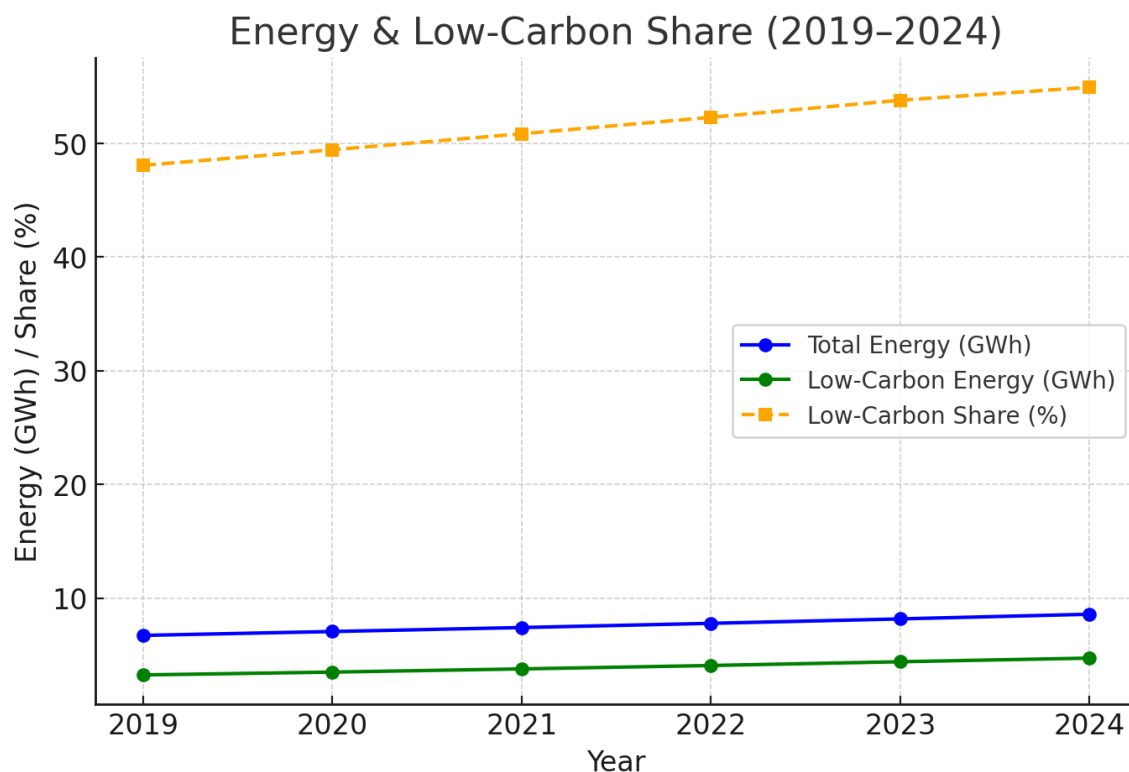


Low-Carbon Energy Use

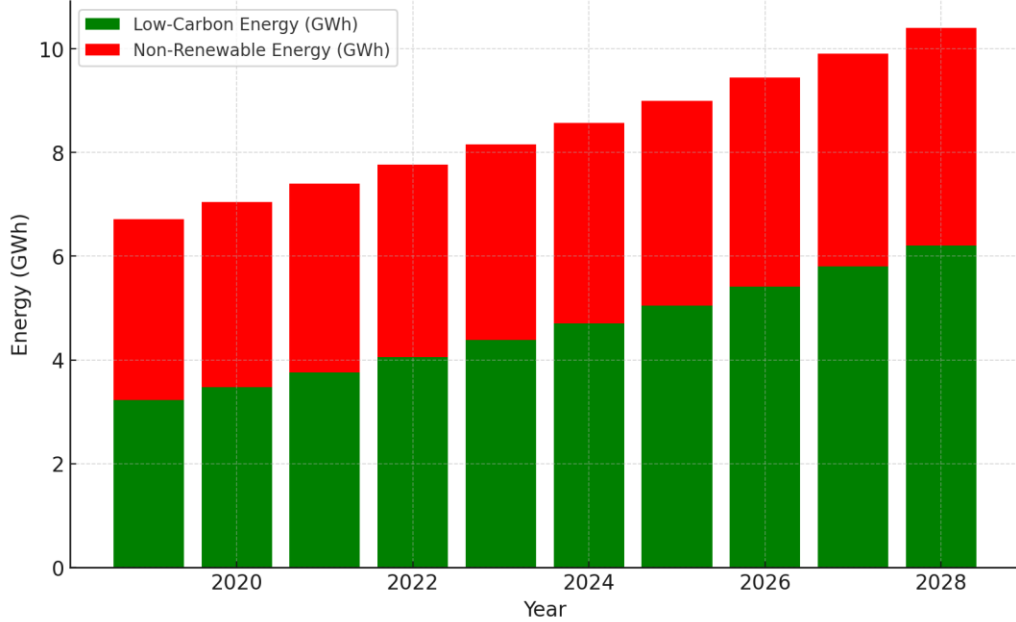
In 2024, Centurion University achieved a low-carbon energy consumption of 4.71 GWh (16956 GJ), accounting for 54.94% of its total energy use. This milestone highlights the University’s strong commitment to sustainability and clean energy adoption. Between 2019 and 2024, the University steadily increased its low-carbon energy share from 3.23 GWh (11,628 GJ) and 48.07% of total consumption to the current level, reflecting consistent growth and strategic investment in sustainable practices.



