

Sentient Energy, Inc. Recognized as the

2021

Company of the Year

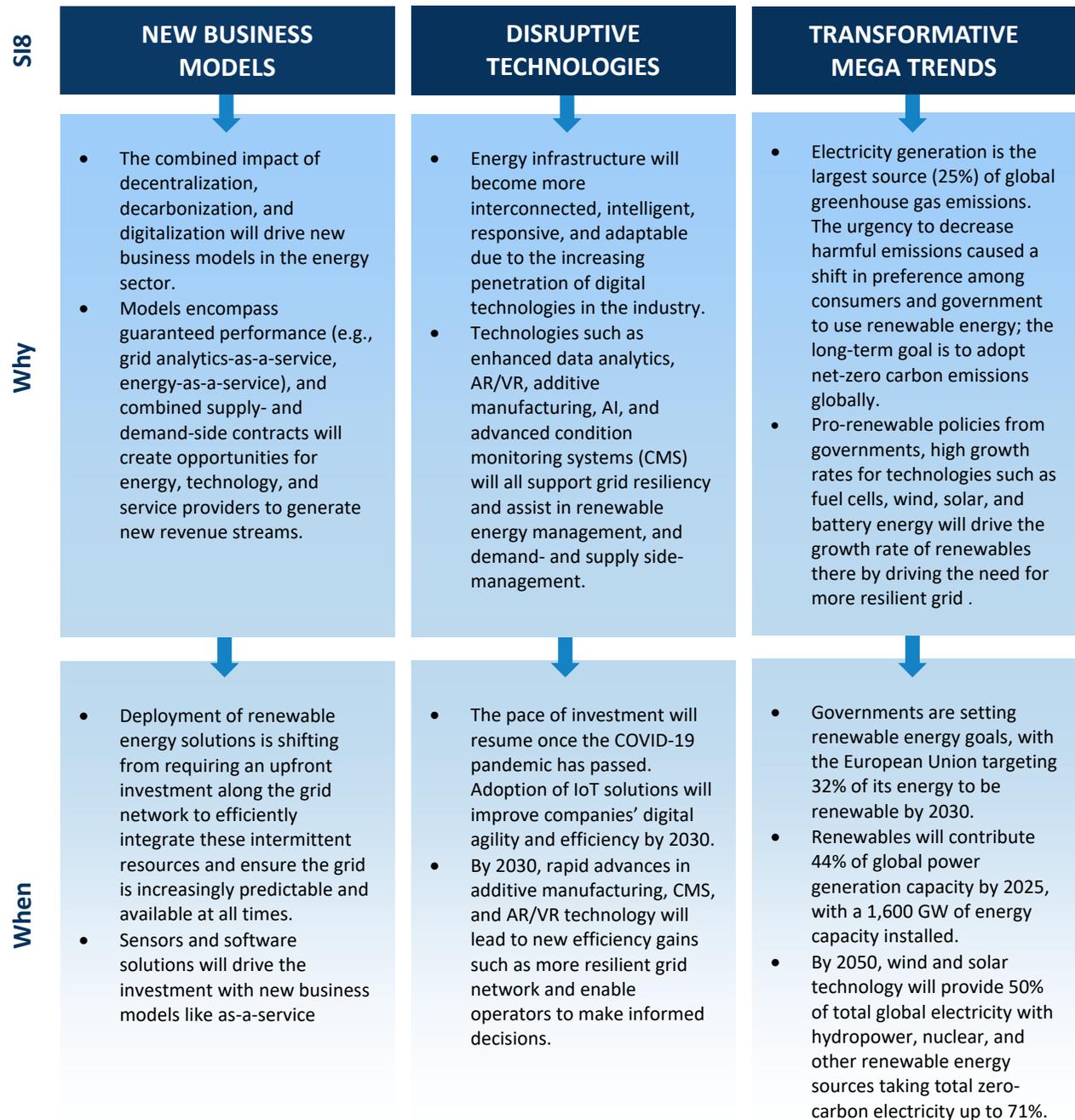
Global Grid Line Sensors Industry

Excellence in Best Practices



Strategic Imperatives

Frost & Sullivan identifies three key strategic imperatives that impact the transmission and distribution industry: new business models, disruptive technologies, and transformative mega trends. Every company that is competing in the grid space is obligated to address these imperatives proactively; failing to do so will almost certainly lead to stagnation or decline. Successful companies overcome the challenges posed by these imperatives and leverage them to drive innovation and growth. Frost & Sullivan’s recognition of Sentient Energy is a reflection of how well it is performing against the backdrop of these imperatives.



Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. Sentient Energy excels in many of the criteria in the grid line sensor space.

AWARD CRITERIA	
<i>Visionary Innovation & Performance</i>	<i>Customer Impact</i>
Addressing Unmet Needs	Price/Performance Value
Visionary Scenarios Through Mega Trends	Customer Purchase Experience
Implementation of Best Practices	Customer Ownership Experience
Leadership Focus	Customer Service Experience
Financial Performance	Brand Equity

Addressing Unmet Needs

Transmission and distribution networks have been held back from digitalization initiatives because of a lack of solutions that enable operational awareness (e.g., measuring voltage, current, and other operating parameters in real time). The result is significant costs for utilities due to the need to identify, locate, and restore faults along the networks. Distribution grid operators have limited visibility and granular data availability between the substation’s fence and the smart meter deployed at the customer’s premises. While utilities deploy a limited number of sectionalizers, cut out switches, and reclosers deployed along the network, the equipment is predominantly reactive.

“Sentient Energy’s products are highly scalable. The company’s ability to preempt outages and assist utilities in overcoming the challenges arising from traditional models that are not based on actual real-time field data has a significant impact.”

- Rajalingam AC, Industry Principal

At the same time, the rise in distributed energy resources and the need for edge intelligence requires enhanced grid network visibility to ensure safe and reliable grid operations. Sentient Energy’s MM3™ line monitor is an intelligent sensor that addresses multiple market gaps, including the need for instant fault location, the generation of granular data regarding any disturbances, and the ability to monitor and troubleshoot problems. Overall, the offering helps operators make informed decisions, a feat that is not feasible using conventional grid protection equipment and practices.

Further, the ability to preempt outages by monitoring disturbances along the grid helps utilities overcome the challenges arising from traditional models that are not based on actual real-time field data. Sentient Energy's comprehensive suite of intelligent sensor solutions for both underground and overhead distribution lines supports monitoring and advanced analytics, a unique selling point for the company compared to its competitors.

Financial Performance

Sentient Energy has steadily grown over the years. It is actively widening its customer base from North America to other global markets, including Europe, Asia-Pacific (APAC), and the Middle East. Frost & Sullivan finds that the company edges past its competitors with its innovative sensor products and analytics solutions. The company enjoys a market leadership position of approximately 30% in the global grid line sensors market, which is estimated to be growing at a compound annual growth rate of 10 to 15% during the next 10 years. Given its product excellence in terms of quality and reliability, Frost & Sullivan strongly believes Sentient Energy will continue to lead the market in the coming years.

Price/Performance Value

Sentient Energy has established a reputation for engineering truly innovative sensor products for diverse utility applications globally. For instance, utilities struggle to locate faults occurring in underground grid networks, resulting in a significant time lag for power restoration after a service disruption. With Sentient Energy's UM3+ sensor, operators can accurately locate faults and identify signal disturbances that could lead to potential failures in the near future. Such assessments are reported to the company's Ample™ Analytics software platform. Such information can help operators minimize downtime as field crews are sent immediately to the fault's exact location.

Among the key features of Sentient Energy's MM3 sensor is its ability to communicate with a multitude of systems such as outage management systems, supervisory control and data acquisition, advanced metering infrastructure, and distribution automation. Frost & Sullivan notes that a significant number of cables are bundled or laid in close proximity in an underground network, presenting major challenges for operators seeking to deploy a reliable monitoring solution. Recognizing the need, Sentient Energy developed UM3+, a modular, first-of-its-kind solution that can address the challenges associated with underground grid networks' various configurations. Similarly, in 2021, Sentient Energy launched ZM1™, the world's first advanced line monitor to collect data from grid networks with no or little amperage. The solution enables utilities to monitor rural distribution circuits and other feeder tie points that were not previously part of the monitoring system, improving utilities' system average interruption duration index (SAIDI) and system average interruption frequency index (SAIFI) value. The ability to develop solutions that address customers' pain points and enable informed decision-making regarding their grid network positions Sentient Energy as the go-to grid line sensor vendor.

Offering Exceptional Customer Ownership Experience through Implementation of Best Practices

Sentient Energy's products are highly scalable, providing it a distinct advantage over competing offerings. Moreover, an oscilloscope is installed in its sensors, allowing customers to predict and preempt faults in advance and minimize downtime. The MM3 sensor captures approximately 6,000 to

15,000 waveforms per second, making it an indispensable tool for understanding the criticality of the grid condition in real time.

