

RENEWABLE GENERATION REPORT

Quarter 02

APR 2024 - JUN 2024



Introduction:

This report offers comprehensive insights into the quarterly performance of renewable energy generation in Sri Lanka. The data and analysis presented herein aim to guide investment decisions within the country's electricity sector. The main focus is on Non-Conventional Renewable Energy (NCRE) sources, including Mini Hydro, Wind, Solar PV, Biomass, and Municipal Solid Waste.

Most solar PV systems tend to be either utility-scale installations with a capacity usually above 1 megawatt (MW) or rooftop PV typically below 1 MW. Residences may be limited to small systems usually up to 20 kilowatts (kW), while larger public, commercial, and industrial buildings may have systems with a capacity as large as 1 MW or even more. Land based wind power projects have been implemented so far while offshore wind projects are considered in the pipeline.

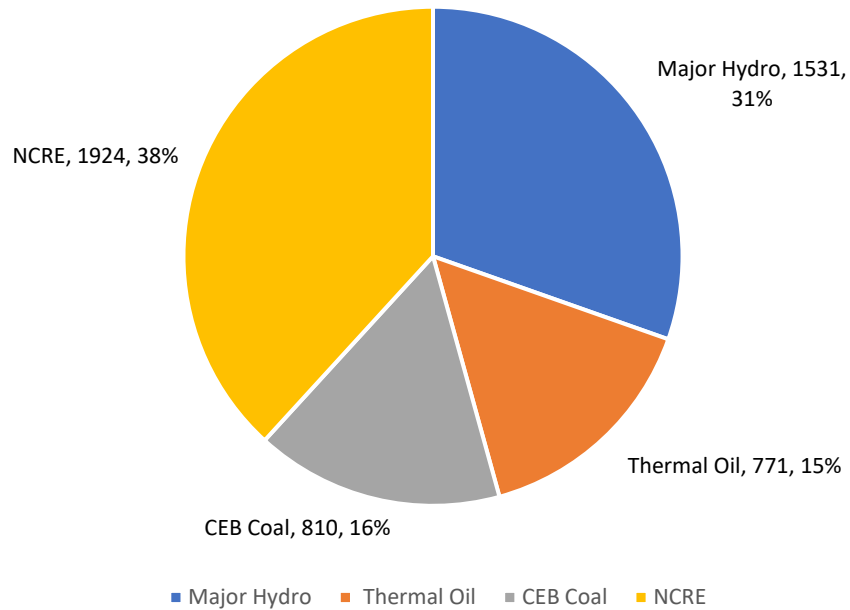
In 2019, the Minister of Power, Energy, and Business Development published the National Energy Policy & Strategies of Sri Lanka, prepared after reviewing and revising the National Energy Policy and Strategies of Sri Lanka published in the Gazette Extraordinary No. 1553/10 of 10.06.2008. The primary objective of the energy policy is to ensure energy security through supplies that are cleaner, secure, economical, and reliable, and to provide convenient, affordable energy services to support the socially equitable development of Sri Lanka.

Policy guidelines such as the 'General Policy Guidelines on the Electricity Industry' as required under Sri Lanka Electricity Act No. 20 of 2009 statutorily required to be issued for each sub-sector, are expected to be prepared and issued, based on this national energy policy.

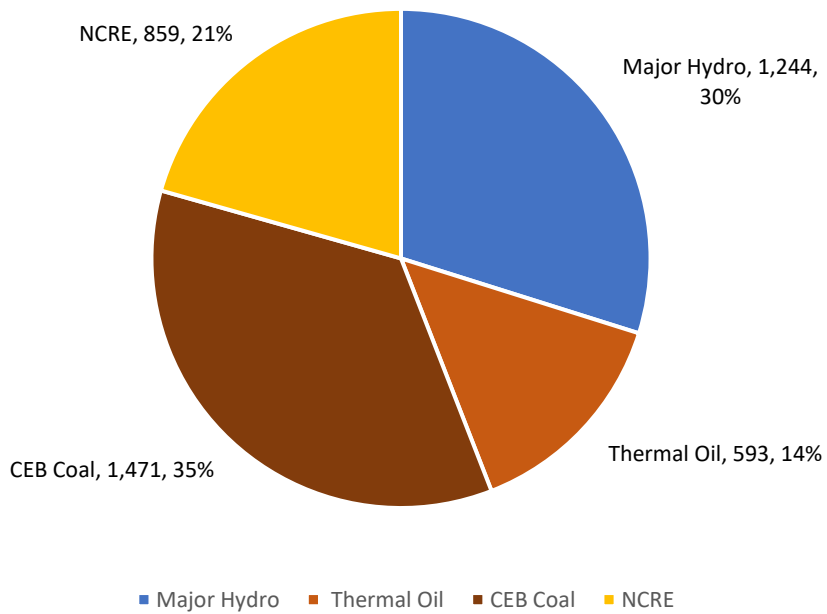
Sri Lanka's power sector development is carried out based on the Long-term generation expansion plan (LTGEP) prepared by the Transmission Licensee (ie. Ceylon Electricity Board (CEB)) and approved by the Public Utilities Commission of Sri Lanka (PUCSL). LTGEP is a rolling plan prepared in every two years incorporating the changes introduced by the varying economic and technical parameters used in the planning process.

**Target: To increase the renewable energy (RE) share
from 50% to 70% by 2030.**

Installed Capacity (MW) by Source - as at 30.06.2024

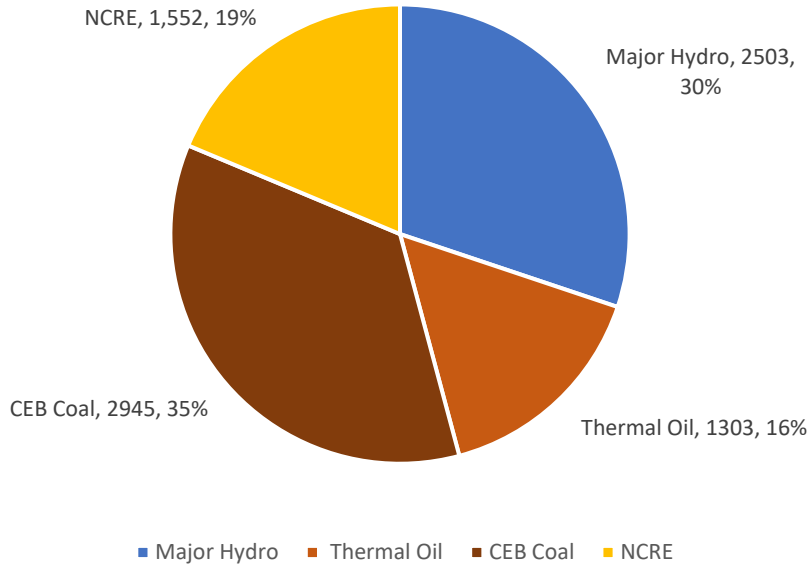


Generation by Source (GWh) - 2nd Quarter 2024



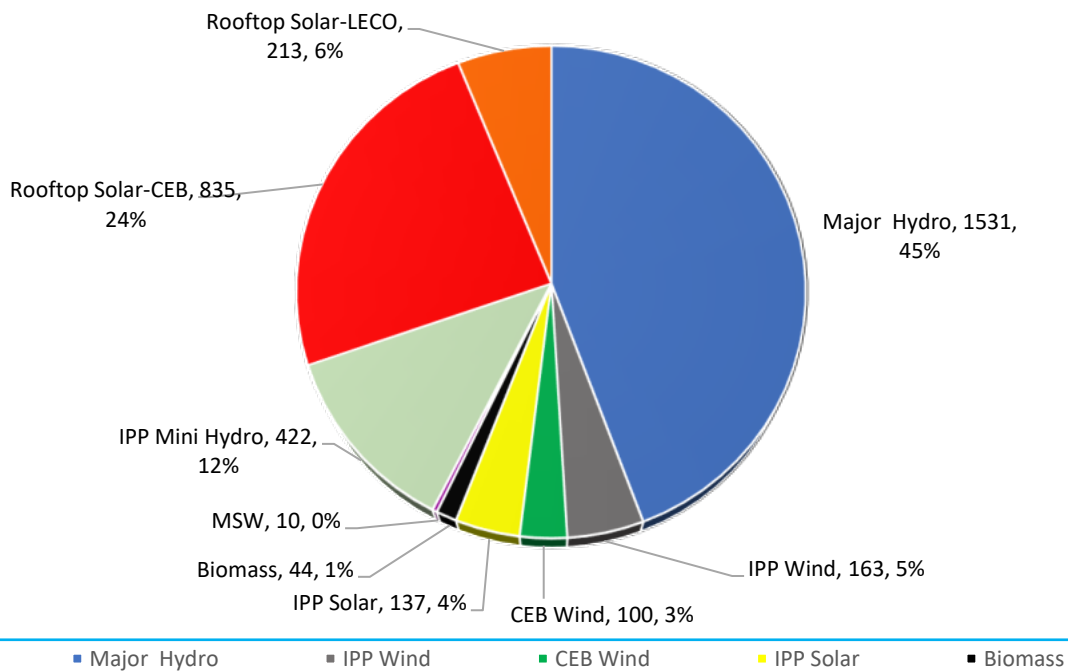
Note: Contribution of rooftop Solar PV Generation from LECO areas is estimated.

Annual Cumulative Generation by Source (GWh) as at 30.06.2024

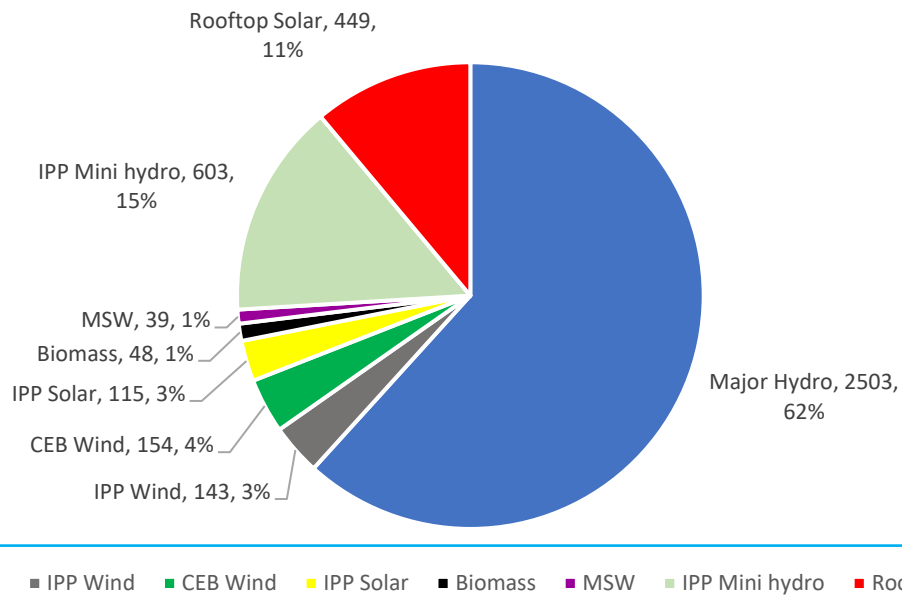


Note: Contribution of rooftop Solar PV Generation from LECO areas is estimated.

