

Global Cloud Seeding Market Size Study, by Type (Aerial Cloud Seeding, Ground Cloud Seeding), by Technique (Glaciogenic, Hygroscopic), by Target Area (Drought-Prone Area, Urban Area, Agriculture & Water Supply, Others), by Cloud Seeding Agent (Silver Iodide, Dry Ice & Potassium Iodide, Sodium Chloride, Others), and Regional Forecasts 2022-2032

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Abstracts

Global Cloud Seeding Market is valued at approximately USD 375.6 Million in 2023 and is anticipated to grow with a healthy growth rate of more than 6.7% over the forecast period 2024-2032. Cloud seeding represents a pioneering weather modification technique aimed at influencing the amount and type of precipitation that falls from clouds. This process is executed by dispersing substances into the air that serve as cloud condensation or ice nuclei, thereby modifying the cloud's microphysical processes. Utilizing seeding agents such as dry ice, silver iodide, and potassium iodide, cloud seeding can be carried out from ground-based generators or aircraft. The technique holds significant potential in increasing precipitation, dispersing fog, and purifying the air of pollutants, proving especially beneficial in regions with limited rainfall.

The rise in climate anomalies globally is a critical factor propelling the growth of the cloud seeding market. With an escalating frequency of extreme weather events, such as prolonged droughts and erratic precipitation patterns, there is a growing necessity for reliable and sustainable water sources. Consequently, the adoption of artificial rain through cloud seeding is gaining traction as an innovative solution. For instance, the U.S. faced severe climate anomalies in 2022, with annual precipitation falling short by 1.59 inches, ranking in the driest third of historical records. Moreover, 18 distinct Million-dollar weather and climate disaster events were recorded, emphasizing the urgent need

for weather modification solutions.

The integration of drones and nanomaterials as seeding agents marks a significant trend in the cloud seeding market. Advanced technologies are being developed to make the artificial rain process more cost-effective and eco-friendly. The incorporation of drones ensures improved timing and accuracy in seeding material delivery, optimizing the overall program's effectiveness. These technological advancements, coupled with strategic partnerships and government initiatives, are anticipated to drive market growth further. Despite the market's promising prospects, regulatory and environmental concerns pose significant challenges. The transboundary nature of weather systems complicates international agreements and protocols, raising geopolitical issues.

The key regions considered for the Global Cloud Seeding Market study include Asia Pacific, North America, Europe, Latin America, and Rest of the World. Asia Pacific is a dominating region in the Global Cloud Seeding Market in terms of revenue. The market growth in the region is being attributed to factors including the region's susceptibility to natural hazards and environmental pollution. China has actively employed artificial rain-making techniques to address drought and power shortages. Whereas, the market in Middle East & Africa is anticipated to grow at the fastest rate over the forecast period fueled by the high adoption of cloud seeding for agriculture enhancement and tourism attraction.

Major market players included in this report are:

Weather Modification Inc. (U.S.)
RHS Consulting Inc. (U.S.)
North America Weather Consultants Inc. (U.S.)
Snowy Hydro Limited (Australia)
Mettech S.P.A (Chile)
3D S.A. (India)
Cloud Technologies GmbH (Germany)
Seeding Operations and Atmospheric Research (SOAR) (U.S.)
Ice Crystal Engineering (ICS), LLC (U.S.)
Charter Flights Aviation (India)
Cloud Seeding Technologies, LLC
Seeding Technologies, Inc.
Silver Lining, Inc.
Atmospheric Sciences Inc.
Rain Enhancement Technologies, LLC

The detailed segments and sub-segment of the market are explained below:

By Type

Aerial Cloud Seeding

Ground Cloud Seeding

By Technique

Glaciogenic

Hygroscopic

By Target Area

Drought-Prone Area

Urban Area

Agriculture & Water Supply

Others

By Cloud Seeding Agent

Silver Iodide

Dry Ice & Potassium Iodide

Sodium Chloride

Others

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Spain

Italy

ROE

Asia Pacific

China

India

Japan

Australia

South Korea
RoAPAC

Latin America
Brazil
Mexico
Rest of Latin America

Middle East & Africa
Saudi Arabia
South Africa
RoMEA

Years considered for the study are as follows:

Historical year – 2022

Base year – 2023

Forecast period – 2024 to 2032

Key Takeaways:

Market Estimates & Forecast for 10 years from 2022 to 2032.

Annualized revenues and regional level analysis for each market segment.

Detailed analysis of geographical landscape with Country level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of competitive structure of the market.

Demand side and supply side analysis of the market.

