

Sharing Session at ICLAD 2018

People Transition Towards Reimagining TNB



Career Enhancement Management

TNB's history...

Electricity Department

1946

- Electricity first made its appearance in this country at the turn of **the 20th century**, and the earliest record of power generation can be traced back to a small mining town in **Rawang, Selangor**

Central Electricity Board

1949-1965

- Lembaga Letrik Pusat (Central Electricity Board, CEB)** was established and came into operation on 1 September 1949.
- The Board was to become heir to three major projects considered by the Electricity Department following its establishment in April 1946 which were the **Connaught Bridge Power Station, Cameron Highlands Hydroelectric Project** & the development of a **National Grid**.
- CEB eventually became the owner of **34 power stations**

National Electricity Board

1965 -1990

- On 22 June 1965, Central Electricity Board (CEB) of the Federation of Malaya was **renamed** the Lembaga Letrik Negara (National Electricity Board, NEB) of the States of Malaya.
- By the 1980s, the Board was supplying the **whole peninsula** with electricity, replacing the Perak River Hydro Electric Power company (PRHEP), Kinta Electrical Distribution Co. Ltd (KED), Penang Municipality, and Huttenbach Ltd
- On 4 May **1988**, Prime Minister Mahathir Mohamad announced the government's decision on a policy of **privatisation**.

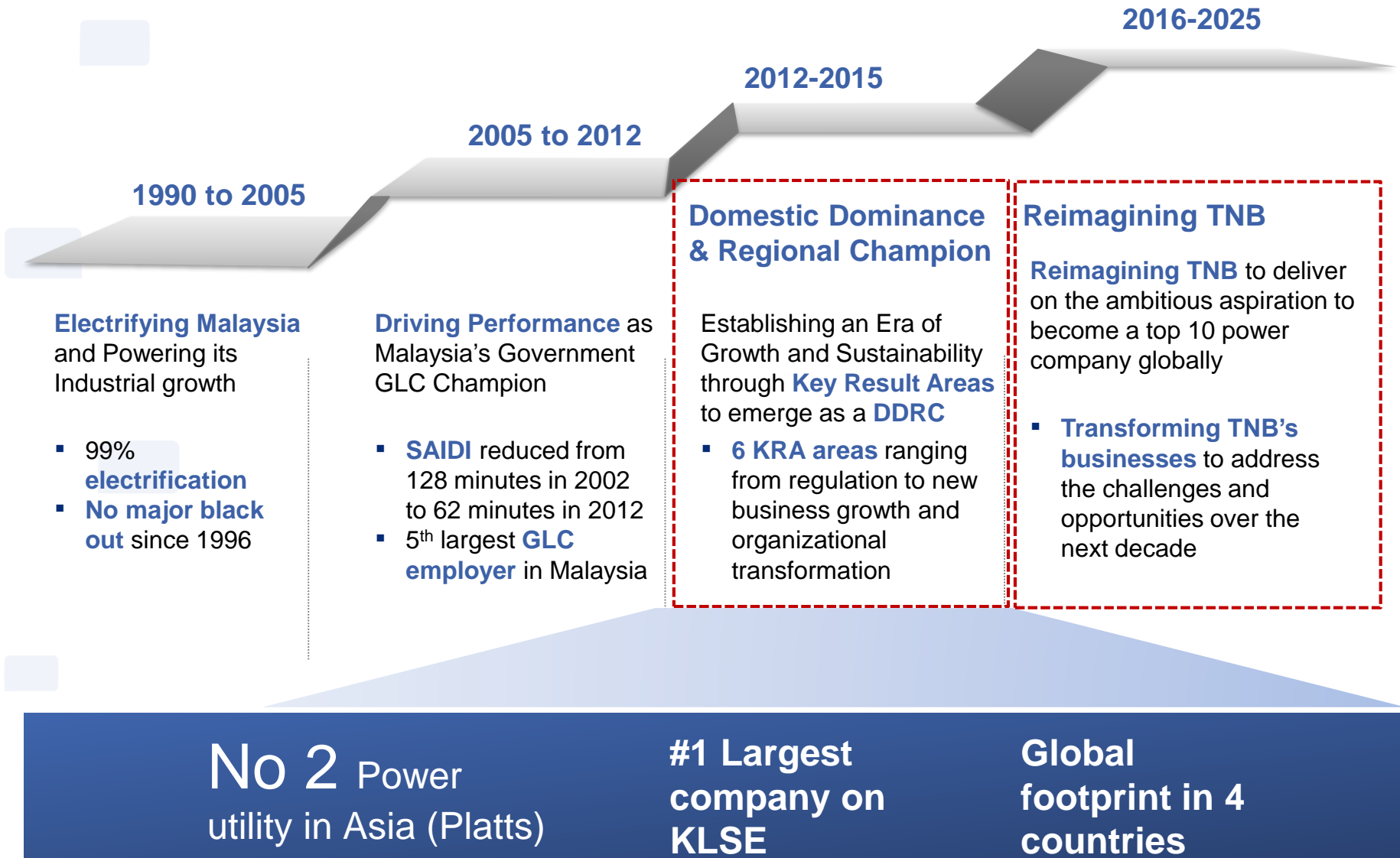
Tenaga Nasional Berhad

1990

- Tenaga Nasional Berhad (TNB) was formed in 1990** by the Electricity Supply Successor Company Act 1990, to succeed the National Electricity Board (NEB) of the States of Malaya.