Renewable Energy Capacity (MW) as at 30.06.2024

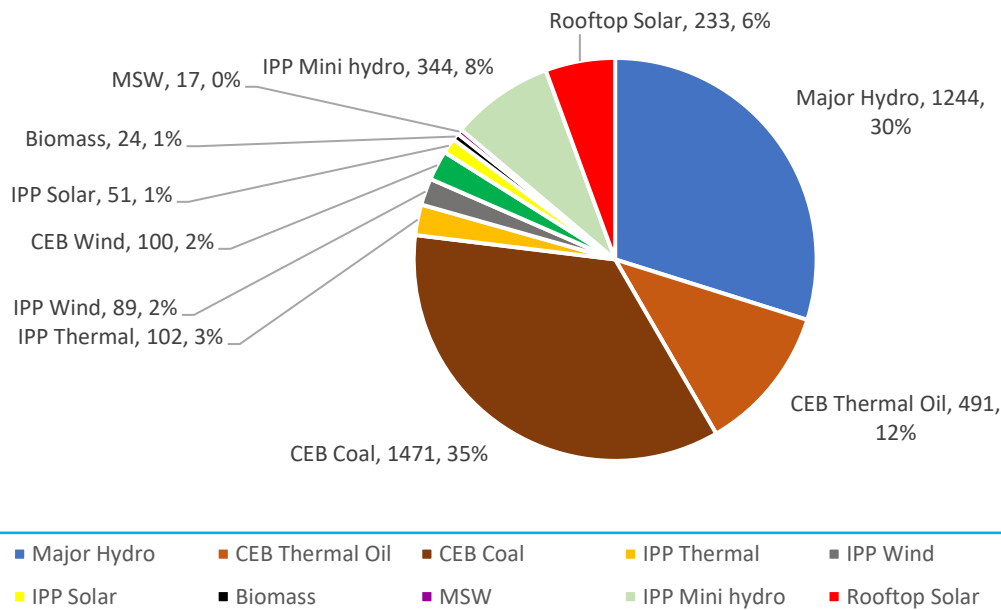


Annual Cumulative Renewable Generation (GWh) 01.01.2024 to 30.06.2024



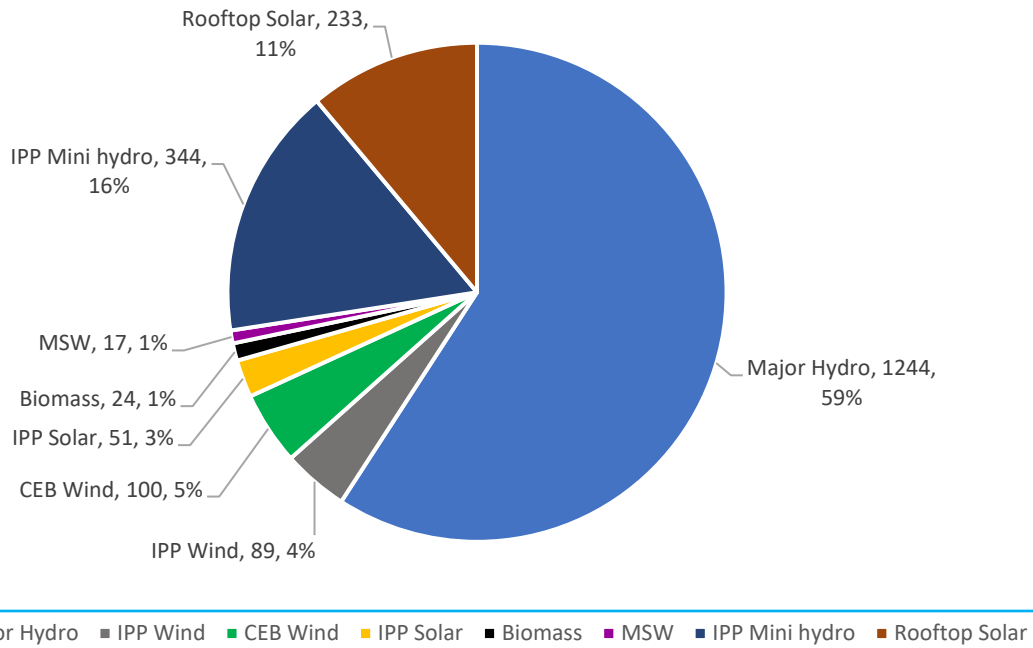
Note: Contribution of rooftop Solar PV Generation from LECO areas is estimated.

Generation Mix (GWh)- 2nd Quarter 2024



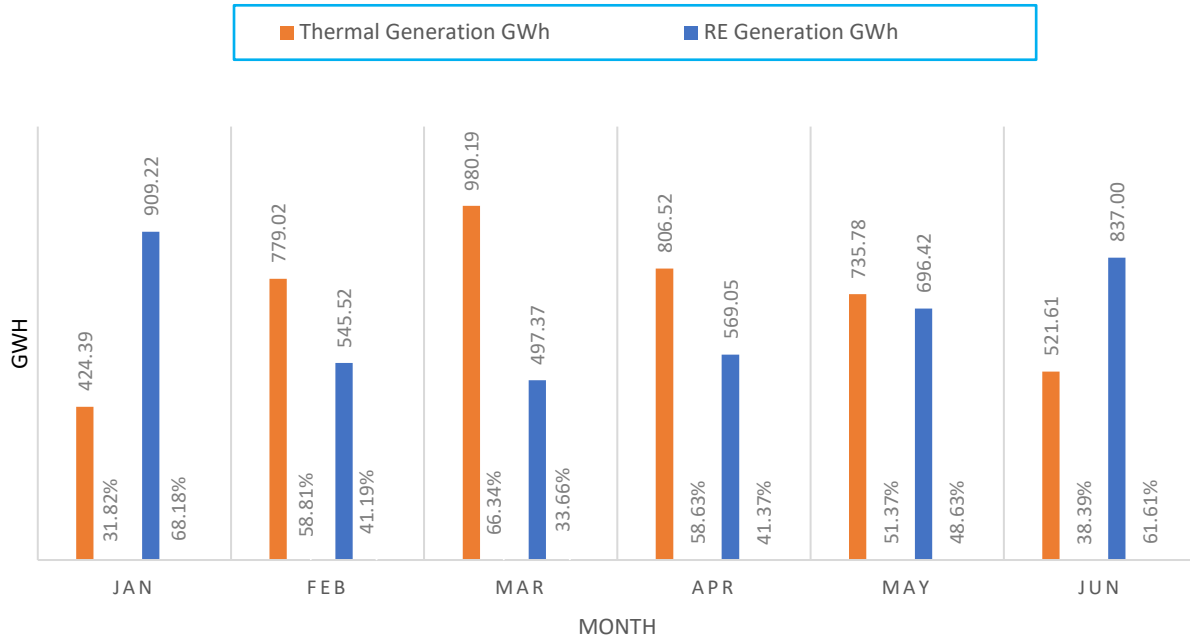
Note: Contribution of rooftop Solar PV Generation from LECO areas is estimated.

Renewable Generation Mix (GWh) - 2nd Quarter 2024

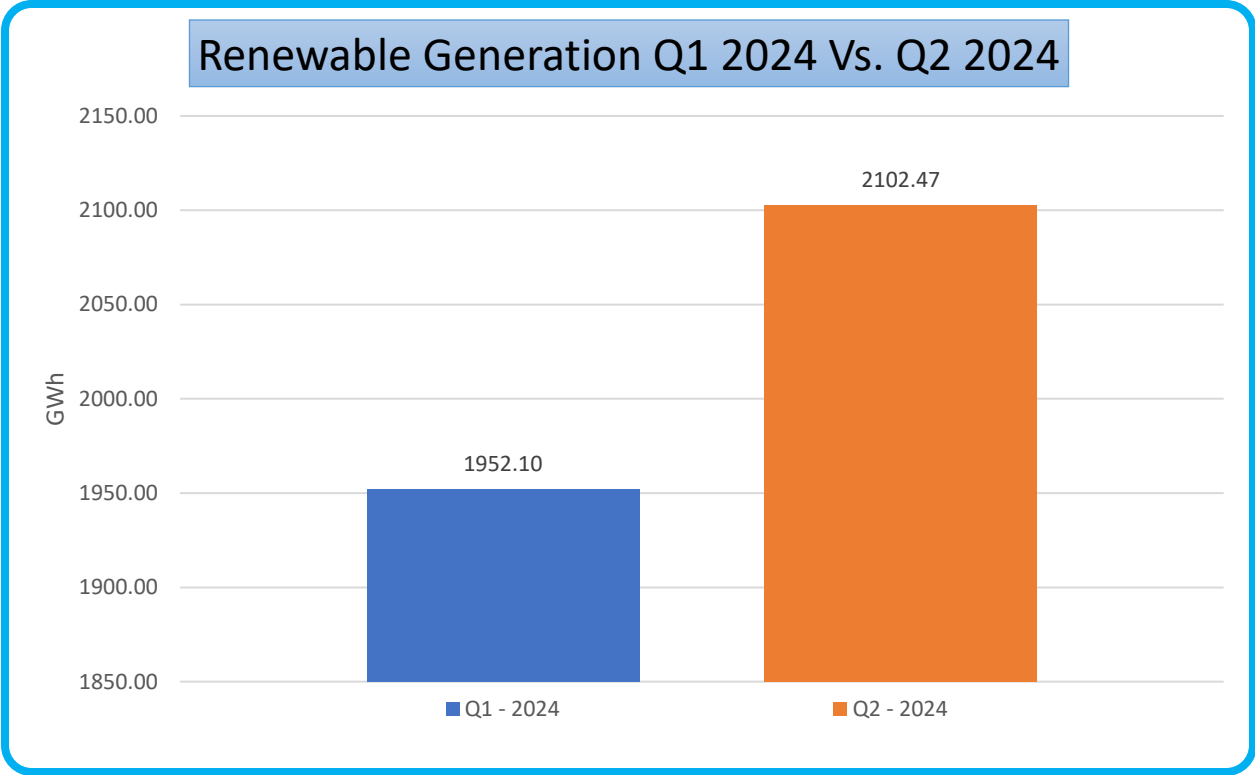


Note: Contribution of rooftop Solar PV Generation from LECO areas is estimated.

MONTHLY GENERATION COMPARISON - 2024



Note: Contribution of rooftop Solar PV Generation from LECO areas is estimated.

