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UNITED NATIONS ENVIRONMENT PROGRAMME –

COPENHAGEN CLIMATE CENTRE

Advancing Climate-Resilient Energy Systems: Strategies for Energy Efficiency in Zambia's Built Environment

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Overview

- The 8th National Development plan guides the national target for electricity access in rural areas is set at 51% and 100% for urban areas.
- Further to this, the Ministry launched the **Integrated Resource Plan (IRP)** in February 2024, marking a significant step in Zambia's long-term energy planning.
- The **IRP** is Zambia's long-term, least-cost roadmap for developing a resilient, inclusive, and sustainable electricity sector by 2050, aligning energy investments with national growth, climate commitments, and universal access goals.

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Overview

Generation

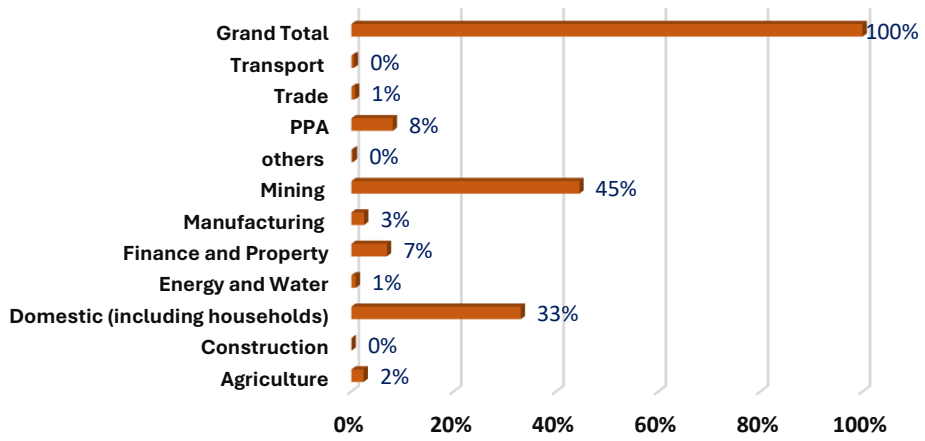
3,868.51MW
Total installed capacity

82%
Hydro electricity

Percentage Mix	
Hydro	82%
Coal	9%
Heavy Fuel Oil	2%
Solar	4%
Diesel	2%
Biomass	1%

Consumption

NATIONAL ELECTRICITY CONSUMPTION BY ECONOMIC SECTOR (2024)



- The mining sector is the largest consumer with a percentage of 45%
- Household sector accounts for 33%

Access

53.6% National

80.3% Urban

34.0 % Rural

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2. IRP Strategies for a Climate-Resilien

Diversification of Generation Mix:

- Shift from **hydro dominance** (85% in 2023 → 36% by 2050). The country currently stands at 82% of hydro power.
- Growth in **solar, wind, biomass, geothermal** to reduce climate risk.

Spatial Rebalancing of Hydro:

- New hydro focused in **northern Zambia** (Congo basin) with **more stable hydrology**.

Resilience Measures:

- Climate-resilient plant designs.
- Integration of **variable renewable energy (VRE)** up to **45% of grid by 2050**.
- **Environmental & social safeguards** in all project planning.

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3. Impact of climate change on the energy sector

- Reduced generation from hydros
- Reduced household electricity supply
- Increased consumption of charcoal
- An increase in solar as part of the country's overall electricity generation mix, along with a rise in solar installations by households
- Increased uptake of Liquified Petroleum Gas

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4. Targets – Zambia Commitments

Indicator	Baseline (2017-2021)	Target (2030)
1. Increased access to electricity	• 6% annual electrification rate (**60,000** connections per year) • **1 .4 million**	• 12% annual electrification rate (**120,000** on-grid) • **3.2 million** (1.4M On-grid, 1.4M SHS , 328,000 Mini-grid)
2. Increased Access to Clean Cooking	**9%** of population with access to clean cooking	
3. Increase share of Renewable Energy in power generation mix	Current RE generation is **3,336MW**	Increase RE capacity to **9,000MW**
4. Amount of Private Capital Mobilized	**USD1.6 billion**	Mobilise **USD9 billion**

