Guidehouse
INSIGHTS

**Research Report**

# Guidehouse Insights
# Leaderboard: AI Vendors for DER Integration

Assessment of Strategy and Execution for 14 AI Vendors for DER Integration

**NOTE: This document is a vendor excerpt of a larger report**

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# Section 1
# Executive Summary

**1.1       Market Introduction**

AI techniques have been deployed in the energy industry for a variety of grid and market operations. One of the most compelling applications of AI in the energy industry is for the integration of distributed energy resources (DER). How the distribution grid operates and how customers participate in this market are changing from a variety of factors including: The proliferation of advanced metering infrastructure (AMI), or smart meters, and the influx of data for more advanced planning and operation of the grid. The market is also shifting because of the increasing capacity of DER requiring advanced communication networks and two-way power flows are changing the way

Advances in analytics capabilities and the influx in available data have positioned AI as a successful and necessary tool for meeting the needs of utilities, customers, and the broader electric grid. As a result, the market for AI-enabled DER integration is anticipated to grow through 2030. The global market for AI-enabled DER integration, not including China, is estimated at $204.2 million in 2021. Guidehouse Insights estimates that this market will increase by a compound annual growth rate (CAGR) of 10.0% and reach $481.8 million by 2030. For the purposes of this analysis, Guidehouse Insights has identified the leading AI vendors for DER integration, with a focus on grid management, demand side management, and customer-centric applications. The vendors selected for this analysis represent a variety of global operational technology (OT) providers as well as more nimble, focused solutions and analytics providers. The analysis includes various OEMs such as Oracle, Landis+Gyr, General Electric (GE) Digital, and Schneider Electric. It also includes data analytics and software as a service (SaaS) providers such as Amperon, AutoGrid, Bidgely, C3 AI, Dexter Energy Services, EnergyHub, Generac Grid Services, Grid4C, mPrest, and Uplight. Companies researched have both behind-the-meter analytics and provide grid optimization and orchestration.

The criteria by which manufacturers are compared in this *Guidehouse Insights Leaderboard* include:

- Vision
- Go-to-Market Strategy
- Partners
- Production Strategy
- Technology
- Geographic Reach

- Sales, Marketing, and Distribution
- Product Performance
- Product Quality and Reliability
- Product Portfolio
- Pricing
- Staying Power

Detailed descriptions of each criterion are provided in the Criteria Definitions section.

**1.2**    **The Guidehouse Insights Leaderboard Grid**

Chart 1-1 shows the *Leaderboard* grid, highlighting the Leaders, Contenders, and Challengers that offer AI for DER integration solutions in the power and utilities industry. Oracle, GE Digital, and Schneider Electric are the Leaders in this report. The Contender category is competitive and has companies that may only offer customer-centric, demand side management, or grid management applications rather than a holistic application portfolio.

*Chart 1-1.    The Guidehouse Insights Leaderboard Grid*
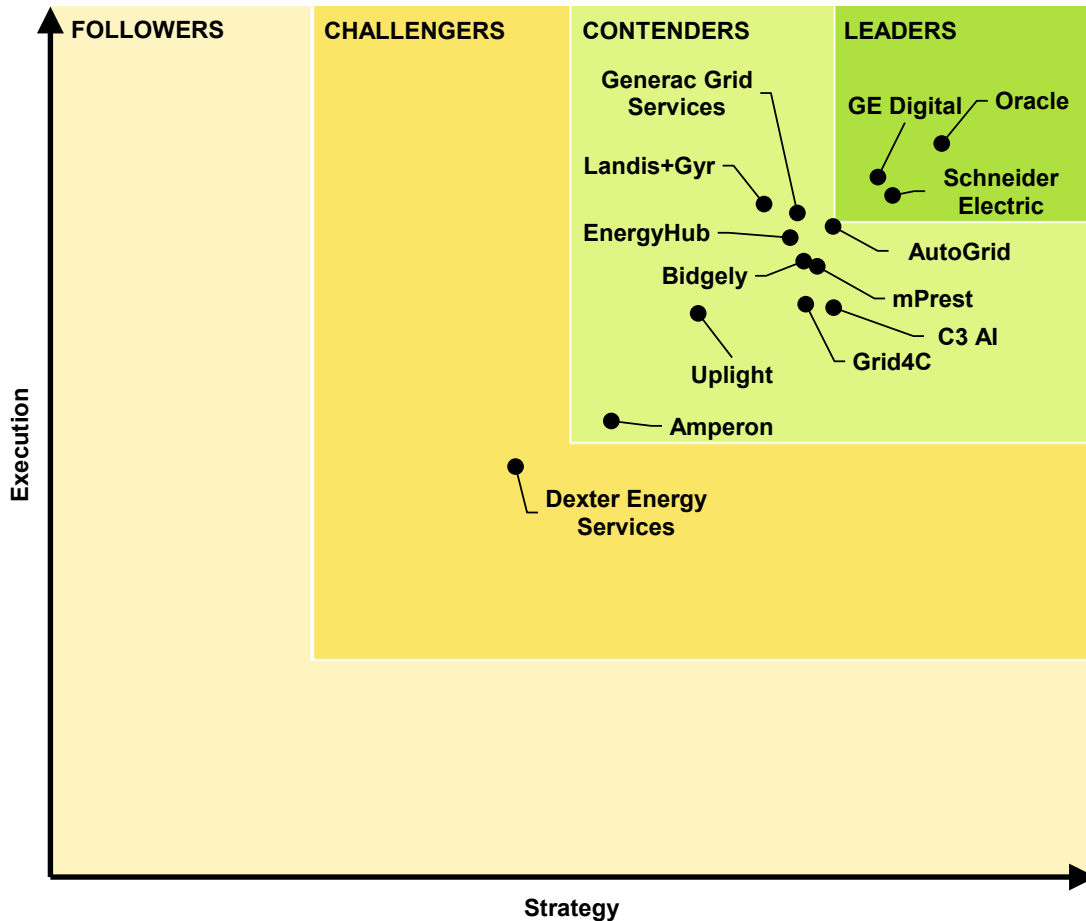