Contents

CHAPTER 1. GLOBAL CLOUD SEEDING MARKET EXECUTIVE SUMMARY

- 1.1. Global Cloud Seeding Market Size & Forecast (2022-2032)
- 1.2. Regional Summary
- 1.3. Segmental Summary
 - 1.3.1. By Type
 - 1.3.2. By Technique
 - 1.3.3. By Target Area
 - 1.3.4. By Cloud Seeding Agent
- 1.4. Key Trends
- 1.5. Recession Impact
- 1.6. Analyst Recommendation & Conclusion

CHAPTER 2. GLOBAL CLOUD SEEDING MARKET DEFINITION AND RESEARCH ASSUMPTIONS

- 2.1. Research Objective
- 2.2. Market Definition
- 2.3. Research Assumptions
 - 2.3.1. Inclusion & Exclusion
 - 2.3.2. Limitations
 - 2.3.3. Supply Side Analysis
 - 2.3.3.1. Availability
 - 2.3.3.2. Infrastructure
 - 2.3.3.3. Regulatory Environment
 - 2.3.3.4. Market Competition
 - 2.3.3.5. Economic Viability (Consumer's Perspective)
 - 2.3.4. Demand Side Analysis
 - 2.3.4.1. Regulatory frameworks
 - 2.3.4.2. Technological Advancements
 - 2.3.4.3. Environmental Considerations
 - 2.3.4.4. Consumer Awareness & Acceptance
- 2.4. Estimation Methodology
- 2.5. Years Considered for the Study
- 2.6. Currency Conversion Rates

CHAPTER 3. GLOBAL CLOUD SEEDING MARKET DYNAMICS

Global Cloud Seeding Market Size Study, by Type (Aerial Cloud Seeding, Ground Cloud Seeding), by Technique (Gl...

3.1. Market Drivers

- 3.1.1. Rising Climate Anomalies Worldwide
- 3.1.2. Increasing Government Investments
- 3.1.3. Rising Adoption of Cloud Seeding Technology

3.2. Market Challenges

- 3.2.1. Regulatory and Environmental Concerns
- 3.2.2. High Cost of Technology Implementation

3.3. Market Opportunities

- 3.3.1. Use of Drone and Nanomaterial as Seeding Agent
- 3.3.2. Development of New Seeding Agents
- 3.3.3. Technological Advancements and Innovations

CHAPTER 4. GLOBAL CLOUD SEEDING MARKET INDUSTRY ANALYSIS

4.1. Porter's 5 Force Model

- 4.1.1. Bargaining Power of Suppliers
- 4.1.2. Bargaining Power of Buyers
- 4.1.3. Threat of New Entrants
- 4.1.4. Threat of Substitutes
- 4.1.5. Competitive Rivalry
- 4.1.6. Futuristic Approach to Porter's 5 Force Model
- 4.1.7. Porter's 5 Force Impact Analysis

4.2. PESTEL Analysis

- 4.2.1. Political
- 4.2.2. Economical
- 4.2.3. Social
- 4.2.4. Technological
- 4.2.5. Environmental
- 4.2.6. Legal

