AGENDA

1. INTRODUCTION TO TENAGA
2. INTRODUCTION TO MESI
3. TARIFF
4. BUSINESS STRATEGY & DIRECTION
5. DIVIDEND POLICY
6. FINANCIAL HIGHLIGHTS
INTRODUCTION TO TENAGA
Three Major Utilities in Malaysia

**Peninsula Installed Capacity vs. Generation mix**

![Diagram showing installed capacity and generation mix for Tenaga Nasional Bhd (TNB), Sabah Electricity Sdn Bhd, and other utilities in Malaysia.](image)

<table>
<thead>
<tr>
<th></th>
<th>FY'12</th>
<th>FY'13</th>
<th>FY'14</th>
<th>FY'15</th>
<th>1QFY'16</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TNB - Peninsula Installed Capacity (MW)</strong></td>
<td>11,462</td>
<td>11,462</td>
<td>10,814</td>
<td>11,708</td>
<td>11,384</td>
</tr>
<tr>
<td><strong>Total units sold (Gwh)</strong></td>
<td>102,132</td>
<td>105,479</td>
<td>108,102</td>
<td>110,837</td>
<td>28,571</td>
</tr>
<tr>
<td><strong>Total customers (mn)</strong></td>
<td>8.36</td>
<td>8.35</td>
<td>8.64</td>
<td>8.94</td>
<td>9.02</td>
</tr>
<tr>
<td><strong>Total employees (‘000)</strong></td>
<td>33.6</td>
<td>35.0</td>
<td>36.1</td>
<td>36.0</td>
<td>35.9</td>
</tr>
<tr>
<td><strong>Total assets (RM bn)</strong></td>
<td>88.5</td>
<td>99.0</td>
<td>110.7</td>
<td>117.1</td>
<td>117.5</td>
</tr>
</tbody>
</table>

*Based on dependable capacity*
INTRODUCTION TO TENAGA

No of Customer vs. Sales Value vs. Unit Sales

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
Industry Regulatory Framework

PRIME MINISTER/CABINET
- Empowered by Electricity Supply Act 1990

MINISTRY of ENERGY, GREEN TECHNOLOGY AND WATER (KeTTHA)
- Promote competition
- Protect interests of consumers
- Issue licenses
- Tariff regulation

ENERGY COMMISSION (Regulator)
- Develops and complements Privatisation Policy
- Evaluates and selects IPPs
- Recommends ESI policies

MINISTRY of ENERGY, GREEN TECHNOLOGY AND WATER (KeTTHA)

SEDA Malaysia

ECONOMIC PLANNING UNIT (EPU)
- Policy Maker

Shareholders
- As at 30th Nov’15

Market Cap (2nd)
RM78.8bn (USD19.9bn)
- As at 30th March 16 -

Ministry of Finance/Khazanah Nasional Berhad
- Holds ‘Golden’ Share

Other Govt. Agencies & Corporations:
- EPF 16.69%
- PNB 13.30%
- Others 11.16%
- Public 5.82%
- Foreign 23.37%

Tenaga Nasional Berhad

IPPs

Consumers
AGENDA

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TRANSFORMATION INITIATIVES BY GOVERNMENT
Aimed at Delivering a Reliable, Transparent, Efficient and Sustainable ESI

New Energy Policy

1. Energy Pricing
   - Jun - Dec 2008
   - Khazanah’s MESI Study

2. Energy Supply
   - Jan - Dec 2009
   - KeTTHA-led syndication

3. Energy Efficiency
   - 4 Dec 2009
   - Cabinet endorsement to transform ESI

4. Governance

5. Change Management

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*
## ENERGY PRICING - COMPETITIVE BIDDING

**Track 1, 2, 3A & 3B**

### Track 1

<table>
<thead>
<tr>
<th>TRACK 1</th>
<th>1,071 MW CCGT PRAI (PRAI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD</td>
<td>February 2016</td>
</tr>
<tr>
<td>LEVELISED TARIFF</td>
<td>34.7 sen/kWh</td>
</tr>
<tr>
<td>STATUS</td>
<td>TNB Northern Energy Sukuk was issued on 29 May 2013 for nominal value of RM1.625 billion.</td>
</tr>
<tr>
<td>PHYSICAL PROGRESS</td>
<td>Completed in February 2016</td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td>Siemens Super Critical H-Class technology gas turbine combined-cycle efficiency of greater than 60%</td>
</tr>
</tbody>
</table>

