



RtDUET

OWN YOUR OPERATIONS.

Outage Tracking

IEEE/NERC Compliance

Equipment Monitoring

Standardized KPI



Killer apps for industrial analytics.





## RtDUET

Realize the operational efficiencies that can be achieved from a centralized data system and common performance measures.

With real-time information on how assets are performing through outage and de-rating event monitoring with associated equipment, problem, cause and category. RtDUET allows for standardized reporting across multiple generation facilities, with configurable out-of-box reports for maintenance and capital planning.

Alignment with international standards for power generation (NERC and IEEE) and a single data repository to support the system across all sites simplifies reporting procedures.

## OWN YOUR OPERATIONS.

Extended functionality for users of the OSIsoft® PI System®.

Push power-gen to the max with outage and derate event monitoring with operational analytics including EFOF, EFOR, EMOF, EPOF, EAF and FOR and others.

OUTAGE + DERATE TRACKING  
IEEE + NERC COMPLIANCE  
EQUIPMENT MONITORING  
STANDARDIZED POWER-GEN KPI

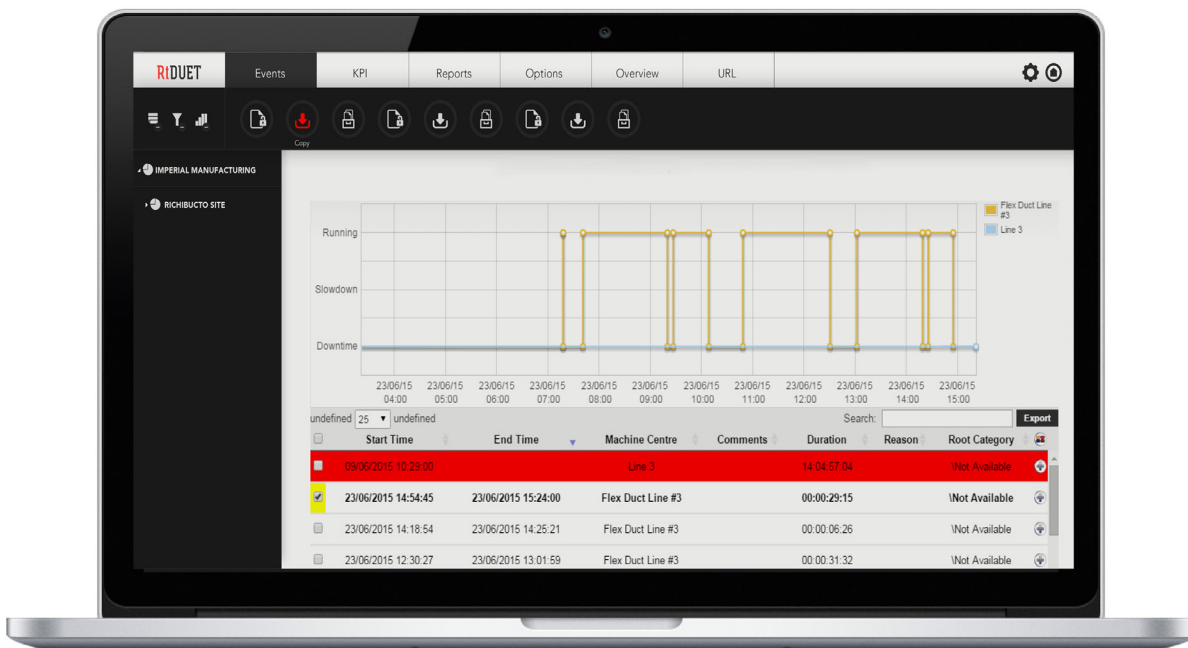
COMPLIANCE



**IEEE**

**NERC**

NORTH AMERICAN ELECTRIC  
RELIABILITY CORPORATION



#### MULTIPLE SOURCE MONITORING

Integrates with PLC, DCS, or data historian aggregating environment, production, and operation data.



#### LOGBOOK INTEGRATION

Automated data collection and classification workflows plus integration with process logbooks.



#### KPI CALCULATION ENGINE

Calculates standard power-gen KPI including EFOF, EPOF and FOR using simple as well as complex triggers.



