

North America Emission Monitoring Systems Market Size and Forecast (2021 - 2031)

<https://marketpublishers.com/r/NA916CD35592EN.html>

Date: January 2026

Pages: 206

Price: US\$ 3,450.00 (Single User License)

ID: NA916CD35592EN

Abstracts

The North America Emission Monitoring Systems Market is projected to grow significantly, reaching approximately US\$ 2,684.4 million by 2031, up from US\$ 1,410.8 million in 2023, reflecting a compound annual growth rate (CAGR) of 8.4% from 2023 to 2031.

Executive Summary and Market Analysis

North America stands as a leading consumer of emission monitoring systems, driven by stringent environmental regulations, heightened awareness of air quality issues, and the increasing commitment of companies to corporate sustainability. Key players in this market include Horiba, ABB, Duke Energy Corporation, and Siemens.

The Environmental Protection Agency (EPA) has established rigorous standards for greenhouse gas emissions, particularly through initiatives like the Greenhouse Gas Reporting Program. Companies in the petroleum sector are required to implement monitoring systems to comply with these regulations and avoid penalties. In December 2023, the EPA introduced a final rule aimed at reducing methane and other harmful pollutants from the oil and natural gas industry, which is expected to prevent around 58 million tons of methane emissions from 2024 to 2038, equating to a reduction of approximately 1.5 billion metric tons of carbon dioxide. By 2030, the anticipated reduction is projected to reach 130 million metric tons of carbon dioxide, with an overall goal of achieving an ~80% reduction in methane emissions by 2038.

BP P.L.C, operating in California, has adopted low carbon fuel standards aimed at decreasing the carbon intensity of transportation fuels by up to 20% by 2030, in line with state regulations that mandate emission monitoring and reporting. Similarly, Canada

has committed to reducing its greenhouse gas emissions by 40-45% below 2005 levels by 2030, further driving the demand for emission monitoring systems across various industries in North America.

Strategic Insights

Market Segmentation Analysis

By Functionality: The market is divided into Continuous Emission Monitoring Systems (CEMS) and Portable Emission Monitoring Systems (PEMS), with CEMS holding the largest market share in 2023.

By Technology: Segmented into Catalytic Bead, Infrared Sensor Technology, Electrochemical Sensor, Photoionization Detectors (PID), and others, with Electrochemical Sensors leading in market share in 2023.

By Type: Includes Methane Gas Detectors, CO2 Gas Detectors, Oxygen Gas Detectors, and others, where CO2 Gas Detectors dominated in 2023.

By End User: Segmented into Marine Vessels, Oil and Gas, Chemicals, Automotive, Power Generation, and others, with Oil and Gas being the largest segment in 2023.

Market Outlook

Globally, air pollution is a significant health concern, and the focus on maintaining air quality is driving the demand for emission monitoring systems. The EPA supports various initiatives aimed at reducing air toxics, such as the National Clean Diesel Campaign and the SmartWay Transport Partnership, which promote cleaner transportation and industrial practices. Canada also actively monitors air pollutants, particularly in urban areas, and both countries are increasingly adopting clean energy solutions and electric vehicles to mitigate air pollution.

Despite advancements, challenges such as wildfires, industrial growth, and transportation emissions persist, necessitating ongoing innovation and policy adjustments. Public awareness campaigns and research investments are crucial for achieving long-term air quality goals. Overall, North America's comprehensive approach combines regulatory enforcement, technological innovation, and community

engagement to enhance air quality for future generations.

Country Insights

The North America Emission Monitoring Systems Market is categorized by country into the United States, Canada, and Mexico, with the United States holding the largest market share in 2023. The demand in the US is primarily fueled by strict government regulations on greenhouse gas emissions across various sectors, including automotive, manufacturing, aviation, marine transportation, oil and gas, chemicals, mining, pharmaceuticals, and waste processing. The pharmaceutical sector, which contributes significantly to carbon emissions, is particularly driving the need for emission monitoring systems.

In March 2024, the EPA announced updated policies to further reduce harmful emissions from light-duty and medium-duty vehicles, reinforcing the need for emission monitoring systems across various industries.

Company Profiles

Key players in the North America Emission Monitoring Systems Market include ABB Ltd, Emerson Electric Co, Siemens AG, SLB, Ametek Inc, Danfoss AS, Sensirion Holding AG, Horiba Ltd, Protea Ltd, Green Instruments A/S, NevadaNano, Aeris Technologies, Qube Technologies, Emsys Maritime Ltd, Green Sea Guard, and OPSIS AB. These companies are pursuing strategies such as expansion, product innovation, and mergers and acquisitions to enhance their market presence.