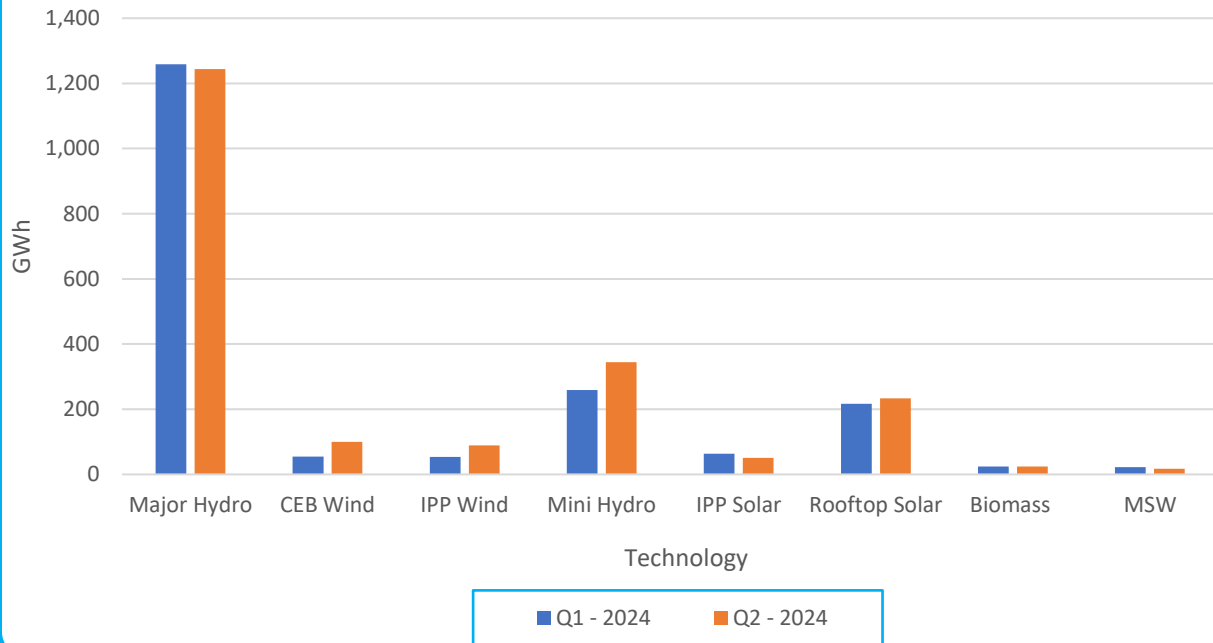


RE Generation in Q2 - 2024 increased by 7.70% as compared to Q1 – 2024

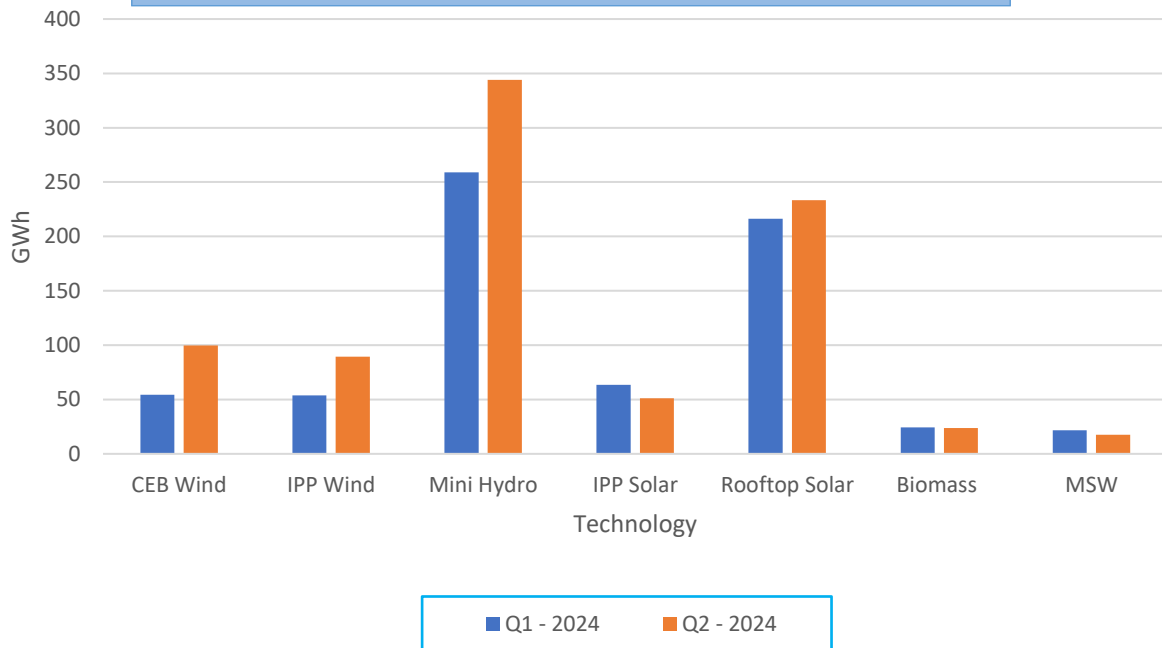
Renewable Generation (GWh) – 1st Quarter 2024 Vs 2nd Quarter 2024

Technology	Q1 - 2024	Q2 - 2024	Deviation (%)
Major Hydro	1,258.9	1,243.8	-1%
CEB Wind	54.3	99.7	83%
IPP Wind	53.9	89.5	66%
Mini Hydro	259.0	343.9	33%
IPP Solar	63.5	51.0	-20%
Rooftop Solar	216.2	233.3	8%
Biomass	24.4	23.8	-2%
MSW	21.8	17.5	-20%

Comparison of RE Generation between Q1 2024 and Q2 2024
(with Major Hydro)



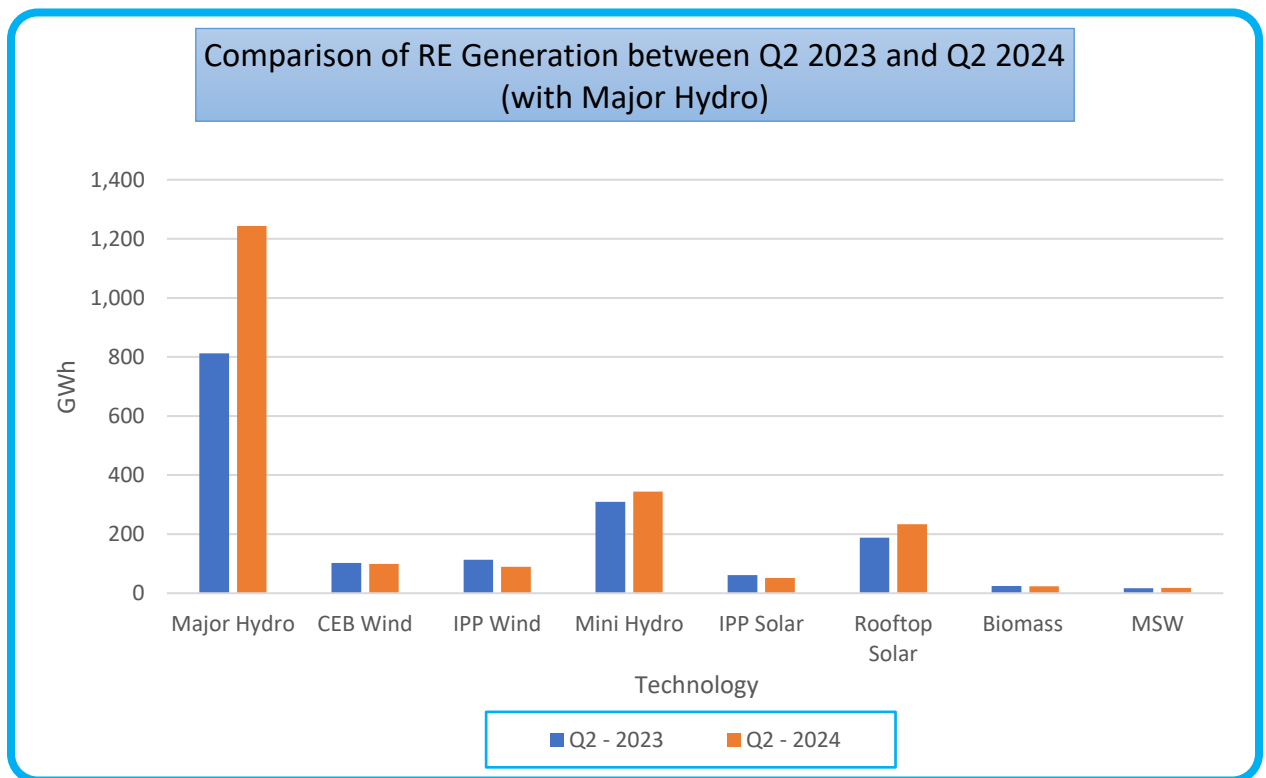
Comparison of RE Generation between Q1 2024 and Q2 2024
(without Major Hydro)