# From control-room to board-room.

## OUTAGE + DERATE TRACKING

Stop guessing.  
Start tracking.

Clients tell us that prior to RtDUET they had short outage or derate events that were completely missed. Even insignificant events add up to significant productivity loss. Outages are usually tied to equipment failures or breakdowns, but includes any unplanned event that stops or slows down generation.

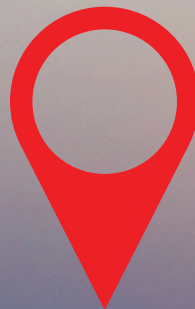
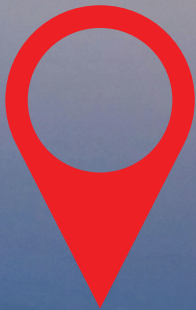
Track outages and derates using RtDUET's operator-friendly event dashboard. Further integrations stream RtDUET data directly into your process logbooks, which means even less human interaction within the process. After an event is captured - classify, split, or have a supervisor verify. Concerned about certain type or length of downtime? Set an automatic alert.

## IEEE + NERC COMPLIANCE

Simplified reporting  
+ compliance.

RtDUET is in full compliance with NERC and IEEE standards for power generation. NERC Reliability Standards define the reliability requirements for planning and operating the North American bulk power system and are developed using a results-based approach. Meanwhile, IEEE is an independent standards association committed to global standardization to protect public health and safety.

RtDUET is configurable with your time usage classifications and KPI calculations to comply with the NERC and IEEE international standards for power generation.





## EQUIPMENT MONITORING

### Relying on unreliable data?

**Did the plant go down at 3:10 or 3:20? Is the derate costing \$10,000 or \$100,000 in lost capacity? Without accurate duration and classification, how can you know?**

Equipment monitoring has replaced manual downtime recording. Reduce the time required for your operators to record downtime events, and increase data accuracy with automatic fault codes and standardized classification of your downtime. With RtDUET, be proactive to improve your operator's productivity and operate more efficiently with more accurate data, faster, to determine the best course of action.

## STANDARDIZED POWER-GEN KPI

### Compare lines. Compare sites.

**Benchmark your performance against industry standards, against other corporate sites or within your own site by department and line.**

The power of a robust analytic app means that information from any PLC, DCS, data historian, or sensor can be aggregated, organized and presented to empower every level of your organization. Empower operators with ownership of their equipment, empower supervisors to optimize processes and promote KPI that have been standardized across multiple sites, to key stakeholders.





## CASE STUDY

### AGL

While AGL had been an established energy provider to Australia since 1837, a series of power generation acquisitions, facility constructions and other investments fuelled rapid growth of the company's generation portfolio from 300 to 10,000 Mega Watts over nine years.

Realizing the operational efficiencies that could be achieved from a centralized data system and common performance measures, AGL sought out a business tool for downtime, uptime and asset management.

RtTech's RtDUET solution was an easy choice for AGL as it integrated seamlessly with their new data historian, OSIsoft's PI System. Furthermore, RtDUET was configurable with AGL's time usage classifications and KPI calculations to comply with the NERC and IEEE international standards for power generation.

*AGL is one of Australia's leading integrated renewable energy companies and is taking action to gradually reduce its greenhouse gas emissions while providing secure and affordable energy to its customers. Drawing on over 175 years of experience, AGL serves its customers throughout eastern Australia with their energy requirements, including gas, electricity, solar PV and related products and services. AGL has a diverse power generation portfolio including base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources including hydro, wind, solar, landfill gas and biomass.*







## CHALLENGE

**Rapid growth from 300-10,000 MW**  
**Required ability to share data across sites and ensure industry compliance (IEEE + NERC)**

## RtDUET

**Asset health and asset performance management.**

**Integration with existing process log-books**

**Standardized KPI calculation across sites**

## SOLUTION

**Increased data accuracy**

**Compliance with industry standards (IEEE + NERC)**

Now successfully deployed in two of the company's business units, AGL reports an initial increase of 5% data accuracy after a few months. They're also in the process of decommissioning the costly reporting systems that RtDUET has replaced.