*(Source: Guidehouse Insights)*

# Section 2
# Company Rankings

### 2.1          Leaders

Leaders are vendors that scored 75 or above in both Strategy and Execution. Three companies were found to be Leaders in the AI for DER integration market: Oracle, GE Digital, and Schneider Electric.

### 2.1.1          GE Digital

*Overall Score: 79.8*

*Strategy: 79.2*

*Execution: 80.40*

GE Digital, headquartered in San Ramon, California, was formed in 2015 to bring digital capabilities across the company into one organization with a central innovation focus on Analytics and Industrial AI—driving key business insights and outcomes through the fusion of data-driven Industrial AI and ML with domain specific knowledge. GE Digital is a division of GE, headquartered in Boston, Massachusetts, a large multinational engineering and technology provider that was founded in 1892. GE is active in a broad spectrum of verticals, a long leader in power, renewable energy, aviation, and healthcare. In recent years, the company has increased its emphasis on building capabilities and solutions in software and analytics.

GE Digital's two-pronged approach to analytics allows a customer to utilize a data science platform to perform analytics, or leverage a portfolio of analytic capabilities that are either embedded within existing IT and OT systems or offered as functional modules that can be utilized on top of multiple applications. The company's microservices-based solutions are interoperable with various systems and vendors.

GE Digital has analytics solutions spanning across the grid including asset inspections, vegetation management and an increased focused in delivering solutions to address the challenges posed by increasing DER penetration. GE Digital's AI capabilities include computer vision, natural language processing, and ML for detection, prediction, forecasting, optimization, and overall grid management. ML is found across the GE Digital portfolio to optimize complex actions.

GE Digital uses digital twins with AI and ML as a virtual representation of assets and processes on the grid to optimize business outcomes. The company has an extensive list of established AI applications spanning across the energy industry which contributes to the company's high score in the Product Portfolio evaluation category. The portfolio of AI-enabled applications for DER integration include renewables- and DER-enabled reliability and switching, frequency control, and voltage optimization, flexibility market management, DER modeling, electric connection checker, DER registration and lifecycle manager, ML-based forecasting, ML for DER optimization, and market management, as well as natural language processing for asset health and grid planning. This platform leverages various data inputs and ML to deliver load and renewables/DER forecasting, disaggregation, and system modeling capabilities such as inertia monitoring and forecasting.

In addition to analytics-based solutions, GE Digital has embedded AI into its DER-enabled portfolio which includes ADMS, EMS, MMS, GIS plus Grid Analytics. Most notable is GE Digital's end-to-end renewables and DER orchestration solution, which leverages real-time insights and coordinates across other technologies to model, optimize, and control DER. The offering is technology agnostic and enables optimized EV charging and DR management functions.

Offering both an analytics platform and the DER-enabled ADMS platform contributes to the company's Technology and Go-to-Market Strategy scores. While mostly focusing on grid analytics, it has extended its portfolio to include DR functions, EV charging optimization, and integration of small-scale renewables. For these reasons, GE Digital has also scored high in the *Guidehouse Insights Leaderboard: DERMS Vendors* report.

