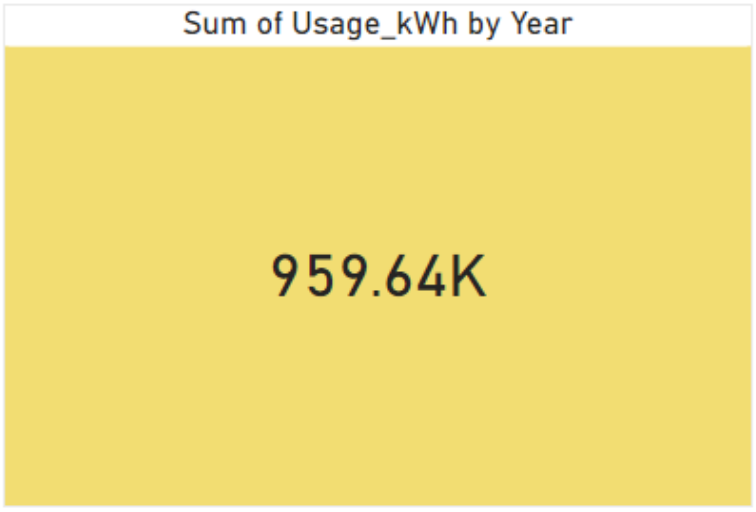
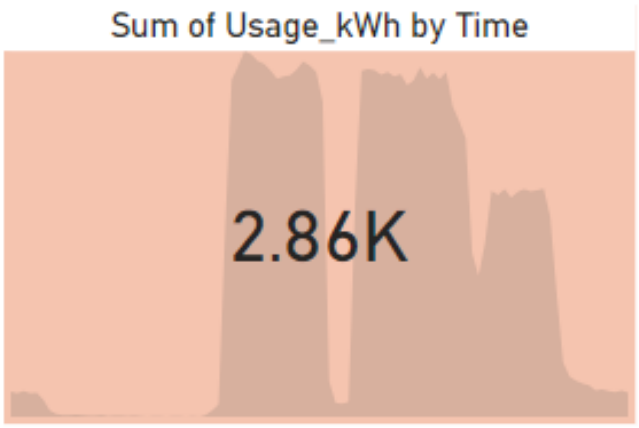
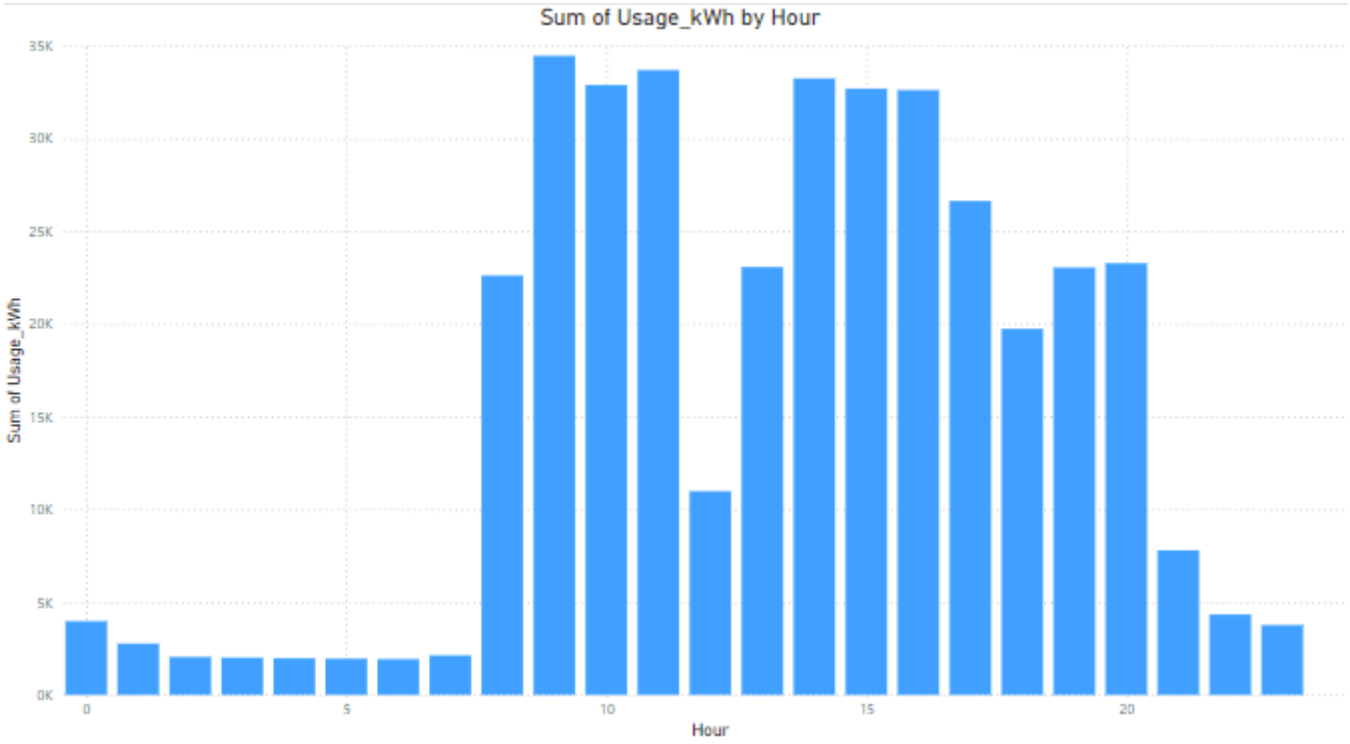
KPI CARDS