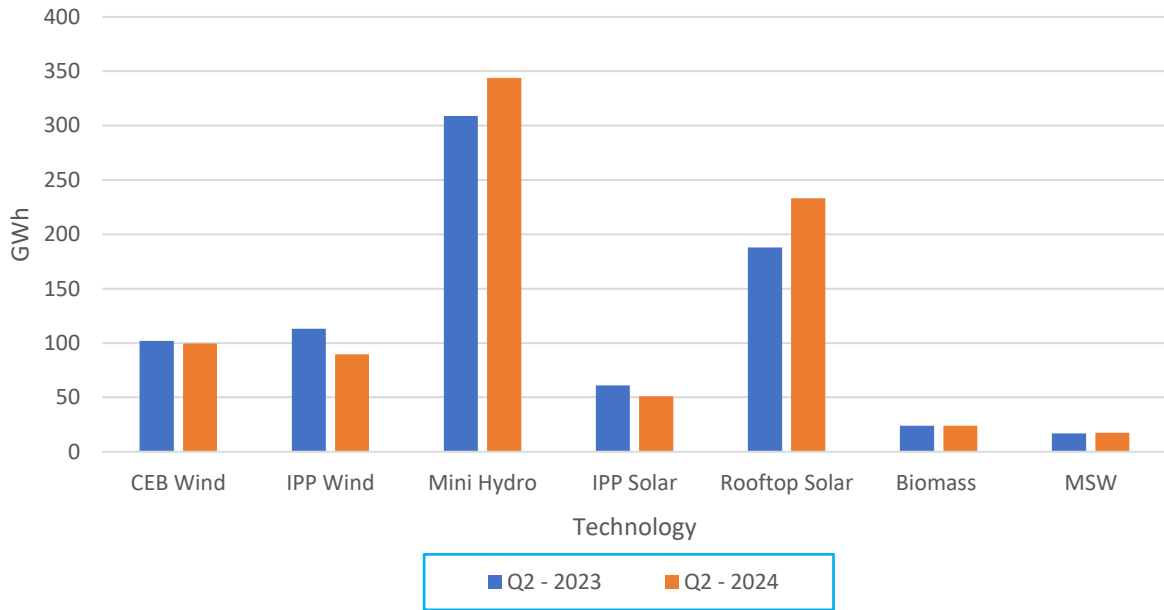
Renewable Generation Comparison

Renewable Generation (GWh) – 2nd Quarter 2023 vs 2nd Quarter 2024

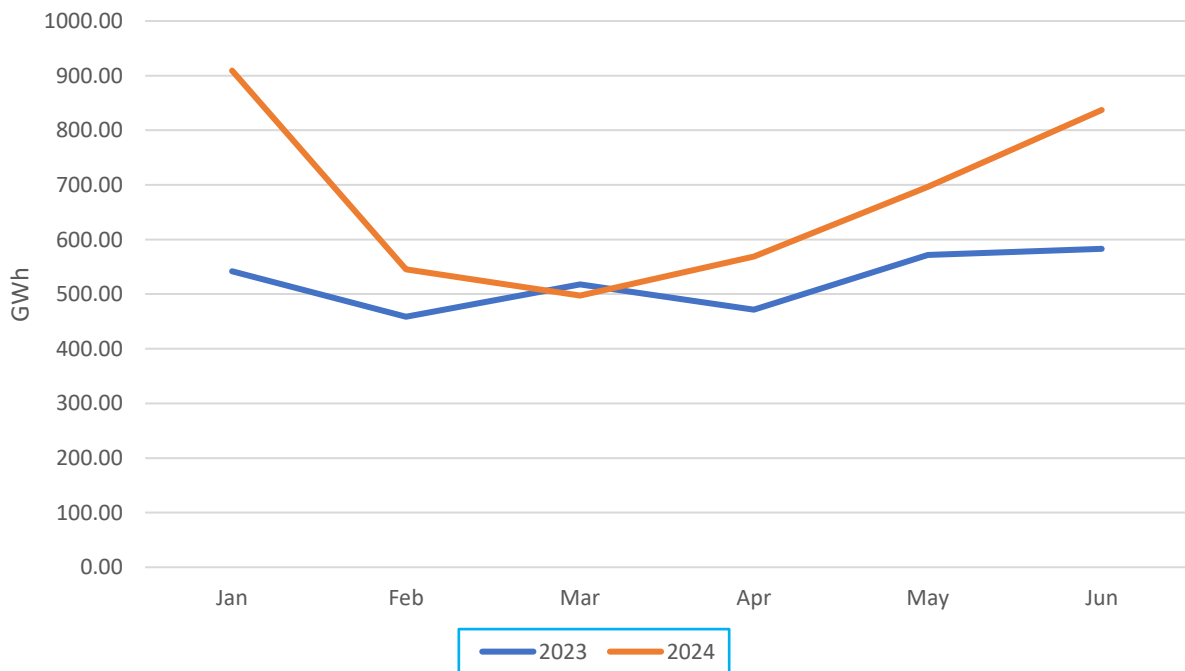
Technology	Q2 - 2023	Q2 - 2024	Deviation
Major Hydro	811.7	1,243.8	53%
CEB Wind	102.0	99.7	-2%
IPP Wind	113.0	89.5	-21%
Mini Hydro	309.4	343.9	11%
IPP Solar	60.8	51.0	-16%
Rooftop Solar	187.7	233.3	24%
Biomass	24.3	23.8	-2%
MSW	17.3	17.5	1%



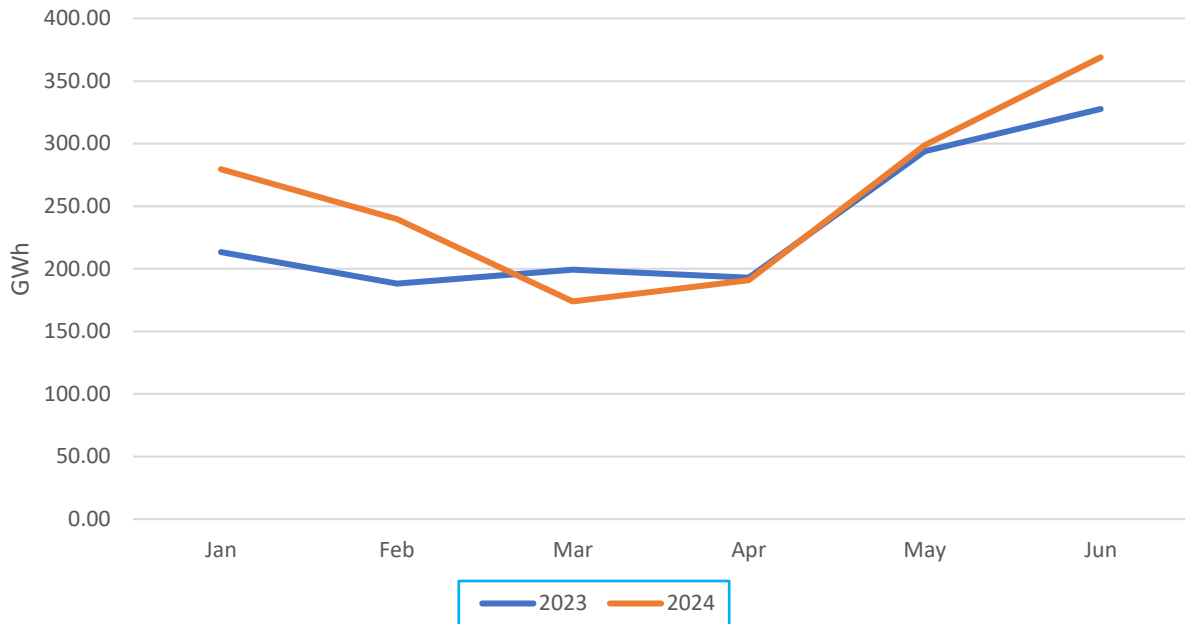
Comparison of RE Generation between Q2 2023 and Q2 2024 (without Major Hydro)



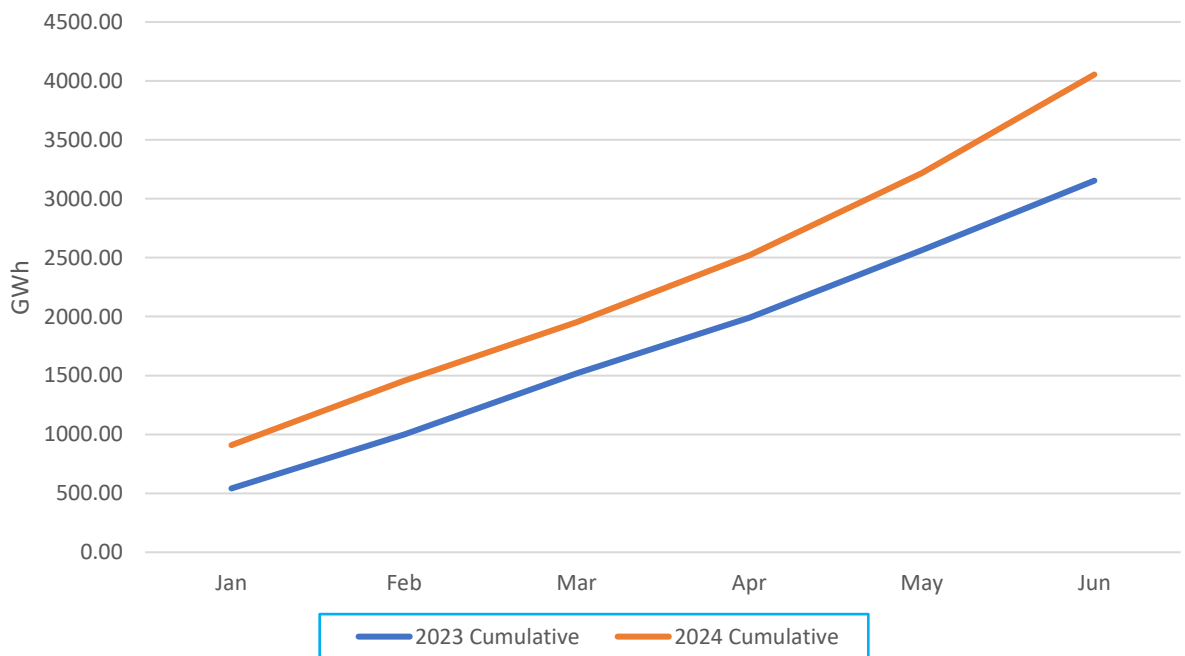
Monthly Renewable Energy Generation - 2023 vs 2024



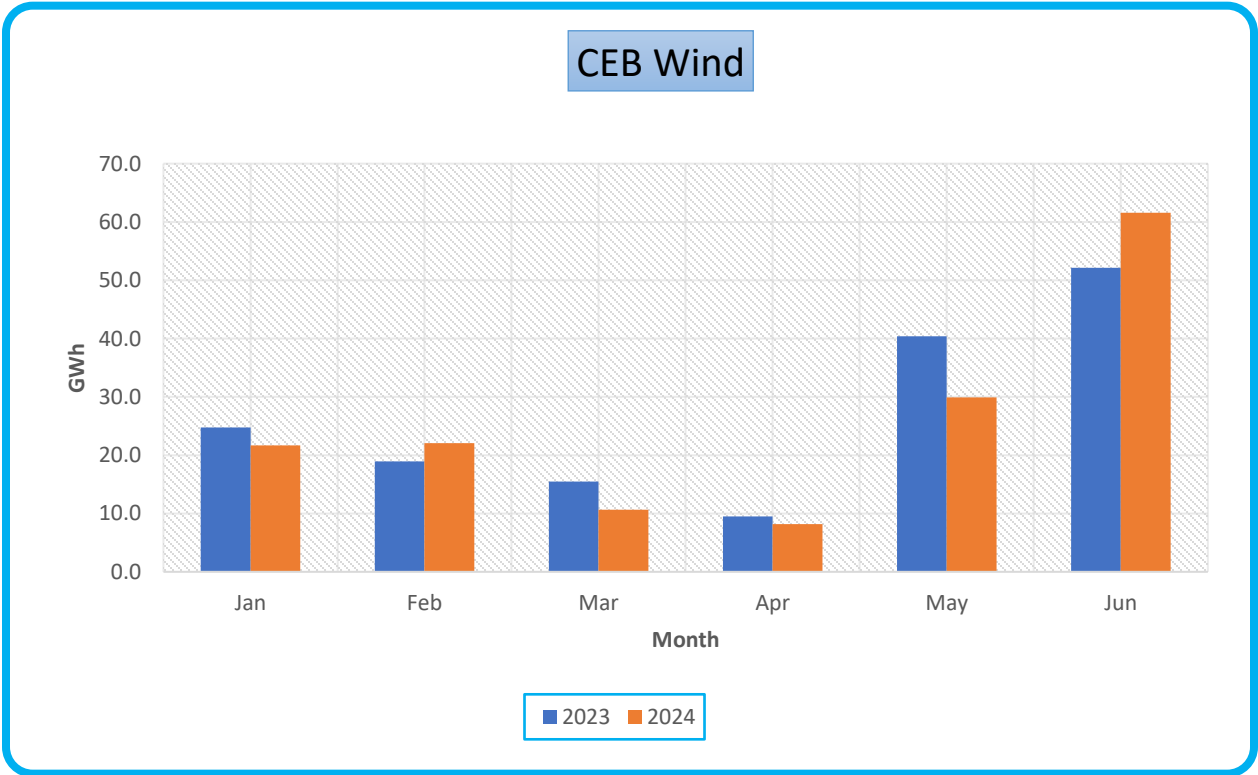
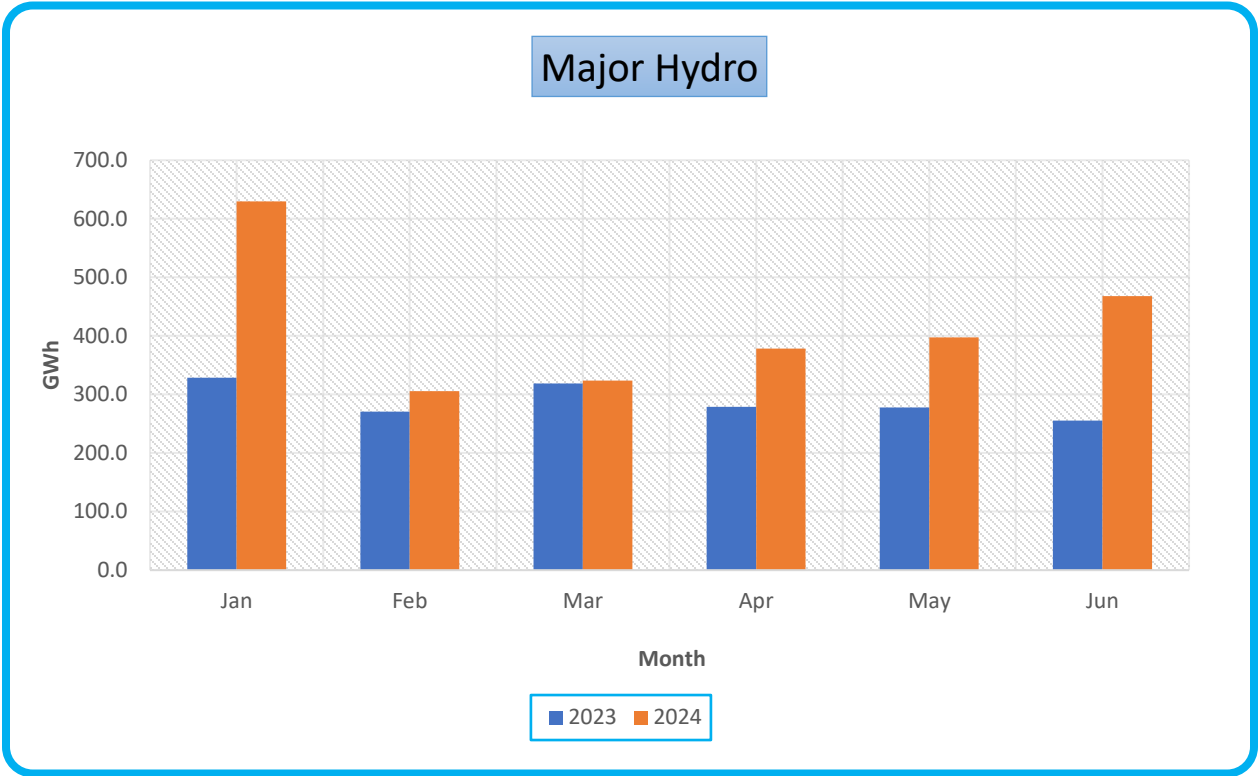
Monthly Renewable Energy Generation (without Major Hydro) - 2023 vs 2024