### Track 2

<table>
<thead>
<tr>
<th>TRACK 2</th>
<th>RENEWAL OF EXPIRING PLANTS : 2,253 MW CCGT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLANTS</td>
<td>GENTING, SEGARI, PASIR GUDANG</td>
</tr>
<tr>
<td>EXTENSION</td>
<td>10 years (to 2026), 10 years (to 2027), 5 years (to 2022)</td>
</tr>
<tr>
<td>LEVELISED TARIFF</td>
<td>35.3 sen/kWh, 36.3 sen/kWh, 37.4 sen/kWh</td>
</tr>
<tr>
<td>STATUS</td>
<td>Reduction rates of CP effective 1 March 2013 until expiry of current PPA. Savings balance: approximately RM1.0 bn</td>
</tr>
</tbody>
</table>

### Track 3A

<table>
<thead>
<tr>
<th>TRACK 3A</th>
<th>1 X 1,000 MW COAL-FIRED (MANJUNG 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD</td>
<td>October 2017</td>
</tr>
<tr>
<td>LEVELISED TARIFF</td>
<td>22.78 sen/kWh</td>
</tr>
<tr>
<td>STATUS</td>
<td>TNB Western Energy Sukuk was issued on 30 January 2014 for nominal value of RM3.655 billion.</td>
</tr>
<tr>
<td>PHYSICAL PROGRESS</td>
<td>Approximately 80%</td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td>Ultra Super Critical Boiler Technology OEM to EPC is Hitachi</td>
</tr>
</tbody>
</table>

### Track 3B

<table>
<thead>
<tr>
<th>TRACK 3B</th>
<th>2 X 1,000 MW COAL-FIRED (JIMAH EAST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COD</td>
<td>15 June 2019 &amp; 15 December 2019</td>
</tr>
<tr>
<td>LEVELISED TARIFF</td>
<td>26.67 sen/kWh</td>
</tr>
<tr>
<td>STATUS</td>
<td>TNB entered into a Share Sale and Purchase Agreement with 1MDB on 3 July 2015 for the acquisition of a 70% shareholding in JEP for a total consideration of circa RM46.98 million. On 26 August 2015, TNB has signed a Supplemental Power Purchase Agreement with JEP. JEP Sukuk was issued on 4th December 2015 for nominal value of RM8.98 billion.</td>
</tr>
<tr>
<td>TECHNOLOGY</td>
<td>2 units of IHI Ultra Super Critical Technology Steam Generator &amp; 2 Units of Toshiba Turbo Generator</td>
</tr>
</tbody>
</table>
Incentive Based Regulation (IBR) - The Move Towards Better Regulation

IBR mechanism to strengthen the following:

1. The Economic Regulatory Framework for Regulating TNB
2. The Tariff Setting Mechanism and Principles for Tariff Design
3. Incentive Mechanisms to Promote Efficiency and Service Standards
4. The Process of Tariff Reviews
5. Creation of Regulatory Accounts and Its Annual Review Process

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

*Source: EC*
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
IBR KEY PERFORMANCE INDICATORS (KPIs)

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

Incentive/penalty caps annually: RM47mn

*Source: EC*
Regulatory WACC for TNB under IBR (FY2014 - 2017) is 7.5%

### WACC Parameters

<table>
<thead>
<tr>
<th>WACC Parameters</th>
<th>Actual market Parameters</th>
<th>TNB's Proposal</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Return ($R_m$)</td>
<td>8.8%[2]</td>
<td>12.3%</td>
<td>8.8%</td>
</tr>
<tr>
<td>Risk free ($R_f$)</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Market Risk Premium ($R_m - R_f$)</td>
<td>4.8%</td>
<td>8.3%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Debt Margin ($D_m$)</td>
<td>2.19%</td>
<td>2.24%</td>
<td>2.24%</td>
</tr>
<tr>
<td>Tax Rate</td>
<td>25.0%</td>
<td>25.0%</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