Sum of Usage_kWh by Year
959.64K


Sum of Usage_kWh by Time
2.86K

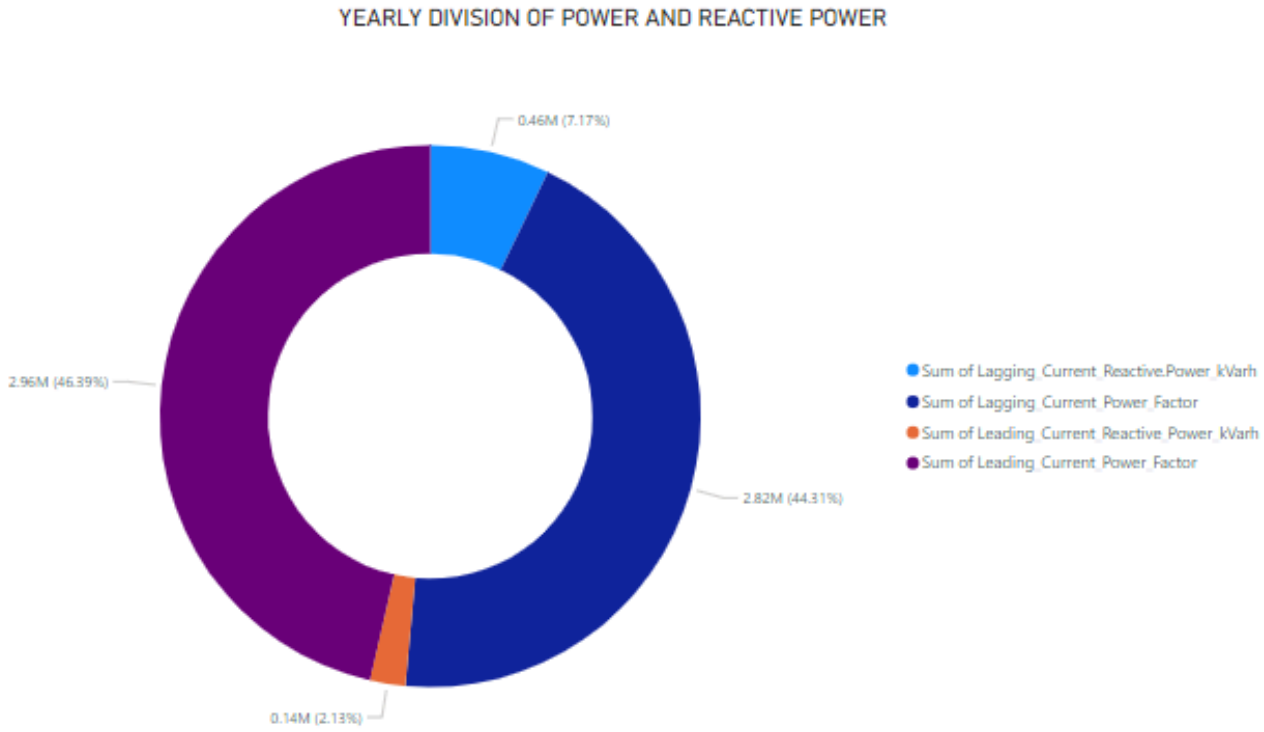

November
Highest Usage Month

1) What are the peak usage hours of the day?