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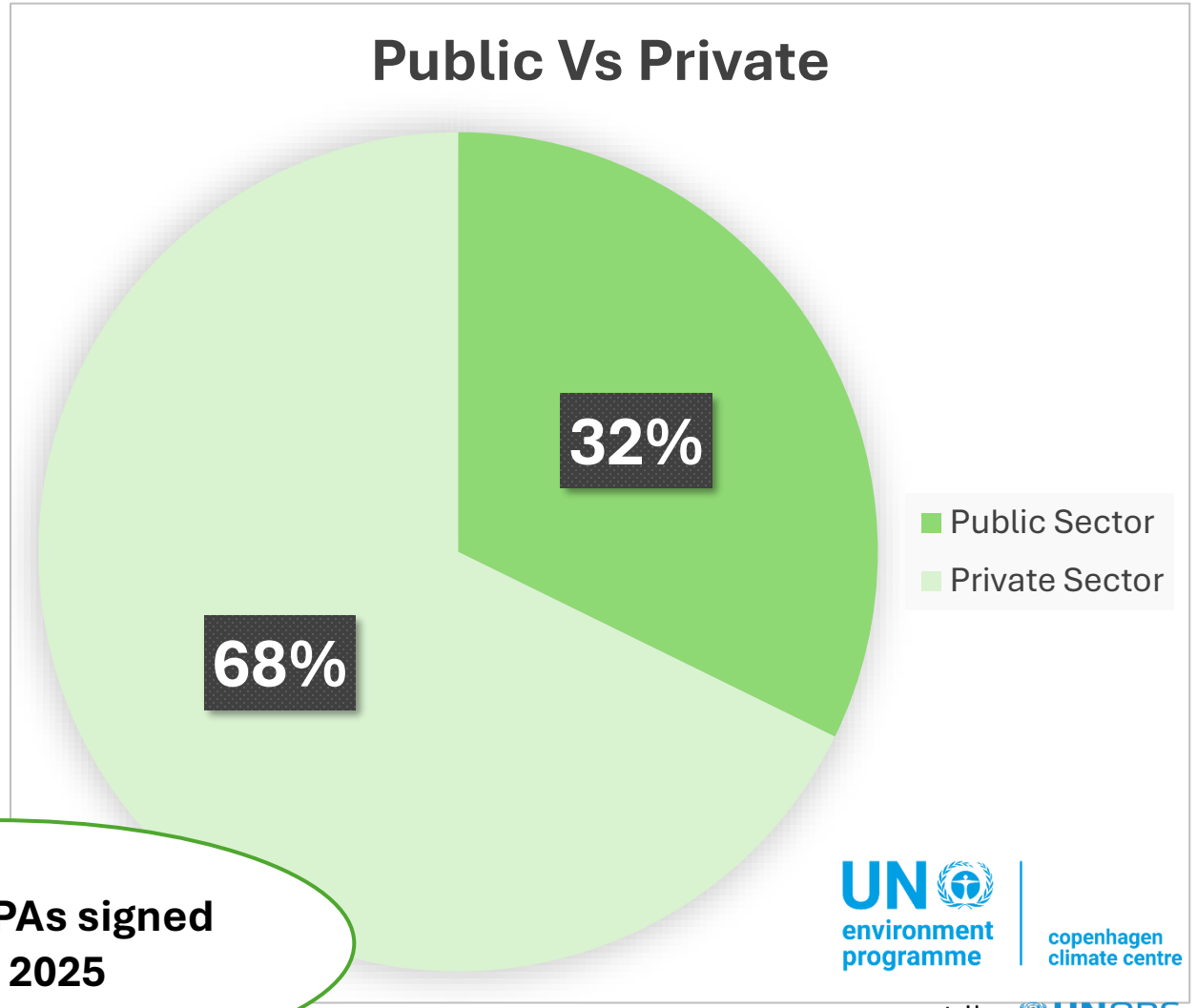
4.1 Pipeline Projects

