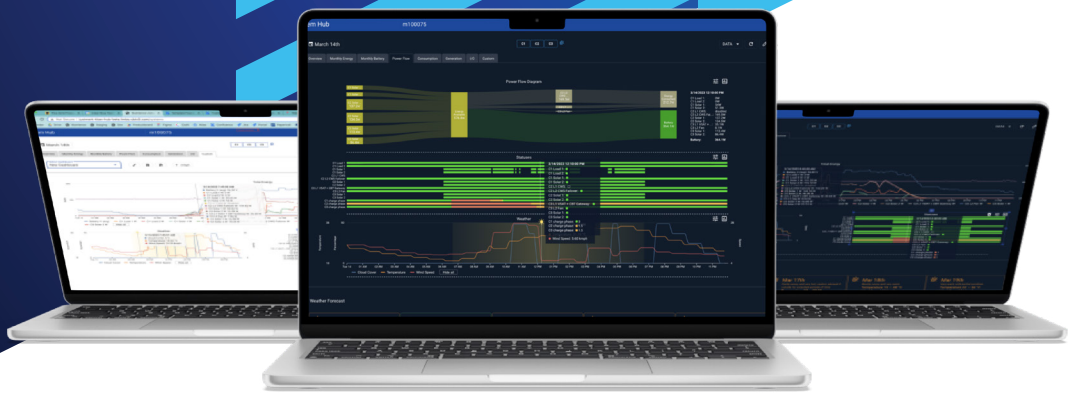
CLEARBLUE
TECHNOLOGIES

Illumience

The Intelligent Cloud-Based Power Management Platform for Smart Off-Grid



The intelligence behind Smart Off-Grid power.

Illumience is the industry's most advanced remote management and control system for off-grid power devices. Illumience is supported by Clear Blue's expert service team, from local control centers, where all of your systems are monitored and managed.

Real-Time Intelligence in the Cloud

Configuration, load profile changes and power optimization are all done remotely and communicated via customized system alarms and automatic alerts, and multi-level reporting provides unmatched intelligence.

Remote and Proactive Maintainability

Full remote control and monitoring of all system components to allow for proactive maintenance, remote troubleshooting, and active control, reducing ongoing costs by up to 70%.

High Reliability and Optimized Performance

Through active monitoring, management and control individual systems are managed to deliver 99.999% uptime, maximum battery life and elevated energy control.

Clear Blue's Expert Management Service

Clear Blue's power management experts provide ongoing support and service from installation and commissioning support through remote servicing and ongoing energy management.

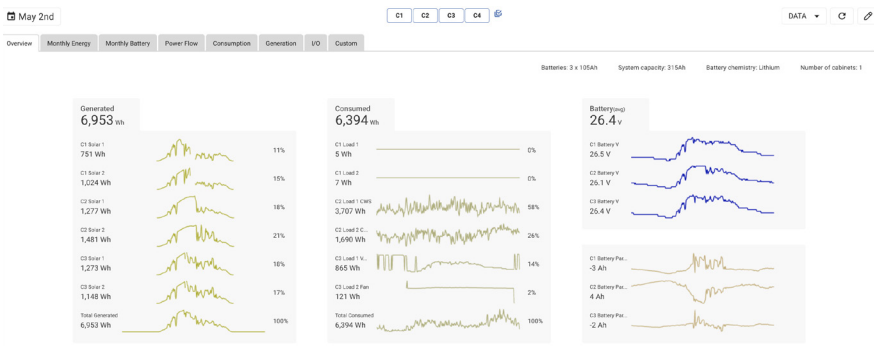
CLEARBLUE TECHNOLOGIES

Illumience

The Smart Off-Grid Advantage

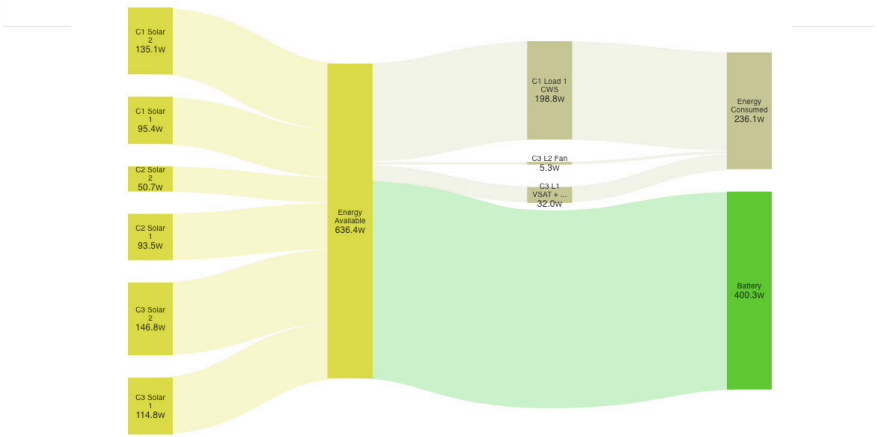
Central Control and Management

Manage all of your Smart Off-Grid systems from one main dashboard. Use the Hub, an essential tool that offers a comprehensive overview of your system's performance. Track performance for any time period, monitor the performance of each solar panel or battery, identify unexpected load outages, and analyze the impact of weather trends on system performance.



