FROST & SULLIVAN

2011

GAS

SECURE

# 2011 European Gas Detection Industry Technology Innovation Award

GAS SECURE


## Frost & Sullivan's Global Research Platform

Frost & Sullivan is in its 50th year in business with a global research organization of 1,800 analysts and consultants who monitor more than 300 industries and 250,000 companies. The company's research philosophy originates with the CEO's 360 Degree Perspective™, which serves as the foundation of its TEAM Research™ methodology. This unique approach enables us to determine how best-in-class companies worldwide manage growth, innovation and leadership. Based on the findings of this Best Practices research, Frost & Sullivan is proud to present the 2011 European Technology Innovation Award in Gas Detection Industry to GasSecure.

## Significance of the Technology Innovation Award

### Key Industry Challenges Addressed by Technology Innovation

Gas detection is critical in the exploration and production of crude oil and natural gas. Flammable and toxic gases are constantly present in all processes and hence monitoring risk levels at all times is vital. One of the biggest challenges faced in the oil and gas industry in particular is the timely and accurate detection of unseen potential threats. Also, running wires are expensive and are a hindrance. Wireless systems can replace wired systems with reliable wireless transmission, increasing flexibility, reducing overall cost and enhancing safety by increasing the number of monitored points. In many projects, the cost of installing a wireless gas detection system can easily reduce the total cost per point with 70-80%. Demand is the agent of change.The rise in awareness about the need for safety has helped the gas detection market grow. And the changing requirements of the end users who purchase gas detectors drives innovation in the industry.

### Impact of Technology Innovation Award on Key Stakeholders

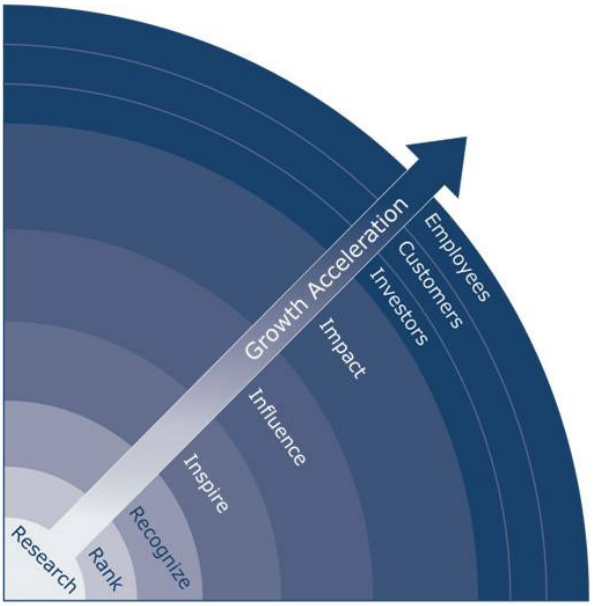
The Technology Innovation Award is a prestigious recognition of GasSecure's accomplishments in the Gas Detection Industry. An unbiased, third-party recognition can provide a profound impact in enhancing the brand value and accelerating GasSecure's growth. As captured in Chart 1 below, by researching, ranking, and recognizing those who deliver excellence and best practices in their respective endeavors, Frost & Sullivan hopes to inspire, influence, and impact three specific constituencies:

- **Investors**
  Investors and shareholders always welcome unbiased and impartial third-party recognition. Similarly, prospective investors and shareholders are drawn to companies with a well-established reputation for excellence. Unbiased validation is the best and most credible way to showcase an organization worthy of investment.

- **Customers**
  Third-party industry recognition has been proven to be the most effective way to assure customers that they are partnering with an organization that is leading in its field.

- **Employees**
  This Award represents the creativity and dedication of GasSecure's executive team and employees. Such public recognition can boost morale and inspire your team to continue its best-in-class pursuit of a strong competitive position for GasSecure.

