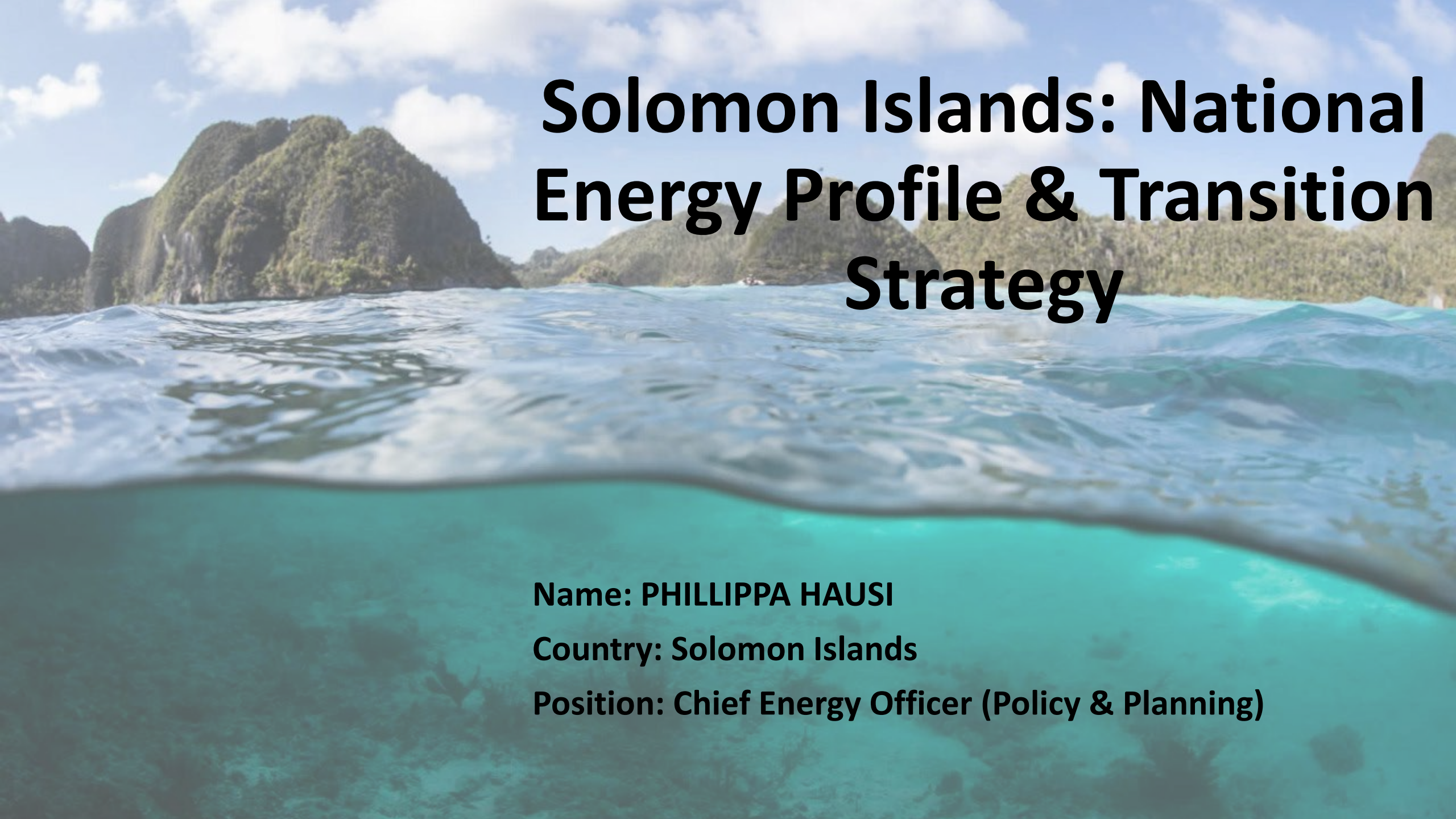




Solomon Islands: National Energy Profile & Transition Strategy

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Country Profile & Economic Indicators

Geography: Archipelagic nation in Melanesia comprising over 1,000 islands, atolls, and cay.

LDC Status: Critical transition phase toward graduation in December 2027.

Nominal GDP: ~SBD \$13.5 billion (~USD \$1.6 billion)

Demographics: ~155,000 households with a deeply rural foundation.