Energy & Low-Carbon Share (2019–2024)

Year	Total Energy (GWh)	Total Energy (GJ)	Low-Carbon Energy (GWh)	Low-Carbon Energy (GJ)	Low-Carbon Share (%)
2019	6.71	24156	3.23	11628	48.07%
2020	7.05	25380	3.48	12528	49.44%
2021	7.4	14400	3.76	13536	50.85%
2022	7.77	27972	4.06	14616	52.30%
2023	8.16	29376	4.39	15804	53.80%
2024	8.57	30852	4.71	16956	54.94%

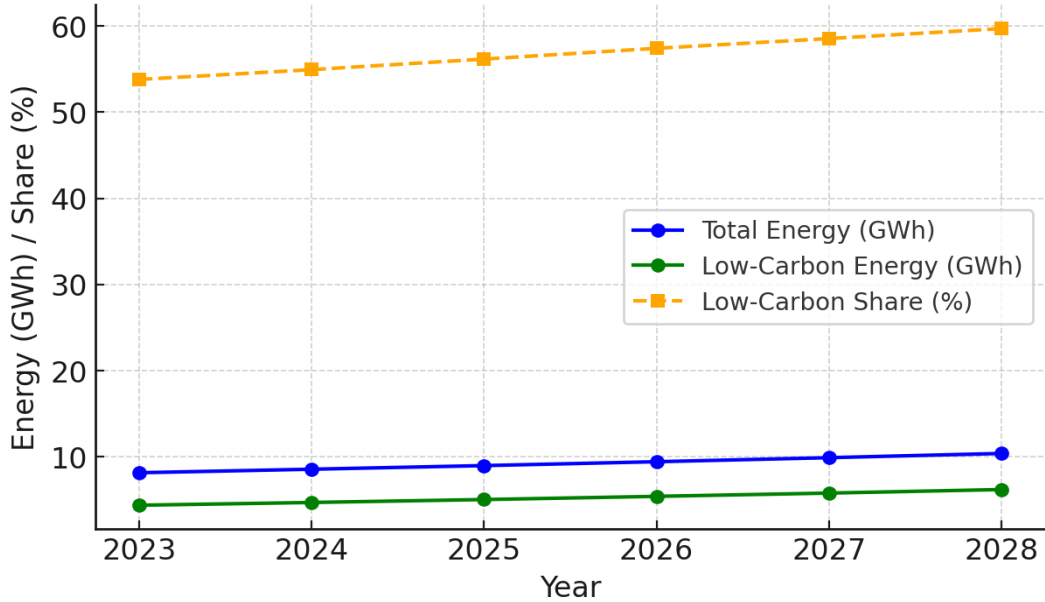
Energy Consumption Split: Low-Carbon vs Non-Renewable (2019–2028)