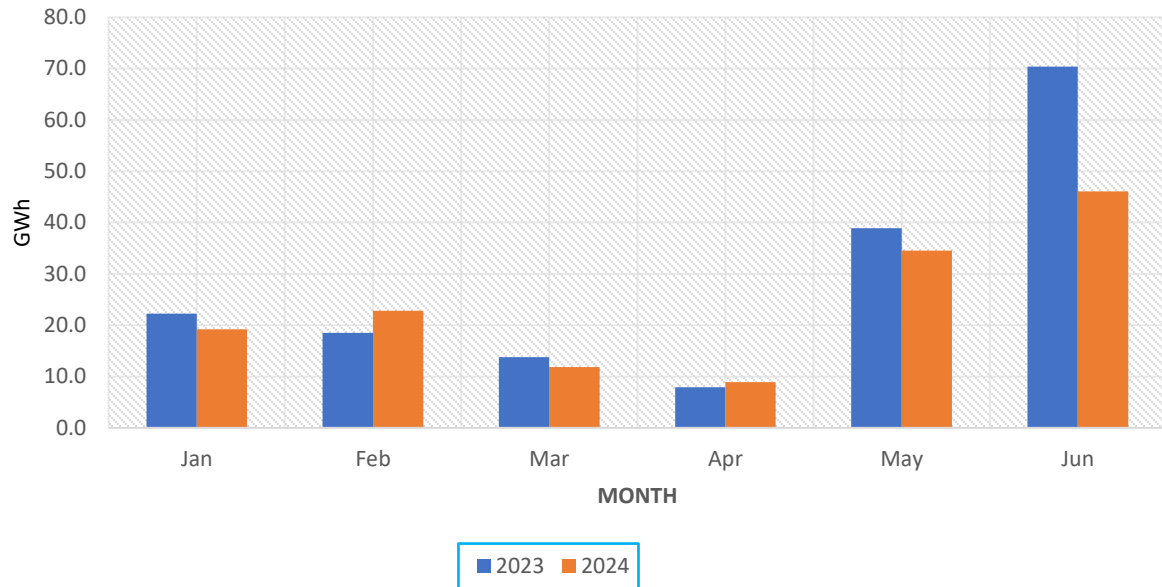
Monthly Cumulative RE Generation - 2023 vs 2024



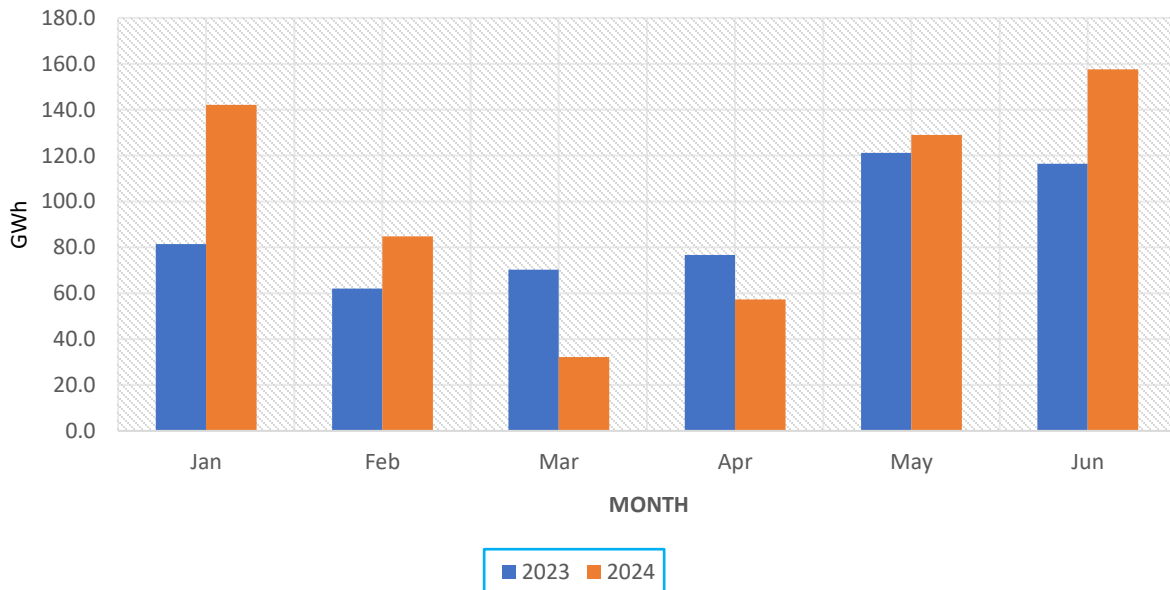
Monthly Variation of RE Generation - 2023 vs 2024 – Technology Wise



