

**Predictive Emission Monitoring System Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Industry (Power Plants & Combustion, Oil & Gas, Chemicals, Petrochemicals, Refineries, Fertilizers, Building Materials, Pharmaceutical and Metal & Mining), By Component (Software and Service), By Deployment (On-Premise and Online), By Region, By Competition, 2020-2030F**

Market Report | 2025-11-24 | 180 pages | TechSci Research

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**Report description:**

**Market Overview**

The Global Predictive Emission Monitoring System Market, valued at USD 5.15 Billion in 2024, is projected to experience a CAGR of 7.77% to reach USD 8.07 Billion by 2030. Predictive Emission Monitoring Systems (PEMS) utilize mathematical models and historical operational data to forecast and estimate emissions from industrial sources in real time. The market's expansion is fundamentally supported by two key drivers: increasingly stringent global environmental regulations mandating precise emission reporting, and the continuous industry pursuit of cost-efficient alternatives to traditional Continuous Emission Monitoring Systems.

**Key Market Drivers**

The Global Predictive Emission Monitoring System market is notably driven by increasingly stringent environmental regulations and advancements in artificial intelligence, machine learning, and sensor technologies. Governments globally are imposing stricter compliance mandates for industrial emissions, compelling precise monitoring solutions. For example, according to ISM, in February 2024, in "New EPA Limits Put Industrial Sector on Notice", the U. S. Environmental Protection Agency reduced acceptable soot pollution levels from 12 micrograms to 9 micrograms per cubic meter, demanding enhanced emission tracking.

**Key Market Challenges**

A substantial challenge impeding the growth of the Global Predictive Emission Monitoring System market is the significant initial capital investment required for PEMS software implementation. This financial outlay can be a considerable barrier for industrial

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facilities, particularly for small and medium-sized enterprises with constrained budgets. The need for considerable upfront expenditure often leads companies to defer or entirely avoid adopting these advanced systems, thereby directly limiting the market's expansion.

#### Key Market Trends

The expansion of PEMS solutions into emerging industrial economies is a prominent market trend. As industrialization accelerates across regions such as Southeast Asia, Latin America, and parts of Africa, there is a growing imperative for advanced emission monitoring to mitigate environmental impacts and ensure compliance with developing regulatory frameworks. These economies often prioritize scalable and economically viable solutions to address increasing pollution concerns alongside industrial growth. For example, according to a 2023 report titled "Environmental Policy Implementation and Communication in the Association of Southeast Asian Nations Manufacturing," PT Astra International in Indonesia achieved an 18% reduction in emissions between 2020 and 2023, showcasing the increasing adoption of such technologies in the region for sustainability targets.

#### Key Market Players

- [ ] ABB Ltd
- [ ] Emerson Electric Co.
- [ ] General Electric Company
- [ ] Honeywell International Inc
- [ ] Siemens AG
- [ ] Yokogawa Electric Corp.
- [ ] Testo SE & Co. KGaA
- [ ] AVL List GmbH
- [ ] Horiba Ltd
- [ ] Bureau Veritas

#### Report Scope:

In this report, the Global Predictive Emission Monitoring System Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

#### - [ ] Predictive Emission Monitoring System Market, By Industry:

- o Power Plants & Combustion
- o Oil & Gas
- o Chemicals
- o Petrochemicals
- o Refineries
- o Fertilizers
- o Building Materials
- o Pharmaceutical
- o Metal & Mining

#### - [ ] Predictive Emission Monitoring System Market, By Component:

- o Software
- o Service

#### - [ ] Predictive Emission Monitoring System Market, By Deployment:

- o On-Premise
- o Online

#### - [ ] Predictive Emission Monitoring System Market, By Region:

- o North America
  - [ ] United States
  - [ ] Canada
  - [ ] Mexico
- o Europe

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- Argentina
- Colombia
- o Middle East & Africa
- South Africa
- Saudi Arabia
- UAE

#### Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the Global Predictive Emission Monitoring System Market.

#### Available Customizations:

Global Predictive Emission Monitoring System Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

#### Company Information

-□Detailed analysis and profiling of additional market players (up to five).

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