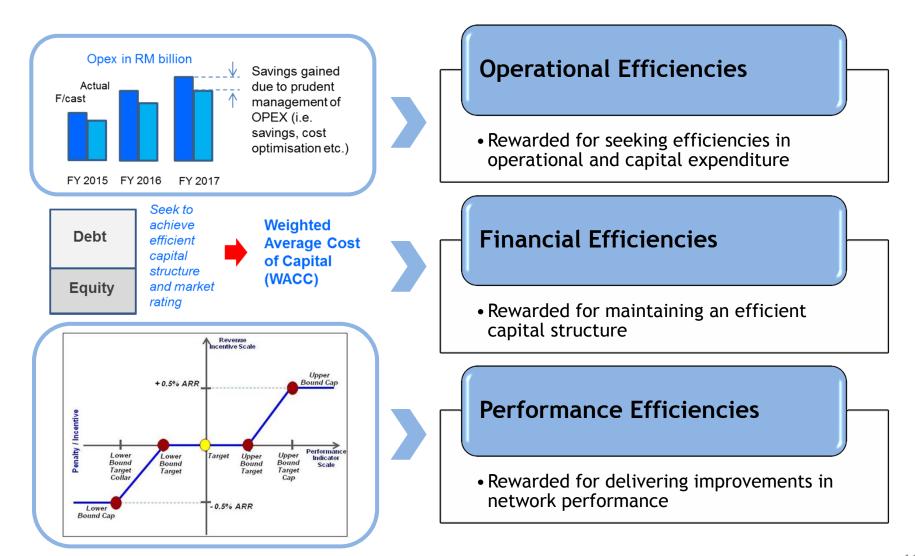
TRACK 3B	2 X 1000 MW COAL-FIRED
COD	October 2018 & April 2019
CLOSING RFP	October 2018 & April 2019 30 October 2013 ON-GOING
STATUS	 5 shortlisted: 1MDB and Mitsui & Co Ltd (Site: Jimah) Formis Resources, SIPP Energy, Posco Energy and Posco Engineering & Construction Co Ltd. (Site: Tg Tohor, Johor) TNB, Global Power Ventures and China National Machinery Import & Export Corporation. (Site: Tg Hantu, Segari) Malakoff and Sumitomo (Site: Carey Island, Selangor) YTL Power and Ranhill Power (Site: Tg Tohor, Johor)



FIGURE 13 AND GOVERNANCE



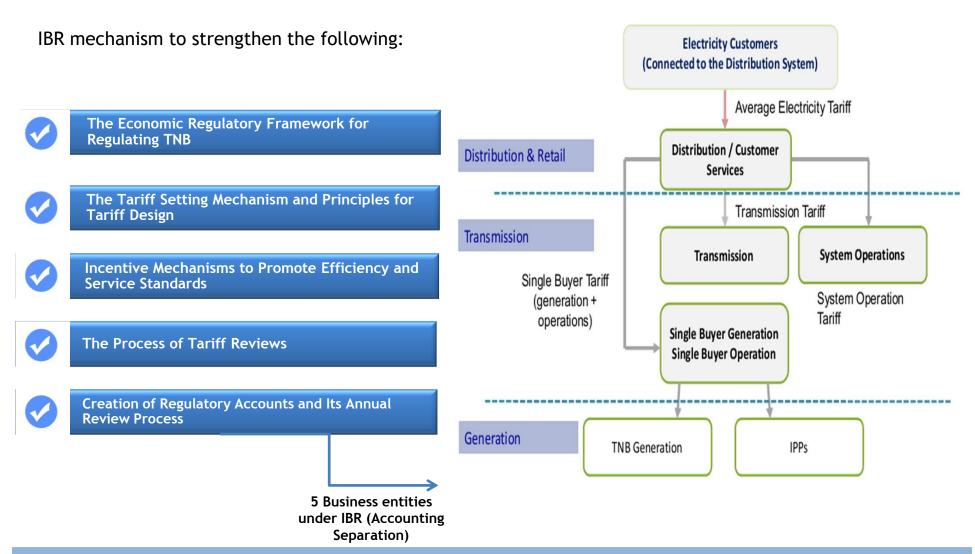
Economic Regulation Methodology Proposed by EC to Promote Efficiency And Transparency through Incentive And Penalty Mechanism