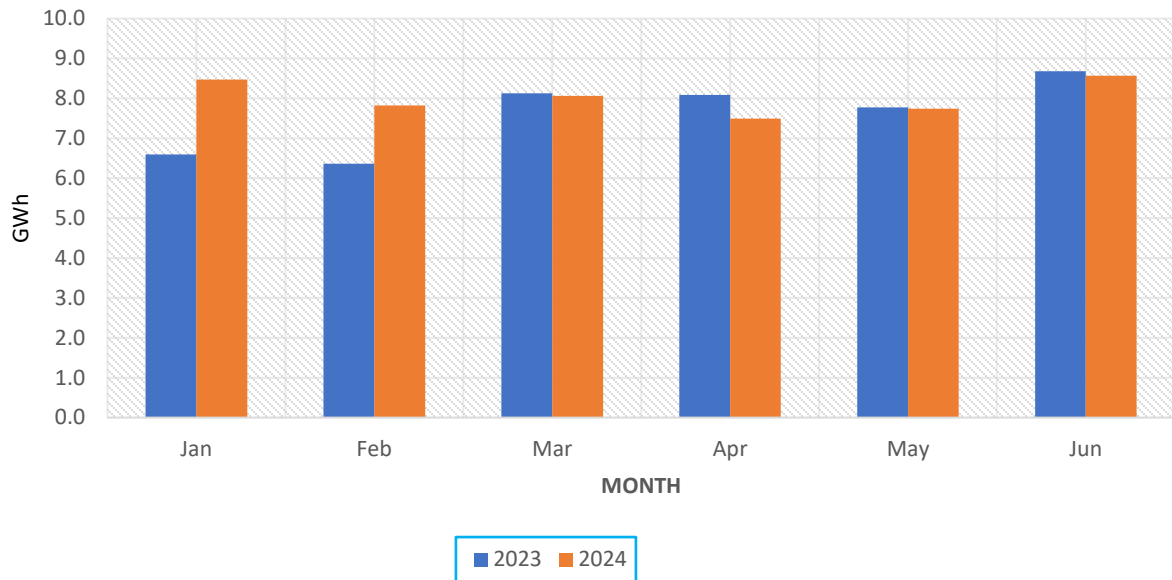
IPP Wind



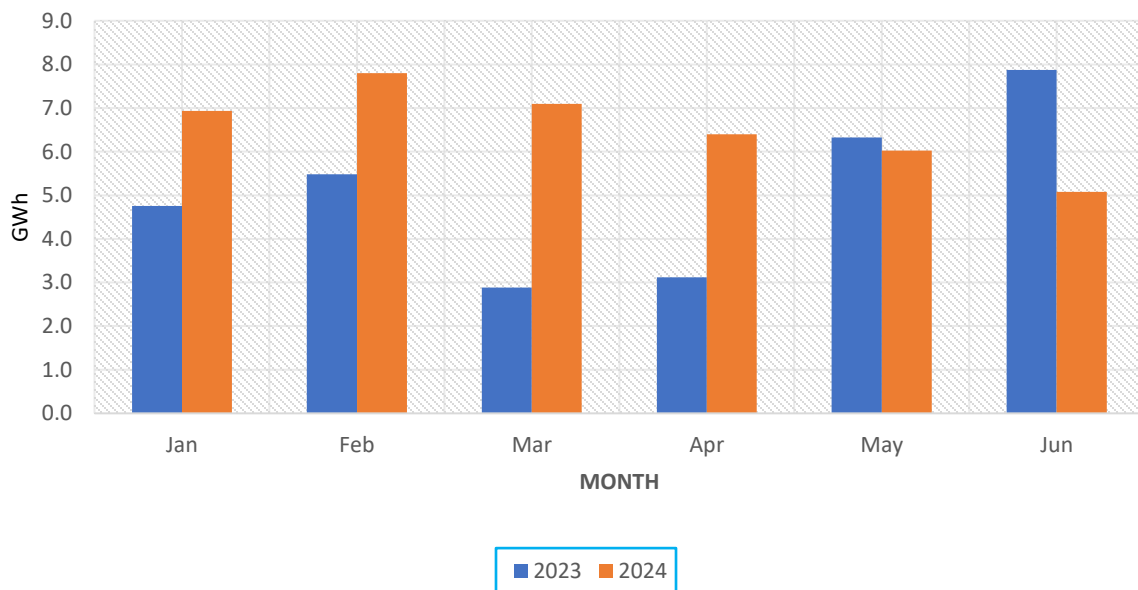
Mini Hydro



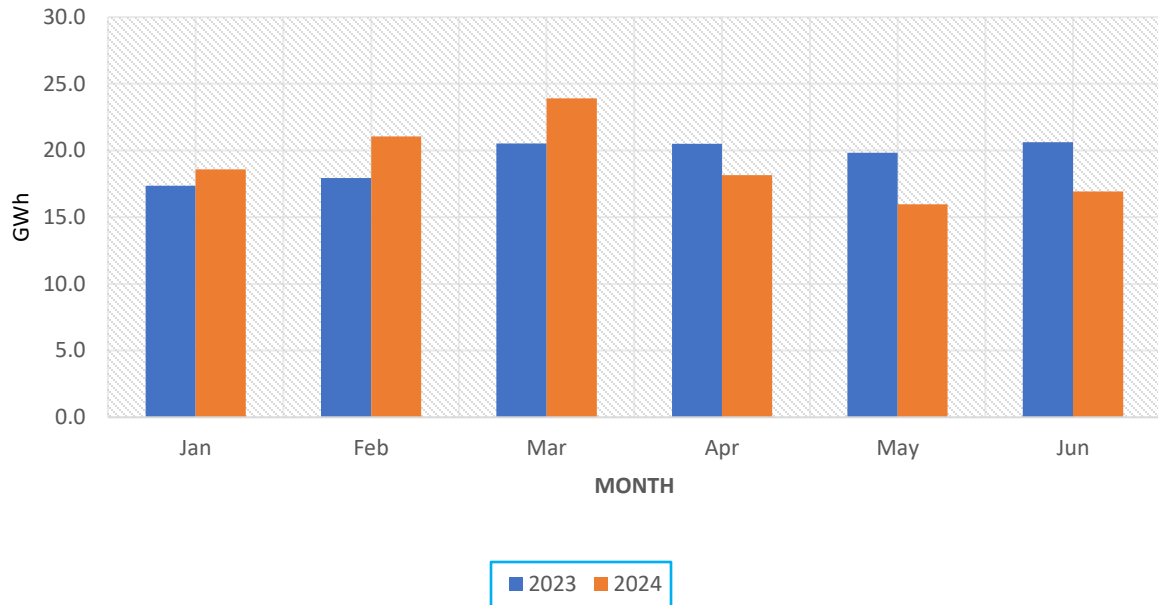
Biomass



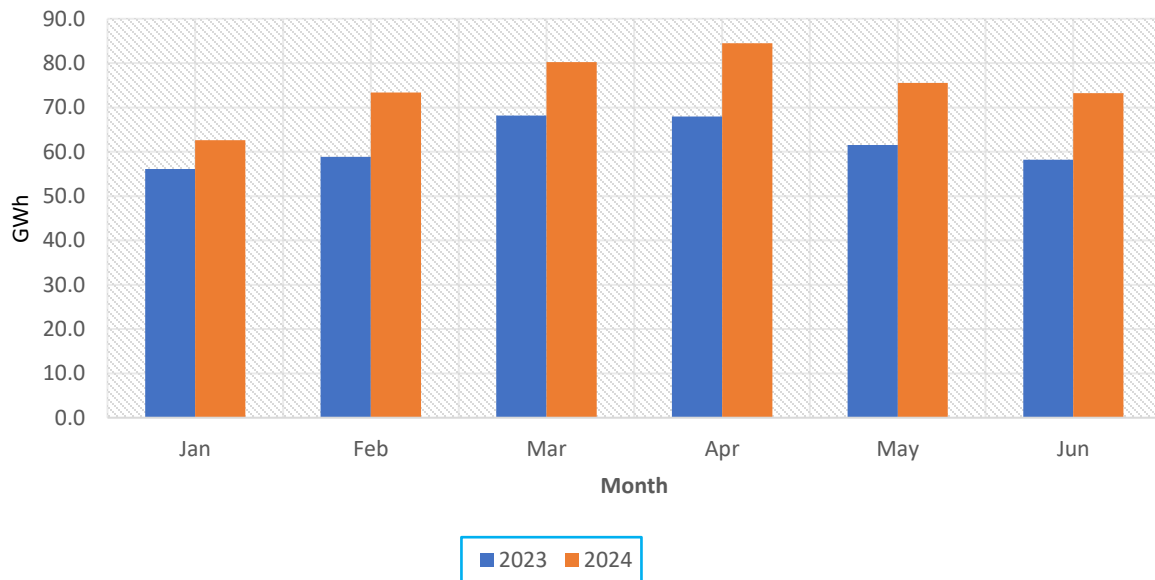
MSW



IPP Solar

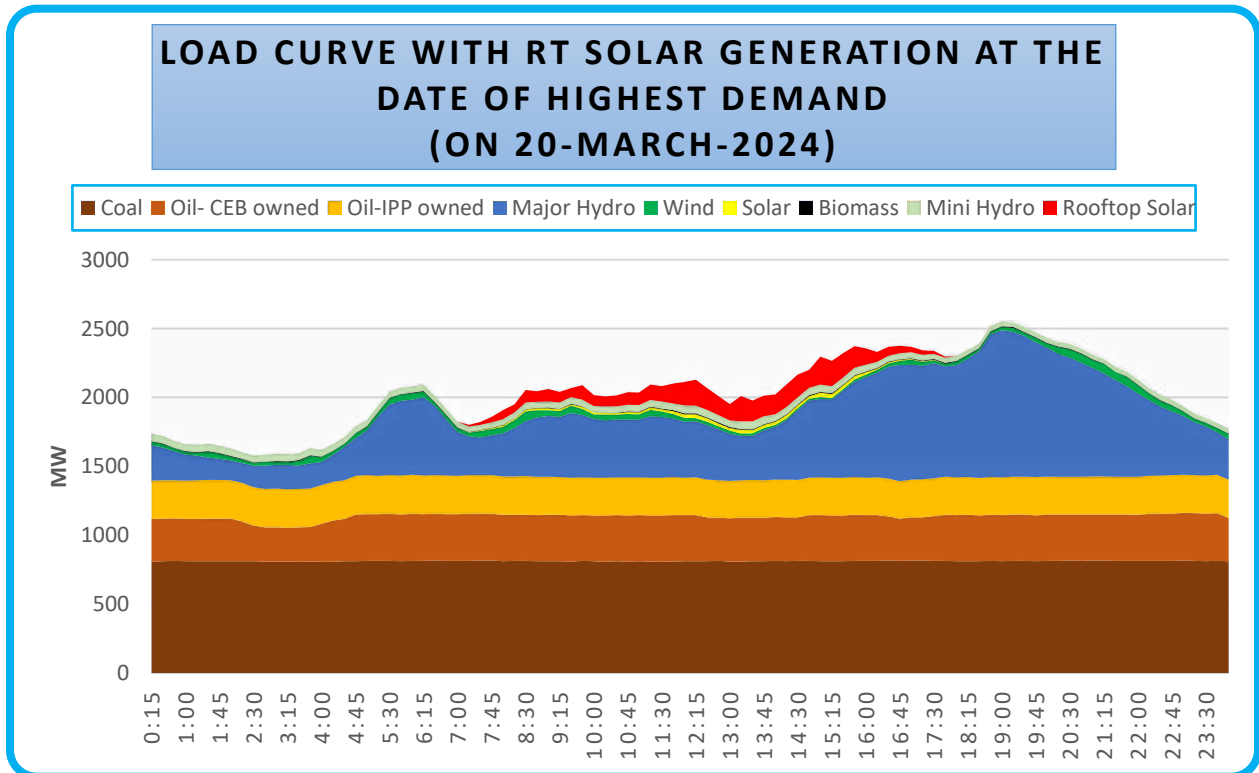
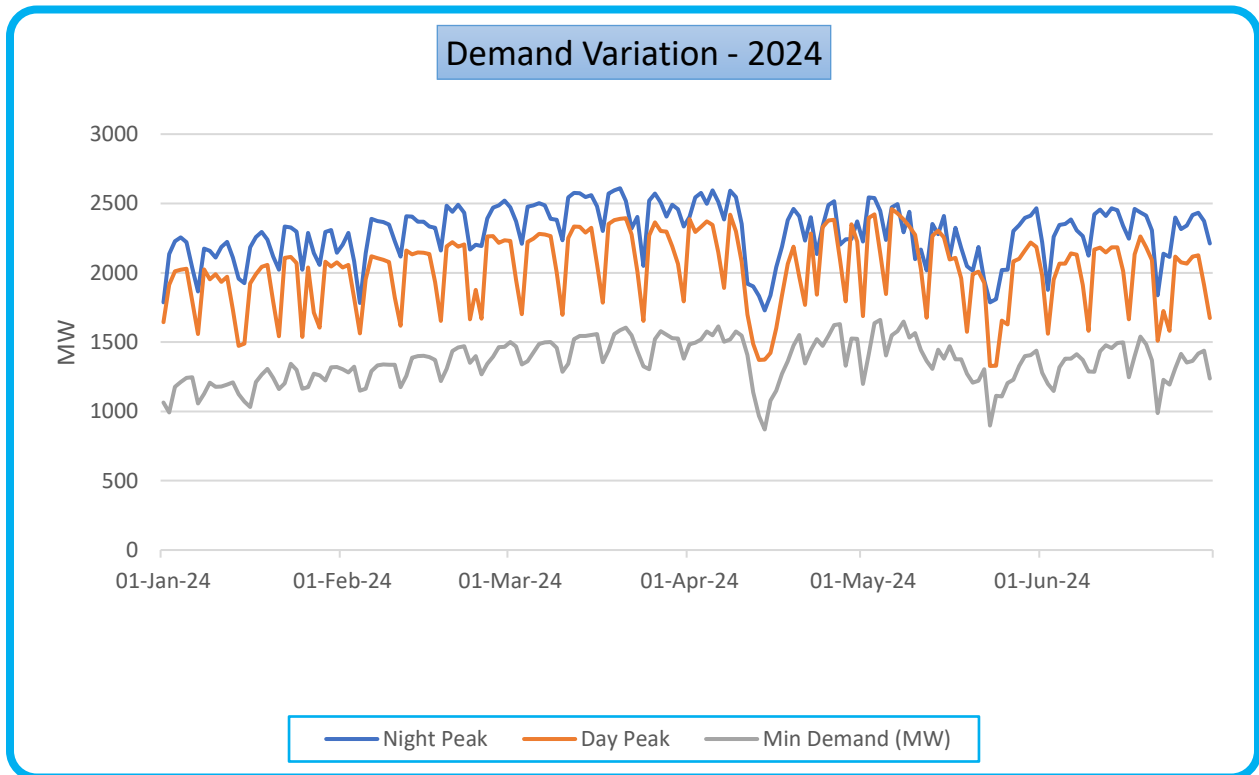