### Weighted Cost of Capital Calculation

<table>
<thead>
<tr>
<th>Capital Structure</th>
<th>Actual market Parameters</th>
<th>TNB's Proposal</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Equity ($K_e$)</td>
<td>Cost 8.38%</td>
<td>Capital Structure 60.5%</td>
<td>Weighted Cost 5.1%</td>
</tr>
<tr>
<td>Cost of Borrowing ($K_d$)[3]</td>
<td>6.18%</td>
<td>39.5%</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

### Weighted Cost of Capital

- **Actual**: 6.9%
- **Proposed**: 9.7%
- **Recommended**: 7.5%

**Note:**
- [1] Based on beta for the period 2004-2012
- [2] $R_m$ - Market return of 10 yrs KLSE Index
- [3] Average Gearing (2004-2011) is 39.5%

*Source: EC*
AGENDA

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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

*Source: EC*
## Tariff

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

<table>
<thead>
<tr>
<th>Tariff Components</th>
<th>sen/kWh</th>
<th>% increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Tariff (Jun 2011)</td>
<td>33.54</td>
<td></td>
</tr>
<tr>
<td><strong>Fuel Components:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Piped-gas regulated price (from RM13.70/mmBTU to RM15.20/mmBTU @1,000 mmscfd)</td>
<td>0.51</td>
<td>1.52</td>
</tr>
<tr>
<td>• Coal (market price) (from USD85/tonne to USD87.5/tonne CIF@CV 5,500kcal/kg)</td>
<td>0.17</td>
<td>0.51</td>
</tr>
<tr>
<td>• LNG RGT market price at RM41.68/mmBTU (for gas volume &gt; 1,000 mmscfd)</td>
<td>3.41</td>
<td>10.17</td>
</tr>
<tr>
<td>Non-fuel component (TNB Base Tariff)</td>
<td>0.90</td>
<td>2.69</td>
</tr>
<tr>
<td><strong>AVERAGE BASE TARIFF EFFECTIVE 1st JANUARY 2014</strong></td>
<td>38.53</td>
<td>14.89</td>
</tr>
</tbody>
</table>
**Imbalance Cost Pass-Through (ICPT) Comprises Two Components**

### Fuel Cost Pass Through (FCPT)
- Adjustment in the following 6 month period, subject to government approval
- FCPT (gas/LNG and coal only)

### Generation Specific Cost Adjustment (GSCPT)
- Adjustment in the following 6 month period, subject to government approval

#### Changes in gas/LNG and coal costs

<table>
<thead>
<tr>
<th>PPAs</th>
<th>Power Purchase Agreements</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLAs</td>
<td>Service Level Agreements</td>
</tr>
<tr>
<td>CSTA</td>
<td>Coal Supply and Transportation Agreement</td>
</tr>
<tr>
<td>CPC</td>
<td>Coal Purchase Contract</td>
</tr>
<tr>
<td>GFA</td>
<td>Gas Framework Agreement</td>
</tr>
<tr>
<td>GSA</td>
<td>Gas Supply Agreement</td>
</tr>
</tbody>
</table>

#### Changes in:
- Other fuel costs such as distillate and fuel oil
- All costs incurred by SB under the power procurement agreements (PPAs, SLAs and etc.) and fuel procurement agreements (CSTA, CPC, GFA/GSA and etc.)
- Renewable energy FiT displaced cost

### ICPT Announcement Rebate Period

<table>
<thead>
<tr>
<th>ICPT</th>
<th>Announcement</th>
<th>Rebate</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan - Dec’14</td>
<td>RM727 mn</td>
<td>2.25sen/kwh</td>
<td>Mar - Jun’15</td>
</tr>
<tr>
<td>Jan - Jun’15</td>
<td>RM1,086 mn</td>
<td>2.25sen/kwh</td>
<td>July - Dec’15</td>
</tr>
<tr>
<td>Jul - Dec’15</td>
<td>RM762 mn</td>
<td>1.52sen/kwh</td>
<td>Jan - Jun’16</td>
</tr>
</tbody>
</table>
### Frequency of Review & Underlying Assumptions

