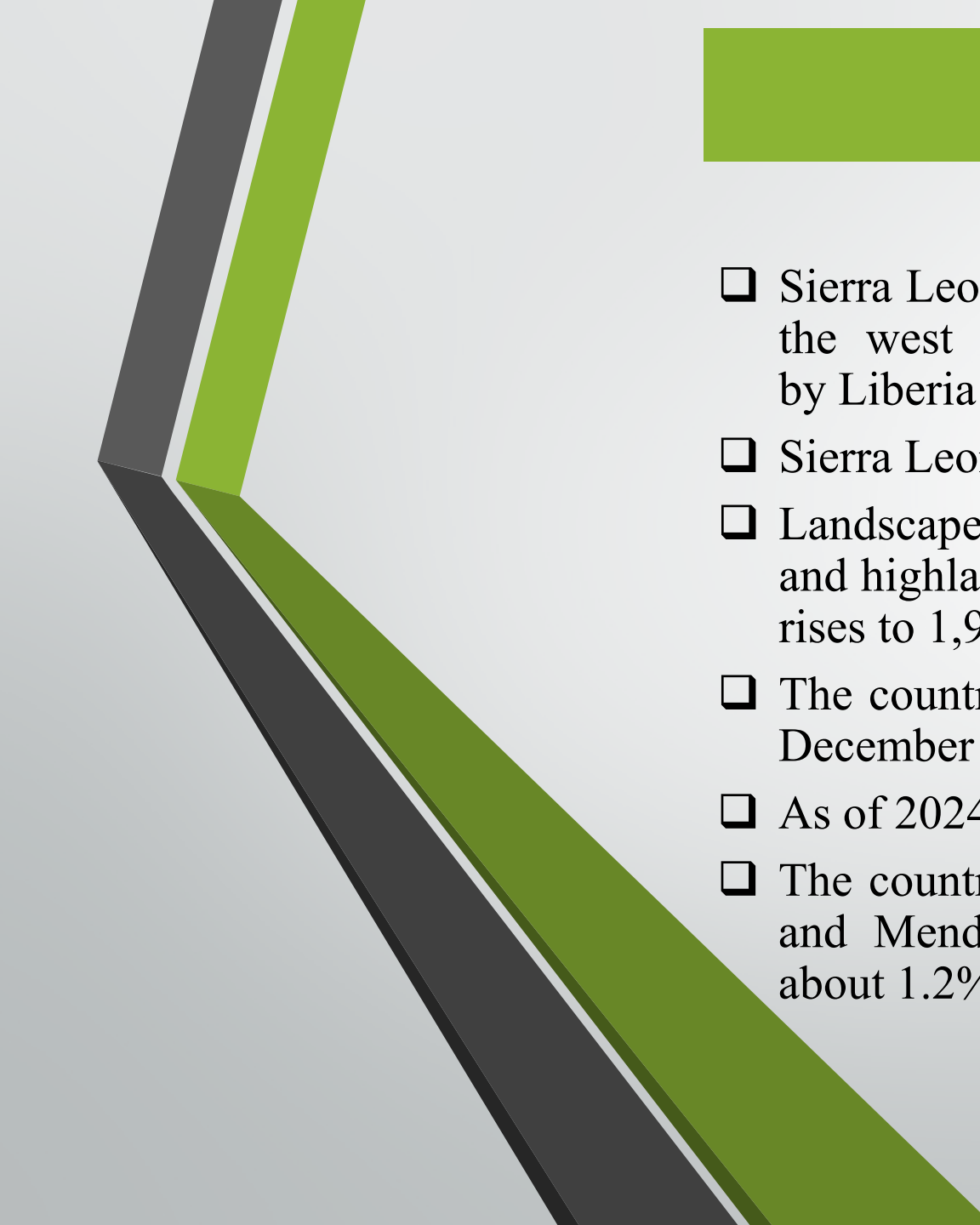


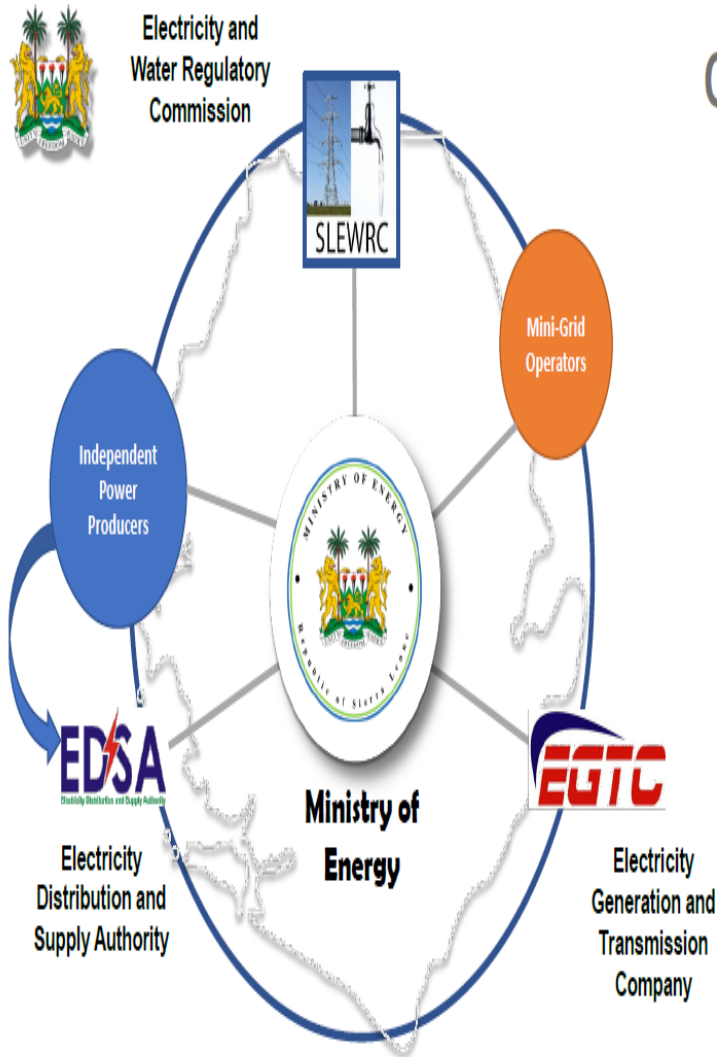


General Information

COUNTRY PROFILE

- ❑ Sierra Leone, officially the Republic of Sierra Leone, is a country on the west coast of West Africa. It is bordered to the southeast by Liberia and by Guinea to the north.
- ❑ Sierra Leone covers an area of approximately 73,252 km².
- ❑ Landscape varies from coastal swamps, to peninsula, interior plains, and highlands such as the Loma Mountains, where Mount Bintumani rises to 1,948 meters.
- ❑ The country has a tropical climate with a rainy season from May to December and a dry season from December to May.
- ❑ As of 2024, Sierra Leone has a population of about 8.64 million.
- ❑ The country is ethnically diverse, with 18 ethnic groups; the Temne and Mende are predominant, while the Creole people constitute about 1.2% of the population.

General Information Cont.



Organization Diagram

- The sector is monitored by the Ministry of Energy (MoE), responsible for policy, planning and direction.
- The Electricity and Water Regulatory Commission (EWRC) regulates the utility service providers; formulates, implements and monitors quality, compliance and tariff in electricity.
- EGTC is responsible for the generation of electricity and transmission at 66kV and higher.
- EDSA is responsible for the sub-transmission below 66kV, and the distribution network.
- IPP's mandated to sell generated electricity to EDSA
- Mini-Grid Operators generate, manage and sell power directly to consumers

