“Are we on target with 70% electricity coverage by 2030?”
Presentation Scope

- PNG Government Vision and Plan
- National Energy Policies, Plans and Institutional Arrangements
- PPL’s Overview
- Challenges
- What we are doing?
- PPL Plans to Achieve GoPNG Electrification Targets
- Roadmap – Pathway to Recovery

What to expect?
PNG Government Vision 2050

- GoPNG Vision 2050 Launched in October 2009;
- 100% of households to have access to electricity by 2050;

PNG Strategic Development Plans 2010 - 2030

- The PNGSDP reinforces the fundamental directives under the Vision 2050 and sets the mid-term targets to be achieved by 2030.
- For energy, the target under PNGSDP is 70% of households to have access to electricity by 2030.

Check point by 2030 is 70% access to electricity
National Energy Policies, Plans and Institutional Arrangements

Institutional Arrangement

• Electricity Industry Policy 2011
• National Electrification Rollout Plan (NEROP); Final Report 2017
• National Energy Policy 2017-2027 – Launched August 2020;
• National Energy Authority Bill 2021 and Electricity Industry (Amendment) Act 2022
• Establishment of the National Energy Authority – July 2021 - NEA vested with the economic and technical regulatory functions in the electricity supply industry;

NEROP Targets

• National Electrification Rollout Plan (NEROP) Targets to meet 70% electrification by 2030 and 100% by 2050;
• On-Grid 60% grid intensification and expansion - by PPL
• Off-Grid 40% electrification - by the NEA

PPL will contribute 60% from its existing grid connections to meet 70% target
PNG Power Overview

PNG Power is a critical contributor to the Nation’s development as defined by the Vision of 2050 and Strategic Plan for 2030. PNG Power will have a direct impact on each of the key themes in the Nation’s development to 2030 and beyond, including accelerating industrialization and facilitating social and economic growth in each sector while protecting PNG’s unique culture, diversity and environment.

- 307,000 customers
- 600MW of power generated
- 3 main grid networks
- 17 mini-grid networks
- 900 kms of high voltage power lines
- 2589 kms of distribution lines
- 1957 employees (20% female)

- Low reliability / constant outages
- Ageing generation & transmission infrastructure
- Underinvestment in assets
- Reliance on IPPs & high cost thermal generation
- High losses
- High operating cost due to fuel
<table>
<thead>
<tr>
<th>Challenges</th>
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<tbody>
<tr>
<td>Geographical</td>
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<tr>
<td>Population spread is wide through rough terrain &amp; across seas</td>
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<tr>
<td>Lack of investment in grid networks</td>
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<tr>
<td>Substation &amp; distribution</td>
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<tr>
<td>Exposure to high fuel costs</td>
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<td>Prices dictated by external forces</td>
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<td>Theft/illegal usage</td>
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<td>Losses from 25% to 30% in the last two years</td>
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<tr>
<td>Land</td>
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<td>Lines pass through multiple landowners</td>
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<td>Tariff Freeze</td>
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<td>Costs have increased, PPL tariffs are 10 years old</td>
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<tr>
<td>Limited system regulation</td>
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<td>Inability to ride through system disturbances Increase in system outages</td>
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These are real challenges that PPL deals with in the business
# What we are doing?

<table>
<thead>
<tr>
<th>Insulation from high cost fuel</th>
<th>Action</th>
<th>Remedy/Projects</th>
<th>Impact</th>
<th>Completion</th>
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<tr>
<td></td>
<td>1.</td>
<td>Fuel switch began in 2019</td>
<td>Avoided over K180m fuel cost using low cost gas</td>
<td>2019</td>
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<td>3.</td>
<td>Rehab on existing hydro</td>
<td>YTOD &amp; Warangoi complete except water shortage. Ramu 1 &amp; Rouna progressing. 40MW hydropower to be available</td>
<td>2023</td>
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<tr>
<td></td>
<td>4.</td>
<td>Private hydro</td>
<td>61MW- Edevu and Baime</td>
<td>2023</td>
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| Grid Investment | 1.     | EUPRIP USD30m with GoPNG/WB | Network fixes in POM and Lae | 2023-2024 |
|                 | 2.     | POM BESS +2MW solar with KCH | Avoids cascaded total system blackouts due to frequency swings | 2023 |
|                 | 3.     | Ramu/Gazelle BESS | Reduces total system blackout | 2024-2025 |
|                 | 4.     | Ramu transmission with GoPNG/Japan | Over K200m project to build second line to Lae | 2024 |
|                 | 5.     | Power Sector Development Project (USD300m) with GoPNG/ADB/AIFFP | Improve grid resilience and capability. 60,000 new HH connections. | 2026 |