Contents

1. INTRODUCTION

- 1.1 Report Guidance
- 1.2 Market Segmentation

2. EXECUTIVE SUMMARY

- 2.1 Key Insights
- 2.2 Market Attractiveness

3. RESEARCH METHODOLOGY

- 3.1 Secondary Research
- 3.2 Primary Research
 - 3.2.1 Hypothesis formulation:
 - 3.2.2 Macroeconomic factor analysis:
 - 3.2.3 Developing base number:
 - 3.2.4 Data Triangulation:
 - 3.2.5 Country-level data:

4. EMISSION MONITORING SYSTEMS MARKET LANDSCAPE

- 4.1 Market Overview
- 4.2 Porters Five Forces Analysis
 - 4.2.1 Threat of New Entrants:
 - 4.2.2 Threat of Substitutes:
 - 4.2.3 Bargaining Power of Buyers:
 - 4.2.4 Bargaining Power of Suppliers:
 - 4.2.5 Competitive Rivalry:
- 4.3 Ecosystem Analysis
 - 4.3.1 Raw Material Suppliers
 - 4.3.2 Manufacturers
 - 4.3.3 Distributors or Suppliers
 - 4.3.4 End-Use Industry
 - 4.3.5 List of Vendors in the Value Chain
 - 4.3.6 regulatory Landscape

5. NORTH AMERICA EMISSION MONITORING SYSTEMS MARKET - KEY MARKET DYNAMICS

- 5.1 Market Drivers
- 5.2 Market Restraints
- 5.3 Market Opportunities
- 5.4 Future Trends
- 5.5 Impact of Drivers and Restraints:

6. EMISSION MONITORING SYSTEMS MARKET - NORTH AMERICA MARKET ANALYSIS

- 6.1 North America Emission Monitoring Systems Market Revenue (US\$ Million), 2023 - 2031
- 6.2 North America Emission Monitoring Systems Market Forecast and Analysis

7. NORTH AMERICA EMISSION MONITORING SYSTEMS MARKET REVENUE ANALYSIS - BY FUNCTIONALITY

- 7.1 Continuous Emission Monitoring System (CEMS)
 - 7.1.1 Overview
 - 7.1.2 Continuous Emission Monitoring System (CEMS): North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- 7.2 Portable Emission Monitoring System (PEMS)
 - 7.2.1 Overview
 - 7.2.2 Portable Emission Monitoring System (PEMS): North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8. NORTH AMERICA EMISSION MONITORING SYSTEMS MARKET REVENUE ANALYSIS - BY TECHNOLOGY

- 8.1 Catalytic Bead
 - 8.1.1 Overview
 - 8.1.2 Catalytic Bead: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- 8.2 Infrared Sensor Technology
 - 8.2.1 Overview
 - 8.2.2 Infrared Sensor Technology: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.3 Electrochemical Sensor

8.3.1 Overview

8.3.2 Electrochemical Sensor: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.4 Photoionization Detectors (PID)

8.4.1 Overview

8.4.2 Photoionization Detectors (PID): North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

8.5 Others

8.5.1 Overview

8.5.2 Others: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9. NORTH AMERICA EMISSION MONITORING SYSTEMS MARKET REVENUE ANALYSIS - BY TYPE

9.1 Methane Gas Detectors

9.1.1 Overview

9.1.2 Methane Gas Detectors: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.2 CO2 Gas Detectors

9.2.1 Overview

9.2.2 CO2 Gas Detectors: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.3 Oxygen Gas Detectors

9.3.1 Overview

9.3.2 Oxygen Gas Detectors: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

9.4 Others

9.4.1 Overview

9.4.2 Others: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

10. NORTH AMERICA EMISSION MONITORING SYSTEMS MARKET REVENUE ANALYSIS - BY END USER

10.1 Marine Vessels

10.1.1 Overview

10.1.2 Marine Vessels: North America Emission Monitoring Systems Market -

Revenue and Forecast, 2021 - 2031 (US\$ Million)