RtDUET provides AGL with an IoT-connected solution that offers:

- **Standardized reporting system and automatic KPI calculations**
- **Alignment with international standards for power generation (NERC and IEEE)**
- **A single data repository and supported system across all sites**

“We have ensured data precision in terms of asset performance and can now chase improvements because we know they are real.”

### DAVID BARTOLO

Head of Operational Systems and Technology  
AGL Energy





## Features for the way you work.

### CONNECT

**Multiple source monitoring**  
Integrates with PLC, DCS, or data historian, aggregating environment, production, and operation data.

**Real-time machine data capture**  
Connectivity to over 400 protocol types for automatic data capture.

**Flexible licensing options**  
Licensing flexibility via asset, site, or Enterprise license.

### MONITOR

**Asset monitoring**  
Monitors equipment 24/7 for any stoppages and/or production delays.

**Configurable user permissions**  
Set security preferences, permissions, and visibility access by user profile.

**Configurable time usage model**  
Configure your own timeline definition or time usage model to drive the KPI calculations.





GET OUTAGE VISIBILITY.  
MONITOR EQUIPMENT HEALTH.  
SHARE PERFORMANCE KPI.  
ALIGNMENT WITH STANDARDS.  
MAX PROFIT WITH MORE OUTPUT.  
IMPROVE DATA ACCURACY.  
LOWER MAINTENANCE COSTS.

## ANALYZE

**Auto-classified downtime**  
Downtime events can be automatically classified when event meets predetermined criteria

## VISUALIZE

**KPI dashboard**  
Real-time visualization of production performance.

**Information timeline**  
Events displayed chronologically to analyze asset performance and repairs

**Web-based interface**  
Reports and dashboard are accessible anytime via secure web application.

## INFORM

**Root-cause analysis**  
Contextualized data is formatted to easily prioritize high-cost pain points and detect root cause.

**Out-of-the-box configurable reports**  
Configure reports to reflect KPI calculations in a clear, concise manner.

**Automated KPI calculation engine**  
Calculates standard power-gen KPI including EFOF, and FOR using simple as well as complex triggers.

**Microsoft Excel module**  
Access and manipulate exported data using specialized Microsoft Excel module.







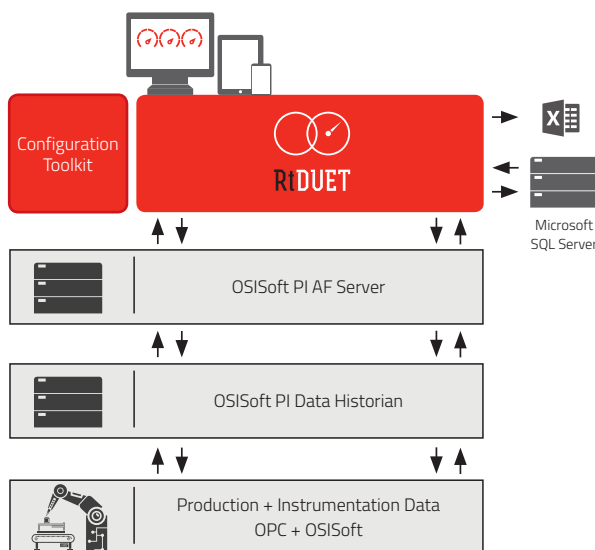
## Designed for use with the OSIsoft® PI System®.

### SYSTEM ARCHITECTURE:

**RtDUET provides extended functionality for users of the OSIsoft® PI System®.**

RtDUET also provides easy access to the underlying data records for downtime events and KPI through advanced analytics. With simple out-of-the-box reporting and integration into on-site systems, accessing data can also be achieved through standard acceptable reporting tools such as Microsoft Excel and Microsoft SQL Server reporting services. RtDUET comes complete with a standard add-in application for the Microsoft Excel 2007, 2010, and 2013 versions.

RtDUET utilizes OSIsoft® PI system® data from tags as trigger inputs to assets. The OSIsoft® PI AF SDK® is utilized for configuration and storage of downtime and KPI records in the event frame subsystem as well as a database for reason tree, time usage configuration and asset hierarchy.