ECONOMIC INDICATORS

- ❑ The GDP per capita in 2024 is 873USD, with a total GDP of 1.30 billion USD in 2023
- ❑ In 2024, the average household size in Sierra Leone is about 5.2 persons per household, meaning that on average, each house accommodates just over five people. This reflects the country's demographic trend of large family units compared to global averages.
- ❑ The average life expectancy is estimated around 62.3 years for both sexes combined, with women living longer (64.1 years) than men (60.6 years).
- ❑ Currently, 45.1% of the population lives in the urban area (3.8 million people in 2024).
- ❑ The 2024 population density in Sierra Leone is 120 people per Km² (310 people per mi²), calculated on a total land area of 72,180 Km² (27,869 sq. miles).

Past Energy Demand & Supply

PRIMARY ENERGY SUPPLY BY SOURCE 2015-2025

Year	Biomass & Waste	Oil Products	Hydropower	Other Renewables	Total (ktoe)
2015	~1,100 ktoe	~250 ktoe	~20 ktoe	<10 ktoe	~1,380
2017	~1,150 ktoe	~260 ktoe	~25 ktoe	<10 ktoe	~1,445
2019	~1,200 ktoe	~270 ktoe	~30 ktoe	<10 ktoe	~1,510
2021	~1,180 ktoe	~280 ktoe	~35 ktoe	<15 ktoe	~1,510
2023	~1,190 ktoe	~290 ktoe	~40 ktoe	<15 ktoe	~1,535
2025*	~1,200 ktoe	~300 ktoe	~45 ktoe	~20 ktoe	~1,565

PRIMARY ENERGY SUPPLY BY ENERGY SOURCE 2015-2025

Year	Biomass	Oil products	Hydropower	Other renewables	Total (ktoe)
2015	~1,300	~250	~20	~5	~1,575
2017	~1,350	~260	~25	~5	~1,640
2019	~1,400	~270	~30	~10	~1,710
2021	~1,420	~280	~35	~10	~1,745
2023	~1,450	~290	~40	~15	~1,795
2025*	~1,480	~300	~45	~20	~1,845

Past Energy Demand & Supply Cont.

FINAL ENERGY CONSUMPTION BY SECTOR 2015-2025

Year	Residential	Industry	Transport	Services	Total
2015	~1,650 ktoe	~220 ktoe	~300 ktoe	~80 ktoe	~2,250 ktoe
2018	~1,700 ktoe	~250 ktoe	~350 ktoe	~90 ktoe	~2,390 ktoe
2020	~1,750 ktoe	~270 ktoe	~400 ktoe	~100 ktoe	~2,520 ktoe
2023	~1,800 ktoe	~300 ktoe	~450 ktoe	~110 ktoe	~2,660 ktoe
2025*	~1,850 ktoe	~320 ktoe	~500 ktoe	~120 ktoe	~2,790 ktoe
Year	Residential	Industry	Transport	Services	Total

FINAL ENERGY CONSUMPTION BY ENERGY SOURCE 2015-2025

Year	Biomass	Oil products	Electricity	Other renewables	Total (ktoe)
2015	~1,050	~180	~25	<10	~1,265
2017	~1,100	~190	~30	<10	~1,330
2019	~1,150	~200	~35	<15	~1,400
2021	~1,200	~210	~40	<15	~1,465
2023	~1,250	~220	~45	~20	~1,535
2025*	~1,300	~230	~50	~25	~1,605

Past Energy Demand & Supply Cont.

