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# OpenPWR Visualization & Control

## An Open Platform for Modern Renewable Operations

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# Topics

- Panacea Introduction
- OpenPWR Platform Introduction
- OpenPWR Site Visualization

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# Panacea Technologies Highlights

- Founded in 1996
- Automation Solutions Company
  - Automation and validation services
    - Capabilities ranging from small system upgrades to turnkey solution delivery ($1K to $20M) and long-term site support
  - Hardware and Software
    - Successful portfolio of products including, OpenPWR, OpenBIO Product Platform, Panacea Update Manager, FHX File Viewer etc.
- Heavily focus on the importance of standards and project design/execution

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# Accolades

engineering leaders <40

- Panacea had two engineers named in the Engineering Leaders Under 40 Program in 2017, 2018, 2019, 2020, and 2021.
- Less than forty engineers are named each year, and Panacea was honored to receive two of the nominations each of the last four years
  - Panacea was named Systems Integrator of the year by Control Engineering and Plant Engineering Magazine
  - Panacea was extremely honored by receiving this prestigious award and the endorsement it carries

CONTROL ENGINEERING
2017 System Integrator of the Year
PLANT ENGINEERING

2018 PHARMA INNOVATION AWARDS
PHARMACEUTICAL MANUFACTURING

- OpenBIO received an Innovator Award from Pharmaceutical Manufacturing Magazine in 2018.

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# Industry Recognition

- Featured in more than 30 Industry Publications in the past 3 years

PLANT ENGINEERING

CONTROL ENGINEERING

CONTROL
PROMOTING EXCELLENCE IN PROCESS AUTOMATION

AutomationWorld®

InTech

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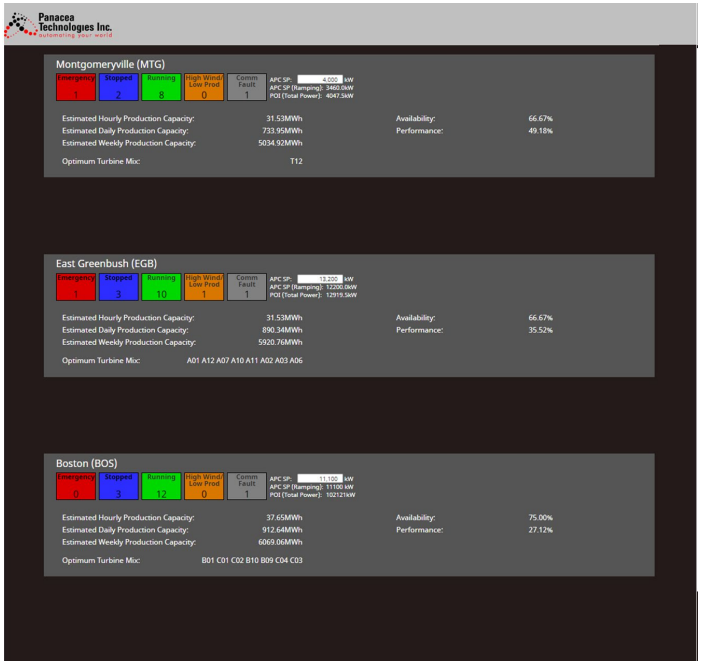
# The OpenPWR Platform

OpenPWR is a cross-functional visualization platform that provides uniform control and reporting regardless of resource, hardware manufacturer, or current visualization platform.




OpenPWR is able to consolidate cross-country and transnational renewable energy sites onto a single platform allowing standardized company-wide remote monitoring and control of the entire renewable portfolio.

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# Why Consolidate Control?

For renewable energy operators, operating multiple sites, with multiple sources and multiple automation platforms, consolidating data for meaningful analysis can be a time-consuming challenge. Consolidating to a single platform allows users to quickly analyze data for key energy generation forecasts and other economic markers.