10.2 Oil and Gas

10.2.1 Overview

10.2.2 Oil and Gas: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

10.3 Chemicals

10.3.1 Overview

10.3.2 Chemicals: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

10.4 Automotive

10.4.1 Overview

10.4.2 Automotive: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

10.5 Power Generation

10.5.1 Overview

10.5.2 Power Generation: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

10.6 Others

10.6.1 Overview

10.6.2 Others: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

11. NORTH AMERICA EMISSION MONITORING SYSTEMS MARKET - COUNTRY ANALYSIS

11.1 North America

11.1.1 North America Emission Monitoring Systems Market Revenue and Forecast and Analysis - by Country

11.1.1.1 North America Emission Monitoring Systems Market Revenue and Forecast and Analysis - by Country

11.1.2.2 United States: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

11.1.2.2.1 United States: North America Emission Monitoring Systems Market Share - by Functionality

11.1.2.2.2 United States: North America Emission Monitoring Systems Market Share - by Technology

11.1.2.2.3 United States: North America Emission Monitoring Systems Market Share - by Type

11.1.2.2.4 United States: North America Emission Monitoring Systems Market

Share - by End User

11.2.3.3 Canada: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

11.2.3.3.1 Canada: North America Emission Monitoring Systems Market Share - by Functionality

11.2.3.3.2 Canada: North America Emission Monitoring Systems Market Share - by Technology

11.2.3.3.3 Canada: North America Emission Monitoring Systems Market Share - by Type

11.2.3.3.4 Canada: North America Emission Monitoring Systems Market Share - by End User

11.3.4.4 Mexico: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

11.3.4.4.1 Mexico: North America Emission Monitoring Systems Market Share - by Functionality

11.3.4.4.2 Mexico: North America Emission Monitoring Systems Market Share - by Technology

11.3.4.4.3 Mexico: North America Emission Monitoring Systems Market Share - by Type

11.3.4.4.4 Mexico: North America Emission Monitoring Systems Market Share - by End User

12 COMPETITIVE LANDSCAPE

12.1 Heat Map Analysis by Key Players

12.2 Company Positioning & Concentration

13 INDUSTRY LANDSCAPE

13.1 Overview

13.2 New Product Development

13.3 Merger and Acquisition

13.4 Other Strategic Developments

14 COMPANY PROFILES

14.1 ABB Ltd

14.1.1 Key Facts

14.1.2 Business Description

- 14.1.3 Products and Services
- 14.1.4 Financial Overview
- 14.1.5 SWOT Analysis
- 14.1.6 Key Developments
- 14.2 Emerson Electric Co
 - 14.2.1 Key Facts
 - 14.2.2 Business Description
 - 14.2.3 Products and Services
 - 14.2.4 Financial Overview
 - 14.2.5 SWOT Analysis
 - 14.2.6 Key Developments
- 14.3 Siemens AG
 - 14.3.1 Key Facts
 - 14.3.2 Business Description
 - 14.3.3 Products and Services
 - 14.3.4 Financial Overview
 - 14.3.5 SWOT Analysis
 - 14.3.6 Key Developments
- 14.4 SLB
 - 14.4.1 Key Facts
 - 14.4.2 Business Description
 - 14.4.3 Products and Services
 - 14.4.4 Financial Overview
 - 14.4.5 SWOT Analysis
 - 14.4.6 Key Developments
- 14.5 Ametek Inc
 - 14.5.1 Key Facts
 - 14.5.2 Business Description
 - 14.5.3 Products and Services
 - 14.5.4 Financial Overview
 - 14.5.5 SWOT Analysis
 - 14.5.6 Key Developments
- 14.6 Danfoss AS
 - 14.6.1 Key Facts
 - 14.6.2 Business Description
 - 14.6.3 Products and Services
 - 14.6.4 Financial Overview
 - 14.6.5 SWOT Analysis
 - 14.6.6 Key Developments

- 14.7 Sensirion Holding AG
 - 14.7.1 Key Facts
 - 14.7.2 Business Description
 - 14.7.3 Products and Services
 - 14.7.4 Financial Overview
 - 14.7.5 SWOT Analysis
 - 14.7.6 Key Developments
- 14.8 Horiba Ltd
 - 14.8.1 Key Facts
 - 14.8.2 Business Description
 - 14.8.3 Products and Services
 - 14.8.4 Financial Overview
 - 14.8.5 SWOT Analysis
 - 14.8.6 Key Developments
- 14.9 Protea Ltd
 - 14.9.1 Key Facts
 - 14.9.2 Business Description
 - 14.9.3 Products and Services
 - 14.9.4 Financial Overview
 - 14.9.5 SWOT Analysis
 - 14.9.6 Key Developments
- 14.10 Green Instruments A/S
 - 14.10.1 Key Facts
 - 14.10.2 Business Description
 - 14.10.3 Products and Services
 - 14.10.4 Financial Overview
 - 14.10.5 SWOT Analysis
 - 14.10.6 Key Developments
- 14.11 NevadaNano
 - 14.11.1 Key Facts
 - 14.11.2 Business Description
 - 14.11.3 Products and Services
 - 14.11.4 Financial Overview
 - 14.11.5 SWOT Analysis
 - 14.11.6 Key Developments
- 14.12 Aeris Technologies
 - 14.12.1 Key Facts
 - 14.12.2 Business Description
 - 14.12.3 Products and Services

