reactive technologies

Data / Power: Driving the Energy Transition

Enabling a resilient, low-carbon power grid for the future, safer, faster

Reactive Technologies (RTL) is a global Grid-Enhancing Technologies (GETs) company at the forefront of addressing the challenges of the energy transition and load growth by measuring power grid inertia and system strength in real-time.

With our proven, first-of-its-kind GridMetrix® platform, we provide real-time, high performance power network measurements and data-driven insights into grid stability and reliability. This enables grid operators and utilities worldwide to plan and operate with greater insight, precision and resilience in a rapidly evolving energy landscape.

“Better critical data drives better decisions—and that’s how we future-proof the energy system to meet renewable integration challenges, building a resilient, low-carbon grid ready for tomorrow.”

Marc Borrett
Chief Executive Officer

Our story

Founded in 2010 by technology veterans Dr. Heikki Huomo, former Global VP of R&D at Nokia, and Marc Borrett, a seasoned entrepreneur who successfully licensed NFC (Near Field Communications) IP to 80% of Semiconductor companies worldwide, prior to a subsequent acquisition by Broadcom, Reactive Technologies brings together a mission-driven team of experts specializing in power systems, communications, digital signal processing, and data science to the challenges of the renewable energy transition.

With a strong foundation in technological innovation and a deep understanding of the challenges facing the energy industry, Reactive Technologies has evolved into a global technology company headquartered in London, UK. Our dedicated sales and project delivery teams work closely with customers worldwide, supported by commercial offices on the East and West Coasts of the USA, as well as in the UAE and Australia, and an advanced R&D center in Finland.

5

Office locations supporting our customers

70+

Employees worldwide

250+

Granted patents across 34 countries

Our deep technology expertise and skill set enables us to deliver unique, impactful technologies that make the transition to a resilient, low-carbon power grid, safer, faster.

Our awards

We work alongside some of the world's most advanced grid operators, including New York Independent System Operator (NYISO) in the US, Australian Energy Market Operator (AEMO) in Australia, and National Energy System Operator (NESO) in Great Britain.

By providing high-performance measurement data - covering power grid inertia, system strength, oscillation events, and a wide range of stability and reliability issues, we enhance situational awareness, optimize resource planning, and unlock new grid capacity. These capabilities drive significant cost savings and enable utilities to integrate wind, solar and distributed energy resources (DERs), safer and faster.

We are honored to receive recognition from media and industry for our innovative contributions and impact.

Trusted by

BusinessGreen
UK Green Business Awards 2025

Winner of the 2025
Renewable Energy
Project of the Year

COP28 UAE

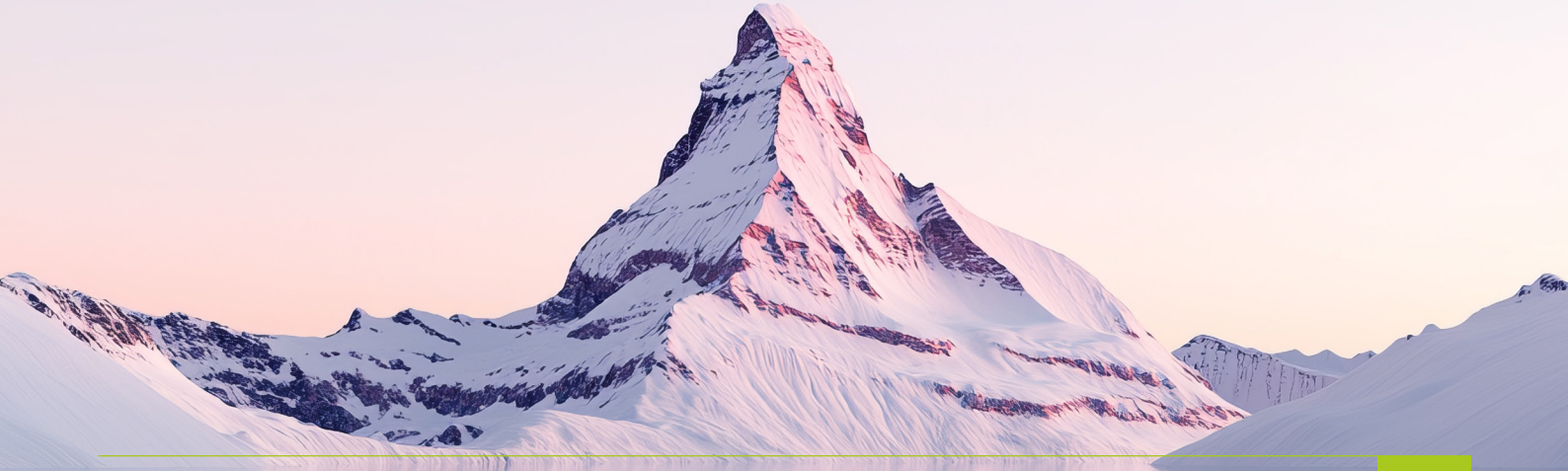
Clean Power Energy
Transition Changemaker
at COP28

