

Sensors In Oil and Gas Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The sensors in the oil and gas market are estimated to grow at a CAGR of about 6.2% over the forecast period. With the increasing trend of big data analytics, wearables devices, and interactive workstations, sensorization is the next step because it facilitates remote monitoring and managing field operations by an oil and gas company.

Key Highlights

The global economy depends on the oil and gas industry. In addition to producing most of the world's basic energy, the oil and gas sector also serves as a substantial source of raw materials for various chemical goods, such as insecticides, fertilizers, medicines, solvents, and polymers. Control and monitoring are crucial for efficient and stable oil and gas industry operations. It improves productivity, cuts costs, and promotes profitability. The control and monitoring of the oil and gas industry depend heavily on sensors.

The primary factors influencing market expansion are a greater focus on technical advancement and supportive governmental policies. Growing industrialization and stricter enforcement of various safety and occupational health regulations reduce market value. The market will grow due to increased awareness of air pollution and the growing supply of miniaturized wireless sensors. Another element contributing to the growth of the market is the expansion and growth of the micro-electromechanical sector. The rising adoption of IIoT (Industrial Internet of Things) sensors in the oil and gas industry is mainly driven by the need to reduce costs. The installation of these sensors takes less time and costs less, owing to technological advancements and easy assembling options that sensor manufacturers offer to end users.

The current oil price environment is driving significant changes and difficult decisions across the oil and gas industry. New operating models and strategies that improve CAPEX and OPEX are required to respond to short- and mid-term market supply and demand dynamics. The long-term requirement for sustainable solutions that reinforce safety and environmental performance is a topmost priority. From drill pad to refinery, the application of sensors helps operators to achieve a unique balance through a

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spectrum of upstream, midstream, and downstream technological innovations and solutions.

Sensor manufacturers are increasingly offering sensors designed with easy assembling options. Owing to technical advancements, the competition among major manufacturers of sensors and service providers of IoT products is intensifying, thereby boosting the adoption of these in the oil and gas industry.

Additionally, the oil and gas industry suffers from a skilled labor shortage. The shallow talent pool has made it complicated for oil and gas companies to hire new employees with the technical skills required to work on new energy sources. Moreover, stress with the oil prices, during COVID-19 and the price war between Saudi Arabia and Russia, is expected to drive oil-producing companies to improve their production efficiency and increase the demand in the sector.

Sensors in Oil & Gas Market Trends

Upstream Industries Offers Potential Growth

Natural gas and crude oil are discovered and produced in the upstream sector. Electricity generation, industrial processes, and transportation heavily rely on crude oil. Rock layers hide the deep subterranean locations of natural gas and crude oil. Many reservoirs are located underwater or in hard-to-reach places with harsh climates.

As a result, sensors and other important seismic images assist manufacturers in obtaining precise drilling location information. This aids them in cutting down on the additional expense related to drilling. In addition, the demand for sensors during the oil and gas procurement process is driven by affordable sensors, expanding connectivity, and rising computational power. Real-time data provided by sensors built into equipment assist businesses in scheduling repairs and streamlining daily operations.

The oil and gas sector's systems, equipment, and sensors must communicate data and learn from one another to enhance efficiency, productivity, health, and safety. Therefore, it will be simple to identify when workers are exposed to unhealthy hazardous substances with the aid of wireless sensors and personal monitoring devices. Consequently, effective steps can be taken. Therefore, it is anticipated that the abovementioned factors will favorably affect the oil and gas industry's sensors market throughout the forecast period.

The upstream and low carbon energy business segment of major firms such as BP PLC generated USD 55.36 billion in sales last year. In addition, BP PLC reorganized its sectors last year, combining its upstream gas sector with low-carbon products like hydrogen, bioenergy, carbon capture, usage, storage, and low-carbon power.

Moreover, the Abu Dhabi National Oil Company (ADNOC) announced in October this year that it revised its upstream methane intensity objective and aims to achieve 0.15% by 2025. The new goal, the lowest in the Middle East, strengthens ADNOC's position as a pioneer in the ethical production of low-carbon energy. To improve the monitoring of methane emissions, ADNOC is also looking into experimental technologies, including satellite monitoring and drone-mounted sensors.

Europe Holds a Significant Market Share

Due to governments' increased focus on pollution control and energy efficiency requirements, oil and gas sensors have become more common in European countries, including Germany, France, and the United Kingdom. An expanding end-user base and expanded applications for gas sensors are two factors that would fuel market growth in this sector.

The strict emission control requirements and government activities in the European Union to promote energy efficiency are credited with expanding the target market in Europe. These gas sensors are also used in gas or smoke alarms, which operate on the same principles. Additionally, consumers' growing awareness of environmental safety is driven by the increased adoption of goods used in air monitoring systems to detect pollution levels and volatile organic compounds. The infrared sensors type of gas sensor technology currently rules the European market.

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The more forward-thinking oil and gas industry in Europe is refocusing its attention away from the Internet of Things (IoT) smart objects like sensors and other devices and toward developing audacious strategies for using the data obtained from these objects to build more intelligent business models that help their business grow.

Oil and gas refineries can be informed about the sorts of oil that have been delivered using the information gathered by IoT sensors. This allows businesses to decide on crucial manufacturing, inventory, and operational decisions. Real-time inventory management with IoT sensors and enhanced connectivity can provide a more efficient supply chain for the European oil and gas industry.

Moreover, in October, the Norwegian police put drone detection systems on offshore oil and gas facilities to investigate recent safety violations in reaction to recent damage to the Nord Stream gas pipelines. Strategic placement of the sensors allowed for the detection of unregistered drones and the prevention of their use.

Sensors in Oil & Gas Market Competitor Analysis

The sensors in the oil and gas market are fragmented and competitive. The deployment of sensors at different oil and gas industry activities, such as upstream, midstream, and downstream, is growing at an organizational level. This creates a competitive environment among the players. Some players are Honeywell International Inc., Siemens AG, and ABB Ltd.

In October 2022, Honeywell displayed its latest sensor technologies at the Abu Dhabi International Petroleum Exhibition and Conference to help the transition to sustainable energy. The technologies displayed included energy storage systems, emission monitoring systems, the business's advanced plastics recycling technology, its portfolio of worker safety solutions, and carbon capture and hydrogen generation technologies.

In July 2022, NASA introduced its high-resolution greenhouse gas (GHG) monitoring from space, which is the specialty of GHGSat. The business doubled the number of optical sensors it can use to monitor methane emissions by launching three additional ABB optical sensors into orbit on a SpaceX Falcon 9 rocket that departed from Cape Canaveral. The GHGSat's capacity to monitor customer sites for methane emissions increased with ABB's high-resolution methane sensors.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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