■ + ■ EFFICIENCY AND GOVERNANCE



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



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

*Source: EC 12

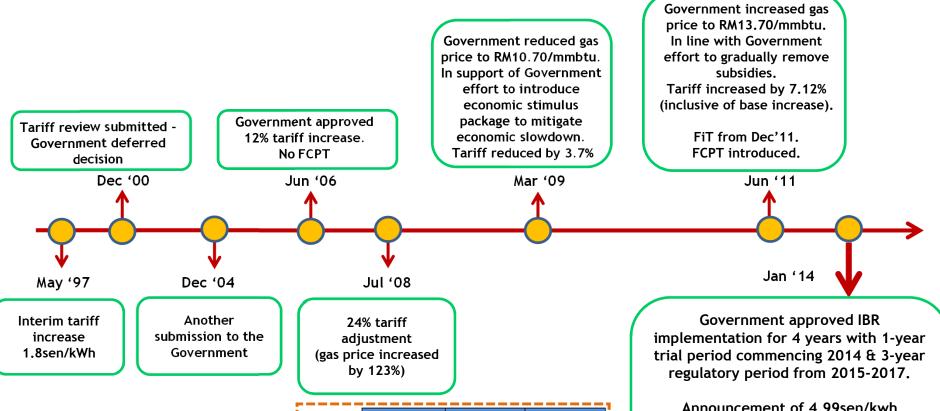
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History: Timeline





	Mar '09	Jun '11	Jan '14	
	(3.7%)	7.1%	14.9%	
	SEC	TOR TARIFF (Avera	ge)	
	Average reduction	Average increase	Average increase	
Commercial	of 2.7%	of 8.3%	of 16.85%	
	(-2.6 to -2.7%)	(6.2 to 8.3%)	(1.2 to 18%)	
	Average reduction	Average increase	Average increase	
Industrial	of 5.0%	of 8.3%	of 16.85%	
	(-4.8 to -5.2%)	(6.2 to 8.3%)	(0.9 to 17%)	
Domestic Average reduction of 2.54%		Average increase of 10%	Average increase of 10.6%	
	(-3.0 to -4.7%)			

Announcement of 4.99sen/kwh tariff increase based on:

- 1. Fuel tariff 4.09sen/kwh
 - Domestic gas: 0.51sen/kwh
 - LNG: 3.41sen/kwh
 - Coal: 0.17 sen/kwh
- 2. Base tariff 0.90sen/kwh



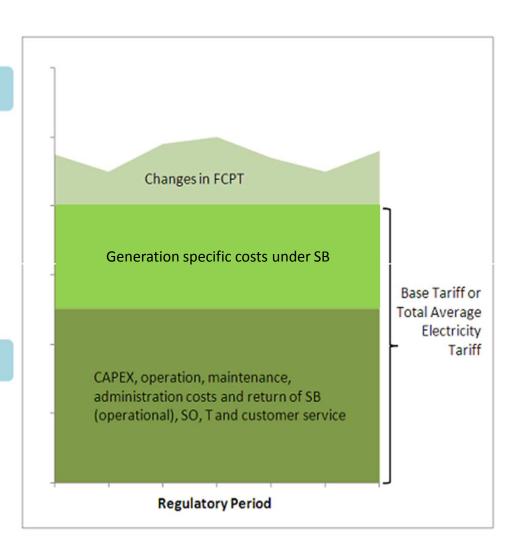
Electricity Tariff Review = Base Tariff + Imbalance Cost Pass-Through (ICPT)

Base Tariff is set to reflect:

- the construction cost of transmission and distribution system;
- Base fuel and purchasing cost;
- Operation, maintenance and administration costs;
- with certain assumptions related to fuel prices, inflation rates (or CPI), exchange rates.

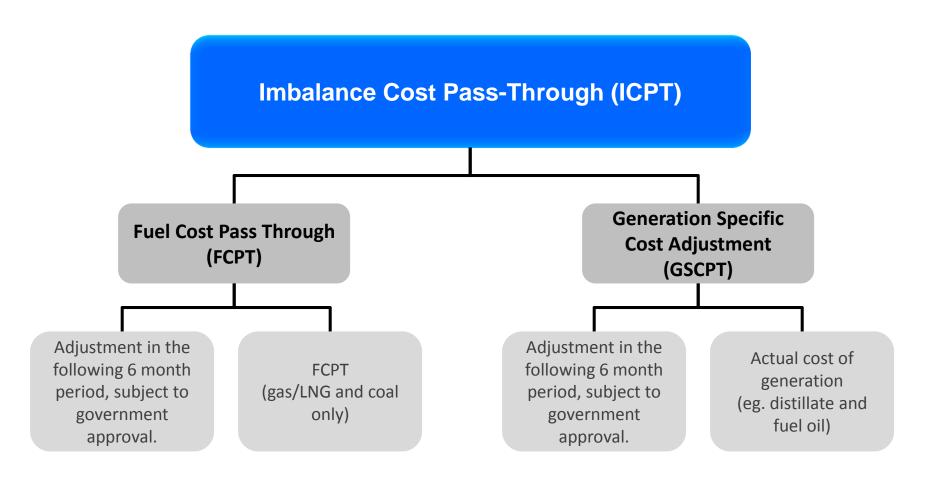
ICPT:

 adjustment to reflect the change in uncontrollable costs from Base Tariff i.e change in fuel and purchasing cost