Growth Drivers: Post-pandemic recovery driven by mining and structural infrastructure.

Current Primary Energy Mix

Traditional Biomass (~54% of Total Supply): Largest source by volume; entirely local firewood, coconut husks/shells, and agricultural residues.

Imported Petroleum (~45% of Total Supply): 100% reliance on foreign refined products; zero domestic oil or gas reserves.

Modern Renewables (<1% of Total Supply): Early growth phase; currently grid-connected solar and mini-hydro networks

High Vulnerability to Imported Petroleum

- ✓ **Import Volume:** 2,000 to 2,500 barrels of refined petroleum products imported daily.
- ✓ **Grid Dependency:** Over 93% of state utility grid electricity is generated by burning Automotive Diesel Oil (ADO).
- ✓ **Key Fuel Types & Uses:** Automotive Diesel Oil (ADO): Powers Solomon Power grids (Lungga and Honiara stations) and inter-island maritime vessels.
- ✓ **Motor Gasoline (Petrol):** Drives urban land transport and outboard motorboats for inter-island transit
- ✓ **LPG & Kerosene:** Used for urban cooking and remote baseline lighting

Total Final Energy Consumption Breakdown

Residential Sector (~56%): Largest volume consumer. Driven by rural biomass for cooking and constrained urban grid electricity due to exceptionally high power tariffs.

Transport Sector (~38%): Heavy maritime dependency (cargo ships, ferries) and Guadalcanal/Honiara land networks.

Commercial & Industrial (~5%): Energy-intensive operations. Includes agro-processing (SolTuna canning, palm oil milling) and off-grid mining/logging diesel generators.

Public Services & Agriculture (~1%): Administrative buildings, hospitals (National Referral Hospital), and minor farming setups

National Electricity Generation Mix

Diesel Generation (~93%): Powered by Solomon Power's backbone Lungga Power Station (four fuel-efficient MAN generators + older Wärtsilä/Niigata units). High costs produce among the highest tariffs in the Pacific.

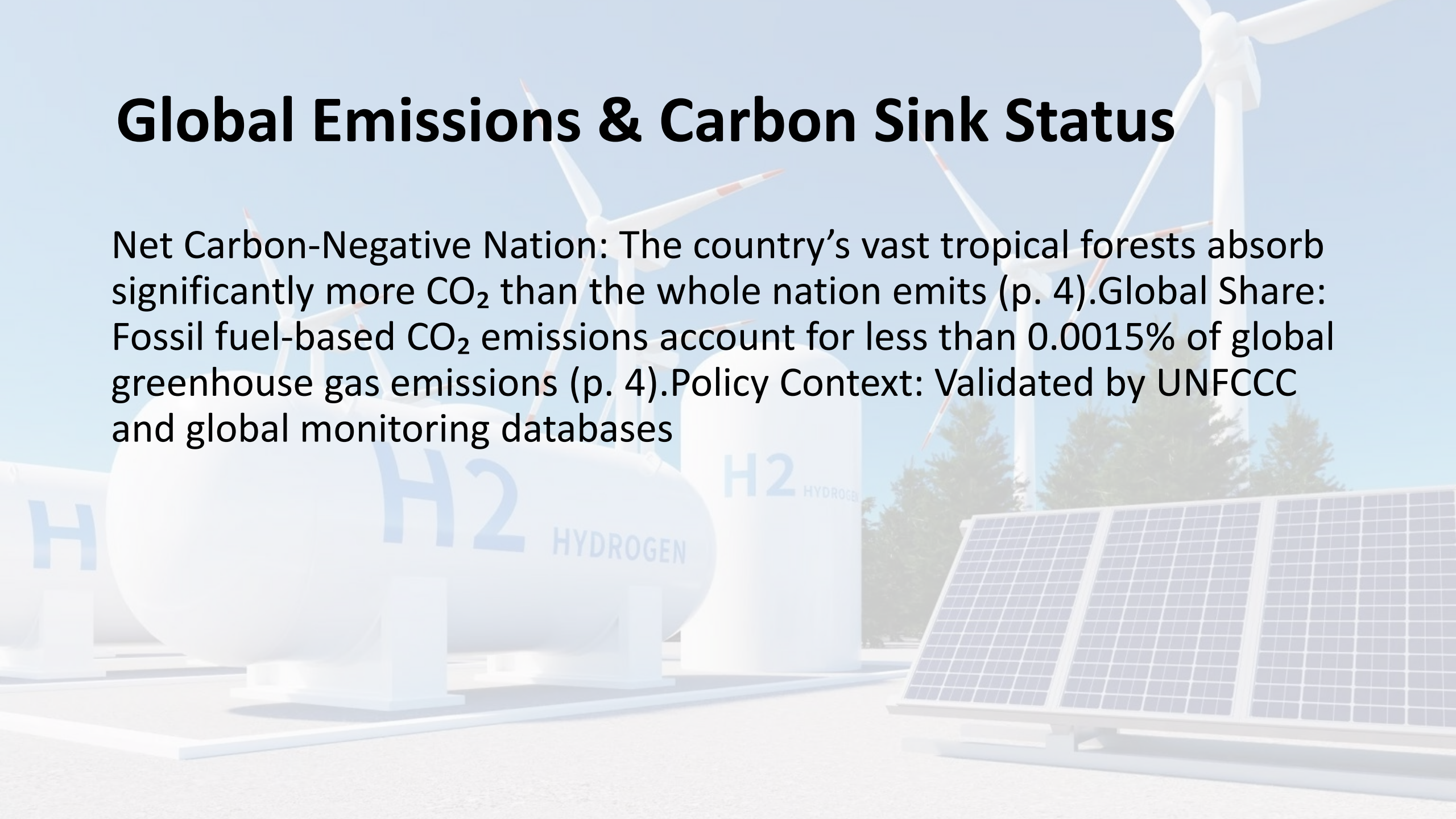
Solar Generation (~5% - 6%): Supported by the 1.0 MW Henderson Solar Farm, 50kW Ranadi HQ array, and provincial Solar Hybrid stations (Taro, Seghe, Tulagi, Malu'u).