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantum</td>
<td>12%</td>
<td>23 - 24%</td>
<td>(3.7%)</td>
<td>Neutral</td>
<td>7.1%</td>
<td>14.9%</td>
<td>(5.8%)</td>
<td>(5.8%)</td>
<td>(3.9%)</td>
</tr>
<tr>
<td>Gas (RM/mmbtu)</td>
<td>6.40</td>
<td>14.31</td>
<td>10.70</td>
<td>10.70</td>
<td>13.70</td>
<td>15.20</td>
<td>15.20</td>
<td>16.70</td>
<td>18.20</td>
</tr>
<tr>
<td>Coal (USD/MT)</td>
<td>45.00</td>
<td>75.00</td>
<td>85.00*</td>
<td>85.00*</td>
<td>85.00*</td>
<td>87.50**</td>
<td>87.50**</td>
<td>87.50**</td>
<td>87.50**</td>
</tr>
<tr>
<td>Average Tariff (sen/kWh)</td>
<td>26.2</td>
<td>32.5</td>
<td>31.3</td>
<td>31.3</td>
<td>33.5</td>
<td>38.5</td>
<td>38.5</td>
<td>38.5</td>
<td>38.5</td>
</tr>
</tbody>
</table>

*Forex (RM/USD) = RM3.6
**Forex (RM/USD) = RM3.14

**Govt. decided not to review gas price for the power sector**

---

* Quantum of tariff review
  - Gas RM6.40 per mmBTU: 12%
  - Gas RM10.70 per mmBTU: 24%
  - Gas RM13.70 per mmBTU: 5.1%
  - Gas RM15.20 per mmBTU: 12.2%
  - Gas RM16.70 per mmBTU: 2.7%
  - Gas RM18.20 per mmBTU: -5.8%

**ICPT Adjustment**
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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

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

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

OVERSEAS INVESTMENT 2020
- Improved financial position and human resource readiness
- Venture into power/energy related investments in the international arena

GLOBAL LEADERSHIP 2025
- Excel in:
  - All business areas
  - Reputation as a strong business partner
  - Ability to continue to create shareholder value
- Tenaga acknowledged as amongst the most admired companies globally

THE PLAN LAYS DOWN THE PATH TOWARDS REALISING OUR VISION OF GLOBAL LEADERSHIP
It builds upon the progress of T7
Tenaga is a strong player in the growing ASEAN region

Fresh industrial reforms has resulted in a more transparent regulatory environment

Management team focused on addressing complexities and unlocking value

A new forward looking strategy centered on growth
TNB TODAY
Financial & Technical 5-Year Performance

**FINANCIAL PERFORMANCE**

1. **COMPANY CPU (sen/kwh)**
   - Sen/Kwh
   - 25.0
   - 30.0
   - 35.0
   - 40.0
   - FY'12 FY'13* FY'14 FY'15 1QFY'16
   - 31.9
   - 31.0
   - 35.0
   - 35.1
   - 32.7

2. **ROA**
   - %
   - 2.0
   - 4.0
   - 6.0
   - 8.0
   - FY'12 FY'13* FY'14 FY'15 1QFY'16
   - 4.5
   - 5.6
   - 6.2
   - 6.6
   - 7.6

3. **REVENUE FROM NON-REGULATED BUSINESS**
   - RM bn
   - 0.0
   - 1.0
   - 2.0
   - 3.0
   - FY'12 FY'13 FY'14 FY'15 1QFY'16
   - 2.3
   - 2.2
   - 2.5
   - 2.6
   - 0.6

**TECHNICAL PERFORMANCE**

1. **EQUIVALENT PLANT AVAILABILITY FACTOR (EAF)**
   - %
   - 60.0
   - 70.0
   - 80.0
   - 90.0
   - 100.0
   - FY'12 FY'13 FY'14 FY'15 FY'16
   - 83.9
   - 88.9
   - 82.1
   - 93.0
   - 90.4

2. **SYSTEM MINUTES**
   - mins
   - 1Q
   - FY'12 FY'13 FY'14 FY'15 FY'16
   - 0.2
   - 0.1
   - 0.2
   - 0.0
   - 0.0

3. **SAIDI**
   - mins
   - 1Q
   - FY'12 FY'13 FY'14 FY'15 FY'16
   - 14.6
   - 15.1
   - 13.8
   - 11.9
   - 12.5

# Exclude Finance Cost
* FY13 - restated
will further strengthen efforts to optimise operation efficiencies

is set to grow the company in key emerging markets

capitalises on the technological disruption and evolution currently confronting the utility sector

unlock value across the value chain, from the generation segment to segments beyond the meter
TNB TOMORROW
Focus on Operational Efficiencies for Domestic Business

