

# Building a Nation

Global Infrastructure Cooperation  
Conference  
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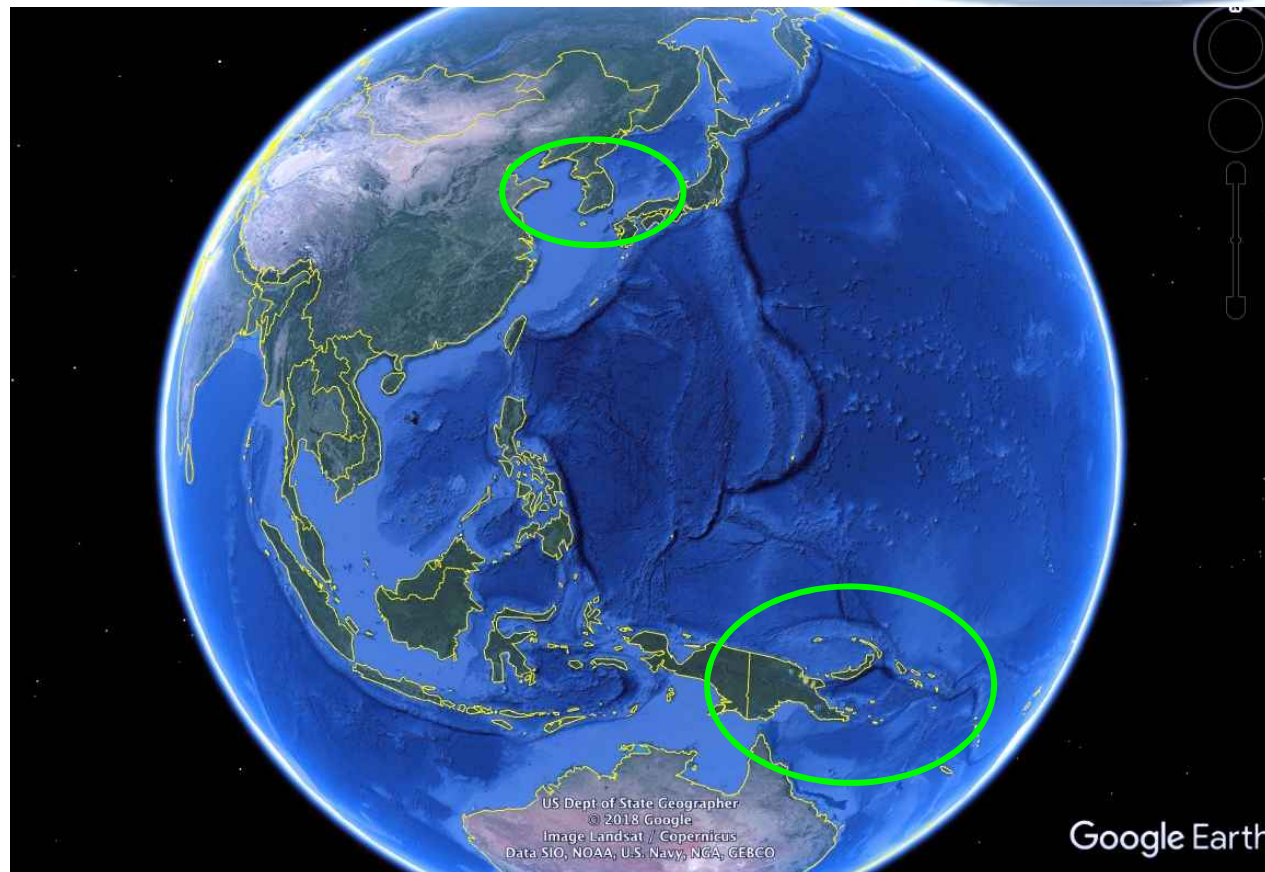


# Outline

- Snapshot of Papua New Guinea and PNG Power
- Challenges
- Bright Spots
- Our Plans
- Korea's Role

# Papua New Guinea and PNG Power





Country	Population (M)	Area (km <sup>2</sup> )	Nominal GDP (US\$B)	Generation Capacity (MW)
Papua New Guinea	8.0	462,840	21	540
South Korea	51.4	110,210	1,693	106,000