Imbalance Cost Pass-Through (ICPT) Comprises Two Components





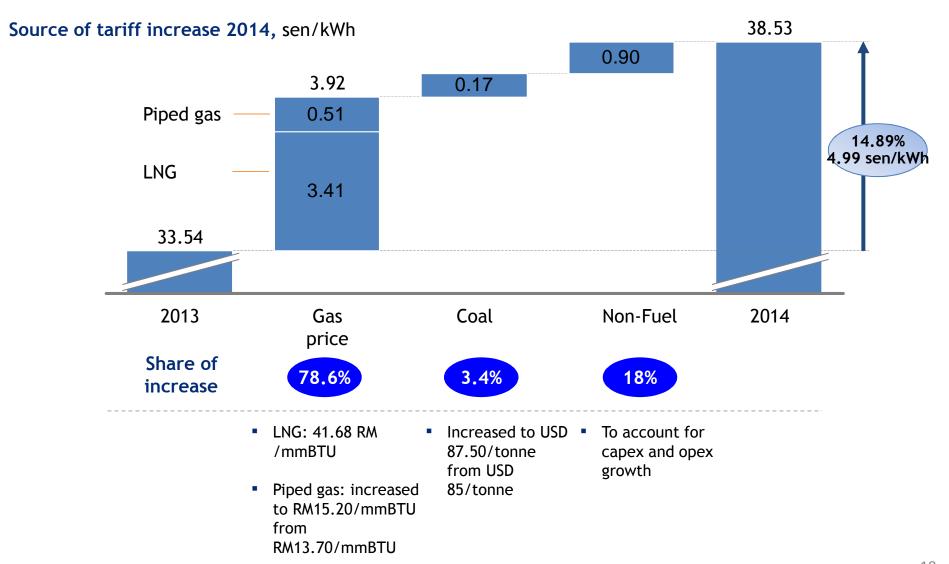
New Tariff of 38.53 sen/kwh is Effective from 1 January 2014

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	4.99 sen/kwh 0.51
 Coal (market price) (from USD85/tonne to USD87.5/tonne CIF@CV 5500kcal/kg) 	0.17	0.51	0.17 82% on fue
 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	0.9 18% on ba
NEW AVERAGE TARIFF	38.53	14.89	



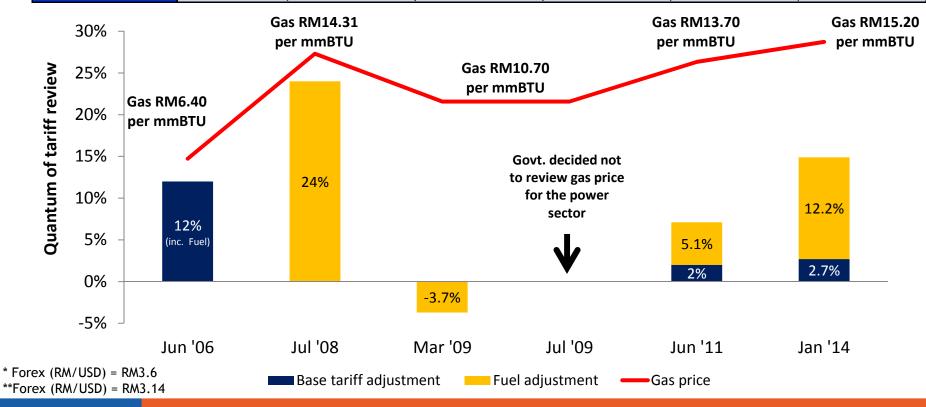
79% of the tariff increase in January 2014 is due to removal of gas subsidies and introduction of LNG at market price