**Regulated Business**
Continued implementation of internal operational efficiencies levers:
- Network digitization
- Workforce management
- Cost optimisation

**Generation Business**
Implementation of assets optimization measures:
- Profitability assessment of each power plant
- Optimised plant outage management
- Plant output improvement program

**Unlocking Staff**
Unlocking of staff potential to deliver value to customer and company:
- Organisation renewal program
- Centralisation of common functions and roles – improving business operations
- Upskilling of staff capability and competency
Future DEMAND GROWTH will come from cities in EMERGING MARKETS

Regional growth strategy targeting emerging markets

Technological disruptions will impact demand and create new opportunities

Grid digitalization and new business approach to capitalize on customer relationship

Technology evolution in renewable generation

Planned increase penetration in renewable generation
KEY THEMES: EMERGING MARKETS

Growth drivers

1. Global economic centre of gravity is shifting east and south from Europe towards Asia

2. 2.5 billion people will live in Asian cities by 2025

3. ~400 emerging market cities will generate 50% of global GDP growth in 2025

4. Emerging economies will grow 75% faster than developed nation by 2025

TNB direction

Turkey & Middle East
- 54 MW in operation
- 593 MW in pipeline

Indian subcontinent
- 235 MW in operation
- 1,500 MW in pipeline

ASEAN
- 10,800 MW in operation
- 7,800 MW in pipeline

TNB is Positioning to Expand Into Key Growth Areas
**KEY THEMES: EMERGING MARKETS**

TNB International Footprint in Energy Related Businesses

- Leverage on Tenaga’s capabilities (in Middle East region) in pursuing overseas investment and services e.g. O&M, project management etc. in power related businesses

- Utilise existing related services (consultation & training) and manufacturing products as stepping stone for future business in new frontier countries

- REMACO O&M for 225MW Sabiya Power Generation & Water Distillation Plant (KUWAIT)
- REMACO O&M for Shuailba North Co-Gen (USD320m) 780MW Power; 204,000 m³ / day water (KUWAIT)
- TNEC JV Al Reef District Cooling, UAE 8,000 RT
- TNEC JV BMC District Cooling, UAE 30,000 RT
- IPP: Liberty Power Ltd (USD272m) 235MW
- REMACO O&M services for Bong Hydro Plant in Pakistan
- REMACO O&M services – HUBCO (Narowal)
- TSG supply of switchgears to Pakistan

- MTM supply of transformers to Saudi Arabia
- MTM supply of transformers to Brunei
- Development of the Sumatera – Peninsular Malaysia HVDC interconnection, Coal-fired power plant & coal mine mouth projects

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
### Growth drivers

Technological advancements will impact demand and create new business opportunities

- **Battery storage** is emerging as the “new power plant” of the future
- Large scale innovations in infrastructure (smart grid, metering, IoT)
- Innovation technology (energy efficiency, analytics) will create market for integrated services

### TNB direction

- **Countries of presence**
- **Countries of interest**
- **Countries under screening**

Market Population: ~2.2 billion

**Technology Advancement Will Allow TNB to Further Unlock the Value of Our Potential Customers**
**Growth drivers**

Renewables will represent up to ~70% of new capacity additions globally by 2040...

<table>
<thead>
<tr>
<th>Year</th>
<th>Fossil Fuel</th>
<th>Nuclear</th>
<th>Renewables</th>
<th>Flexible Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td>275 GW</td>
<td></td>
</tr>
<tr>
<td>2040</td>
<td></td>
<td></td>
<td>490 GW</td>
<td></td>
</tr>
</tbody>
</table>

Share of renewables of total capacity added: 51% (2015), 71% (2040)

**TNB direction**

1. Malaysia is looking to add ~2GW of renewable generation by 2020

2. ASEAN region will require large investment in RE to deploy ~50GW of renewable generation by 2025.

3. Tenaga Nasional is positioning to tap both its’ domestic market and the ASEAN regional market

**SOURCE:** Bloomberg New Energy Finance – Outlook 2015, Asean Centre of Energy
Evolution on National Energy Policies

- Minimise negative impacts on the environment
- Promote efficient utilisation of energy
- Green Technology as the driver to accelerate the national economy
- Promote Sustainable Development