**Chart 1: Best Practices Leverage for Growth Acceleration**




## Key Benchmarking Criteria for Technology Innovation Award

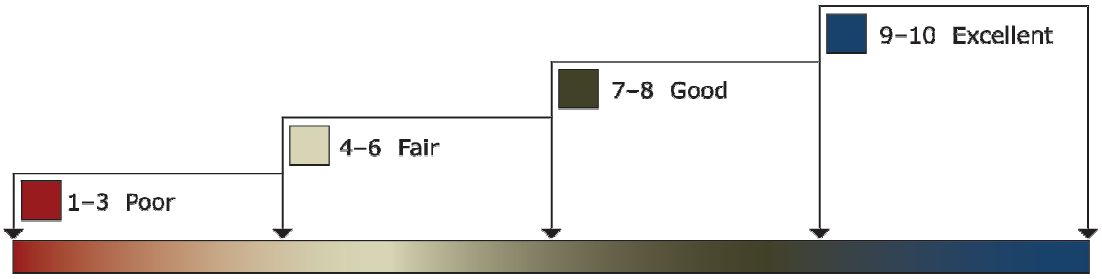
For the Technology Innovation Award, the following criteria were used to benchmark GasSecure's performance against key competitors:

- Uniqueness of Technology
- Impact on New Products/Applications
- Impact on Functionality
- Impact on Customer Value
- Relevance of Innovation to Industry

## Decision Support Matrix and Measurement Criteria

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Matrix (DSM). The DSM is an analytical tool that compares companies' performance relative to each other with an integration of quantitative and qualitative metrics. The DSM features criteria unique to each Award category and ranks importance by assigning weights to each criterion. The relative weighting reflects current market conditions and illustrates the associated importance of each criterion according to Frost & Sullivan. Fundamentally, each DSM is distinct for each market and Award category. The DSM allows our research and consulting teams to objectively analyze each company's performance on each criterion relative to its top competitors and assign performance ratings on that basis. The DSM follows a 10-point scale that allows for nuances in performance evaluation; ratings guidelines are shown in Chart 2.

**Chart 2: Performance-Based Ratings for Decision Support Matrix**




This exercise encompasses all criteria, leading to a weighted average ranking of each company. Researchers can then easily identify the company with the highest ranking. As a final step, the research team confirms the veracity of the model by ensuring that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

**Chart 3: Frost & Sullivan's 10-Step Process for Identifying Award Recipients**

## Best Practice Award Analysis for GasSecure

The Decision Support Matrix, shown in Chart 4, illustrates the relative importance of each criterion for the Technology Innovation Award and the ratings for each company under evaluation. To remain unbiased while also protecting the interests of the other organizations reviewed, we have chosen to refer to the other key players as Competitor 1 and Competitor 2.

**Chart 4: Decision Support Matrix for Technology Innovation Award**

| *Measurement of 1–10 (1 = lowest; 10 = highest)* | Award Criteria | | | | | |
|---|---|---|---|---|---|---|
| | Uniqueness of Technology | Impact on New Products/Applications | Impact on Functionality | Impact on Customer Value | Relevance of Innovation to Industry | Weighted Rating |
| **Relative Weight (%)** | **20%** | **20%** | **20%** | **20%** | **20%** | **100%** |
| GasSecure | 9 | 9 | 8 | 9 | 9 | 8.8 |
| Competitor 1 | 7 | 8 | 7 | 6 | 8 | 7.2 |
| Competitor 2 | 7 | 7 | 6 | 6 | 8 | 6.8 |

### Criterion 1: Uniqueness of Technology

GasSecure has developed the world's first wireless gas detector, GS01, for oil and gas installations based on an optical sensor. The device is built around a half-centimeter silicon chip that detects methane. The new gas detector technology combines ultrasonic and infrared detection and has already been patented. The gas sensor, with an expected life time of 15 years, first uses ultrasound to make a rough classification about the possible types of gas before coupling in an optical sensor for the final identification stage. Response time including wireless communication is less than 5 seconds. This sensor technology can be tuned to detect specific gases of interest. The revolutionary optical design guarantees unrivalled signal stability, no interference from environmental changes and does not require recalibration. The wireless communication uses standard safe protocols and will be SIL2 rated. Batteries can be replaced in explosive atmospheres and lifetime exceeds two years.

### Criterion 2: Impact on New Products/Applications

The gas detector is aimed at oil and gas installations. The system is truly wireless and its potential advantages are low cost, low weight, no cables, no conduits, fewer junction boxes, negligible installation costs and less engineering. It is WirelessHART and ISA-100 compatible which means that it enables users to quickly and easily gain the benefits of wireless technology while maintaining compatibility with existing devices, tools, and systems. New detectors are automatically added into the network of GS01. It can also be calibrated to detect gases other than hydrocarbons and is ideal for fixed installation and as transportable monitors.