ELECTRICITY GENERATION BY ENERGY SOURCE
2015-2025

Year	Hydropower	Oil/Diesel	Solar	Total
2015	~120 GWh	~60 GWh	<5 GWh	~185 GWh
2016	~130 GWh	~65 GWh	<5 GWh	~200 GWh
2017	~150 GWh	~70 GWh	~10 GWh	~230 GWh
2018	~160 GWh	~80 GWh	~20 GWh	~268 GWh (peak)
2019	~140 GWh	~60 GWh	~15 GWh	~215 GWh
2020	~135 GWh	~55 GWh	~20 GWh	~210 GWh
2021	~140 GWh	~50 GWh	~25 GWh	~215 GWh
2022	~145 GWh	~50 GWh	~30 GWh	~225 GWh
2023	~150 GWh	~45 GWh	~18 GWh	~213 GWh
2024	~155 GWh	~45 GWh	~16 GWh	~216 GWh
2025 (proj.)	~160 GWh	~40 GWh	~20 GWh	~220 GWh

ANNUAL CO₂ EMISSIONS BY SECTOR
(2015–2025)

Year	Power	Industry	Transport	Agriculture	Buildings	Waste	Total CO ₂ (Mt)
2015	~0.35	~0.18	~0.22	~0.20	~0.05	~0.02	1.02
2016	~0.37	~0.19	~0.23	~0.21	~0.05	~0.02	1.06
2017	~0.36	~0.18	~0.22	~0.20	~0.05	~0.02	1.04
2018	~0.42	~0.20	~0.25	~0.21	~0.06	~0.02	1.21
2019	~0.41	~0.19	~0.24	~0.21	~0.06	~0.02	1.21
2020	~0.42	~0.20	~0.23	~0.20	~0.06	~0.02	1.23
2021	~0.50	~0.22	~0.26	~0.22	~0.07	~0.02	1.47
2022	~0.49	~0.21	~0.25	~0.21	~0.06	~0.02	1.47
2023	~0.47	~0.20	~0.24	~0.21	~0.06	~0.02	1.41
2024	~0.49	~0.21	~0.25	~0.22	~0.06	~0.02	1.46
2025*	~0.50	~0.22	~0.26	~0.22	~0.07	~0.02	1.48

ANNUAL CO₂ EMISSIONS BY ENERGY SOURCE
(2015–2025)

Year	Oil Products	Coal	Natural Gas	Renewables/Biomass*
2015	~1.6	~0	~0	~0.3
2018	~1.8	~0	~0	~0.4
2020	~2.0	~0	~0	~0.4
2023	~2.1	~0	~0	~0.5
2025	~2.2	~0	~0	~0.5

Outlook of Energy Demand & Supply

PRIMARY ENERGY SUPPLY BY SOURCE 2030, 2040, and 2050

Year	Biomass	Hydropower	Solar	Oil	Other renewables	Total
2030	~1,800 ktoe	~500 ktoe	~200 ktoe	~300 ktoe	~50 ktoe	~2,850 ktoe
2040	~1,600 ktoe	~900 ktoe	~500 ktoe	~350 ktoe	~100 ktoe	~3,450 ktoe
2050	~1,400 ktoe	~1,400 ktoe	~900 ktoe	~400 ktoe	~150 ktoe	~4,250 ktoe

PRIMARY ENERGY SUPPLY BY ENERGY SOURCE 2030, 2040, and 2050

Year	Biomass	Hydropower	Oil Products	Solar/Wind	Total Supply
2030	~1,800 ktoe	~400 ktoe	~350 ktoe	~150 ktoe	~2,700 ktoe
2040	~1,600 ktoe	~700 ktoe	~400 ktoe	~300 ktoe	~3,000 ktoe
2050	~1,400 ktoe	~1,200 ktoe	~450 ktoe	~600 ktoe	~3,650 ktoe

FINAL ENERGY CONSUMPTION BY SECTOR 2030, 2040, and 2050

Year	Residential	Transport	Industry	Services	Agriculture	Total
2030	~1,200	~400	~200	~150	~100	~2,050
2040	~1,500	~700	~400	~250	~150	~3,000
2050	~1,800	~1,200	~600	~300	~200	~4,100

FINAL ENERGY CONSUMPTION BY ENERGY SOURCE 2030, 2040, and 2050

Year	Biomass	Petroleum products	Electricity	Renewables	Total
2030	~1,900 ktoe	~450 ktoe	~120 ktoe	~80 ktoe	~2,550 ktoe
2040	~2,100 ktoe	~600 ktoe	~200 ktoe	~150 ktoe	~3,050 ktoe
2050	~2,300 ktoe	~800 ktoe	~350 ktoe	~250 ktoe	~3,700 ktoe

Outlook of Energy Demand & Supply Cont.