Government Green Development Plan

8th Malaysia Plan (2001-2005)
- RE as the fifth fuel
- Target: 5% RE in energy mix

9th Malaysia Plan (2006-2010)
- RE Grid-connectivity
- Target:
  - Peninsula 300 MW
  - Sabah 50 MW

10th Malaysia Plan (2011-2015)
- RE installed capacity
- Target: 985 MW of RE by 2015

11th Malaysia Plan (2016-2020)
- Reduction in GHGs emission intensity of GDP compared to 2005 level
- Formulation of a comprehensive demand side management master plan
- In renewable energy installed capacity by 2020 (7.5% energy mix)

- 2013: 33%
- 2014: 243MW
TNB Green Policy

“TNB is committed to support the national green agenda and minimise the environmental impact of our business by applying sustainable, efficient operations and delivering green energy through the application of appropriate technologies and investments”

TNB RE Targets by 2020

Domestic
- 60-80% of national targets by 2020 (1,248 - 1,664 MW)

International
- In accordance to TNB Investment policy and guidelines on ventures, M&A and bidding for Green Energy Projects
## TNB Green Initiatives

### Major Green Projects
- **1)** Ultra-supercritical technology for coal plants
  - 10% less CO2 emission compared to conventional subcritical technology
- **2)** Carbon footprint study - supply side (2012)
  - Preliminary assessment of Carbon Inventory for TNB Thermal Power Plants
  - Recommendation on the most suitable methodology of measuring Carbon Footprint for TNB power plants
- **3)** R&D projects for enhancing power plants efficiency
- **4)** Smart Grid (SG) Project
- **5)** Various District Cooling (DCS) & Thermal Energy Storage (TES) projects

### Renewable Energy Projects
- **1)** Non FiT and Off-grid installation:
  - Solar Hybrid project
    - 850kW in RPS Kemar, Perak.
- **2)** FiT projects:
  - JV project with Felda Global Ventures
    - 10MW Biomass (Jengka)
  - JV with Sime Darby
    - 2MW Biogas Hadapan Palm Oil Mill
    - 2MW Remington Palm Oil Mill
  - JV with Amcorp Power Sdn Bhd
    - 20MW Mini Hydro at Sg Liang, Pahang
  - Floating solar pilot project in Negeri Sembilan

### Energy Efficiency (EE) Programs
- **Demand Side Management (DSM) Programs**
  - Special tariff rates for DCS & TES
  - Thermal energy storage
  - DSM study on Enhanced Time of Use (ETOU) & interruptible scheme
  - Development of training & capacity building centres
  - Pilot Electric Vehicles (EV) charging terminal
- **Renewable Energy Projects**
  - Energy audits & power quality services by TNB Energy Services, a subsidiary of TNB
  - Pilot Home Energy Report (HER) Programme
  - TNB EE Managers Programs
  - TNB EE campaigns
  - TNB participation in EE awareness programs

### Key Themes: Renewable Generation
AGENDA

1. INTRODUCTION TO TENAGA
2. INTRODUCTION TO MESI
3. TARIFF
4. BUSINESS STRATEGY & DIRECTION
5. DIVIDEND POLICY
6. FINANCIAL HIGHLIGHTS
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

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Dividend Paid (gross sen)</th>
<th>Yield (Dividend Paid per Share/Price)</th>
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<tbody>
<tr>
<td>FY2001</td>
<td>10.0</td>
<td>1.2%</td>
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<tr>
<td>FY2002</td>
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<td>FY2003</td>
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<td>FY2005</td>
<td>16.2</td>
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<tr>
<td>FY2006</td>
<td>14.8</td>
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<td>FY2007</td>
<td>36.3</td>
<td>3.6%</td>
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<tr>
<td>FY2008</td>
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<tr>
<td>FY2009</td>
<td>17.8</td>
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<td>FY2010</td>
<td>26.0</td>
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<td>FY2011</td>
<td>4.5</td>
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<td>FY2012</td>
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<td>FY2013</td>
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<td>FY2014</td>
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<tr>
<td>FY2015</td>
<td>29.0</td>
<td>2.6%</td>
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</table>

**Total FY’15:** 29.0 sen per ordinary share
1. INTRODUCTION TO TENAGA
2. INTRODUCTION TO MESI
3. TARIFF
4. BUSINESS STRATEGY & DIRECTION
5. DIVIDEND POLICY
6. FINANCIAL HIGHLIGHTS
**ELECTRICITY GROWTH IN PENINSULA**