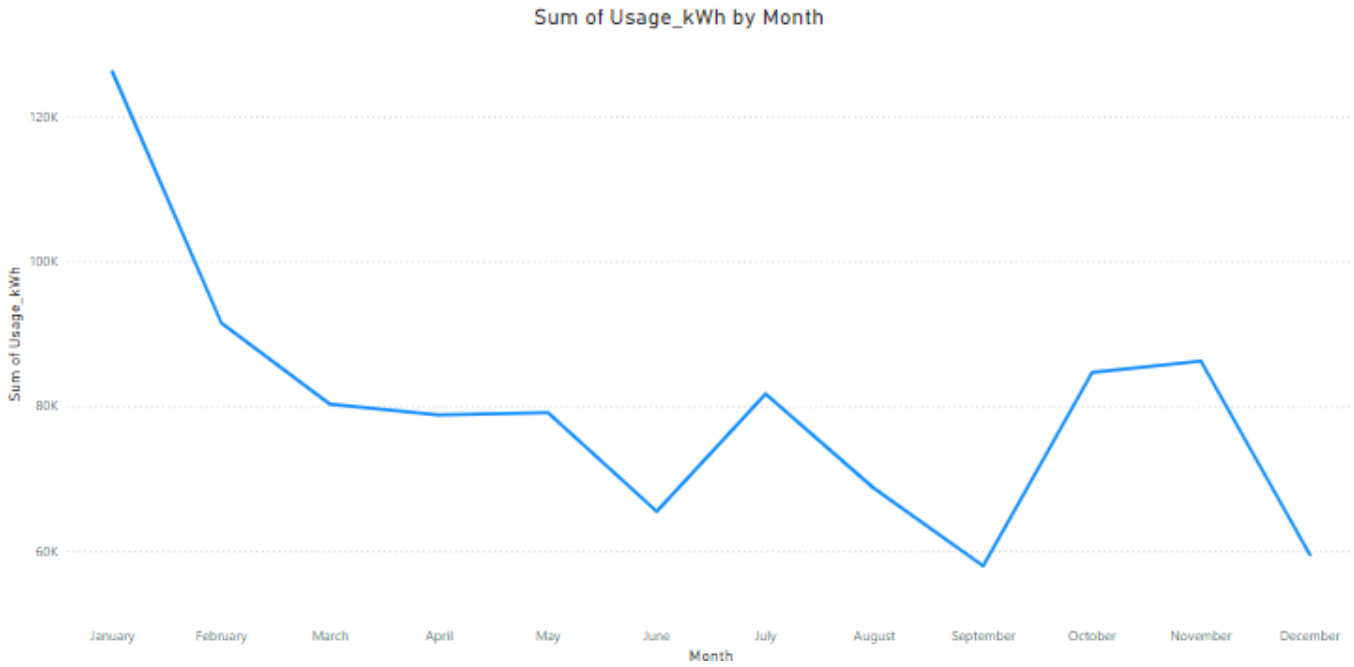
This graph displays energy usage by hour throughout the day. Each bar represents the total or average kilowatt-hours consumed during each hour, allowing identification of peak usage times. Higher bars indicate hours with more energy usage, highlighting periods of increased demand. This hourly breakdown aids in understanding daily energy consumption patterns.

2) What is the distribution of different types of power and reactive power measurements over the year?