Sources: IMF, Statistics Korea, KEPCO, EPSIS



## State-Owned Utility

Generation

Transmission

Distribution

Retail

Regulated by ICCC

2,100 employees

3 Grids, 19 regional centres

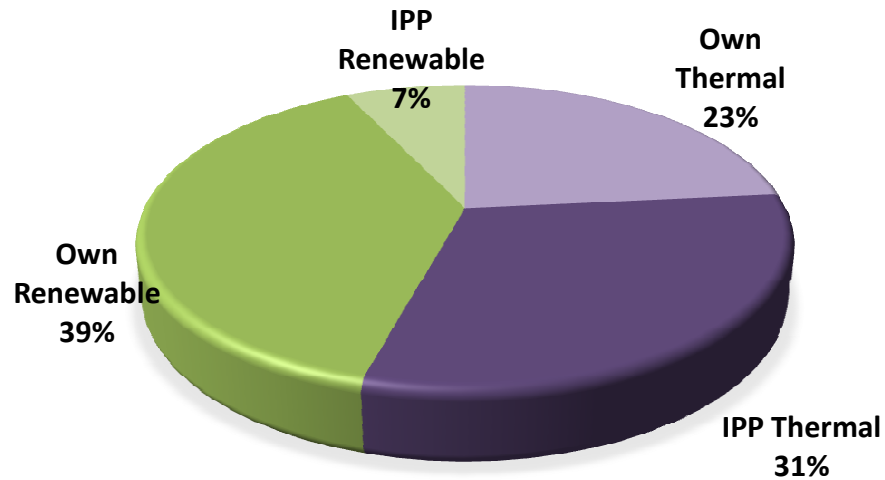
Installed capacity 540 MW

116,000 customers

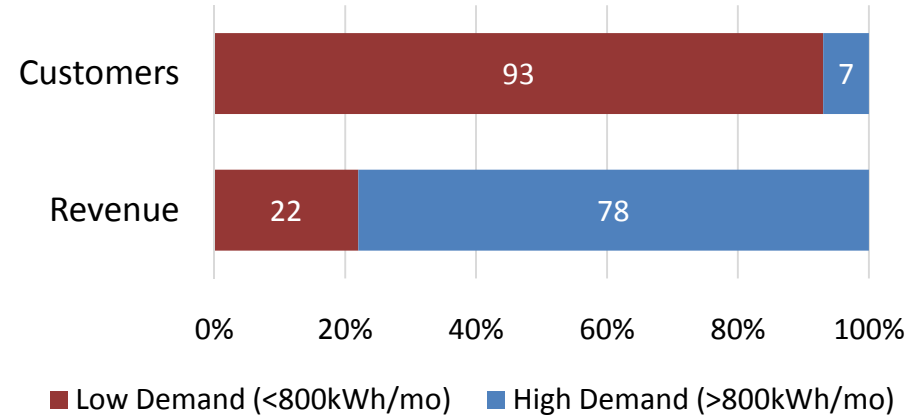
2017 Production 1,351 GWh

2017 Sales 978 GWh

## Energy Portfolio 2017

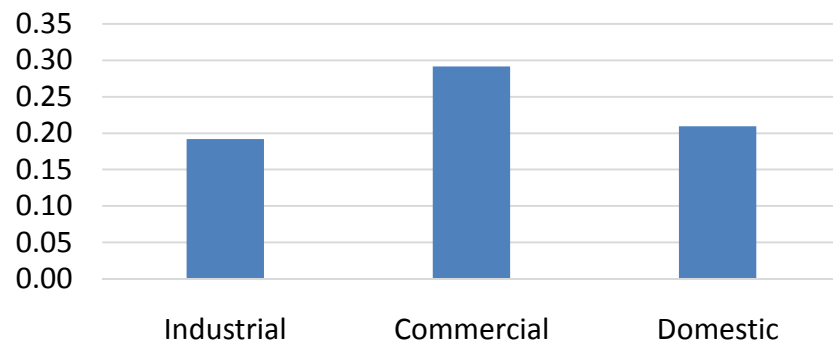