20 Public Sector

+

42 Private Sector

62 Projects



7000MW PPAs signed by Q1 2025

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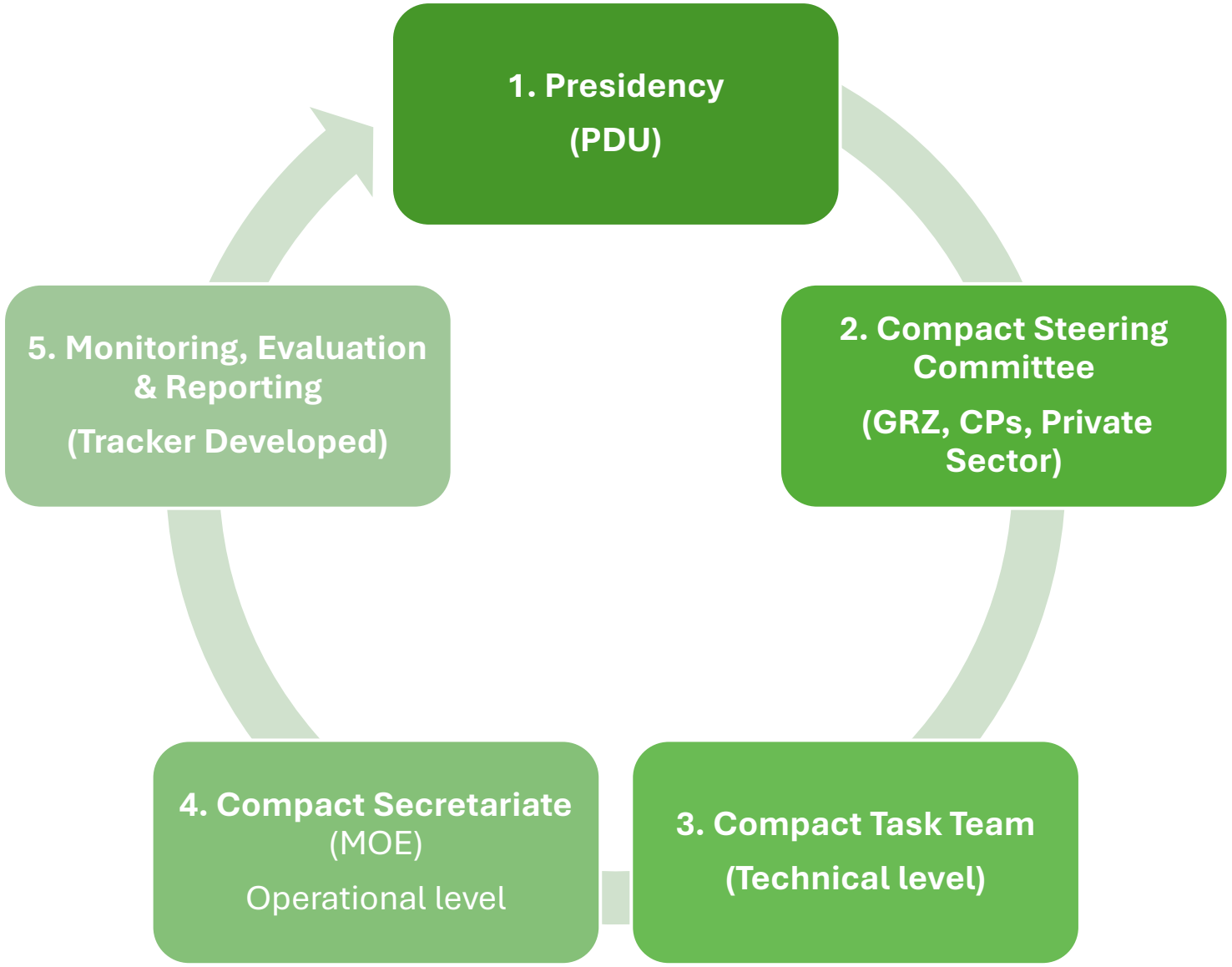
5. Implementation Framework



1. **PDU:** link into Presidency/alignment with Presidential Priorities
2. **Steering Committee:** provide oversight/ monitoring results bi-annually
3. **Task Team:** develop/review technical outputs quarterly
4. **Secretariate:** day-day running
5. **Tracker:** monitoring/reporting progress on key milestone monthly

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Zikomo!