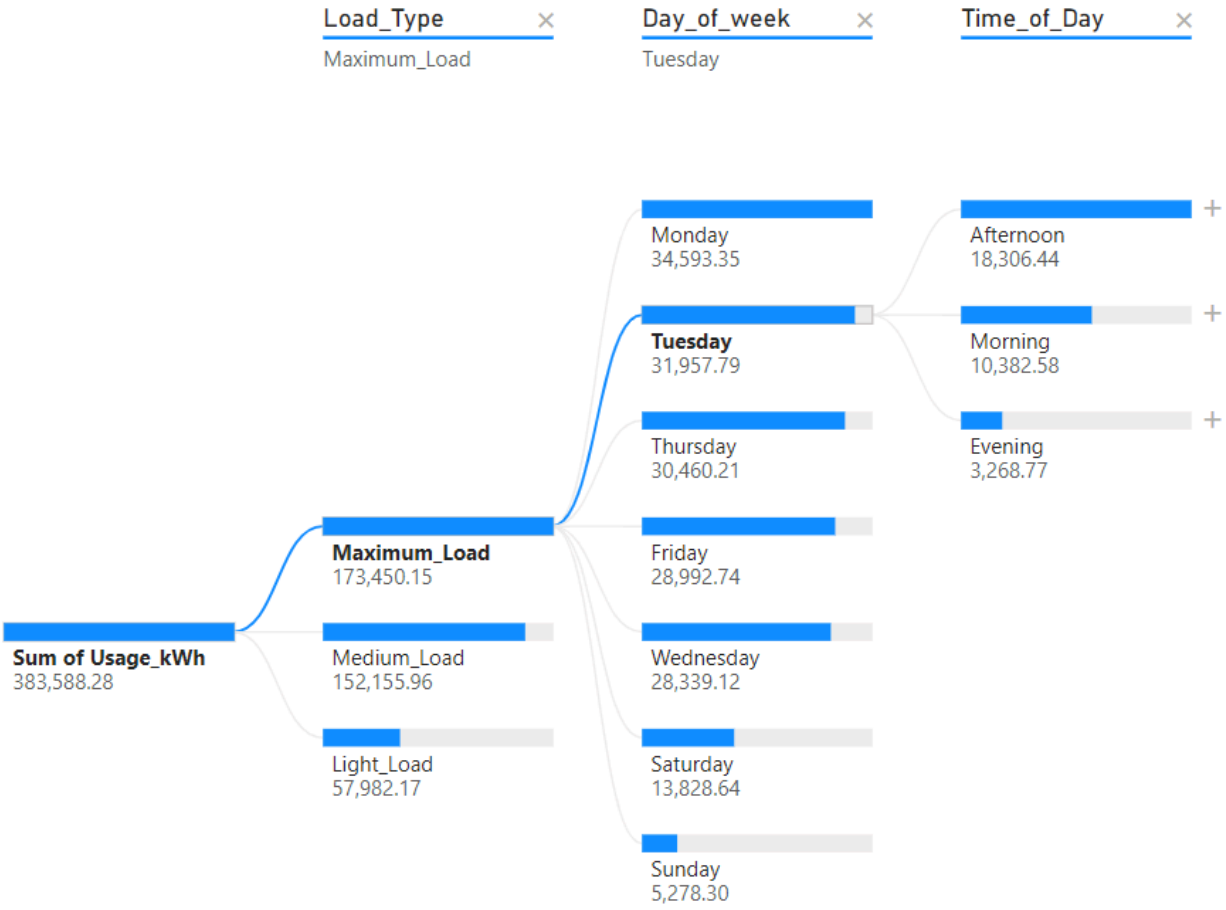
The analysis reveals that lagging current reactive power, constituting 46.39% of the total yearly power, significantly influences energy usage, while the lagging current power factor accounts for 44.11% of the total, underscoring its impact on system efficiency. In contrast, leading current components contribute minimally, with reactive power at just 2.13% and power factor at 7.17%, indicating a lesser focus on leading current within the system. This high predominance of lagging current suggests that enhancing the power factor or better managing reactive power could be effective strategies for optimizing energy efficiency.

3) How does monthly energy consumption fluctuate throughout the year?