# A snap short of projects underway to reform PPL
# What we are doing?

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<td>2. Smart meters Project with WB</td>
<td>5000 units under procurement</td>
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<td>Supply monitored at customer level</td>
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<td>Reform</td>
<td>1. Actionable Unbundling Plan in partnership with DFAT</td>
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## A snap short of projects underway to reform PPL

- **Fix Basics**
  - **Illegal Usages**
    - 1. Amnesty Program with USAID PEP: Over 15,000 HH registered (about K0.5m rev/month) - 2023
    - 2. Smart meters Project with WB: 5000 units under procurement - 2023-2024
    - 3. Management by Feeder with USAID PEP: Supply monitored at customer level - 2023-2024
  - **Reform**
    - 1. Actionable Unbundling Plan in partnership with DFAT: Staged approach. Fix basics, and in parallel, prepare for a competitive market - Ongoing
    - 2. Technical/Commercial Programs with PEP: Improved process and staff Efficiency - Ongoing

## Competitive PPL
Grid Intensification and Expansion—3 Main Grids

• PPL’s response of grid intensification and expansion targets are captured and updated in its 15 Year Power Development Plan (PDP);
• The focus is on the 3 main grids with expected increased households connections by 100,000 per annum to meet the 70% electrification target by 2030;
• The PDP and HH connections is supported by least cost generation mainly renewables -hydro, biomass, Solar PV/BESS;

The Mini-Grids Hybridization – All PPL Mini-grids

• PEP Partners support with more efficient diesels and Solar PV+BESS with a long term view to transition to 100% renewables;
• Hybridization of all PPL mini-grids/diesel centers through renewable energy development utilising cheap financing options;
• Improve reliability and further increase household connections.

At the current rates PPL highly likely will achieve 30-40% of 60% by 2030
## Roadmap - Path to Recovery

*PNG Power is dedicated to supply reliable electricity services and in doing so promoting a profitable, professional, and growing company while contributing to the development and wellbeing of our present and future customers.*

### Stability

**Stronger footing, both commercially and technically.**
- High voltage circuit between Ramu and Highlands
- Investment in POM and Ramu grids
- Rehabilitation of hydro-electric power stations
- Replacement of mini-grid generation with Hybrid Systems
  - Complete KCH recapitalization
  - Increase ERC regulated Tariff rating
  - Prioritise positive cashflow projects
  - Establish Grid Stabilisation Fund

### Recovery

**Medium-term activities to reduce costs through the adoption of least-cost principles, improve performance, and ensure PNG Power can deliver a high-quality service to its customers**
- Increase revenues through major industry connections and metering
- Connect mining demand
- Introduce hybridisation
- Establishing robust MIS
- Fuel switch program - From HFO, diesel to gas and then renewables

### Transformation

**A fundamental restructure of the power sector in PNG, including the unbundling of PNG Power, which will unlock value, drive efficiencies, and enable private sector investment**
- Internal separation program of generation assets to drive operational efficiencies
- Incorporate subsidiaries, focus on GenCo
- Put in place process of asset transfers
- Complete internal restructure

### Growth

**Increase margin through ongoing process improvement initiatives and continue to grow revenue base from industrial and mining demand whilst strengthening the capital structure**
- Integrate and automate systems and processes including ICT systems to improve efficiency and productivity
- Strengthen capital structure through on-going debt reduction and investment in new capital infrastructure.
- Retail centric approach
- Customer household connection driven
Thank you