Sentient Energy continuously focuses on improving customers' overall ownership experience by providing a strong value-add to its offerings. For instance, every disturbance along the grid network generates a number of white noises which may or may not result in a fault situation. Using waveforms to distinguish between faults and white noise is difficult and a capability not offered by competitors. Sentient Energy is developing an advanced data analytics program that can filter out faults from white noise, subsequently associating the waveforms with a fault signature. Such an approach could help utility operators make more accurate and informed decisions regarding vegetation management and other factors that can lead to disruptions. Further, Sentient Energy has developed ArcShield™, a product designed to prevent sensor and conductor damage. Though traveling arcs are infrequent, they can potentially damage electrical systems, including conductors and sensors in the field. The company's patent-pending ArcShield enables operators to prevent damage to sensors, conductors, and other wire or pole-mounted field equipment from electrical arcs caused by faulty grid equipment, lightning strikes, and other issues such as vegetation encroachment along the network. When deployed alongside MM3 sensors, ArcShield is an industry-leading solution for locations that are susceptible to lightning strikes and vegetation encroachments.

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Further, the sensor's modular nature allows operators to monitor the condition of up to 12 primary power cables with a single communication and processing unit. The communication units are platform-agnostic, enabling communication via cellular networks, radio frequency mesh networks, or hybrid communication networks. As a result, utilities can widen their monitoring capabilities to remote corners of their network. Sentient Energy is closing the gap between sensor-reported data and the accuracy and relevance of fault-related information with the aforementioned solutions. Offering such industry-leading solutions not only enhances the value offered but also assures a superior ownership experience to customers.

Brand Equity

Sentient Energy's visionary products and solutions position it as a go-to vendor globally. To ensure its products are relevant for customers in various geographical regions, the company partners with regional

In 2021, Sentient Energy expanded the monitoring capacity of its underground monitoring sensor by a factor of 4, another example of the company's commitment to continuous improvement. The upgrade ensures sensors operate as a plug-and-play component that can monitor up to 12 phases and 4 positions in equipment such as switchgear and transformers. Unlike in the past, deploying one high-capacity sensor inside a transformer that can perform multiple functions minimizes the space required for multiple sensors.

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and global communication network solution providers, including AT&T, Silver Spring Networks, and Verizon. Clients include Florida Power and Light, Pacific Gas & Electric, Exelon, Dominion, BC Hydro, and other prominent utilities globally. Though most customers are based out of North America, the company is actively expanding its presence in Europe, the Middle East, and APAC. Moreover, the company recently acquired Varentec, a grid edge intelligence and dynamic control technology provider. Varentec is not only known for its advanced grid edge intelligence technology but is also funded by some of the world's most reputed investors, including Bill Gates, Khosla Ventures, and 3M. The ability to provide a one-stop solution alongside Sentient Energy's renowned for its product reliability and quality further strengthens its brand image in the market.

Conclusion

Sentient Energy's judicious approach in developing technologically superior products assures a promising position in the global grid line sensors industry. The company's differentiated, cutting-edge products address key customer pain points, allowing it to meet current requirements and future challenges. By securing a strong foundation through innovative product development and a dominant market position, Sentient Energy is positioned to register consistent growth in the coming years, allowing it to capture lucrative and significant market share.

With its strong overall performance, Sentient Energy earns Frost & Sullivan's 2021 Global Company of the Year Award in the grid line sensors industry.

What You Need to Know about the Company of the Year Recognition

Frost & Sullivan's Company of the Year Award is its top honor and recognizes the market participant that exemplifies visionary innovation, market-leading performance, and unmatched customer care.

Best Practices Award Analysis

For the Company of the Year Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Visionary Innovation & Performance

Addressing Unmet Needs: Customers' unmet or under-served needs are unearthed and addressed by a robust solution development process

Visionary Scenarios Through Mega Trends:

Long-range, macro-level scenarios are incorporated into the innovation strategy through the use of Mega Trends, thereby enabling first to market solutions and new growth opportunities

Leadership Focus: Company focuses on building a leadership position in core markets and on creating stiff barriers to entry for new competitors

Best Practices Implementation: Best-in-class implementation is characterized by processes, tools, or activities that generate a consistent and repeatable level of success

Financial Performance: Strong overall business performance is achieved in terms of revenue, revenue growth, operating margin, and other key financial metrics

Customer Impact

Price/Performance Value: Products or services provide the best value for the price compared to similar market offerings

Customer Purchase Experience: Quality of the purchase experience assures customers that they are buying the optimal solution for addressing their unique needs and constraints

Customer Ownership Experience: Customers proudly own the company's product or service and have a positive experience throughout the life of the product or service

Customer Service Experience: Customer service is accessible, fast, stress-free, and high quality

Brand Equity: Customers perceive the brand positively and exhibit high brand loyalty