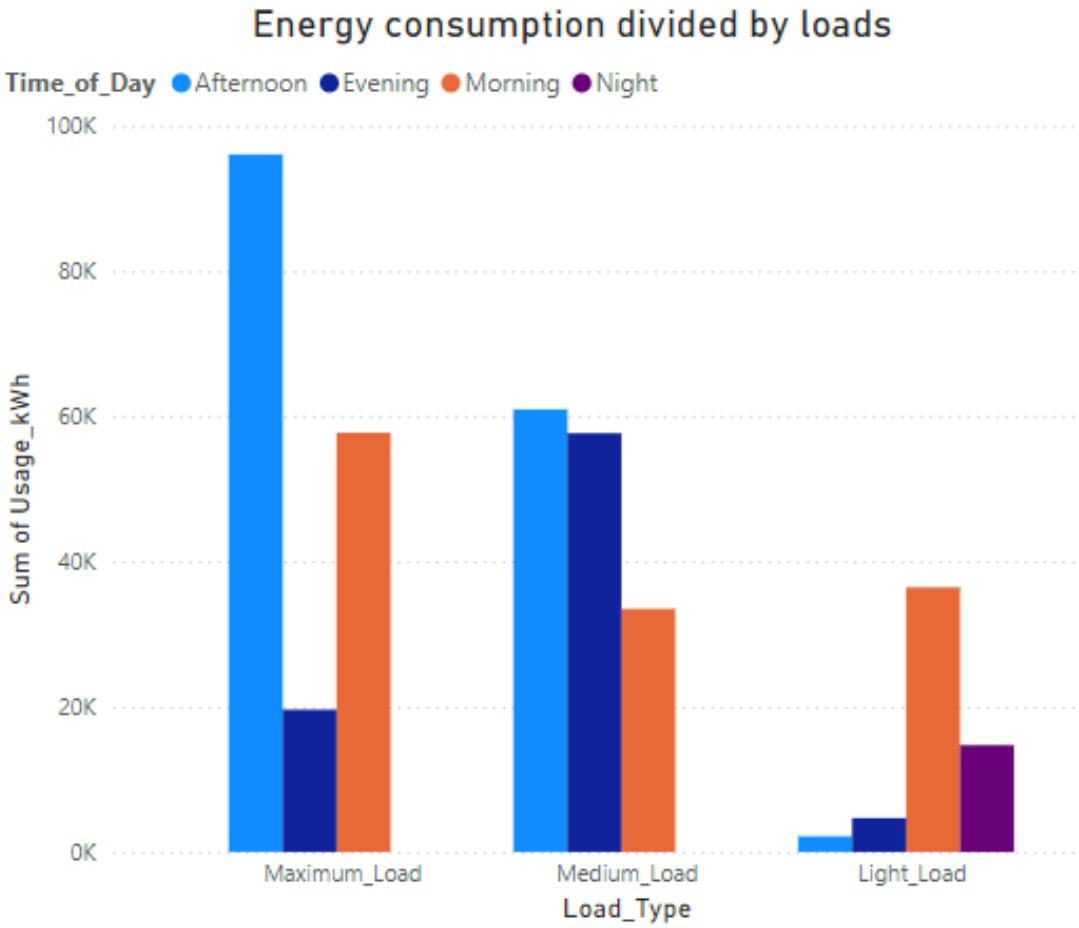
This line graph shows the monthly sum of electricity usage (in kWh) over a year. The usage starts high in January (around 120K kWh) and declines through the first half of the year, reaching lower levels in the middle months. Usage fluctuates with small peaks in July and October before ending the year lower in December, indicating seasonal variations in electricity consumption.

4) What factors contribute the most to variations in energy usage?