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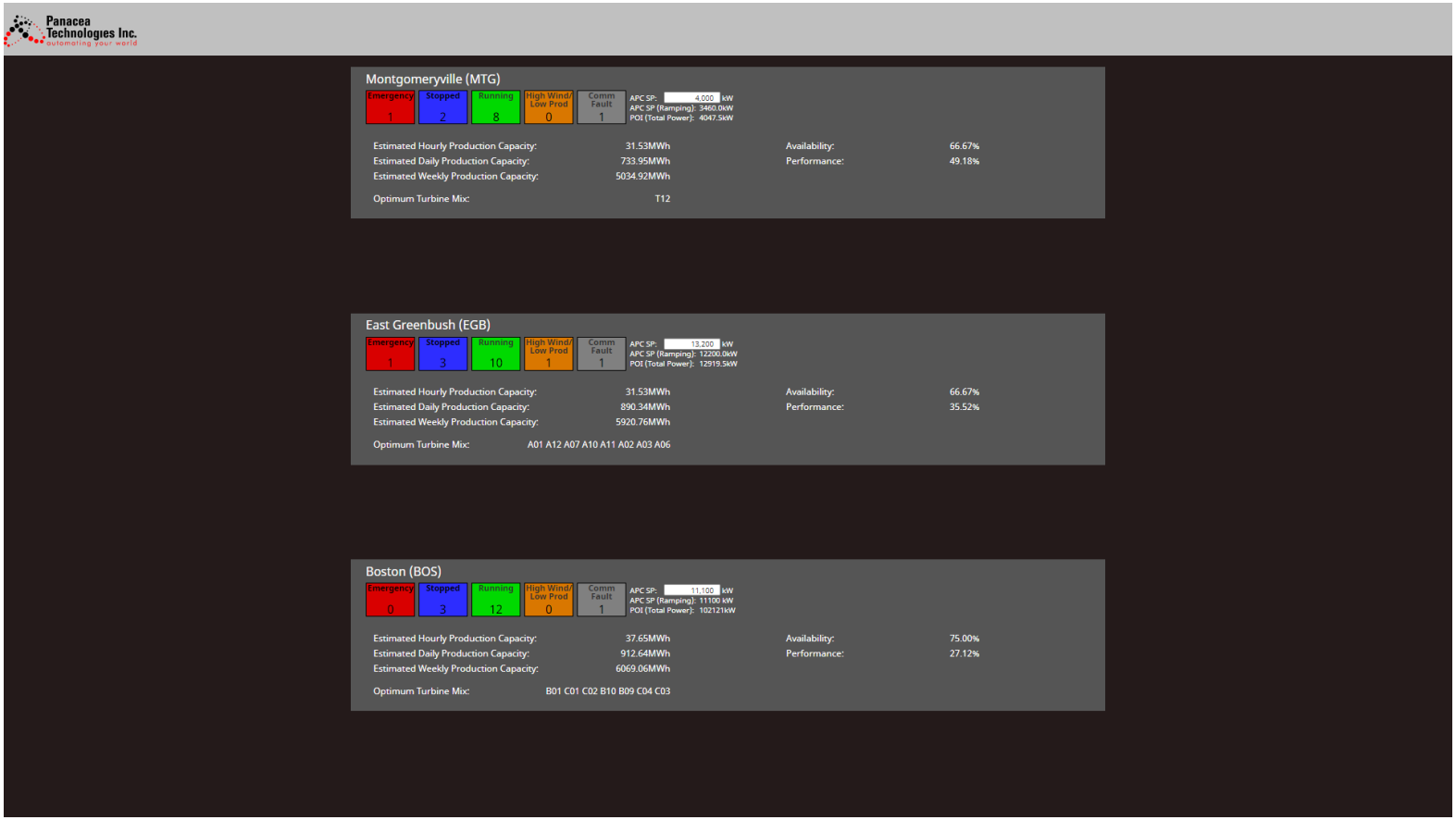
# Corporate Level View




OpenPWR's corporate view aggregates site data to provide performance to determine key predictive and operational drivers