ELECTRICITY GENERATION BY ENERGY SOURCE (2030, 2040, & 2050)

Year	Hydropower	Solar PV	Oil/Diesel	Biomass	Total
2030	~2,500 GWh	~1,000 GWh	~500 GWh	~300 GWh	~4,300 GWh
2040	~10,000 GWh	~5,000 GWh	~200 GWh	~200 GWh	~15,400 GWh
2050	~25,000 GWh	~15,000 GWh	~100 GWh	~100 GWh	~40,200 GWh

CO₂ EMISSIONS BY SECTOR (2030, 2040, & 2050)

Year	Energy	Transport	Agriculture	Forestry	Waste	Total
2030	~2.8 Mt	~1.2 Mt	~0.9 Mt	~0.7 Mt	~0.4 Mt	6.0 Mt
2040	~3.5 Mt	~1.6 Mt	~1.1 Mt	~0.8 Mt	~0.5 Mt	7.5 Mt
2050	~4.2 Mt	~2.0 Mt	~1.3 Mt	~0.9 Mt	~0.6 Mt	9.0 Mt

CO₂ EMISSIONS BY ENERGY SOURCE (2030, 2040, & 2050)

Year	Biomass	Oil	Coal	Natural Gas	Renewables	Total
2030	~2.8	~1.2	negligible	~0.3	~0.1	~4.4
2040	~2.0	~0.9	negligible	~0.2	~0.05	~3.15
2050	~0.8	~0.3	negligible	~0.1	~0.02	~1.22

Current Energy Policy and Measures

❑ Power Sector Reform Roadmap

- Led by the Ministry of Energy, this roadmap emphasizes institutional strengthening, expanding access, and promoting clean power solutions
- Focus areas include reliability improvements, sustainable generation, and transparent governance.

❑ Green Industrialization Strategy

- President Julius Maada Bio has positioned energy as the engine of production, jobs, and stability.
- Flagship initiative Feed Salone integrates energy with agriculture (irrigation, agro-processing, cold storage).
- Distributed renewable energy (mini-grids, stand-alone solar) prioritized for rural communities.
- Clean cooking transition is being promoted to create new value chains, especially benefiting women.

❑ Fiscal & Structural Reforms

- 2026 budget allocated NLe480.4 million to settle debts with Independent Power Providers (e.g., Karpowership, CI-Energy).
- Measures include:
 - ✓ Single Collection Account for transparency
 - ✓ Smart/prepaid meters rollout
 - ✓ Digital billing systems
 - ✓ Cost-reflective tariffs under the revised Energy and Water Regulatory Commission Act (2025), with subsidies for vulnerable households.
 - ✓ Mission 300 Compact aims to expand renewable generation and regional energy trade.

Major Difficulties and Bottlenecks Currently Faced in Formulating Energy Policies

❑ Low Electricity Access

Only 36% of Sierra Leoneans have access to electricity, with rural areas particularly underserved. Clean cooking access is critically low at 1.5%, creating health and environmental challenges.

❑ Financial Insolvency of Utilities

The Electricity Generation and Transmission Company (EGTC) and the Electricity Distribution and Supply Authority (EDSA) operates at a loss due to tariffs below cost-recovery, widespread illegal connections, and non-payment by customers. The government has had to subsidize the sector with over 2 billion New Leones (2018–2023).