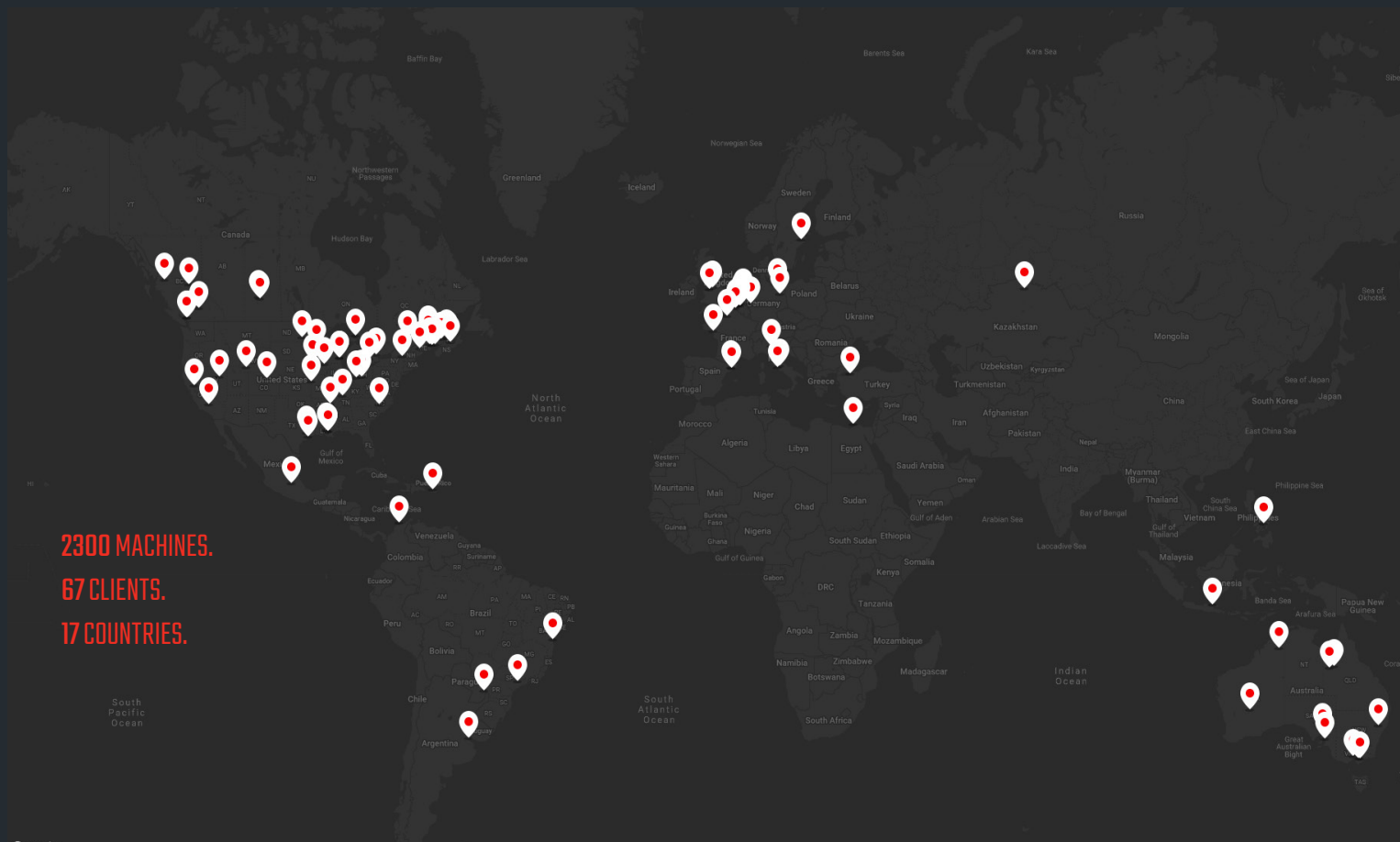


"I compare RtDUET to an app on your phone. The right apps make the phone so much more useful," says David Bartolo, speaking of the value RtDUET adds to their data historian.

**DAVID BARTOLO**

Head of Operational Systems and Technology  
AGL Energy





## Kickin' it up a gear, around the globe.

Our footprint spans across the globe, helping companies in 17 countries get the most out of their operations by maximizing productivity and reducing energy costs. We'd love to hear about your power-generation facilities and how we can help!

Own your operations with killer apps for industrial analytics.



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