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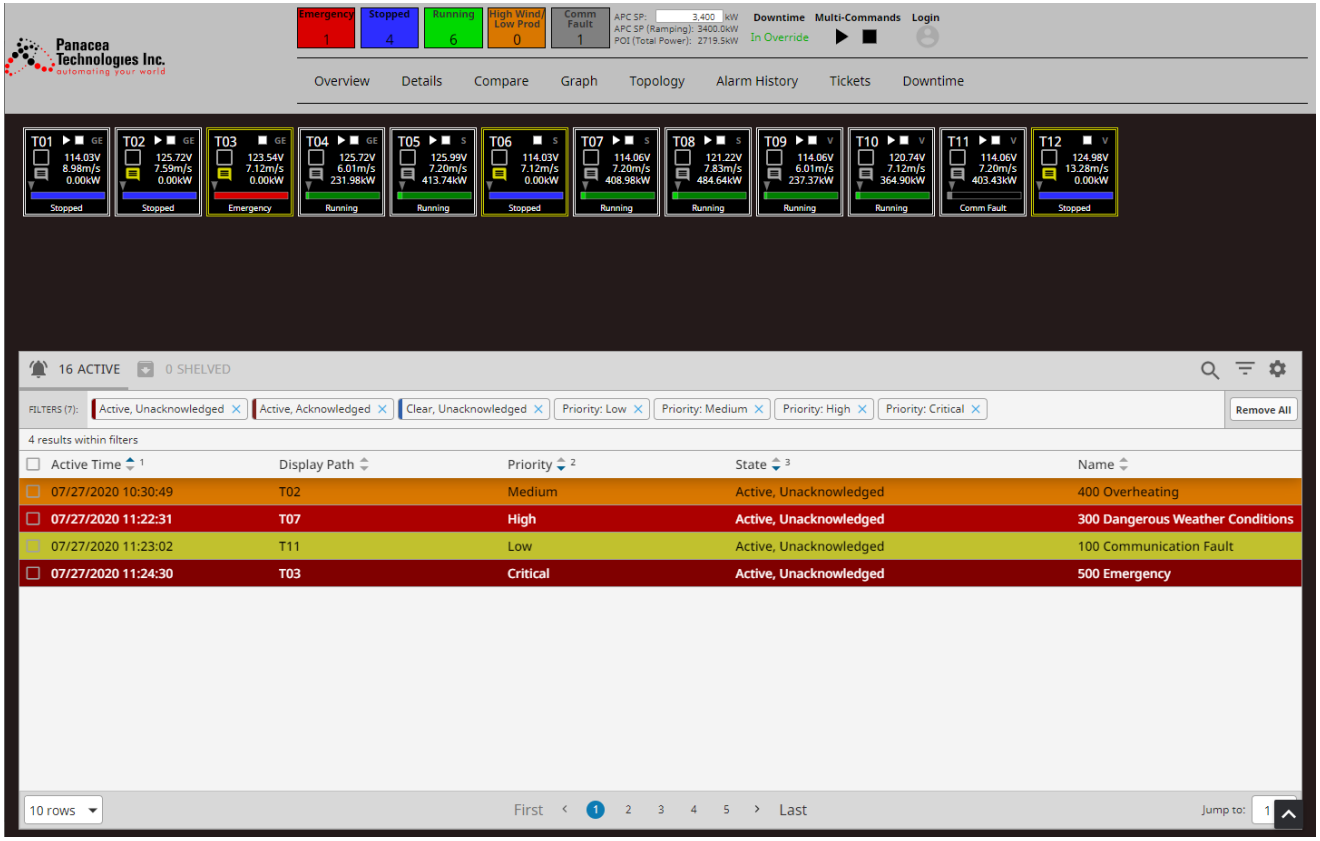
# Site Level View




The site view allows for customized and tailored monitoring solutions. This view provides a summary of conditions, output from every turbine or panel, and all active alarms.