Rooftop Solar PV



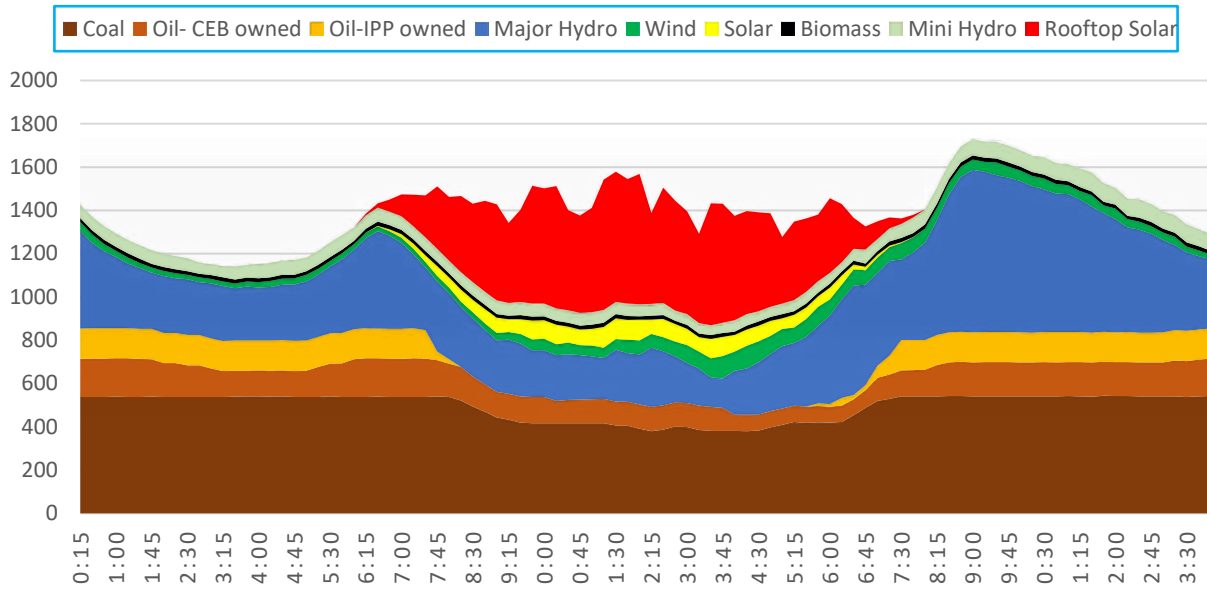
Source: CEB monthly Review Report

Daily Demand Variation



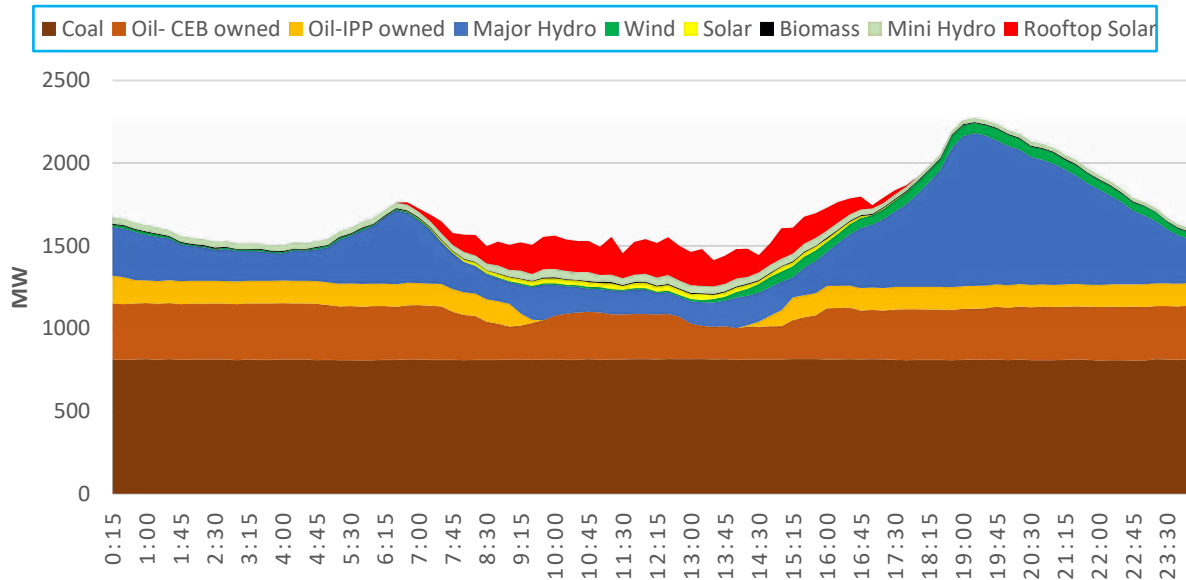
Note: Contribution from Rooftop Solar PV, IPP Solar (1MW), and Non-telemetered Mini Hydro is estimated based on the relevant actual generation and modelled in the generation profile

LOAD CURVE WITH THE LOWEST DEMAND (ON 14-APRIL-2024)



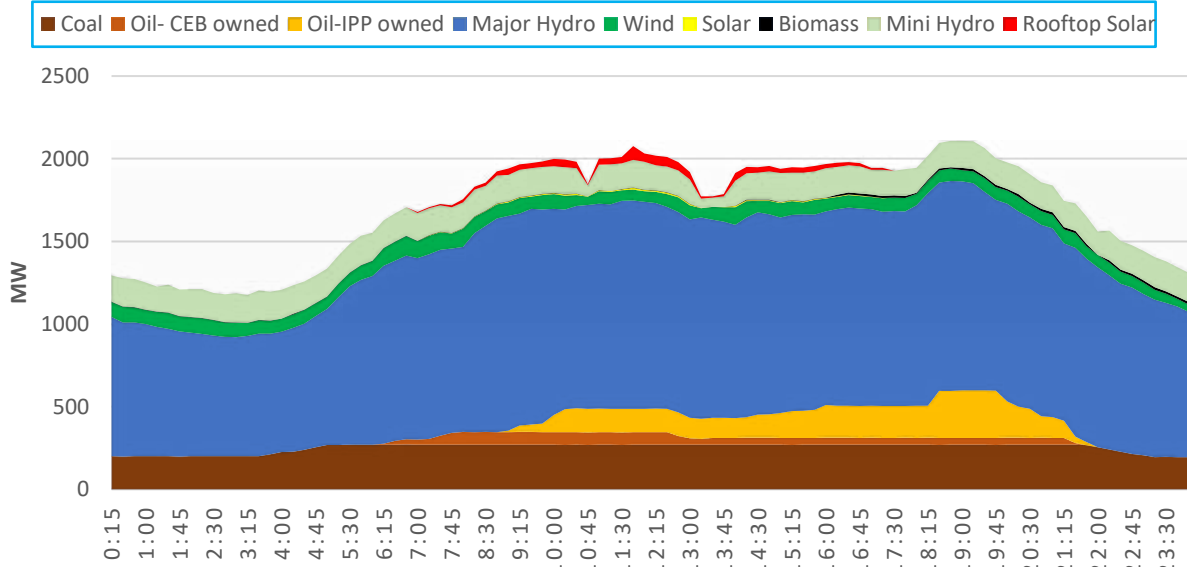
Note: Rooftop Solar PV, IPP Solar (1MW), and Non-telemetered Mini Hydro daily generation for Load Curves are calculated relative to actual monthly generations.

LOAD CURVE WITH THE RT SOLAR GENERATION AT THE DATE OF HIGHEST SOLAR GENERATION (ON 17-MARCH-2024)



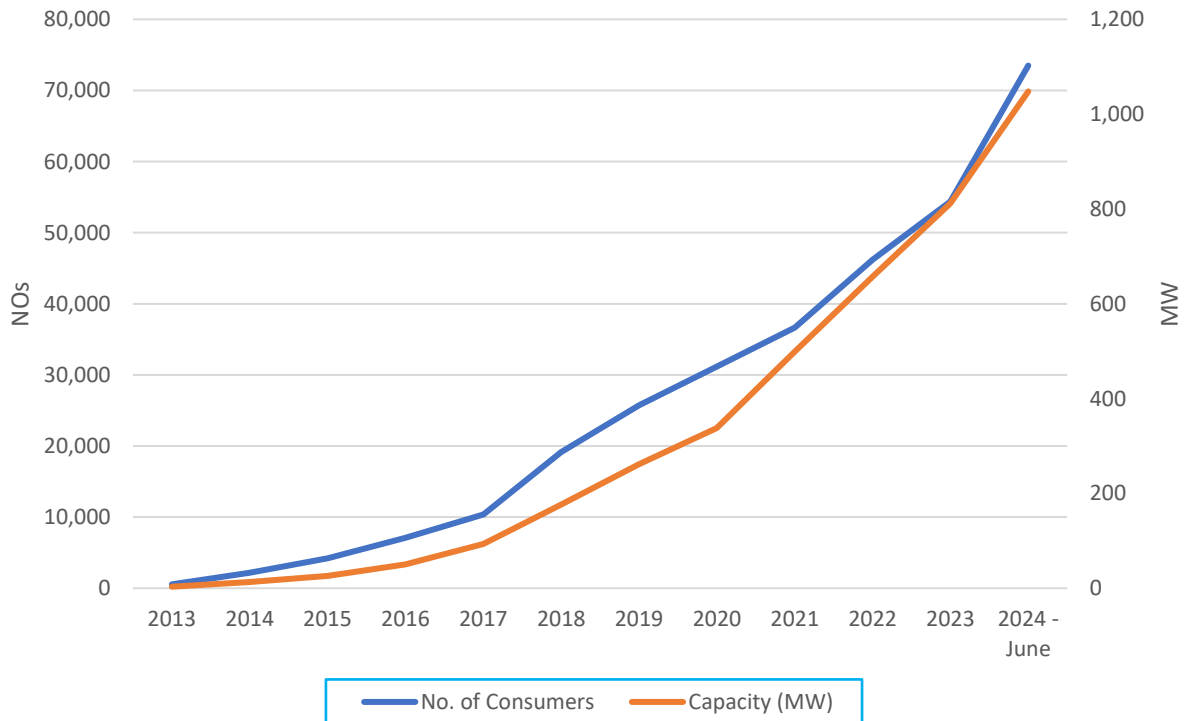
Note: Rooftop Solar PV, IPP Solar (1MW), and Non-telemetered Mini Hydro daily generation for Load Curves are calculated relative to actual monthly generations.

LOAD CURVE WITH RT SOLAR GENERATION AT THE DATE OF LOWEST SOLAR GENERATION (ON 10-JANUARY-2024)