❑ Dependence on Costly Energy Imports

Sierra Leone relies on power imports from Côte d'Ivoire and a heavy fuel oil ship (Karpower). This exposes the country to volatile oil prices and foreign exchange risks, as revenues are collected in Leones but payments are made in dollars.

Subject Areas of Interest in KCCP Energy Policy Training Program

☐ **Energy Economics and Markets**

- Market structures, production costs, and risk management
- Principles of demand and supply
- Oil, gas, and electricity pricing mechanisms

☐ **Energy Transition & Sustainability**

- Renewable energy integration strategies
- Climate change mitigation and adaptation policies
- Environmental sustainability frameworks

☐ **Energy Access & Equity**

- Policies for universal energy access
- Addressing social and economic impacts of energy transition
- Rural electrification and tariff design

☐ **Electricity Systems & Regulation**

- Grid integration and storage technologies
- Market design and electricity trading
- Tariff setting and regulatory economics

❖ **Expectation – Acquire skills to design, analyze, and implement effective energy strategies**

Energy Prices in Sierra Leone (March 2026)

Fuel Type	Price per Litre (Le)	Notes
Petrol	Le 32.00	Increased from NLe 28.50 in Jan 2026
Diesel	Le 32.00	Same as petrol, capped ceiling
Kerosene	Le 28.03	Higher due to global Platts benchmarks

Energy-related Investment for Domestic and Overseas

KEY DOMESTIC ENERGY INVESTMENTS

❑ Nant Project

- ❖ \$292 million loan from U.S. DFC and ECOWAS Bank.
- ❖ First large-scale independent power project in the country.
- ❖ 105MW combined-cycle power plant in Freetown.
- ❖ Expected to nearly double Sierra Leone's electricity generation capacity.

❑ SOGREAH Initiative

- ❖ 24 million EU-Denmark-backed program.
- ❖ Focused on rural electrification via green mini-grids.
- ❖ Provides performance-based capital support to reduce investment risk.
- ❖ Targets underserved communities, lowering tariffs and expanding access

❑ Ministry of Energy Projects

- ❖ Mission 300 Compact: connecting towns/villages to the national grid.
- ❖ Utility Reform Project: improving governance and transparency.
- ❖ Smart Metering Rollout: modernizing billing and customer service.
- ❖ Karpowership Partnership: floating power generation for stability.

Energy-related Investment for Domestic & Overseas Cont.

KEY DOMESTIC ENERGY INVESTMENTS CONT.

Project	Scale	Focus Area	Impact
Nant Power Plant	105MW	Urban/utility-scale	Doubles national capacity
SOGREA Mini-Grids	€24M	Rural electrification	Expands clean energy access
Mission 300 Compact	National	Grid expansion	Connects underserved towns
Smart Metering	Nationwide	Billing modernization	Improves transparency & service

Energy-related Investment for Domestic and Overseas Cont.

KEY OVERSEAS ENERGY INVESTMENT OPPORTUNITIES

☐ **Hydropower**

- Bumbuna I hydropower expansion in Tonkolili District is open for private partnerships.
- Government promoting feasibility studies for 6 new hydropower projects.

☐ **Solar Energy**

- 20 MW solar + 10 MW battery storage project available for investors to improve dry-season reliability.

☐ **Wind Energy**

- Low-speed turbines suitable for rural electrification in the North.

☐ **Bioenergy**

- Potential for biofuels from maize and cassava, plus biogas from waste.

Energy-related Investment for Domestic & Overseas Cont.

KEY OVERSEAS ENERGY INVESTMENT OPPORTUNITIES CONT.

Sector	Potential Capacity	Key Projects	Advantages
Hydropower	2,000+ MW	Bumbuna I expansion	Reliable, low-cost renewable
Solar	1,800 MW	20 MW solar + battery	Strong radiation, scalable mini-grids
Wind	Emerging	Rural electrification projects	Suitable for remote areas
Bioenergy	Large untapped	Cassava/maize biofuels	Waste-to-energy potential