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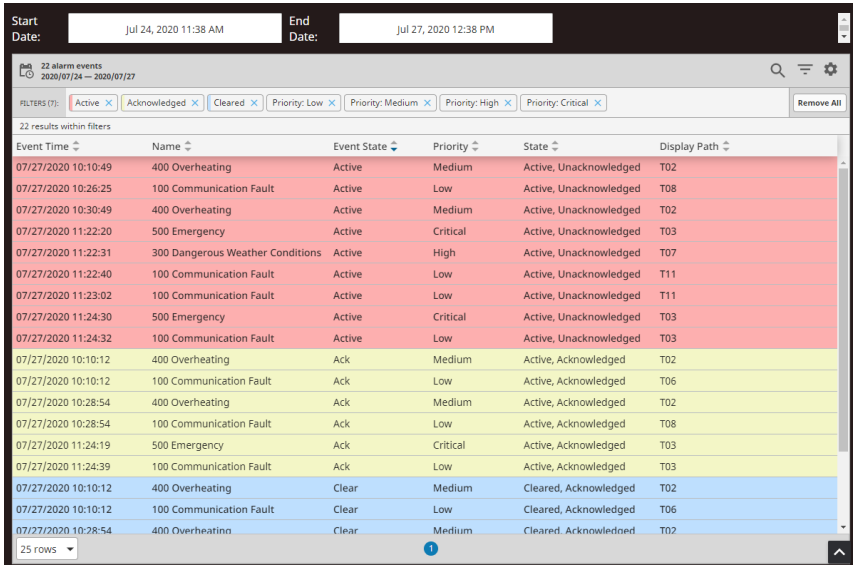
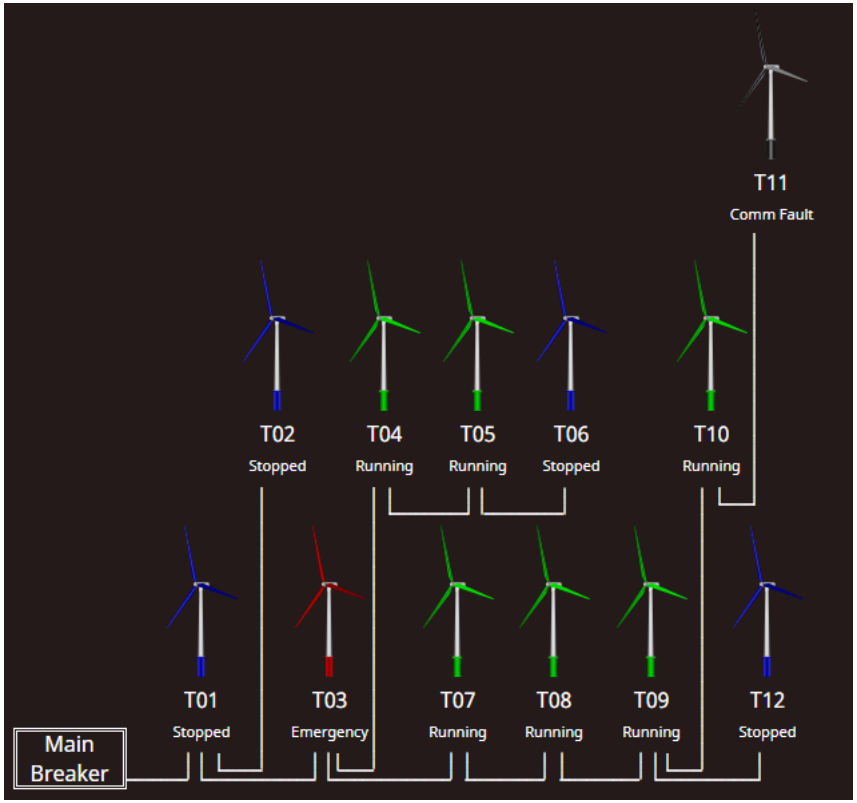
# Additional Site Level Views

## Alarm History




## Topography View




All alarms are archived in **Alarm History**. **Topography** view provides a graphical display of the communications fiber to provide insight into substation and fiber related issues.