## Customer Concentration



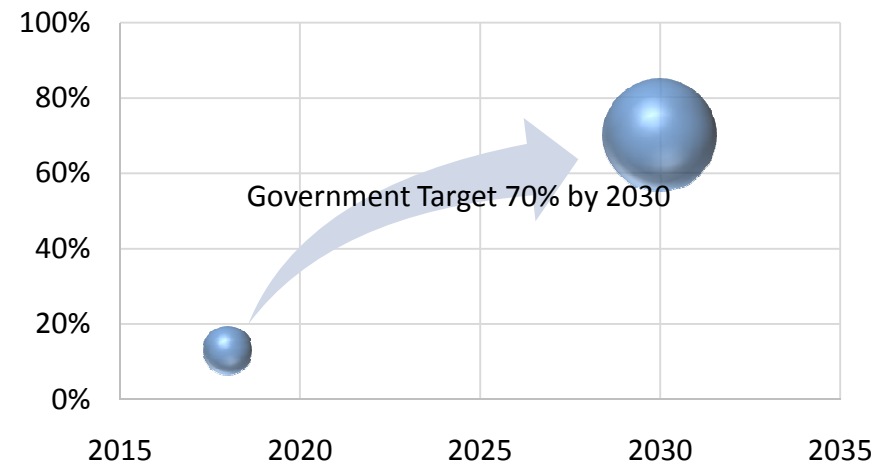
- 7% of customers yield 78% of revenue

## Published Tariffs US\$/kWh



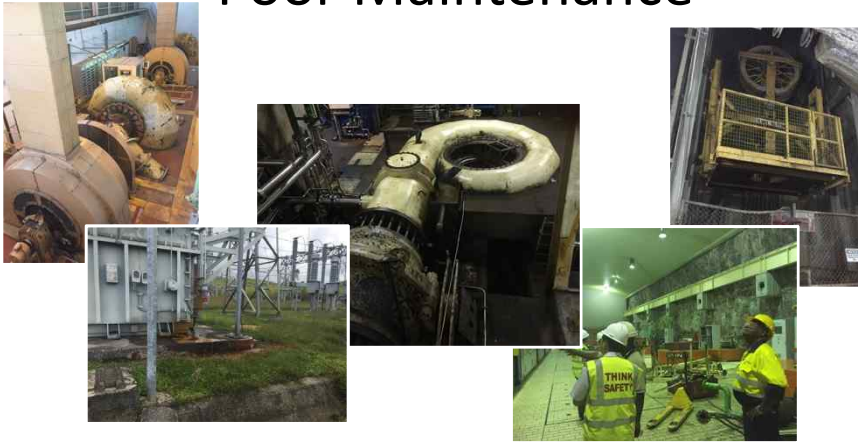
- “Postage Stamp” – uniform across the country
- No changes since 2013.

## Electrification Rates



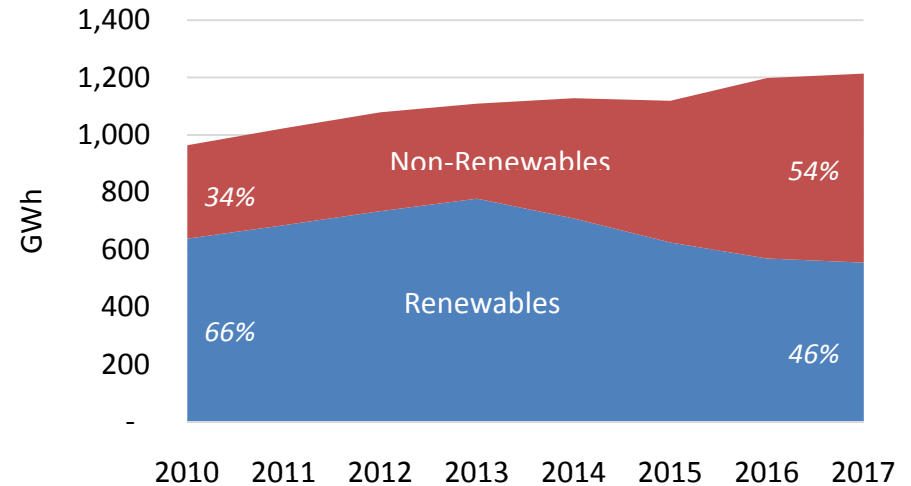
# Challenges

## Poor Maintenance



- Years of underfunding
- Reliably unreliable
- Some industrial customers moved to self-generation