GE Digital is a leading industrial software company with over 4,000 plus employees, revenue more than $1 billion, and more than 21,000 global customers including electric utilities, power generation, O&G, manufacturing, and aviation. Customers of GE Digital software solutions have expressed contentment with the applications citing various benefits from increased reliability, cost savings, and improved efficiency. For these reasons the company has scored well in the Product Performance, Geographic Reach, and Staying Power categories.

**www.ge.com/digital**

**Chart 4-1.    *GE Digital Strategy and Execution Scores***
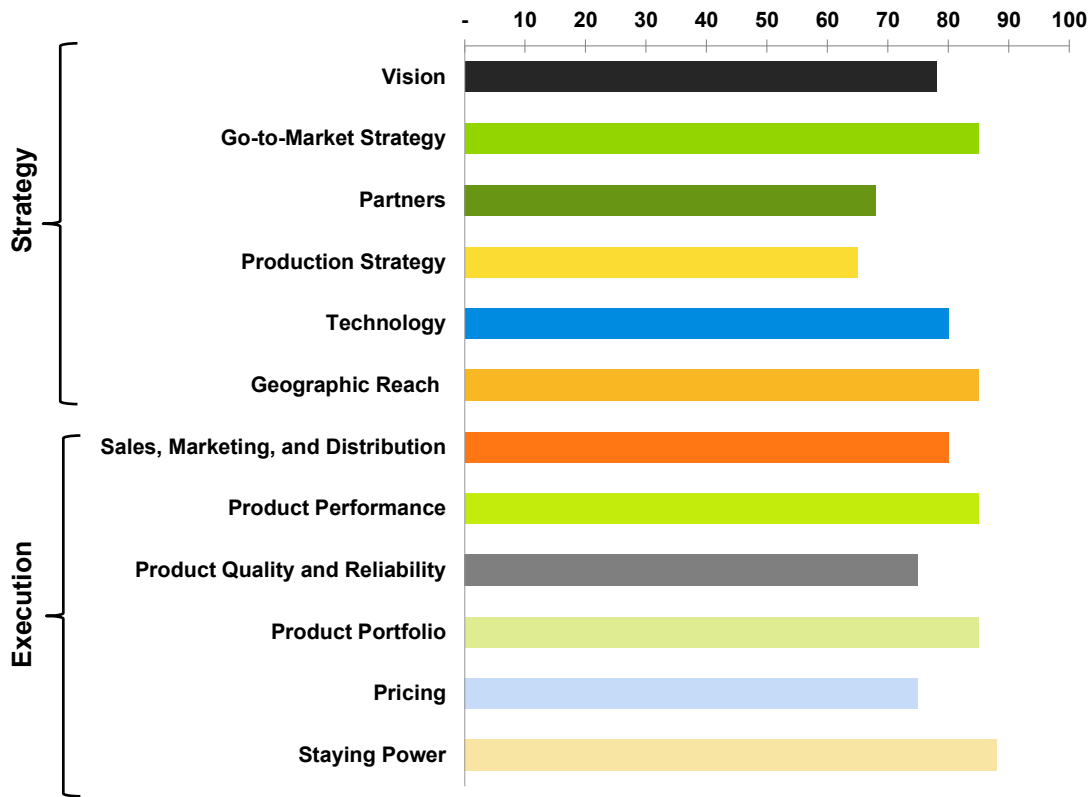


*(Source: Guidehouse Insights)*

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# Table of Charts and Figures

# Section 5
# Scope of Study and Methodology

### 5.1          Scope of Study

The major objective of this *Leaderboard* is to provide a timely overview of the companies involved in the AI analytics market related to DER integration and their Strategy and Execution in developing, marketing, and delivering these solutions. Company ratings capture the vendor's standing at the time of the report and are not a retrospective of past accomplishment or an indication of future success. In this market, ratings are likely to shift as companies consolidate and switch focus and AI analytics applications for DER integration continue to evolve and mature.

### 5.2          Sources and Methodology

Guidehouse Insights' industry analysts use a variety of research sources in preparing Research Reports. The key component of Guidehouse Insights' analysis is primary research gained from phone and in-person interviews with industry Leaders including executives, engineers, and marketing professionals. Analysts are diligent in ensuring that they speak with representatives from every part of the value chain, including but not limited to technology companies, utilities and other service providers, industry associations, government agencies, and the investment community.

Additional analysis includes secondary research conducted by Guidehouse Insights' analysts and its staff of research assistants. Where applicable, all secondary research sources are appropriately cited within this report.