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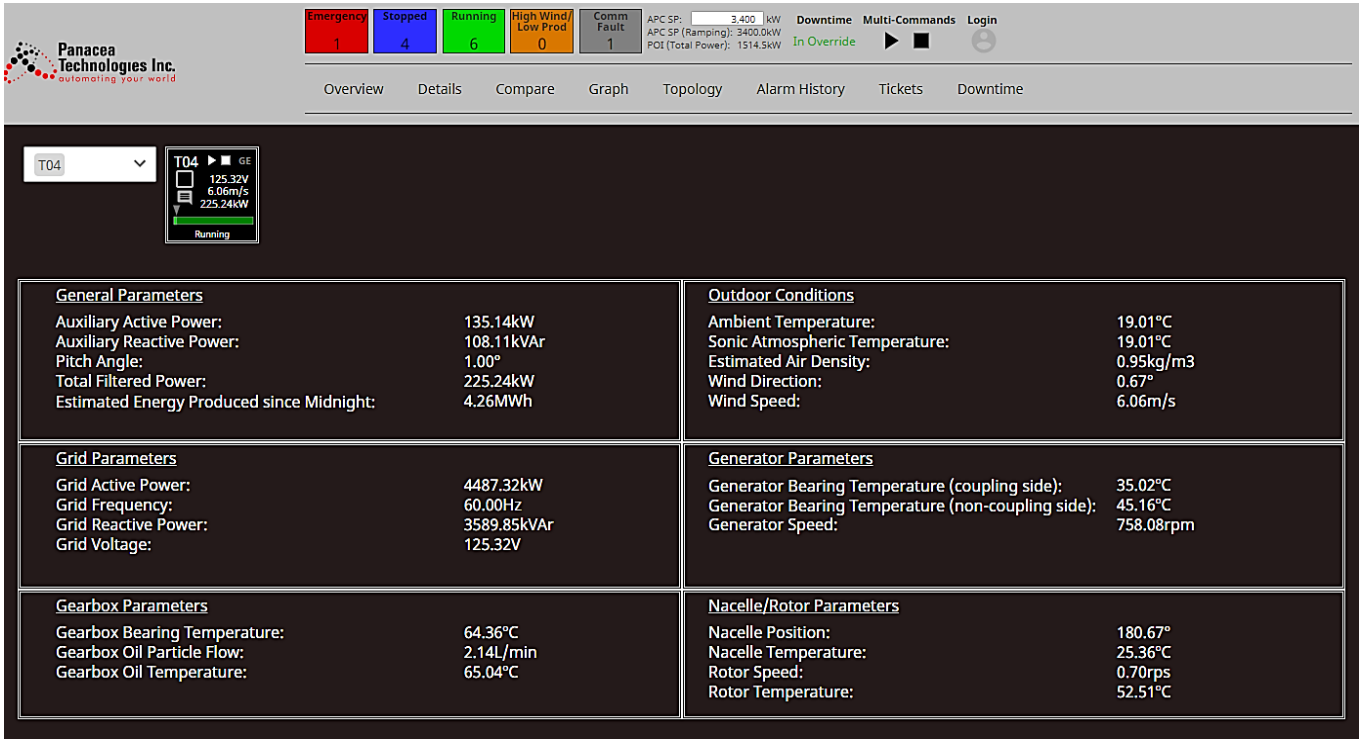
# Source Level View




OpenPWR provides real-time monitoring of specific turbines and other sources and their related metrics and environmental data.

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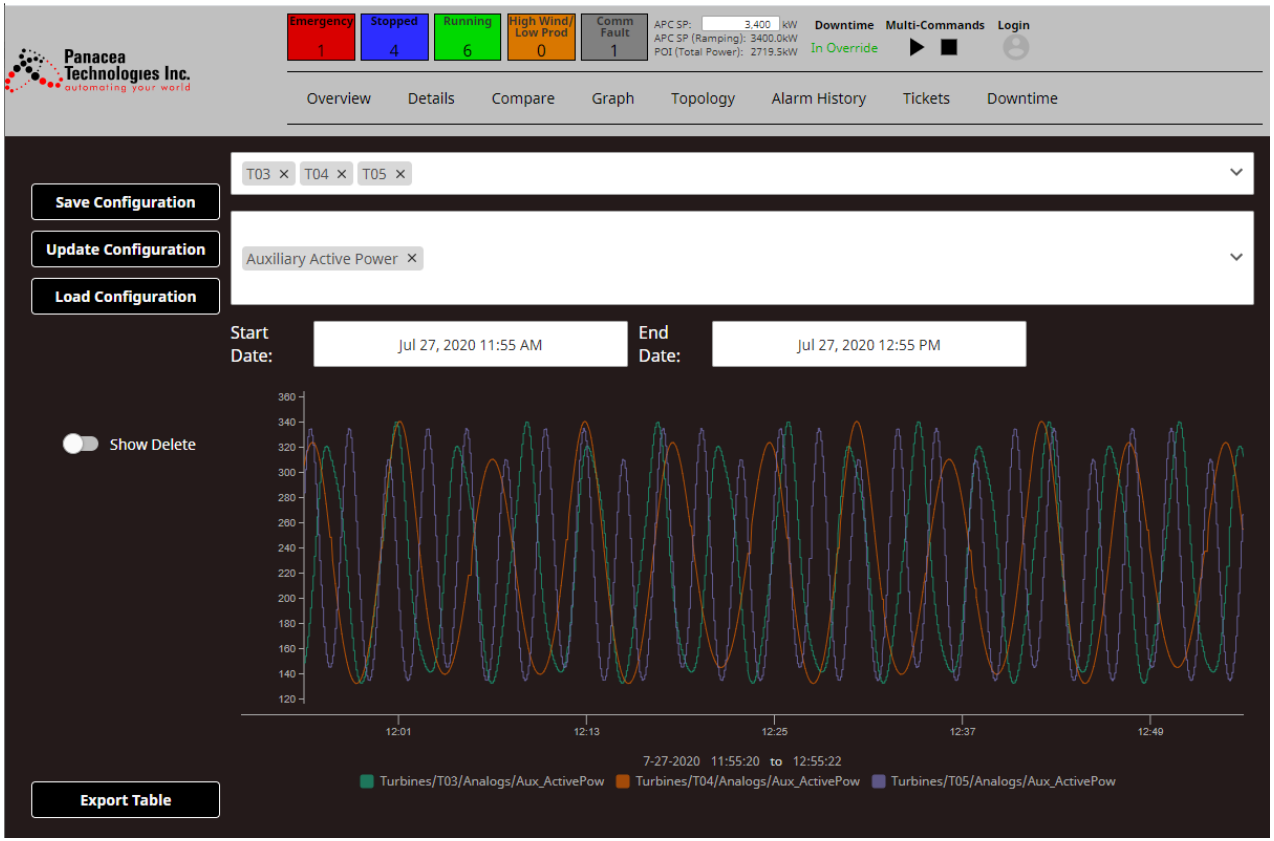
# Analytics and Data Management