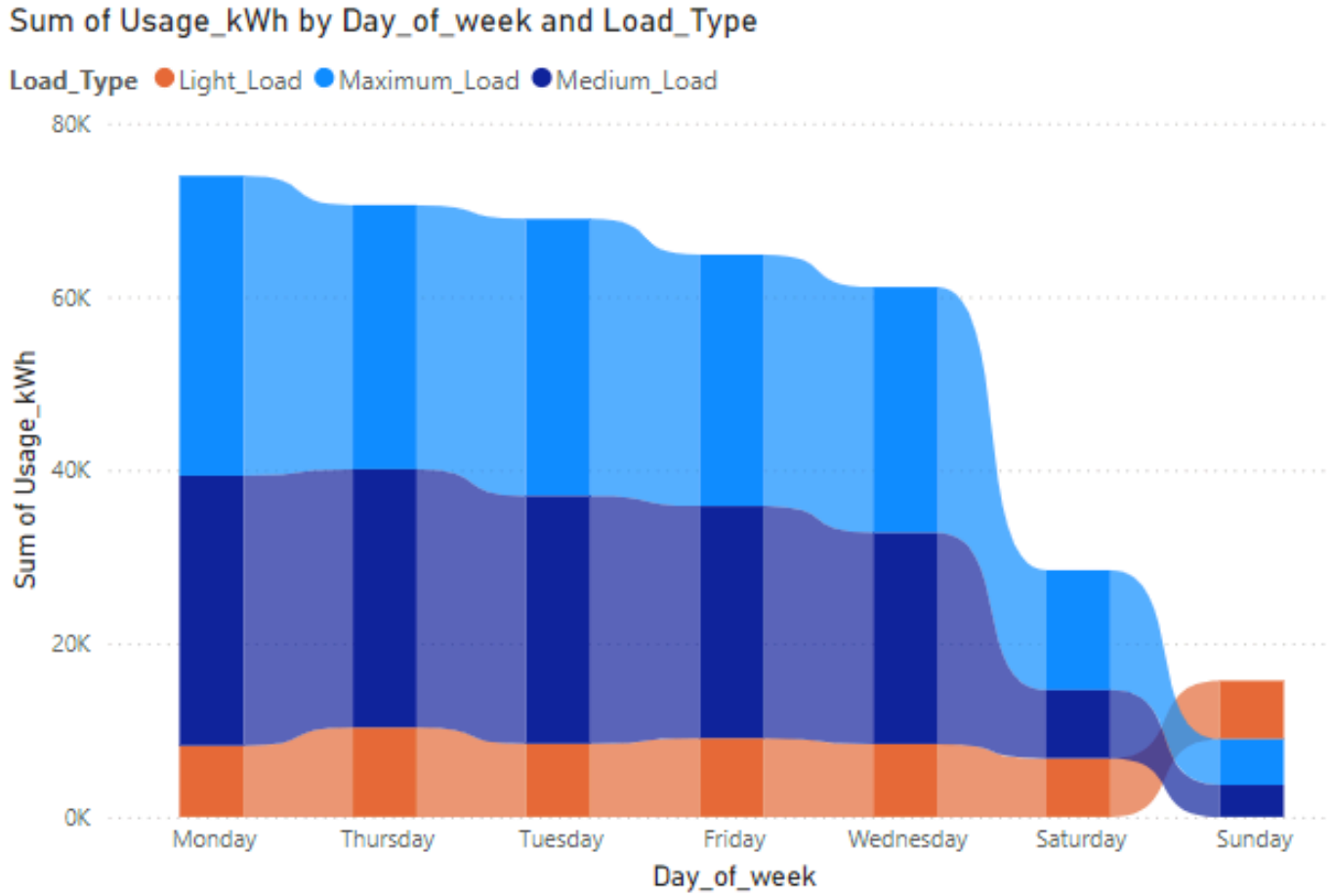
The graph shows that energy consumption peaks under "Maximum Load," particularly on Mondays and Tuesdays, with Tuesday afternoons having the highest usage (18,306.44 kWh). This pattern suggests that peak demand often occurs early in the week and in the afternoon, which could inform energy management strategies to address demand surges on these days and times. Light and Medium Loads contribute less significantly to the total usage, indicating that managing peak periods could have a substantial impact on overall energy efficiency.

5) What proportion of energy usage is associated with different Load_Type values?



The chart shows that energy consumption varies by load type and time of day, with Maximum Load peaking in the afternoon (over 80,000 kWh) and Medium Load evenly high during the afternoon and evening. Light Load usage is highest in the morning, with moderate night usage, while afternoon and evening show minimal consumption. Overall, Afternoon sees the highest energy demand for maximum and medium loads, indicating heavy activity during this time, whereas Light Load has its peak in the morning. Night usage remains low across all load types except for Light Load, which maintains a modest demand.

6) How does energy usage ranking change across days or load types



This ribbon chart represents the sum of electricity usage (in kWh) by day of the week, divided into three load types: Light Load, Medium Load, and Maximum Load. Usage peaks at the start of the week (Monday and Tuesday) with a high contribution from Maximum Load (dark blue) and Medium Load (light blue). As the week progresses, the total usage gradually decreases, with a notable drop from Thursday onwards, reaching the lowest on Sunday. Light Load (orange) remains relatively constant throughout the week but is minimal compared to the other load types. This pattern shows higher energy consumption on weekdays, tapering off towards the weekend.