These primary and secondary research sources, combined with the analyst's industry expertise, are synthesized into the qualitative and quantitative analysis presented in Guidehouse Insights' reports. Great care is taken in making sure that all analysis is well-supported by facts, but where the facts are unknown and assumptions must be made, analysts document their assumptions and are prepared to explain their methodology, both within the body of a report and in direct conversations with clients.

Guidehouse Insights is a market research group whose goal is to present an objective, unbiased view of market opportunities within its coverage areas. Guidehouse Insights is not beholden to any special interests and is thus able to offer clear, actionable advice to help clients succeed in the industry, unfettered by technology hype, political agendas, or emotional factors that are inherent in cleantech markets.

5.2.1        Vendor Selection

Guidehouse Insights selected AI analytics vendors that offer solutions with multiple applications for DER integration, including standalone analytics platform providers and embedded analytics within IT/OT systems. These use cases span across grid management, demand side management, and customer-centric applications. The vendors selected for this analysis offer either cloud-based SaaS or on-premise offerings, or both. This creates a diverse vendor pool consisting of standalone analytics providers, business software providers, and large OEMs. Vendors were selected based on market presence, commercial activity, and expertise related to AI analytics solutions for DER integration.

5.2.2        Ratings Scale

Companies are rated relative to each other using the following point system. The ratings are a snapshot in time, showing the current state of the company. These scores are likely to be fluid as new competitors enter the market and customer requirements evolve.

- Very Strong       91 – 100
- Strong           76 – 90
- Strong Moderate   56 – 75
- Moderate        36 – 55
- Weak Moderate    21 – 35
- Weak            11 – 20
- Very Weak        1 – 10

**5.2.2.1    Score Calculations**

The scores for Strategy and Execution are weighted averages based on the subcategories. The overall score is calculated based on the root mean square of the Strategy and Execution scores.

5.2.3        Criteria Definitions

**5.2.3.1    Strategy**

- **Vision:** Measures the company's stated goals in designing market solutions against the actual needs of customers based on the entire environment in which they will operate. Clear and compelling visions that are effectively communicated to the industry result in higher scores.

- **Go-to-Market Strategy:** Evaluates the company's strategy for reaching the target market, including the sales and marketing channels to be used, as well as the processes established for informing the target market about brand differentiation and unique product value. Higher scores are the result of companies going to market through multiple channels to reach a variety of industries and forming partnerships with key organizations.

- **Partners:** Measures the company's established partnerships with key organizations that will provide an advantage in financial backing, sales, business, and product development. Higher scores are given to companies that have established partnership networks or are operating within an ecosystem that furthers the traction of their offerings.

- **Production Strategy:** Evaluates the long-term competitiveness and uniqueness of the solution to meet market requirements and customer needs. Companies that scored highly in this category do not use off-the-shelf components to build their solutions, have a significant lead on IP, patents, have exclusive partnerships, or use a combination of unique software components.

- **Technology:** Evaluates whether the company has developed and patented technology that provides a significant business advantage over competitors that is likely to have an enduring impact on its success. Higher scores are given if the company's technology is already a proven market success or delivers unique product attributes.

- **Geographic Reach:** An evaluation of companies' ability to reach national and international customers through networks of distributors, partnerships, and other resellers. Scores are lower if the company does not have a sales or dealer strategy suitable for retail or fleet sales in multiple regions.

### 5.2.3.2    *Execution*

- **Sales, Marketing, and Distribution:** Evaluates the company's marketing and sales performance and current distribution channel. Higher scores are given to companies with brand recognition and significant sales or customer base.

- **Product Performance:** Evaluates the competitive performance of the AI analytics solutions. Higher scores are given to companies with higher customer satisfaction, and energy savings or improved reliability results.

- **Product Quality and Reliability:** Evaluates the competitive performance and adaptability of the company's AI solution for DER integration. This includes solutions that have integrated with third-party solutions, are modular, and are vendor or technology agnostic.

- **Product Portfolio:** Evaluates the magnitude and breadth of AI solutions offered for DER integration. Companies that score highly in this category have various offerings across grid management, demand side management, and customer-centric application segments.

- **Pricing:** Determines the suitability of product pricing based on its cost-effectiveness, whether products are available at multiple price points, and how pricing compares to that of competitor products. Also considers integration and maintenance cost, if any.

- **Staying Power:** Evaluates whether the company has the financial resources to withstand the strains of an emerging market and increasing competition. This criterion also measures the maturity of a company, their solution, and their ability to compete in the market. Higher scores are given to companies with established track records, a large customer base and high customer satisfaction, and plans or roadmaps outlining success or growth in the future.

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*Note: Editing of this report was closed on November 18, 2021.*