Generating millions of data points annually, OpenPWR is highly adaptable and can provide data averages and continuously generated graphs. Data can be exported in various formats including .pdf reports, tailored for different stakeholders.

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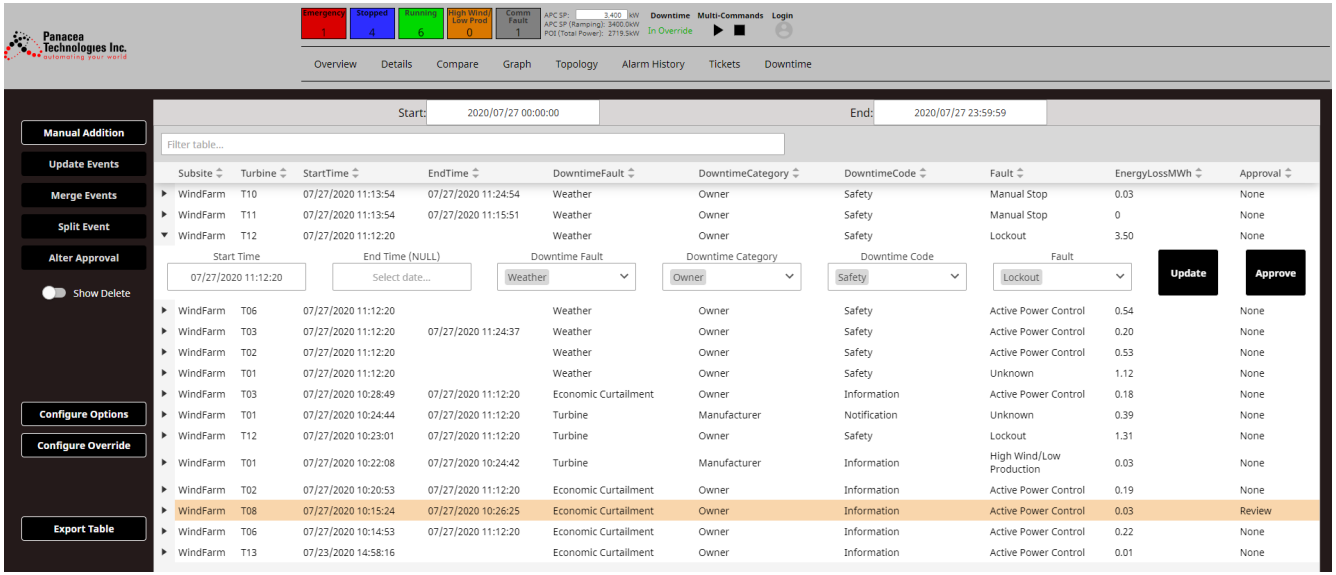
# Downtime Analysis




OpenPWR's automated downtime log allows for a more robust analysis of the impact of both internal and external events. Events are assigned to a fault and owner and can be split or merged. A robust log provides insight into the key causes and costs of different downtime events, allowing users to improve availability and determine if incidents are part of a trend and if corrective procedures area followed.