FT

Financial Times
Energy Tech
Champions 2023

BNEF
pioneers
2022

Winner of the 2022
BNEF Pioneers
by challenge



Grid Edge Measurement Device (XMU) - Grid IoT

Our Grid Edge Measurement devices (XMU) are at the core of what sets us apart. This distributed network of ultra high-definition grid IoT devices, combined with cloud-based digital signal processing, enhances your existing network assets by creating a high-precision measurement overlay. This approach provides a unique and proven method for monitoring the dynamic physics of the power grid.

Designed for fast deployment with a vendor-managed device approach, GridMetrix® allows customers to start collecting actionable, real-time data from day one - minimizing upfront cost, simplifying operation, and accelerating return on investment.

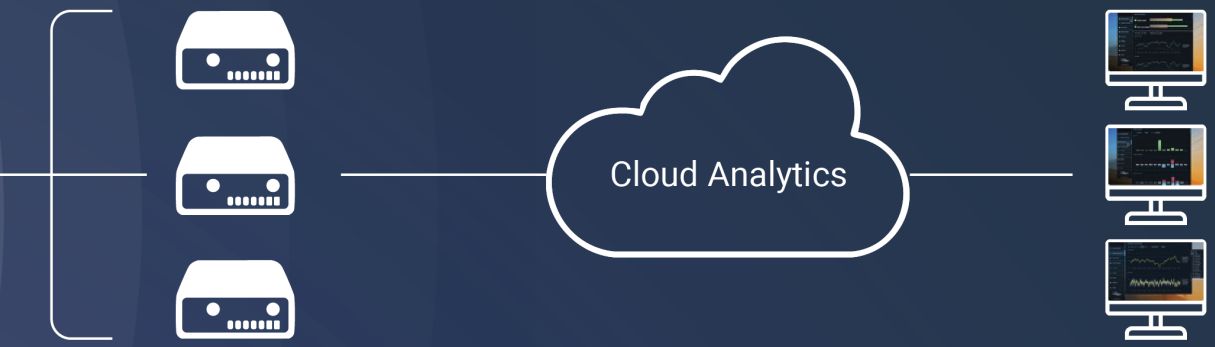
How It Works

Key features

- High definition grid edge measurement (up to 48,000 measurements/second resolution)
- Vendor (Reactive) managed devices
- Robust cyber-secure cloud platform
- Seamless data integration with existing system

Benefits

- Well-informed data driven decisions
- Optimized operation cost
- Highest standard on data security
- Enhanced grid stability and reliability



Extensible Multifunctional Units (XMUs)

ISO27001 - certified Information Security Management System

Customer's control center

Highly accurate real-time data delivered to the control room

Introducing GridMetrix®

GridMetrix® combines a distributed network of high-definition grid IoT devices with an advanced cloud-based data processing platform, forming a high-precision measurement overlay that enhances the evaluation of rea-time network operations.

Figure: Oscillation monitoring in GridMetrix®

For illustration purpose only

Key capabilities

Direct inertia measurement
GridMetrix® real-time measurements replaces traditional model-based inertia estimation with patented technology for accurate and direct measurement of system inertia.

System strength measurement
GridMetrix® delivers real-time insights into system strength including short circuit strength, voltage profiles, and flicker, helping operators manage grid reliability.