**Criterion 3: Impact on Functionality**

It is extremely expensive to install gas sensors, and in many cases, they are not installed at the most strategic points, because they need to be connected to a power supply. However, with the use of GasSecure's technology, this challenge can be overcome as it does not require any cables for connectivity to the power source or with communication cables. It can be used for fixed installation and can also be transported easily if necessary. The sensor switches rapidly and accurately between the absorbing and two reference wavelengths and its reliability is unaffected by changing temperature or environmental factors. It is energy efficient and is compatible with other existing devices. These factors make it a perfect solution for end users who are looking for a reliable, wireless gas detector.

**Criterion 4: Impact on Customer Value**

The advantage of this system designed by GasSecure is the simplicity and flexibility of installation and operation. The system offers low weight and low cost of installation and does not require much maintenance. An error signal is communicated in case of detector failure and when preventive maintenance is required. Apart from the oil and gas industry, GasSecure foresees that GS01 can find applications in air quality monitoring and industrial plants. The system's flexibility of being used in multiple locations in a cost effective manner expands market access.

**Criterion 5: Relevance of Innovation to Industry**

The GS01 has been designed to suit the needs of the oil and gas industry. The system has all the desirable features required for a gas detector, which include high reliability, fast response times, long battery life and accuracy. A solution of this kind has the potential to revolutionize the gas detection industry.

## Conclusion

In a market where the product performance is a vital key to saving human life, the increased flexibility and ease of installation of the GS01 has the potential to revolutionize the industry. Based on the company's best practices approach to innovation in the Gas Detection industry, GasSecure is the recipient of the 2011 Frost and Sullivan Technology Innovation Award.

## CEO 360 Degree Perspective™ - Visionary Platform for Growth Strategies

The CEO 360 Degree Perspective™ model provides a clear illustration of the complex business universe in which CEOs and their management teams live today. It represents the foundation of Frost & Sullivan's global research organization and provides the basis on which companies can gain a visionary and strategic understanding of the market. The CEO 360 Degree Perspective™ is also a "must-have" requirement for the identification and analysis of best-practice performance by industry leaders.

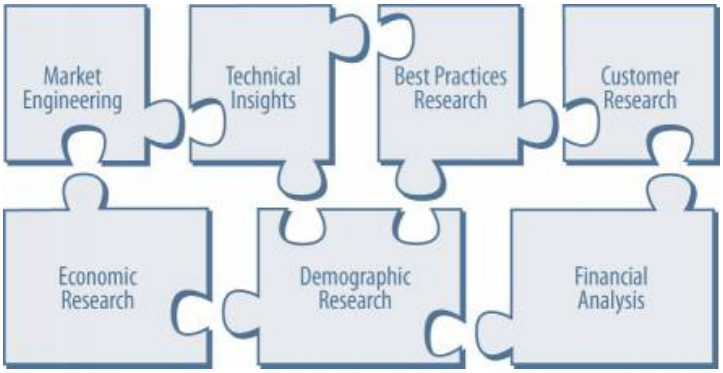
The CEO 360 Degree Perspective™ model enables our clients to gain a comprehensive, action-oriented understanding of market evolution and its implications for their companies' growth strategies. As illustrated in Chart 5 below, the following six-step process outlines how our researchers and consultants embed the CEO 360 Degree Perspective™ into their analyses and recommendations.

**Chart 5: How the CEO's 360 Degree Perspective™ Model Directs Our Research**

## Critical Importance of TEAM Research

Frost & Sullivan's TEAM Research methodology represents the analytical rigor of our research process. It offers a 360 degree view of industry challenges, trends, and issues by integrating all seven of Frost & Sullivan's research methodologies. Our experience has shown over the years that companies too often make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Frost & Sullivan contends that successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. In that vein, the letters T, E, A and M reflect our core technical, economic, applied (financial and best practices) and market analyses. The integration of these research disciplines into the TEAM Research methodology provides an evaluation platform for benchmarking industry players and for creating high-potential growth strategies for our clients.

**Chart 6: Benchmarking Performance with TEAM Research**




## About GasSecure

GasSecure is a Norwegian company that was founded in 2008 as a spin-off from SINTEF. The company is headquartered in Oslo. It has developed the world's first optical gas detector for demanding industrial applications. Its investors include SINTEF, Viking Venture, ProVenture Seed, Investinor and employees.


## About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best-practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages 50 years of experience in partnering with Global 1000 companies, emerging businesses and the investment community from more than 40 offices on six continents. To join our Growth Partnership, please visit http://www.frost.com.

Catherine Brassell
Frost & Sullivan
DDI: +44.207.915.7867
Email: catherine.brassell@frost.com
www.frost.com