## Generation Mix

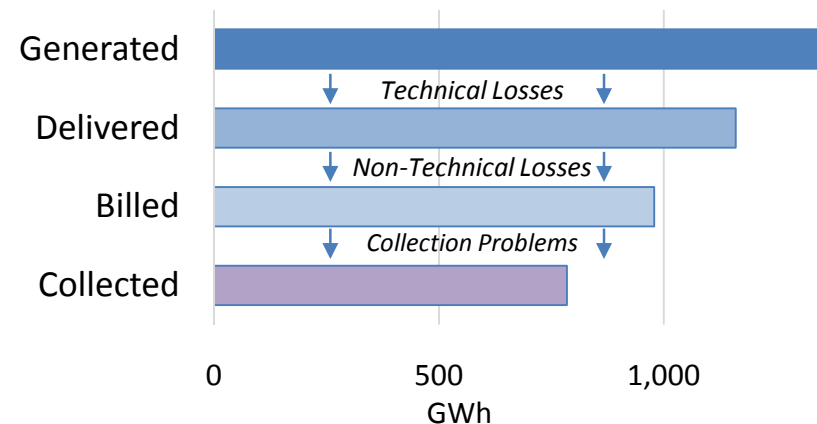


## Expenses

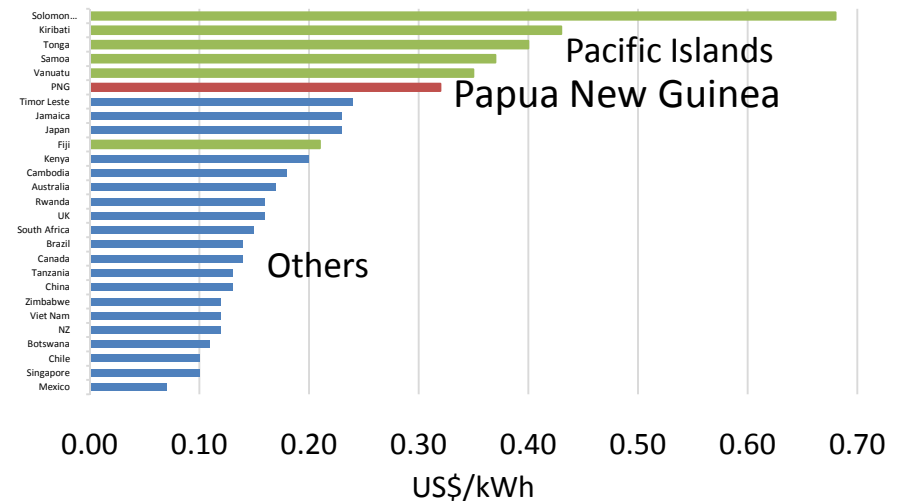


- Staff, Fuel and IPPs are highest costs
- Need to optimise

## Energy Losses



## Average Tariff Comparison



## Unsolicited Proposals



- Frequent generation proposals from domestic and international developers, often with political support
- Aligned to developers' needs, **not** PNG Power's requirements
- Needs to be a demand-driven exercise

## Electrification

- We have averaged 1,600 connections per year.
- Government target implies:
  - 125,000 connections per year, or
  - **1 million customers** per year
  - For 12 years
  - US\$1.4 billion investment

# Bright Spots

## Capable People



- Capable and intelligent workforce
- Want to do the right thing
- They are our shareholders and customers
- Need sensible and consistent guidance from Management.

## Natural Resources



- > 15GW of hydro potential
- > 5 Tcf of proven gas reserves
- Solar, wind & geothermal potential
- Minerals – Cu, Au, Co, Ag, Ni, coal
- Agriculture and aquaculture potential