- 14.12.4 Financial Overview
- 14.12.5 SWOT Analysis
- 14.12.6 Key Developments
- 14.13 Qube Technologies
 - 14.13.1 Key Facts
 - 14.13.2 Business Description
 - 14.13.3 Products and Services
 - 14.13.4 Financial Overview
 - 14.13.5 SWOT Analysis
 - 14.13.6 Key Developments
- 14.14 Emsys Maritime Ltd
 - 14.14.1 Key Facts
 - 14.14.2 Business Description
 - 14.14.3 Products and Services
 - 14.14.4 Financial Overview
 - 14.14.5 SWOT Analysis
 - 14.14.6 Key Developments
- 14.15 Green Sea Guard
 - 14.15.1 Key Facts
 - 14.15.2 Business Description
 - 14.15.3 Products and Services
 - 14.15.4 Financial Overview
 - 14.15.5 SWOT Analysis
 - 14.15.6 Key Developments
- 14.16 OPSIS AB
 - 14.16.1 Key Facts
 - 14.16.2 Business Description
 - 14.16.3 Products and Services
 - 14.16.4 Financial Overview
 - 14.16.5 SWOT Analysis
 - 14.16.6 Key Developments

15. APPENDIX

- 15.1 About The Insight Partners

List Of Tables

LIST OF TABLES

- Table 1. North America Emission Monitoring Systems Market Segmentation
- Table 2. List of Vendors
- Table 3. North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Table 4. North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Functionality
- Table 5. North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Technology
- Table 6. North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Type
- Table 7. North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by End User
- Table 8. North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Country
- Table 9. United States: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Functionality
- Table 10. United States: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Technology
- Table 11. United States: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Type
- Table 12. United States: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by End User
- Table 13. Canada: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Functionality
- Table 14. Canada: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Technology
- Table 15. Canada: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Type
- Table 16. Canada: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by End User
- Table 17. Mexico: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Functionality
- Table 18. Mexico: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million) - by Technology
- Table 19. Mexico: North America Emission Monitoring Systems Market - Revenue and

Forecast, 2021 - 2031 (US\$ Million) - by Type

Table 20. Mexico: North America Emission Monitoring Systems Market - Revenue and

Forecast, 2021 - 2031 (US\$ Million) - by End User

Table 21. Heat Map Analysis by Key Players

List Of Figures

LIST OF FIGURES

- Figure 1. North America Emission Monitoring Systems Market Segmentation - Country
- Figure 2. Porter's Analysis
- Figure 3. Ecosystem: Emission Monitoring Systems Market
- Figure 4. North America Emission Monitoring Systems Market - Key Market Dynamics
- Figure 5. Impact Analysis of Drivers and Restraints
- Figure 6. North America Emission Monitoring Systems Market Revenue (US\$ Million), 2023 - 2031
- Figure 7. North America Emission Monitoring Systems Market Share (%) - by Functionality, 2023 and 2031
- Figure 8. Continuous Emission Monitoring System (CEMS): North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 9. Portable Emission Monitoring System (PEMS): North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 10. North America Emission Monitoring Systems Market Share (%) - by Technology, 2023 and 2031
- Figure 11. Catalytic Bead: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 12. Infrared Sensor Technology: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 13. Electrochemical Sensor: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 14. Photoionization Detectors (PID): North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 15. Others: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 16. North America Emission Monitoring Systems Market Share (%) - by Type, 2023 and 2031
- Figure 17. Methane Gas Detectors: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 18. CO2 Gas Detectors: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 19. Oxygen Gas Detectors: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)
- Figure 20. Others: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 21. North America Emission Monitoring Systems Market Share (%) - by End User, 2023 and 2031

Figure 22. Marine Vessels: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 23. Oil and Gas: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 24. Chemicals: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 25. Automotive: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 26. Power Generation: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 27. Others: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 28. North America Emission Monitoring Systems Market Breakdown by Key Countries, 2023 and 2031 (%)

Figure 29. United States: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 30. Canada: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 31. Mexico: North America Emission Monitoring Systems Market - Revenue and Forecast, 2021 - 2031 (US\$ Million)

Figure 32. Company Positioning & Concentration

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