3.2% Growth in Electricity Demand

### UNITS SALES

<table>
<thead>
<tr>
<th></th>
<th>FY2015</th>
<th></th>
<th></th>
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<th>FY2016</th>
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<td>1Q</td>
<td>2Q</td>
<td>3Q</td>
<td>4Q</td>
<td>Sept</td>
<td>Oct</td>
<td>Nov</td>
<td>1Q</td>
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<tr>
<td>Gwh</td>
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<td>10,976</td>
<td>10,761</td>
<td>11,009</td>
<td>3,764</td>
<td>3,572</td>
<td>3,765</td>
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<td>1.6</td>
<td>1.7</td>
<td>0.1</td>
<td>1.6</td>
<td>(0.3)</td>
<td>2.1</td>
<td>1.2</td>
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<td>Gwh</td>
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<td>8,990</td>
<td>9,361</td>
<td>3,142</td>
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<td>3.1</td>
<td>1.4</td>
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<td>1.6</td>
<td>0.9</td>
<td>3.9</td>
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<tr>
<td>Domestic</td>
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<td></td>
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<tr>
<td>Gwh</td>
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<td>5,338</td>
<td>5,775</td>
<td>6,121</td>
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<tr>
<td>Growth (%)</td>
<td>3.0</td>
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<td>4.1</td>
<td>2.5</td>
<td>8.8</td>
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<td>6.9</td>
<td>6.3</td>
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<tr>
<td>Others</td>
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<tr>
<td>Gwh</td>
<td>496</td>
<td>493</td>
<td>462</td>
<td>483</td>
<td>162</td>
<td>163</td>
<td>165</td>
<td>490</td>
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<tr>
<td>Growth (%)</td>
<td>6.9</td>
<td>5.6</td>
<td>(0.9)</td>
<td>0.6</td>
<td>(3.6)</td>
<td>(0.6)</td>
<td>0.6</td>
<td>(1.2)</td>
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<tr>
<td>Total</td>
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<tr>
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<td>25,667</td>
<td>25,988</td>
<td>26,974</td>
<td>9,072</td>
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<td>2.1</td>
<td>1.3</td>
<td>5.7</td>
<td>1.1</td>
<td>2.6</td>
<td>3.2</td>
<td></td>
</tr>
</tbody>
</table>

**FY’15 2.2%**

**1QFY’16 3.2%**

<table>
<thead>
<tr>
<th>Growth (%)</th>
<th>1QFY’16</th>
<th>1QFY’15</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.2</td>
<td>3.3</td>
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</table>
COAL REQUIREMENT

Average Coal Price for 1QFY’16 was at USD59.0/MT

<table>
<thead>
<tr>
<th>Average Coal Price (CIF)</th>
<th>FY’10</th>
<th>FY’11</th>
<th>FY’12</th>
<th>FY’13</th>
<th>FY’14</th>
<th>FY’15</th>
<th>1QFY’16</th>
</tr>
</thead>
<tbody>
<tr>
<td>(USD/metric tonne)</td>
<td>88.2</td>
<td>106.9</td>
<td>103.6</td>
<td>83.6</td>
<td>75.4</td>
<td>66.0</td>
<td>59.0</td>
</tr>
<tr>
<td>(RM/metric tonne)</td>
<td>293.8</td>
<td>325.9</td>
<td>321.9</td>
<td>259.5</td>
<td>244.6</td>
<td>236.0</td>
<td>254.1</td>
</tr>
</tbody>
</table>

Average Coal Price for 1QFY’16 was at USD59.0/MT.

With commissioning of Tg Bin 4

Country Mix

- Indonesia: 57%
- Australia: 27%
- South Africa: 5%
- Russia: 11%
CAPITAL EXPENDITURE

Major Projects Represent 59.4% of Total CAPEX

Recurring Generation, Transmission, Distribution, Others

Generation Capacity
The Group is required to hedge a minimum of 50.0% of TNB’s known foreign currency exposure up to 12 months period. The Group uses forward exchange contracts and currency options contract to hedge its foreign currency risk. Most of the forward exchange contracts have maturities of less than three months.”

HEDGING POLICY
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THANK YOU