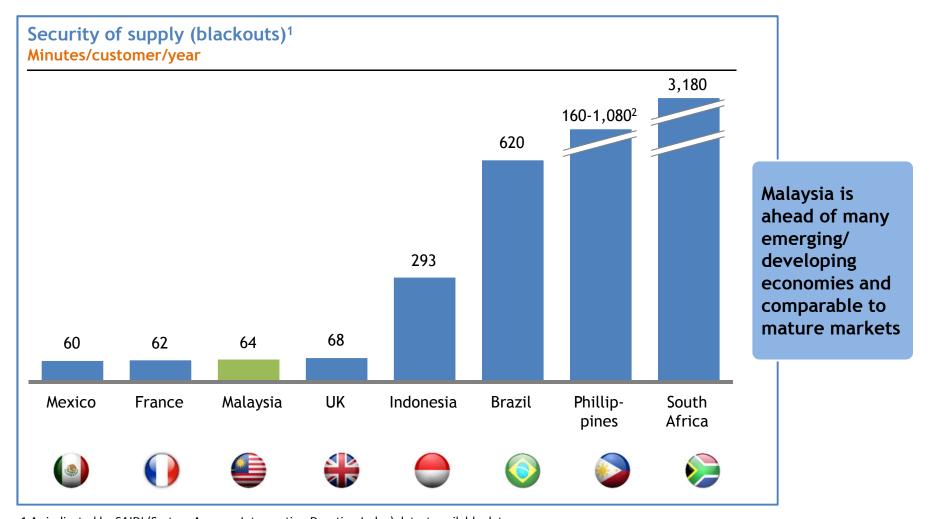
Frequency of Review & Underlying Assumptions

Approval date	May 2006	Jun 2008	Feb 2009	Jun 2009	May 2011	Dec 2013
Effective date	Jun 2006	Jul 2008	Mar 2009	Jul 2009	Jun 2011	Jan 2014
Quantum	12%	2% 23 - 24% (3.79		Neutral	7.1%	14.9%
Gas (RM/mmbtu)	Vmmbtu) 6.40 14.31		10.70 10.70		13.70	15.20
Coal (USD/MT)	75.00 *85.00		* 85.00	*85.00	* 85.00	** 87.50
Average Tariff (sen/kWh)	26.2	32.5	31.3	31.3	33.5	38.5





Investment is Critical Towards Ensuring Security of Supply



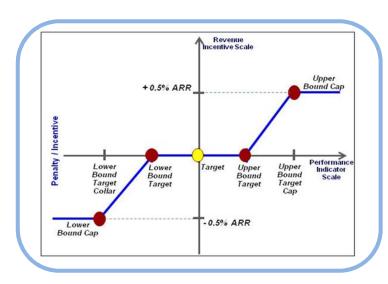
¹ As indicated by SAIDI (System Average Interruption Duration Index); latest available data

Source: IEA, World Energy Outlook, World Bank

² Philippines SAIDI is 160 minutes for Meralco in major areas, while rural electrification by cooperatives average at 1,080 minutes



Incentive and Penalty Mechanism Based on Performance Targets Determined by EC



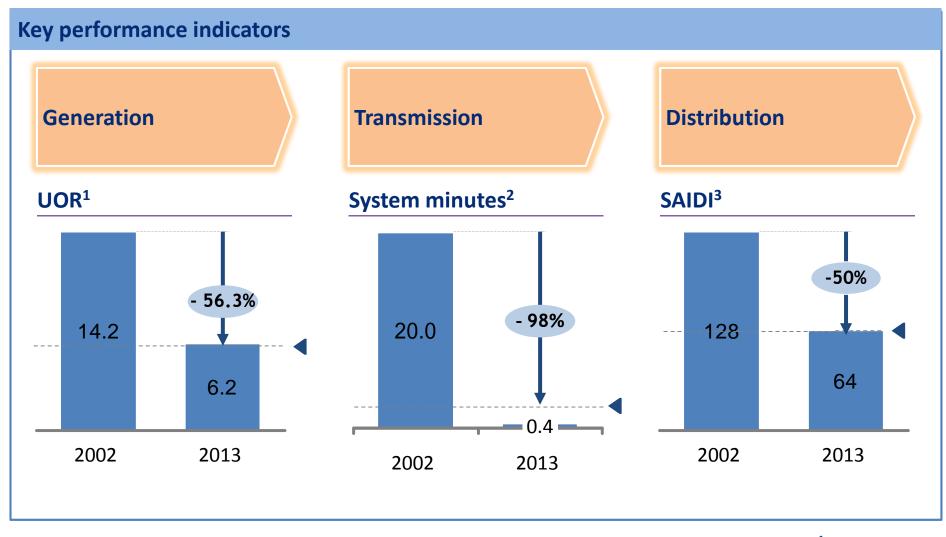
- Incentive/penalty is capped at +/-0.3% to 0.5% of annual revenue requirement
- No incentive/penalty if performance between upper and lower bound targets
- Any incentive/penalty to be given in the next regulatory period

PERFORMANCE KPIs

				A Down all I I Down all			
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 and5)	%	25	86.32	95.50		
Transmiss	ion						
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	/er						
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:	FC		•				



