

# **Advanced Power Quality Systems Market Forecasts to 2032 – Global Analysis By System Type (Active Power Filters, Static VAR Compensators, Dynamic Voltage Restorers, Uninterruptible Power Systems, Harmonic Mitigation Systems and Power Conditioning Units), Power Disturbance, Voltage Level, Application, End User and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Advanced Power Quality Systems Market is accounted for \$37.8 billion in 2025 and is expected to reach \$58.8 billion by 2032 growing at a CAGR of 6.5% during the forecast period. Advanced Power Quality Systems are technologies and solutions designed to monitor, protect, and improve the characteristics of electrical power within a grid or facility. They address disturbances like voltage sags/swells, harmonics, flicker, and interruptions. Using devices such as active filters, dynamic voltage restorers, and unified power flow controllers, these systems ensure clean, stable, and reliable power supply, which is crucial for protecting sensitive industrial equipment and digital infrastructure.

### **Market Dynamics:**

Driver:

Grid modernization and electrification surge

Grid modernization and electrification surge continues to accelerate demand for advanced power quality systems as utilities upgrade aging transmission and distribution infrastructure. Increasing penetration of renewable energy sources, electric vehicles,

and distributed generation assets introduces power instability challenges requiring active conditioning solutions. Industrial automation and digitized manufacturing further heighten sensitivity to voltage fluctuations and harmonic distortion. As power reliability becomes a strategic priority for utilities and large consumers, investments in advanced power quality technologies are gaining strong momentum across developed and emerging economies.

#### Restraint:

##### High deployment and integration costs

High deployment and integration costs present a significant restraint for the advanced power quality systems market, particularly for small utilities and cost-sensitive industrial users. Installation often requires extensive retrofitting of existing electrical infrastructure, specialized power electronics, and skilled technical expertise. Integration with legacy grid management systems can increase project complexity and commissioning timelines. Budget constraints, coupled with long return-on-investment cycles, limit adoption in regions with underdeveloped grid infrastructure, slowing overall market penetration.

#### Opportunity:

##### Smart grid power conditioning solutions

Smart grid power conditioning solutions represent a key opportunity as utilities transition toward digitalized and automated grid environments. Advanced power quality systems equipped with real-time monitoring, predictive analytics, and remote control capabilities support proactive voltage regulation and disturbance mitigation. Integration with smart substations and energy management platforms enhances operational efficiency and asset utilization. Growing emphasis on grid resilience, cybersecurity, and adaptive load management positions intelligent power conditioning technologies as critical components of next-generation power networks.

#### Threat:

##### Regulatory uncertainty across power markets

Regulatory uncertainty across power markets poses a notable threat to consistent investment in advanced power quality systems. Variations in grid codes, incentive

structures, and power quality standards across regions complicate product standardization and deployment strategies. Policy delays related to renewable integration and infrastructure funding can postpone large-scale projects. Additionally, sudden regulatory shifts may alter procurement priorities, increasing financial risk for manufacturers and solution providers operating across multiple jurisdictions.

### **Covid-19 Impact:**

The COVID-19 pandemic initially disrupted supply chains and delayed grid infrastructure projects due to labor shortages and capital reallocation. However, increased reliance on digital services, healthcare facilities, and data centers amplified demand for uninterrupted and stable power supply. Utilities prioritized reliability enhancements to support essential services, driving renewed interest in power quality systems. Post-pandemic recovery has restored capital spending, reinforcing long-term demand for resilient and high-performance power conditioning solutions.

The uninterruptible power systems segment is expected to be the largest during the forecast period

The uninterruptible power systems segment is expected to account for the largest market share during the forecast period, resulting from its critical role in ensuring continuous power supply across industrial, commercial, and data center applications. Rising dependence on digital infrastructure and automation increases tolerance thresholds for power interruptions. UPS systems provide immediate protection against outages, voltage dips, and frequency variations, making them indispensable for mission-critical operations and supporting sustained segment dominance.

The voltage sags & swells segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the voltage sags & swells segment is predicted to witness the highest growth rate, propelled by increasing sensitivity of modern equipment to short-duration voltage disturbances. Semiconductor manufacturing, healthcare imaging, and automated production lines require stable voltage profiles to prevent operational losses. Expanding deployment of renewable energy sources further contributes to voltage variability, accelerating demand for advanced mitigation solutions focused on sags and swells management.

### **Region with largest share:**

During the forecast period, the Asia Pacific region is expected to hold the largest market share, attributed to rapid industrialization, expanding power generation capacity, and extensive grid modernization initiatives. Countries such as China, India, and Japan are investing heavily in transmission upgrades and renewable integration. Growth in manufacturing hubs and urban infrastructure increases demand for reliable power quality solutions, strengthening the region's leadership position in the global market.

### **Region with highest CAGR:**

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR associated with accelerated smart grid deployment and rising investments in grid resilience. Strong adoption of electric vehicles, data centers, and renewable energy systems elevates power quality requirements. Regulatory emphasis on grid reliability and modernization, combined with technological innovation by regional solution providers, supports faster adoption of advanced power quality systems across utilities and industrial sectors.

### **Key players in the market**

Some of the key players in Advanced Power Quality Systems Market include ABB Ltd., Siemens AG, Schneider Electric, Eaton Corporation, General Electric Company, Mitsubishi Electric Corporation, Hitachi Energy, Toshiba Energy Systems, Fuji Electric, S&C Electric Company, Socomec Group, Vertiv Group Corp., Delta Electronics, Legrand, Rockwell Automation, Emerson Electric, and Huawei Digital Power.

### **Key Developments:**

In January 2026, ABB Ltd. expanded its digital power quality portfolio with AI-enabled voltage regulation systems, improving grid stability, harmonic mitigation, and real-time power monitoring for industrial and utility-scale applications.

In December 2025, Siemens AG enhanced its grid-edge power quality solutions by integrating advanced analytics and automation, supporting voltage stabilization and resilience across renewable-heavy distribution networks.

In November 2025, Schneider Electric upgraded its EcoStruxure Power platform with intelligent power quality modules, enabling predictive disturbance detection and optimized voltage control for critical infrastructure facilities.

### System Types Covered:

- Active Power Filters
- Static VAR Compensators
- Dynamic Voltage Restorers
- Uninterruptible Power Systems
- Harmonic Mitigation Systems
- Power Conditioning Units

### Power Disturbances Covered:

- Voltage Sags & Swells
- Harmonic Distortion
- Frequency Variations
- Power Factor Issues
- Transient Disturbances

### Voltage Levels Covered:

- Low Voltage Systems
- Medium Voltage Systems
- High Voltage Systems
- Extra-High Voltage Systems

**Applications Covered:**

Industrial Manufacturing

Data Centers

Renewable Energy Plants

Transportation Infrastructure

Commercial Buildings

**End Users Covered:**

Utilities

Industrial Facilities

Commercial Enterprises

Transport Operators

Renewable Energy Operators

**Regions Covered:**

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

**What our report offers:**

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

**Free Customization Offerings:**

All the customers of this report will be entitled to receive one of the following free customization options:

**Company Profiling**

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

**Regional Segmentation**

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

## Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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