## Supportive Suppliers

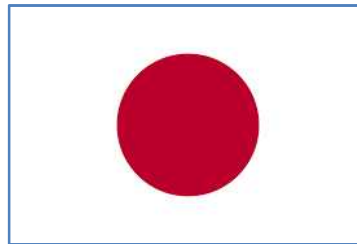


## Monopoly

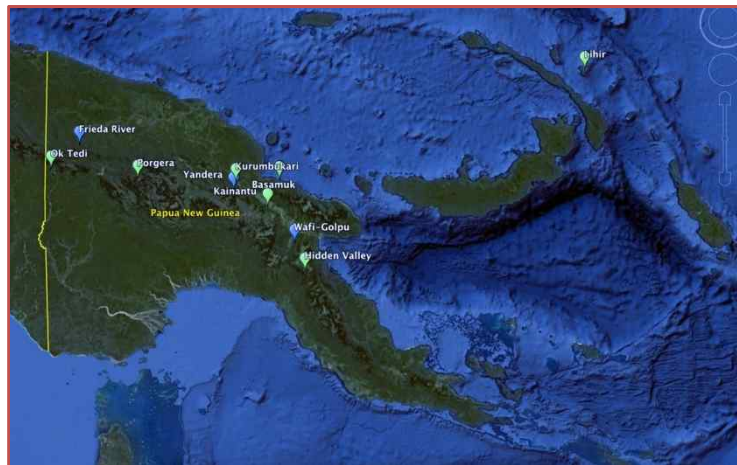


- Transmission, Distribution, Retail (for the time being)
- We have a product that everyone wants but only 13% have access
- Range of low cost generation potential

## Multi and Bilateral Support



## Mining Prospects



- Existing mines – Ramu Nickel, Pongera, Ok Tedi, Lihir, Kainantu, Hidden Valley
- Proposed mines – Wafi-Golpu, Frieda River, Yandera
- 700MW of potential load to underpin growth in PNG Power and Papua New Guinea's economy

# Our Plans





- Least Cost Development Plan – Hydro rehab, gas, new hydro, solar, wind
- Revenue Protection Program – advanced metering, improve billing/collection
- Improve Reliability – technical loss reduction, network upgrades, SCADA
- Gas-to-Power - Domestic Market Obligation, de-coupled from world prices
- Naoro Brown Hydro – 80MW near Port Moresby



- Town Electrification Program – US\$150 million
- Port Moresby Grid Improvement – US\$83 million
- Power Sector Development Investment Program (PSDIP)
  - Multi tranche facility, 10 years, 3 tranches
  - US\$740 million including support from other partners

## IPP and Major Infrastructure Policy

- Define how PNG Power will seek and evaluate proposals
- Must be demand-driven by our Least Cost Development Plans
- International competitive tendering, encouraged to include Papua New Guinean companies



## Electrification

- 125,000 connections per year for 12 years
- Requires massive shift in PNG Power's focus
- Developing plans for 4 trial provinces, execution in 2019
- Develop plans for remaining provinces and regions



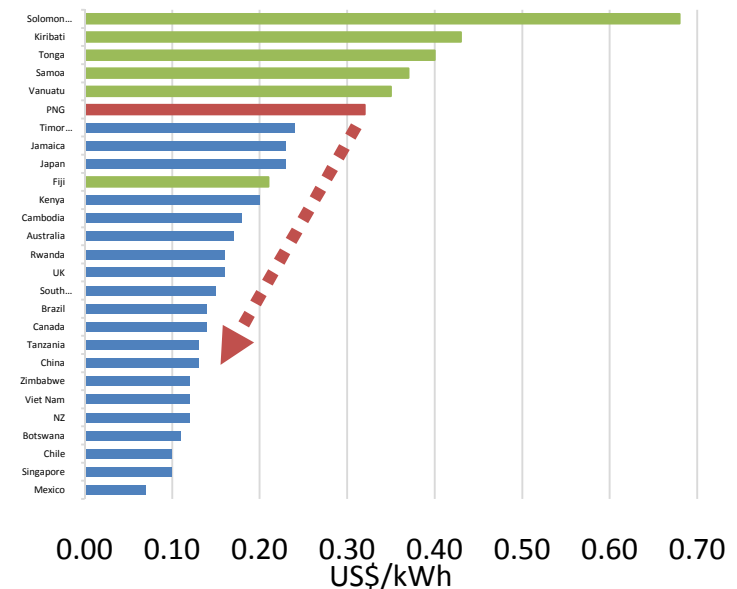
## Identify and Develop Hydro Potential

- Naoro Brown Hydro – with World Bank support
- Basin analysis, case-by-case analysis
- Feasibility studies
- Based on load growth and achievable tariff



## Reduce our tariff

- 50% reduction within 5 – 10 years
- Make electricity affordable and accessible
- Boost GDP, more jobs, healthier and better educated society
- Driven by Least Cost Development Plans



# Korea's Role

## Implications for Korea and Korean Companies

- Participate in IPPs
  - Naoro Brown - 2019
  - Remote Centre IPP – 2019
  - Competitive bidding, supported by PNG Power least cost plans
- Support us through ADB, Green Climate Fund (GCF)
- Support us with people and advice as we reform, rebuild and grow our company and our nation

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