TNB has been Improving its Performances Over the Last 10 years and are Now in Line with World Standards



¹ Unplanned Outage Rate

² Transmission System Minutes

³ System Average Interruption Duration Index – minutes/customer/year

HEADLINE KPIs



Most Performance Targets for 1st Phase of 20- year Strategic Plan that was Set in 2005 were Met Ahead of Target Date

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

Not track as TNB Headline KPI

Note:

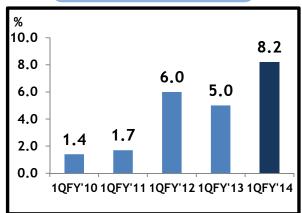
HEADLINE KPIs

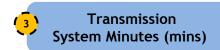


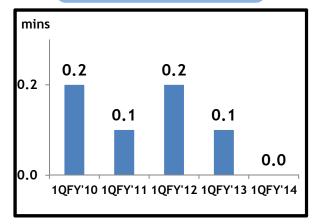
Continuous Monitoring of Performance Targets

Technical Indicators

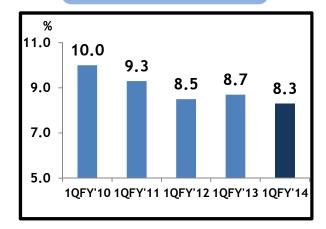
Unplanned Outage Rate (UOR)(%)



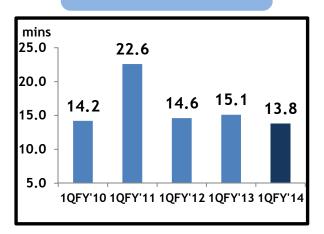




T & D Losses (%)

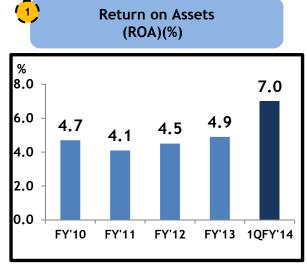


Distribution SAIDI (mins)

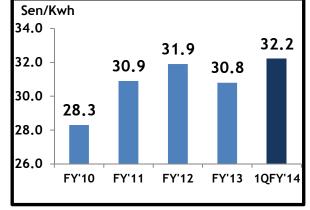


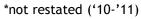


Financial Indicators

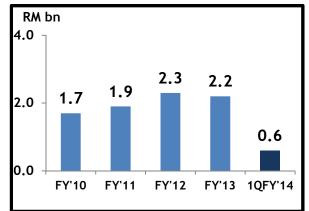








Revenue from Non-Regulated Business (RM bn)



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20-YEAR STRATEGIC PLAN



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

LEADERSHIP 2025

- Excel in:
 - All business areas

GLOBAL

- Reputation as a strong business partner
- Ability to continue to create shareholder value
- Tenaga acknowledged as amongst the most admired companies globally

GEOGRAPHICAL EXPANSION (SERVICES) 2015

- Expand works and services related to the energy sector
- Creation of new revenue stream leveraging on Tenaga's knowledge and competencies in the energy business

SERVICE EXCELLENCE 2010

- Improve Core Operations under T7 Strategy
- Place Tenaga as the best performing company in Malaysia by 2007 and as the Regional best by 2010

Improve financial sharehold position and human resource readiness of • Tenaga acknowledge of the create sharehold sh

Venture into power/energy related investments in the international arena

OVERSEAS

INVESTMENT 2020

Tenaga

DOMESTIC DOMINANCE REGIONAL CHAMPION "DDRC"



TNB Transformation Paves the Way for TNB to Become a Strong Leader at Home while Growing as a Regional Champion

Strong domestic leader

Develop our country



- Ensure universal access to power
- Develop power supply to enable national and economic development

Delight our customers



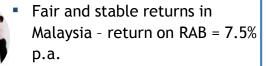
- Deliver secure and reliable supply
- Excellent customer service that exceeds customer expectations

Inspire our people



- Large, growing and admired employer of choice
- International mobility opportunities and word-class capability building