High-resolution oscillation monitoring
Our Grid Edge Measurement Devices (XMUs) sample up to 48,000 frequency measurements per second, delivering the granularity required to detect even the smallest and fastest fluctuations.

Benefits

Increased situational awareness
Pre and post-fault situation awareness enabling safe, smooth, reliable operations.

Enabling the energy transition
Manage the integration of DERs and IBRs* and reduces renewable curtailments.

Lower reserve and balancing costs
Optimize inertial reserve planning, helping grid operators reduce balancing costs.

Optimized asset management & planning
Enable network investment, and supports long-term grid-forming asset planning.

DERs: Distributed Energy Resources **IBRs:** Inverter-Based Resources

Tradenergy®

Ultra-fast, unique grid insights for short-term power traders

In the increasingly complex and fast-paced energy market, access to fast, reliable data is essential for smarter decision making and maintaining your competitive edge.

Tradenergy® provides short-term power traders, asset owners and market analysts with advanced data to monitor the power system in real-time.

Grid events, such as power station or interconnector trips, are detected on average 10 minutes earlier than alternative sources through our network of Grid Edge IoT monitoring devices.

Our network spans over 100 live devices across GB and Europe, covering 14 countries, with ongoing deployments of additional devices in the EU.

What we offer

Locational Grid Event Detection

- Ultra-fast, locational, Grid Event Alerting via the Reactive Technologies network of Grid Edge IoT devices
- Receive notification of interconnector, generator and transmission line outages in 2 seconds
- MW sizes for events are provided, as well as classification (Generation / Interconnector / Transmission) and named likely sources
- Intuitive User Interface and email alert

Low Latency Frequency Streaming

Ultra-low latency frequency readings streamed live from Reactive's devices with the following key features:

- <0.5s from device to publication
- 10 Hz resolution
- Delivery via Advanced Message Queueing Protocol (AMQP) 1.0

The service is available for selected locations: GB, EU and Nordics initially, with devices also available in US, Japan and Australia

Inertia Monitoring & BM Forecasting

- Day ahead inertia forecasting
- Intraday inertia forecast updates and actuals
- Probabilistic Balancing Market (BM) forecasts

Seamless Integration With Your Systems

Events Push Interface
Offers the fastest way to receive data for Algo-trade strategy optimization

Frequency Push Interface
Low latency frequency data streaming 10 readings per second via AMPQ

Forecasts REST API
Provides programmatic access to both real-time and historical inertia and BM forecasts

Asset Services

Optimizing your renewable asset planning and operation

The growing share of renewable generation is driving the development of markets for assets like synchronous condensers and grid-forming inverters, which add inertia and enhance grid stability.

As grid stability markets develop, expert knowledge is essential to assess potential revenue, optimize asset placement, and ensure compliance with grid standards, securing income from stability contracts.