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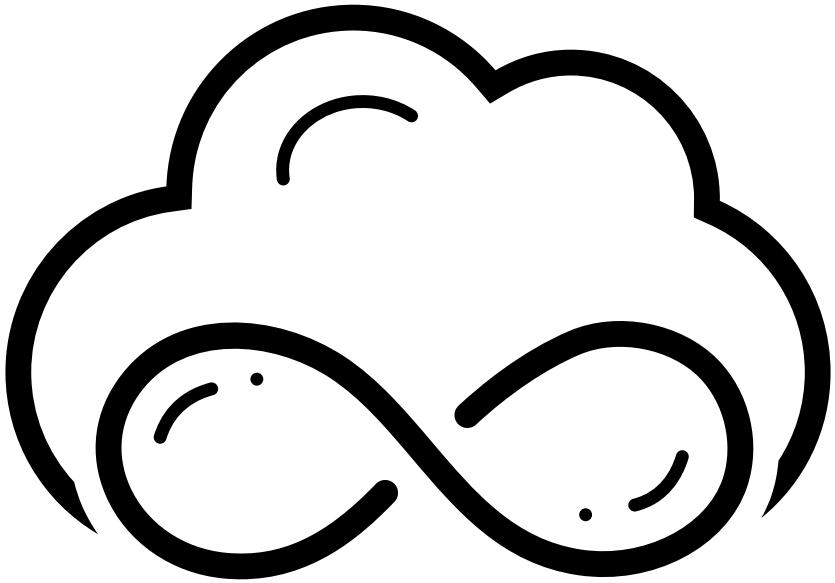
# Unlimited Licensing Model

OpenPWR's unlimited licensing model is designed to be a onetime cost, including the deployment and integration of the platform, drastically reducing costs when compared to other packages.



Examples:

| Site type | Number of Turbines | Number of Technologies | Est. Deployment & License Cost |
|---|---|---|---|
| Small windfarm | 25 | 1 | $ 90,000 |
| Large windfarm | 100 | 3 | $ 140,000 |

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# Capabilities

- Complete suite of project capabilities including:
  - Feasibility Studies
  - SOP Creation
  - Design Document Authoring
  - Programming and Configuration
  - Hardware Design and Panel Fabrication (with partner)
  - Testing
  - Validation
  - Startup and Commissioning
  - Long Term Support
  - Project Management
- Standalone services including the above items as well as:
  - Automation Network Design
  - Serialization
  - Virtualization
  - Legacy install base evaluations and migrations
  - Automation asset and code management
  - On-site support
  - Data Historization and Reporting
  - Integration with Enterprise Systems (ERP, MES, PLM, etc.)

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# Platforms and Certifications

Certified Partnerships:

Rockwell Automation

Ignition Premier Integrator

inductive automation

synTQ Application Partner

vmware

OSIsoft.

kepware

Wonderware by Schneider Electric CERTIFIED System Integrator Partner

GE Intelligent Platforms

THINMANAGER A Rockwell Automation Technology

Matrikon®

OPTO 22 Automation made simple.

Expertise with available References:

YOKOGAWA

Honeywell

DELTAV

SIEMENS

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# Panacea Update Manager

Panacea Technologies recently launched the Panacea Update Manager, which automates the process of patching Operating Systems for Automation Platforms.

Panacea Update Manager works by taking vendor recommended patch definitions from GE, Rockwell Automation/Allen Bradley, Siemens, OSI soft, and Wonderware and ensures only vendor approved Microsoft OS patches are deployed on your networks.

The software ensures your Computer Networks receive the latest OS patches keeping your infrastructure secure, but it also ensures potential downtime events are eliminated by only deploying tested patches.

Visit https://www.panaceatech.com for more information.