Increase shareholder value



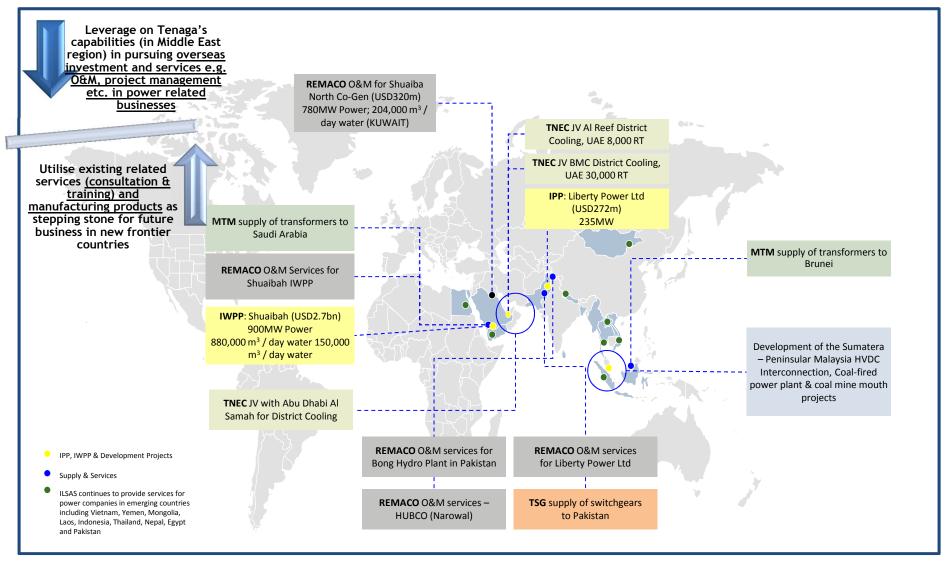
 Robust growth of business - net profit growth of 7-11% p.a.



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



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;

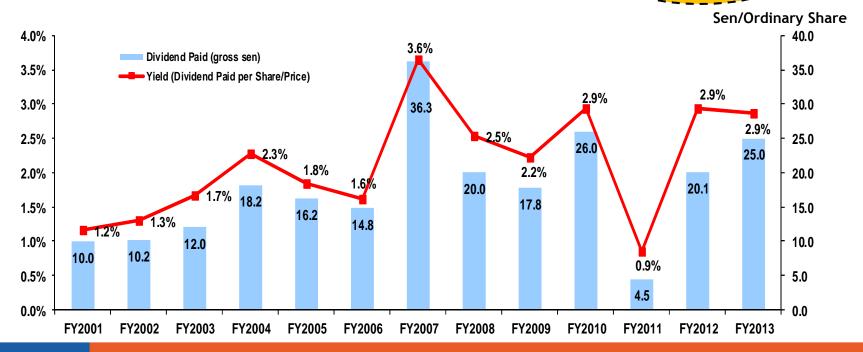
Cashflow from Operations less Normalised Capex and Interest Servicing

Interim Dividend Paid: 10.0 sen per ordinary share

Single-Tier Dividend of 15.0 sen per ordinary share

Total FY'13: 25.0 sen per ordinary share





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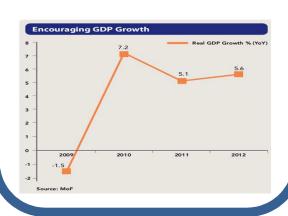
OUTLOOK FY2014



Group's Performance for the FY Ending 31st August 2014 is Expected to Remain Positive

1 DEMAND

"The electricity demand growth is expected to remain steady, in line with the expectancy of improving global outlook. This is supported by the projected domestic economic growth of 5% to 5.5% as announced in the 2014 Budget".



GAS VOLUME Improvement in gas supply with Melaka RGT commissioned on 23/5/13. Daily average gas volume (mmscfd) 1QFY13 1.043 2QFY13 1,105 3QFY13 1,106 4QFY13 1,230 1QFY14 1,321 **GAS SUPPLY** FY'13 1,121mmscfd

3 COAL PRICE

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

	Average Coal Price (CIF) (USD/MT)
FY07	45.3
FY08	76.4
FY09	90.2
FY10	88.2
FY11	106.9
FY12	103.6
FY13	83.6
1QFY14	77.2



PART TWO



1QFY2014 RESULTS HIGHLIGHTS

RESULTS SNAPSHOTS



3-Month Ended 30th Nov 2013

- Group Revenue grew by 5.0%.
- Group Operating Profit declined by 13.4% to RM1.52 billion.
- EBITDA margin reduced by 3 percentage points to 28.0%.