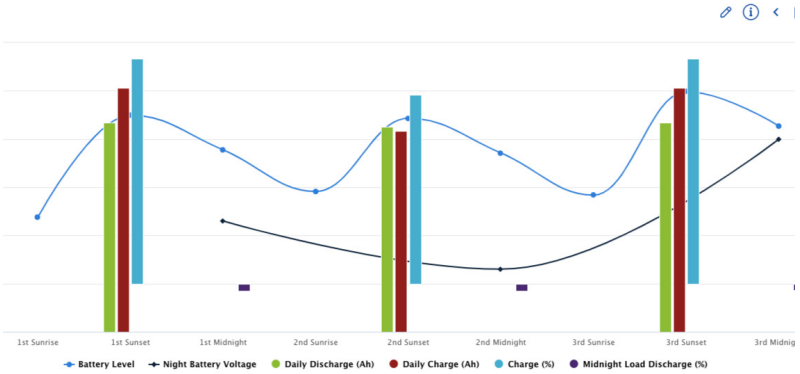
Advanced Energy Forecasting

Energy forecasting is essential for achieving the highest system reliability and maximizing uptime performance. Illumience produces a five day weather forecast for the exact geographic location of each system, based on 30 years of historical weather data. From there, we can develop an energy forecast to predict the amount of energy the system could potentially generate.



Battery Life Cycle Management

Battery management is critical for optimizing the performance of off-grid systems. Illumience Cloud Control provides immense flexibility in battery management. There are numerous settings to specifically manage battery charging and optimize system performance. The wide range of available battery charging settings makes the systems very modular. Systems in a variety of environments can be precisely managed according to customized settings.



Comprehensive Reporting

Hub provides 24/7 system visibility through a range of standard and entirely customized report and charts, enabling highly efficient energy management.

CLEARBLUE TECHNOLOGIES

Illumience

Cloud Software Features

Features	
System Monitoring & Status	Data is continuously streamed from Clear Blue's Smart Off-Grid Controller to Illumience's cloud service. This data is stored in the cloud to enable ongoing support, maintenance, and troubleshooting. Collected data includes: • Voltage and current readings for two independent solar panels and two independent load ports (applies to Nano-Grid systems only), • Battery current, voltage and temperature • Wind current and voltage, frequency, power and wind speed* at the installation site (voltage and current for AC and DC inputs as well as turbine frequency for systems configured with wind support), • Integrated weather data, forecasts and alerts, and • Over 24 other indicators are also sent to the cloud to monitor services maintained by the controller.
Alarms and Alerts	Each user can optionally create alerts for their systems individually or as a whole. Notifications can be delivered via email, or online via Illumience, with adjustable frequency. All statuses, and ports can have customized alerts based upon rules defined by the user. As trouble tickets are cleared, notification alerts are also sent out stating that the alert is no longer active.
Lighting / Load Profiles	Illumience makes it simple to set up and change load profiles that automatically adjust based on time of day, day of week, and whether or not motion has been sensed (motion sensor option must be included.) Illumience can manage two independent load profiles. System templates and modifications to profiles and other attributes can be easily applied across multiple systems. Profiles can be activated during the day for providing power to other devices which may or may not be a light.
Predictive Weather Analysis	This powerful capability will predict any potential energy generation issues based upon current load and local forecasts for the estimated number of hours of sun for the next six days. In the near future the system will proactively make recommendations to conserve battery life. Users are presented with potential weather issues for their site(s) upon logging into Illumience. Clear Blue's service team actively monitores energy generation and usage to help manage power effectively for customer sites.
Proactive Maintenance	Illumience alerts can be designed to send a notification of a potential issue before it happens, allowing users to avert an issue before it occurs. For example, an alert would notify users of low battery voltage before the system hits low voltage disconnect, which would disable loads to preserve the health of the system. If such an alert were received, the user could proactively adjust the load profile remotely by increasing dimming, or disabling loads during a period of low usage. The system would maintain the battery voltage, and supply power or lighting when at critical times so there are no unplanned outages. This type of proactive maintenance can all be done remotely averting any costly trips by service personnel to provide on-site support.
Installation & Provisioning Services	During an installation, administrators can push remote control features to an administrators smartphone over SMS or email, allowing the installer to use their smartphone as a testing tool for the installation.
Comprehensive Reporting with the Hub	The Hub provides both detailed reports as well as snapshots of system recent performance, energy generated and consumed, battery trends, and key system information. The Power Flow Diagram is a valuable tool that can help visualize how energy is moving in and out of the system. All the data needed to optimize performance and ensure long life is available through this valuable tool.

*For systems configured with wind support, an optional anemometer is required to collect wind speed data.

CLEARBLUE TECHNOLOGIES

Illumience

Example of Hub reports

The Hub is accessible for each system or each device. The Hub displays reports including:

- Overview
- Monthly Energy
- Monthly Battery
- Power Flow
- Energy Consumption
- Energy Generation
- I/O
- or customize to create your own hub.

Monthly Energy

Monthly Battery

Power Flow