



Energy Measurement and Management at ACME Voyages

1. Measurement and Calculation Method

ACME Voyages monitors energy usage across our offices and operations using the following approach:

- **Electricity Consumption:**
 - Measured directly from utility meters installed at each office location.
 - Calculated monthly in kilowatt-hours (kWh) from meter readings.
 - Energy intensity metrics are derived by dividing total energy used by office square footage or staff numbers to allow year-over-year comparisons.
- **Heating and Cooling (HVAC):**
 - Measured using smart thermostats and energy meters integrated into HVAC systems.
 - Calculated in kWh or BTU equivalents depending on system type.
 - Seasonal usage trends are tracked to identify peaks and optimize setpoints for efficiency.

2. Energy Sources

- **Grid Electricity:** Primary source, supplied by local utilities, which include a mix of conventional and renewable sources.
- **Diesel Generators:** Used as a backup during power outages. These are activated automatically only when grid supply fails.
- **Renewable Energy Initiatives:** While grid electricity is currently our main source, we are exploring rooftop solar and green electricity options to further reduce carbon footprint.

3. Measurement and Reporting Frequency

- Energy consumption data is collected monthly.
- Reports are generated quarterly to track trends, identify inefficiencies, and benchmark progress against targets.
- Historical energy consumption data is available since January 2023, when systematic energy measurement began:

Year	Total Electricity (kWh)	HVAC Energy (kWh)	Notes
2023	34,000	12,000	Baseline established
2024	25,000	10,200	Implemented LED & thermostat optimization
2025*	11,000 (Jan-Sep)	5,500	Ongoing monitoring, partial HVAC upgrades

4. Backup Power and Transition to Batteries

- Currently, diesel generators serve as backup for unavoidable power cuts. They are tested periodically to ensure reliability but are only used in emergencies due to emissions and fuel costs.
- Transitioning to battery-based backup systems is under evaluation.
 - While battery prices are decreasing, challenges include upfront investment, space requirements, and system integration.
 - ACME Voyages is conducting a feasibility study for hybrid solutions (solar + battery storage) to reduce generator dependency and emissions in the near future.

5. Continuous Improvement

- Energy data is reviewed quarterly by management to identify opportunities for reduction.
- Investments in more efficient HVAC, lighting, and renewable energy solutions are prioritized as they become cost-effective and operationally feasible.
- Staff engagement programs encourage energy-conscious behavior to complement technological improvements.