Since then, TNB has been progressive in its transformation programs and has strong aspiration towards becoming a Global Energy Champion



Started in 2012, TNB's DDRC Transformation was to further entrench TNB leadership in Malaysia and establishing a firm presence in the region through delivery of 6 Key Result Areas (KRAs)

Better. Brighter.

Domestic Dominance, Regional Champion (DDRC)

KRA1

Shape
Regulatory
Outcome

KRA2

Exceed
Customer
Expectations

KRA3

Drive
Operational &
Cost
Efficiency

KRA4

Grow
Profitable
New
Business

KRA6

SESB
Turnaround

KRA5

Transform Organization

By end FY2016, the transformation program has significantly improved TNB's business operations, financial positions and organization capabilities

KRA 1

Shape regulatory outcomes



2,264MW
Additional of new domestic capacity installed.



ICPT
successfully implemented

82%
Strong Corporate Reputation in 2017

KRA 2

Exceed customer expectations



63% customers received supply within
3 days
of application



8.1
CSI score in FY2015/2016

#8
position in ease of doing business (electricity industry) by World Bank ranking

KRA 3

Drive operational & cost efficiencies



749 Total of **cost efficiencies** achieved through 22 initiatives
Mn



Generation Excellence
Rolled out to SPVs



Procurement Transformation Programme
in delivery stage

KRA 4

Grow profitable New Business



2.9Bn
revenue from subsidiaries resulting to RM220m PAT



Investment in **GAMA Enerji Turkey** and **GMR India** with expected EIRR of 11-13%



TNB-IT subsidiary formed to pursue **TELCO business**

KRA 5

Transform organization

Improved productivity from **RM1.46 to RM1.55** revenue/employees



49 Future CEOs on TOD through **TNB Leadership Drive**

Establishment of strategic and innovative functions enabled by Center of Expertise (COE, Business Partner (BP) and Shared Service Center (SSC)

KRA 6

SESB Turnaround

CSI improved from **70% to 73%**



Supply Connection time improved from **48 to 5 days**



ESS improved from **69% to 75%**

Global trends and domestic business environment continue to pose challenges to TNB business... change is inevitable

Global Trends

Economic shifts

Power is shifting towards Asian and emerging market economies

Shareholder expectations

Shareholders demanding not just greater returns but sustainable/green returns and transparency

Technology disruptions

Dramatically changing the power sector and customer demands

Regulations evolving

Increasing competition due to market liberalisation

Domestic Trends

Slowing demand growth

2020 forecast electricity sales growth to reduce to <1.92%

Overcapacity

Generation reserve margin rise from 25% to 44% in 2021

Renewables Lockout

TNB has only managed to secure 12% of LSS capacity

Gas Market Deregulation

First step towards a market-based pricing of energy

Market Liberalization

ST is pushing for electricity market by 2025; part of RMK11

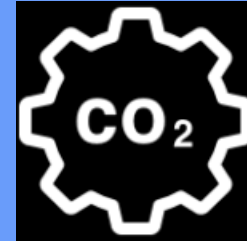
Distributed Renewables

NEM targeting 500MW of roof top solar

Utilities too need to transform in lieu of the 4De triggers



Deregulation



Decarbonization



Decentralization



Digitalization

Standing still is not an option... In midst of these challenging trends, there are significant opportunities ahead for TNB... hence Reimagining TNB



1 Growth

Compete to capture new growth opportunities in **Emerging markets**

2 Customer

Win the **Digital Age customer** through anytime, anywhere, mobile service and beyond the kWh services

3 Government

Manage **relationship** with the regulators to future-proof and transform TNB's core power business

4 Productivity

Unleash step change in productivity using **technology** for automation and productivity improvements

Digital Technologies are a part of the journey towards Reimagining TNB.....