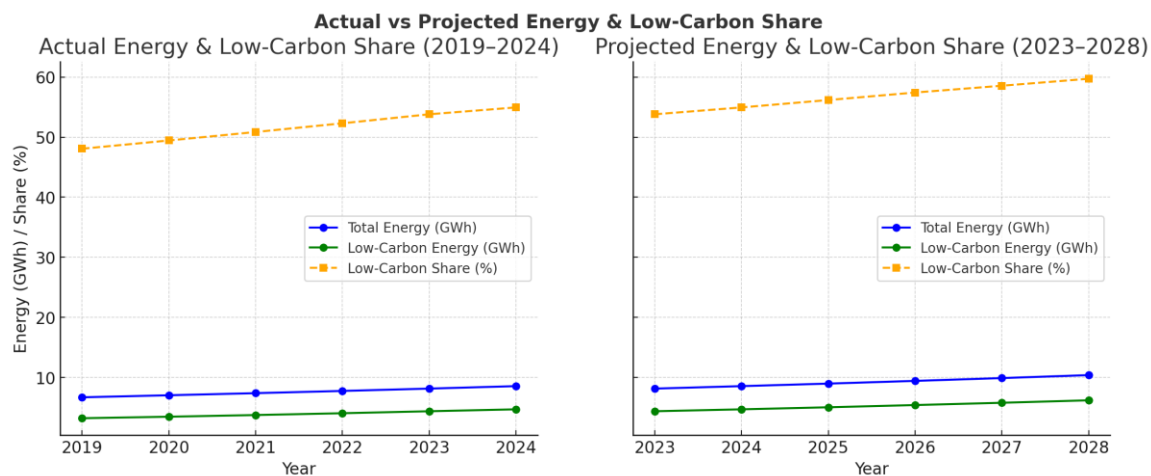


Projection of Energy Use (2023–2028)

Based on actual values for 2023 and 2024, projections for 2025–2028 have been developed using observed growth rates. This ensures consistency in reporting and provides a reliable estimate of total and low-carbon energy progression.

Projected Energy & Low-Carbon Share (2023–2028)





Year	Total Energy (GWh)	Total Energy (GJ)	Low-Carbon Energy (GWh)	Low-Carbon Energy (GJ)	Low-Carbon Share (%)
2023.0	8.16	29376	4.39	15804	53.8
2024.0	8.57	30852	4.71	16956	54.94
2025.0	8.99	32364	5.05	18180	56.17
2026.0	9.44	33984	5.42	19512	57.42
2027.0	9.91	35676	5.8	20880	58.55
2028.0	10.4	37440	6.21	22356	59.71

The projection from 2023 to 2028 indicates steady growth in both total and low-carbon energy use. While total energy demand is expected to rise from 29376GJ (2023) to approximately 37440GJ (2028), low-carbon energy is projected to grow from 15804GJ to 22356GJ over the same period. This results in an increase of low-carbon share from 53.80% in 2023 to 59.71% in 2028, demonstrating the University’s consistent alignment with SDG 7 targets and its strengthening reliance on clean energy solutions.

Key Energy Efficiency Initiatives (2019–2024)

In addition to quantitative improvements in total and low-carbon energy use, the University has implemented several qualitative initiatives that directly impact energy efficiency and strengthen alignment with SDG 7 targets. The table below summarizes these measures:

Initiative / Measure	Description	Impact on Energy Use	Status
LED Lighting	Replaced conventional lights with LED-based fixtures across campus buildings	Reduced electricity consumption for lighting by ~30–40%	Implemented
Smart Controllers	Automated switching, occupancy sensors, and daylight sensors installed in classrooms and offices	Avoids wastage, ensures energy use only when required	Ongoing

Automation Systems	Integration of Building Management Systems (BMS) for HVAC, labs, and growth chambers	Optimizes heating, cooling, and equipment usage	Partial rollout
Awareness Programs	Student and staff campaigns on energy saving	Behavioral reduction in unnecessary use	Regular
Energy Audit	Periodic audits by external experts	Identifies inefficiencies and proposes corrective actions	Annual

The projection from 2023 to 2028 indicates steady growth in both total and low-carbon energy use. While total energy demand is expected to rise from 29376GJ (2023) to approximately 37440GJ (2028), low-carbon energy is projected to grow from 15804GJ to 22356GJ over the same period. This results in an increase of low-carbon share from 53.80% in 2023 to 59.71% in 2028, demonstrating the University's consistent alignment with SDG 7 targets and its strengthening reliance on clean energy solutions.