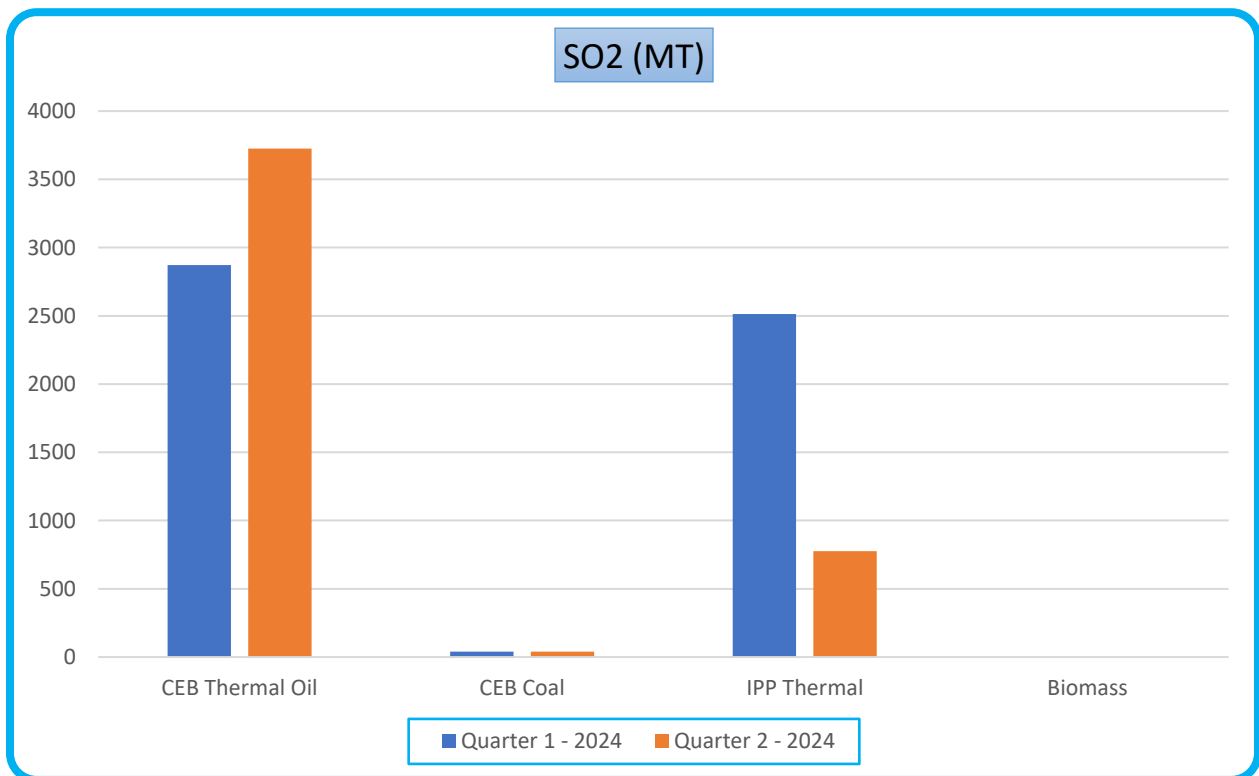
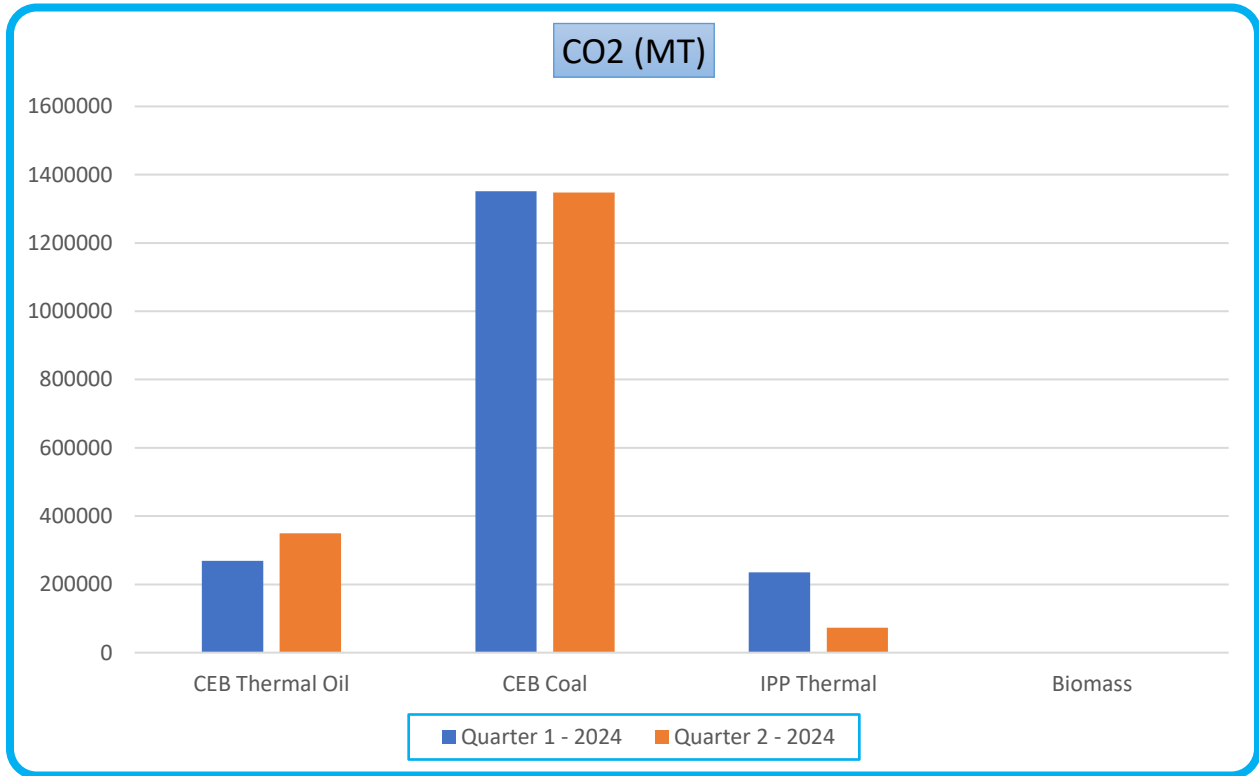


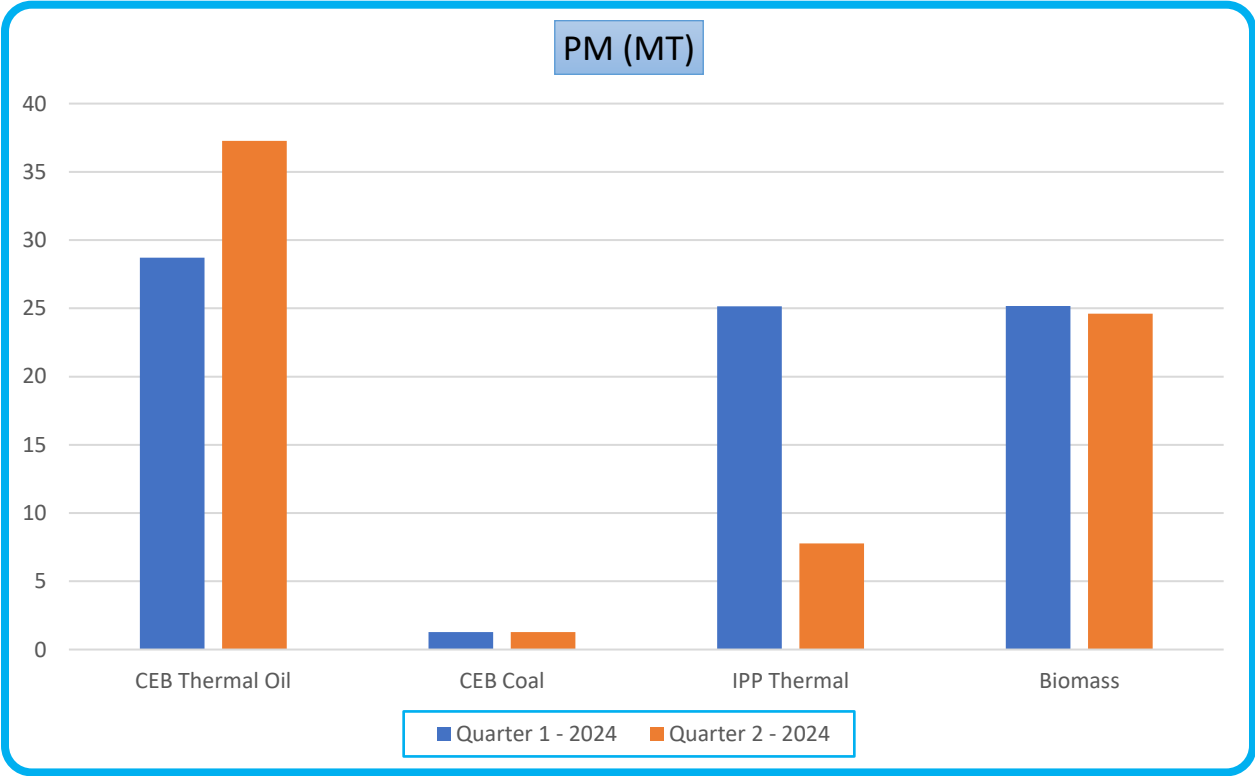
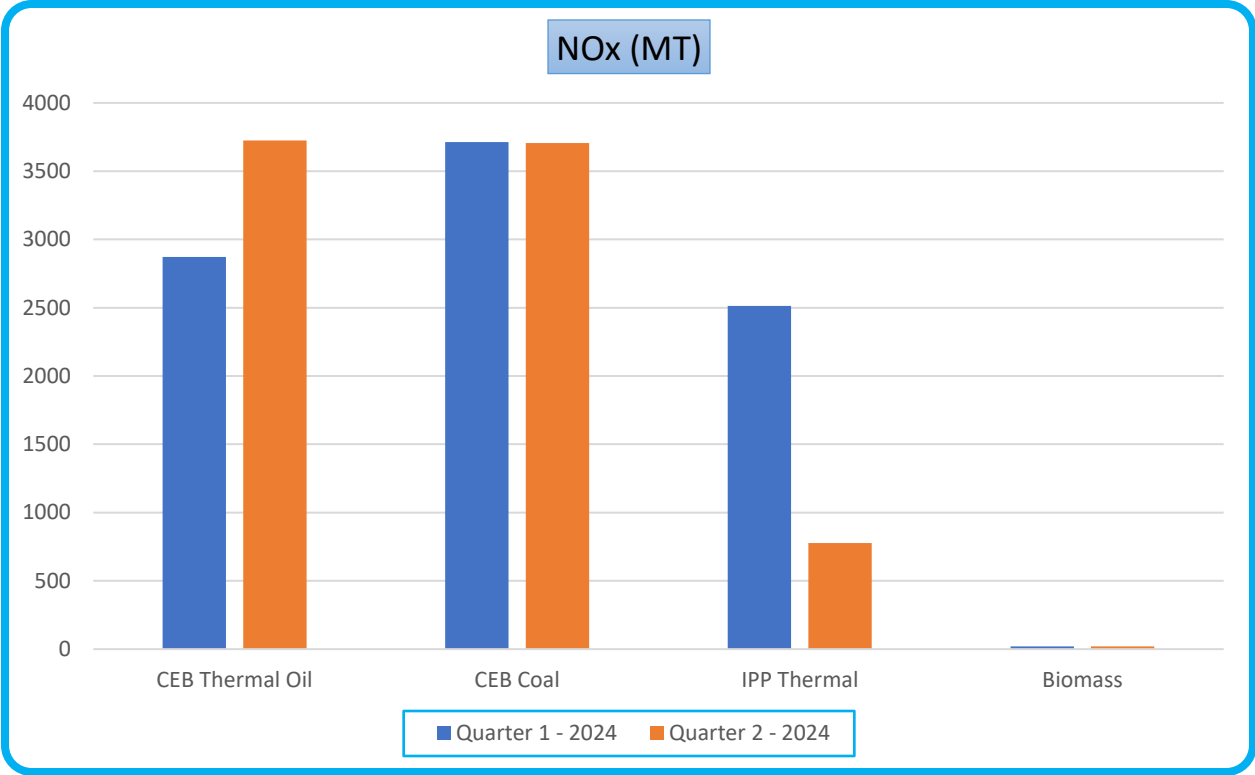
Note: Rooftop Solar PV, IPP Solar (1MW), and Non-telemetered Mini Hydro daily generation for Load Curves are calculated relative to actual monthly generations.

Rooftop Solar PV Growth



Generation Source wise Emission Q1 2024 vs Q2 2024





Source: Estimated base on actual generation

Generation Licensees - 2024

Generation License details can be found via the following

Link: <https://www.pucsl.gov.lk/electricity/licensee/list-of-licensees/>

Renewable Generation Power Plants in Sri Lanka

Locations of the Renewable Power plants can be found via the following link.

<https://www.pucsl.gov.lk/electricity/quality/environment-and-renewable-energy/>

Electricity Dispatch Data Dashboard

Electricity Dispatch Data can be found via the following link.

<https://gendata.pucsl.gov.lk/home>