Robust capability

More variable RE generation and two-way power flows

Advanced maintenance

Automatic grid status, evaluation and data collection



Smart meters and grid communication system installed to improve grid functionality and customer control

Control system upgrade enabling rapid fault detection and faster grid restoration

Remote data collection to improve operations and maintenance



Advanced metering infrastructure



Distribution Automation



Geospatial Information System



Volt-Var optimization



LED Streetlights

Improved grid stability and reliability through reduced reactive power import

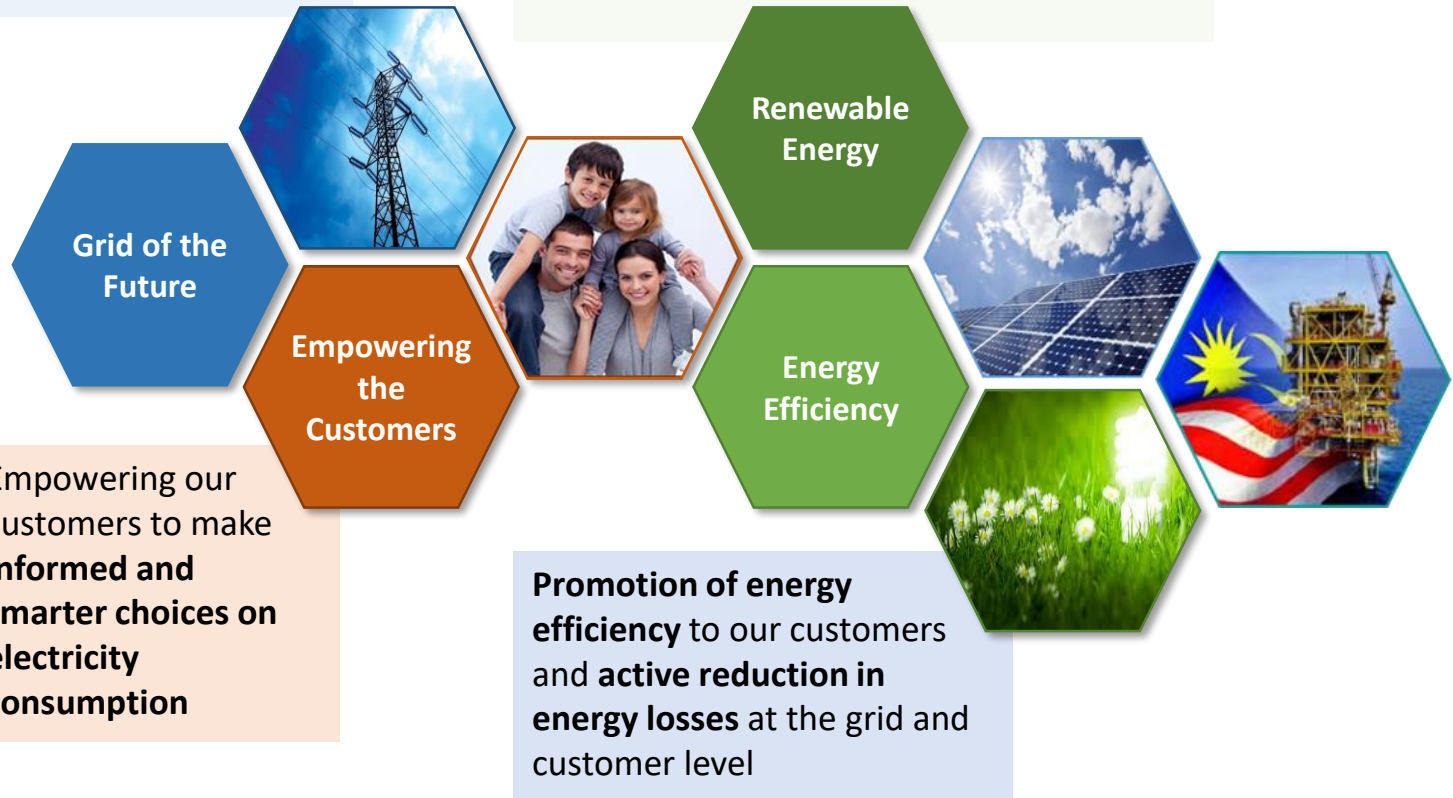
LED streetlamps for all state capital

Grid of the Future

Empowering our customers and enhancing the grid continue to be our priority....

Enhancing safety and **reliability** of the grid network, with **smart grid capabilities**

Ensuring the transmission and distribution system is **resilient** to address the **intermittency of renewable energy** sources and **bi-directional flow of energy**



Empowering Customers through the Grid of the Future

TNB have and are initiating new skills amongst employees via reskilling , upskilling and new hiring to support the initiatives towards Reimagining TNB



Studies indicate that
~ 6 to 10% of employees will be
affected by these initiatives

Smart Billing System

Conventional Power Plant phase-outs

More RE initiatives

Demarcation of roles in support service functions
(Centre of Expertise and Business Partners)

Centralisation of support services

More automation (e.g. Auto-billing)

TNB's approach in managing people transition is aimed at improving productivity and towards realizing Reimagining TNB



Promote **growth** for TNB employees at all levels via engagement, development and learning programs



Promote and inculcate **value creation** for all initiatives (e.g. Project Assignment)



Actively and continuously engaging employees at all levels to **build trust**, **commitment** and **harmony** amongst employees in TNB



Thank You