MONTHLY & YEARLY ANALYSIS



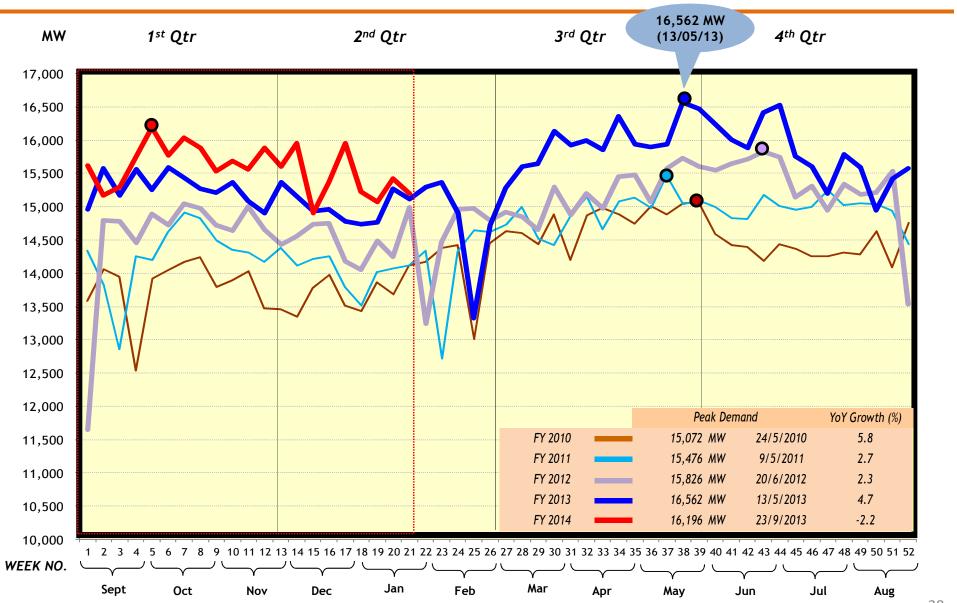
RM mn	1QFY'13	1QFY'14	Sept'13	Oct'13	Nov'13
Total Units Sold (Gwh)	26,070.4	26,717.4	8,727.2	8,918.2	9,072.0
Revenue	9,130.8	9,585.4	3,074.2	3,165.4	3,345.8
Operating Expenses (before depreciation)	6,394.5	6,966.1	2,008.2	2,134.1	2,823.8
Operating Income	92.9	67.9	(5.2)	35.3	37.8
EBITDA	2,829.2	2,687.2	1,060.8	1,066.6	559.8
EBITDA Margin (%)	31.0%	28.0%	34.5%	33.7%	16.7%
Depreciation and Amortisation	1,071.4	1,164.3	393.0	367.6	403.7
ЕВІТ	1,757.8	1,522.9	667.8	699.0	156.1
EBIT Margin (%)	19.3%	15.9%	21.7%	22.1%	4.7%
Finance Cost	229.6	240.5	73.4	76.8	90.3
Profit Before Tax & Forex Translation	1,605.2	1,349.9	656.6	615.5	77.8
Net Profit Before Forex Translation	1,018.1	1,482.2	608.7	548.6	324.9
Translation Gain	397.4	252.7	24.8	219.6	8.3
Net Profit Attributable to Equity Holders	1,415.5	1,734.9	633.5	768.2	333.2
Non-controlling Interest	(0.1)	(16.4)	9.1	(2.3)	(23.2)

COAL PRICE & CONSUMPTION	1QFY'13	1QFY'14	Var (%)
Average Coal Price Consumed (USD/MT)			
FOB	75.5	67.5	-10.6%
Freight	8.4	9.1	8.3%
Others	0.5	0.6	20.0%
CIF	84.4	77.2	-8.5%
Average Coal Price Consumed (RM/MT) (CIF)	258.7	249.0	-3.7%
Coal Consumption (mn MT)	5.1	4.7	-7.8%

SYSTEM WEEKLY MAXIMUM DEMAND (PENINSULA)