Hydroelectric (~1%): Minimal utility share; supported by a single 150 kW run-of-river mini-hydro facility in Buala (Isabel Province).

Economic Relief: National utility rates were slashed by 8.3% via structural adjustments, aiming for a total 25% reduction.

Global Emissions & Carbon Sink Status

Net Carbon-Negative Nation: The country's vast tropical forests absorb significantly more CO₂ than the whole nation emits (p. 4). Global Share: Fossil fuel-based CO₂ emissions account for less than 0.0015% of global greenhouse gas emissions (p. 4). Policy Context: Validated by UNFCCC and global monitoring databases



Strategic Roadmap to 2030, 2040, and 2050

Decade	Projected Demand Dynamics	Primary Supply Matrix	Key Policy Target / Project
2030	Honiara urban demand scales toward ~85–95 GWh annually; initial industrial shift away from diesel.	Hydroelectric (Tina River) handles baseline; distributed solar PV handles the daytime peak.	100% Renewable Generation on the main Honiara grid.
2040	Aggressive demand expansion due to urban population growth and initial adoption of electric mobility.	Interconnected regional solar mini-grids, backed by large-scale battery storage (BESS) .	50% Grid-Wide Renewable Generation across all provincial outstations.
2050	Peak load matches fully formalized industrial, commercial, and rural networks across the archipelago.	100% Native Renewables (Hydro, Solar, Geothermal, and Biomass Gasification).	100% Universal Electricity Access nationwide.

Transforming the Policy Framework

- ✓ Solomon Islands National Energy Policy
- ✓ Dedicated Solar, Hydro, and Rural Electrification policies.
- ✓ Legal updates: Amendment of the Electricity Act & Petroleum Act

Strategic Objectives for this Energy Policy training Program

In this JICA program, I am particularly eager to study the policy and regulatory frameworks governing the integration of large-scale renewable energy into small, isolated grid networks. As the Solomon Islands undergoes a major transition toward solar hybrids and utility-scale hydropower, learning Japan's advanced methodologies for Grid Stabilization and Battery Energy Storage Systems (BESS) is highly critical. Furthermore, I want to learn about market unbundling strategies and policy designs that successfully attract private investment via Independent Power Producers (IPPs). Finally, I am keen to study Japan's structural approach to rural electrification and micro-grid management, which will directly assist me in drafting scalable policies to improve electricity access across our fragmented provincial outstations."