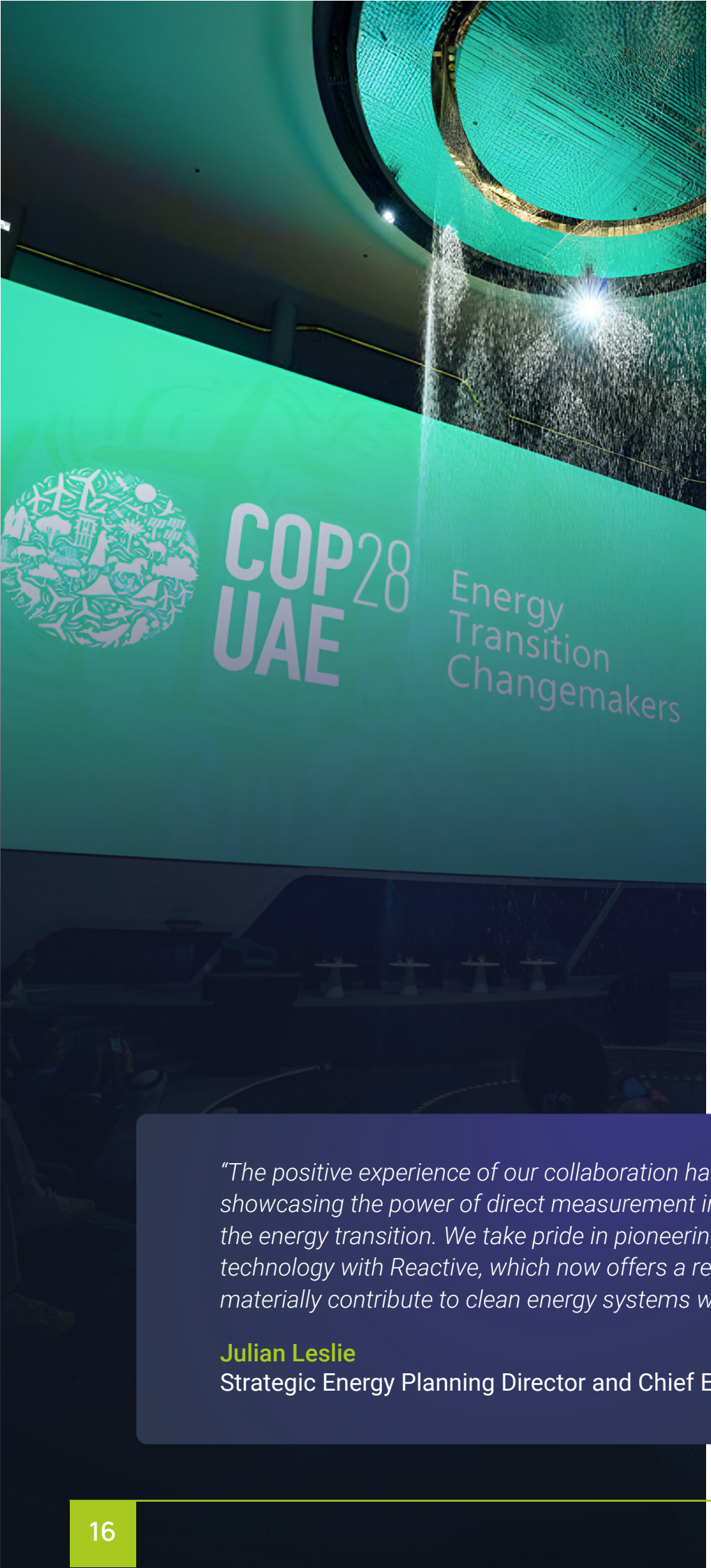
We provide the tools and expertise to help organizations planning to build or operate power system assets understand current and future grid behavior. Our services enhance operational reliability, optimize performance, and protect the value of your investments with unparalleled grid insights.

Site pre-assessment

We analyze potential locations based on our unique power grid performance data to identify regional inertia needs and market opportunities, ensuring optimal selection for asset location pre-market tendering.

Performance monitoring

We deploy our Grid IoT devices ahead of asset procurement for continuous monitoring, providing data insights to support design, grid compliance assessment, performance and identify threats to good performance such as oscillations. Once commissioned, our system can provide ongoing performance monitoring for compliance purpose.



30%+

Extra grid capacity for renewables integration unlocked

£14.4M

Cost saving for customers per year on managing inertia

~18M

Tonnes of CO2 saved annually in GB alone

~5.5%

Of total GB CO2 emissions eliminated annually

"The positive experience of our collaboration has been transformative, showcasing the power of direct measurement innovation in advancing the energy transition. We take pride in pioneering this Net Zero enabling technology with Reactive, which now offers a replicable model that can materially contribute to clean energy systems worldwide."

Julian Leslie
Strategic Energy Planning Director and Chief Engineer at NESO

Award-winning deployment of the world's first inertia measurement technology in collaboration with NESO, Great Britain

Adopting innovative technology is essential to drive sustainable progress and support a resilient, low-carbon grid of the future.

Launched officially in 2021, National Energy System Operator (NESO) deployed RTL's GridMetrix® inertia measurement service across Great Britain to achieve for the first time, a real-time power grid stability insight and support higher proportions of renewable energy safely running on GB's national power grid.

The implementation of RTL's GridMetrix® technology was proven to mitigate renewable curtailment, significantly cut greenhouse gas emissions, and strengthen grid stability. The results highlight a tremendous potential for global impact in reducing CO2 emissions across power grids.

Get in touch

Discover our IP portfolio

www.reactive-technologies.com

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