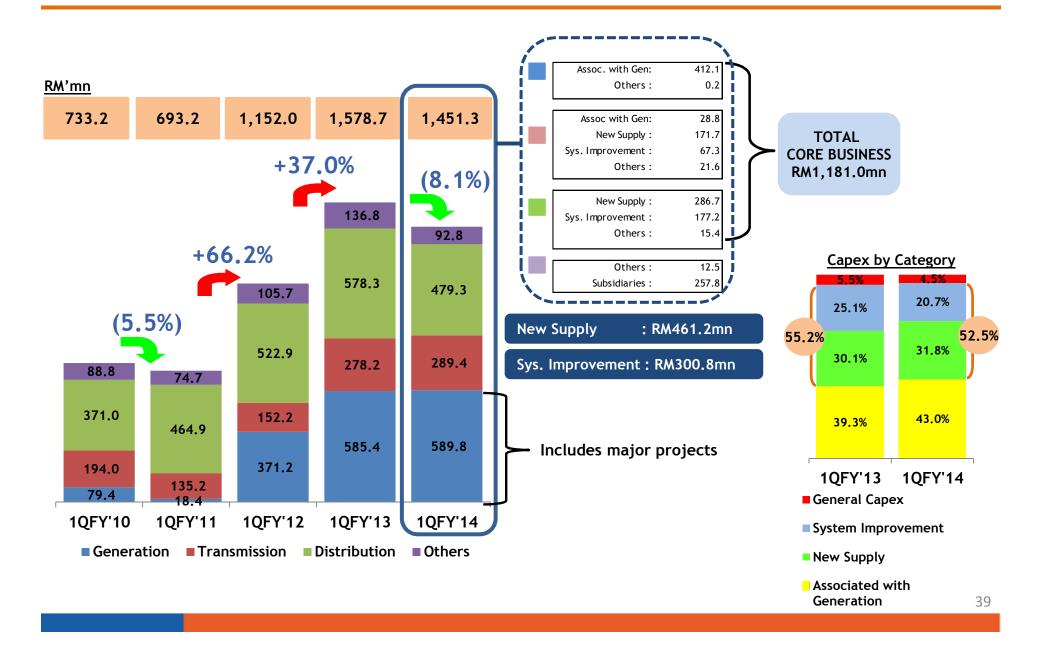
For FY2010 to FY2014



CAPITAL EXPENDITURE



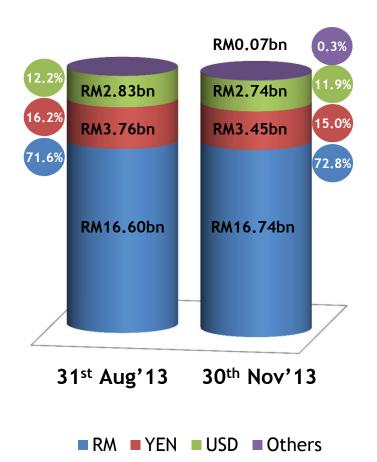
Major Projects Represent 45.4% of Total CAPEX



DEBT EXPOSURE & FOREX



Increase in Ringgit Loan Mainly due to Strengthening of RM Against Yen & USD



Statistics	31st Aug'13	30th Nov'13
Total Debt (RM bn)	23.2	23.0
Net Debt (RM bn)	13.7	12.6
Gearing (%)	39.6	38.3
Net Gearing (%)	23.3	21.0
Fixed : Floating (%)	98.8 : 1.2	98.8 : 1.2
Final Exposure (%)	100.0:0.0	100.0 : 0.0
Weighted Average Cost of Debt (%)	4.68	4.71
Final Exposure (%)	4.77	4.79

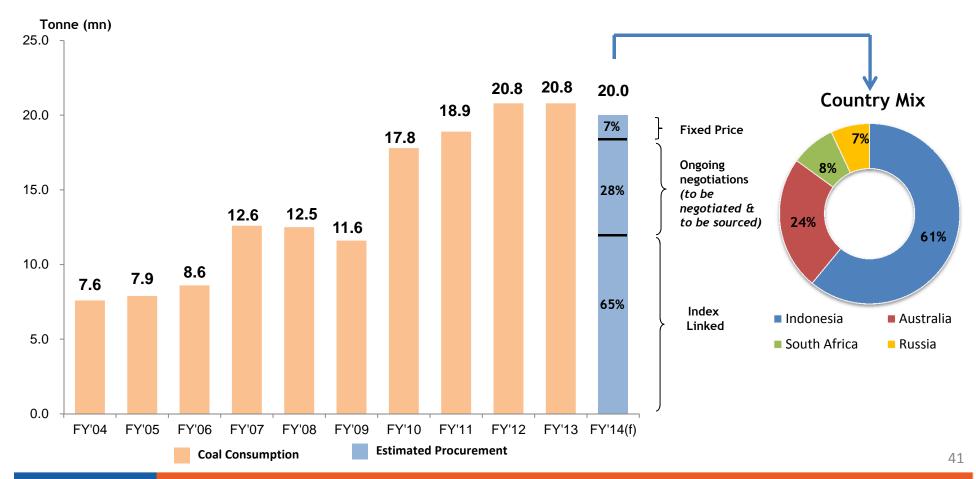
	31st Aug'13	30th Nov'13		
USD/RM	3.29	3.22		
100YEN/RM	3.35	3.15		
USD/YEN	98.21	102.22		

COAL REQUIREMENT



Average Coal Price for 1QFY'14 was at USD77.2/MT

	FY'04	FY'05	FY'06	FY'07	FY'08	FY'09	FY'10	FY'11	FY'12	FY'13	1QFY'14
Average Coal Price (CIF) (USD/metric tonne)	34.0	49.8	52.8	45.3	76.4	90.2	88.2	106.9	103.6	83.6	77.2



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THANK YOU