4.3. Top investment opportunity

4.4. Top winning strategies

4.5. Disruptive Trends

4.6. Industry Expert Perspective

4.7. Analyst Recommendation & Conclusion

CHAPTER 5. GLOBAL CLOUD SEEDING MARKET SIZE & FORECASTS BY TYPE 2022-2032

5.1. Segment Dashboard

5.2. Global Cloud Seeding Market: Type Revenue Trend Analysis, 2022 & 2032 (USD Million)

5.2.1. Aerial Cloud Seeding

5.2.2. Ground Cloud Seeding

CHAPTER 6. GLOBAL CLOUD SEEDING MARKET SIZE & FORECASTS BY TECHNIQUE 2022-2032

6.1. Segment Dashboard

6.2. Global Cloud Seeding Market: Technique Revenue Trend Analysis, 2022 & 2032 (USD Million)

6.2.1. Glaciogenic

6.2.2. Hygroscopic

CHAPTER 7. GLOBAL CLOUD SEEDING MARKET SIZE & FORECASTS BY TARGET AREA 2022-2032

7.1. Segment Dashboard

7.2. Global Cloud Seeding Market: Target Area Revenue Trend Analysis, 2022 & 2032 (USD Million)

7.2.1. Drought-Prone Area

7.2.2. Urban Area

7.2.3. Agriculture & Water Supply

7.2.4. Others

CHAPTER 8. GLOBAL CLOUD SEEDING MARKET SIZE & FORECASTS BY CLOUD SEEDING AGENT 2022-2032

8.1. Segment Dashboard

8.2. Global Cloud Seeding Market: Cloud Seeding Agent Revenue Trend Analysis, 2022 & 2032 (USD Million)

8.2.1. Silver Iodide

8.2.2. Dry Ice & Potassium Iodide

8.2.3. Sodium Chloride

8.2.4. Others

CHAPTER 9. GLOBAL CLOUD SEEDING MARKET SIZE & FORECASTS BY REGION 2022-2032

- 9.1. North America Cloud Seeding Market
 - 9.1.1. U.S. Cloud Seeding Market
 - 9.1.1.1. Type breakdown size & forecasts, 2022-2032
 - 9.1.1.2. Technique breakdown size & forecasts, 2022-2032
 - 9.1.1.3. Target Area breakdown size & forecasts, 2022-2032
 - 9.1.1.4. Cloud Seeding Agent breakdown size & forecasts, 2022-2032
 - 9.1.2. Canada Cloud Seeding Market
- 9.2. Europe Cloud Seeding Market
 - 9.2.1. UK Cloud Seeding Market
 - 9.2.2. Germany Cloud Seeding Market
 - 9.2.3. France Cloud Seeding Market
 - 9.2.4. Spain Cloud Seeding Market
 - 9.2.5. Italy Cloud Seeding Market
 - 9.2.6. Rest of Europe Cloud Seeding Market
- 9.3. Asia-Pacific Cloud Seeding Market
 - 9.3.1. China Cloud Seeding Market
 - 9.3.2. India Cloud Seeding Market
 - 9.3.3. Japan Cloud Seeding Market
 - 9.3.4. Australia Cloud Seeding Market
 - 9.3.5. South Korea Cloud Seeding Market
 - 9.3.6. Rest of Asia Pacific Cloud Seeding Market
- 9.4. Latin America Cloud Seeding Market
 - 9.4.1. Brazil Cloud Seeding Market
 - 9.4.2. Mexico Cloud Seeding Market
 - 9.4.3. Rest of Latin America Cloud Seeding Market
- 9.5. Middle East & Africa Cloud Seeding Market
 - 9.5.1. Saudi Arabia Cloud Seeding Market
 - 9.5.2. South Africa Cloud Seeding Market
 - 9.5.3. Rest of Middle East & Africa Cloud Seeding Market

CHAPTER 10. COMPETITIVE INTELLIGENCE

- 10.1. Key Company SWOT Analysis
 - 10.1.1. Company
 - 10.1.2. Company
 - 10.1.3. Company
- 10.2. Top Market Strategies
- 10.3. Company Profiles

- 10.3.1. Weather Modification Inc.
 - 10.3.1.1. Key Information
 - 10.3.1.2. Overview
 - 10.3.1.3. Financial (Subject to Data Availability)
 - 10.3.1.4. Product Summary
 - 10.3.1.5. Market Strategies
- 10.3.2. RHS Consulting Inc.
- 10.3.3. North America Weather Consultants Inc.
- 10.3.4. Snowy Hydro Limited
- 10.3.5. Mettech S.P.A
- 10.3.6. 3D S.A.
- 10.3.7. Cloud Technologies GmbH
- 10.3.8. Seeding Operations and Atmospheric Research (SOAR)
- 10.3.9. Ice Crystal Engineering (ICS), LLC
- 10.3.10. Charter Flights Aviation
- 10.3.11. Cloud Seeding Technologies, LLC
- 10.3.12. Seeding Technologies, Inc.
- 10.3.13. Silver Lining, Inc.
- 10.3.14. Atmospheric Sciences Inc.
- 10.3.15. Rain Enhancement Technologies, LLC

CHAPTER 11. RESEARCH PROCESS

- 11.1. Research Process
 - 11.1.1. Data Mining
 - 11.1.2. Analysis
 - 11.1.3. Market Estimation
 - 11.1.4. Validation
 - 11.1.5. Publishing
- 11.2. Research Attributes

List Of Tables

LIST OF TABLES

- TABLE 1. Global Cloud Seeding Market, Report Scope
- TABLE 2. Global Cloud Seeding Market Estimates & Forecasts by Region 2022-2032 (USD Million)
- TABLE 3. Global Cloud Seeding Market Estimates & Forecasts by Type 2022-2032 (USD Million)
- TABLE 4. Global Cloud Seeding Market Estimates & Forecasts by Technique 2022-2032 (USD Million)
- TABLE 5. Global Cloud Seeding Market Estimates & Forecasts by Target Area 2022-2032 (USD Million)
- TABLE 6. Global Cloud Seeding Market Estimates & Forecasts by Cloud Seeding Agent 2022-2032 (USD Million)
- TABLE 7. Global Cloud Seeding Market by Segment, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 8. Global Cloud Seeding Market by Region, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 9. Global Cloud Seeding Market by Segment, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 10. Global Cloud Seeding Market by Region, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 11. Global Cloud Seeding Market by Segment, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 12. Global Cloud Seeding Market by Region, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 13. Global Cloud Seeding Market by Segment, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 14. Global Cloud Seeding Market by Region, Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 15. U.S. Cloud Seeding Market Estimates & Forecasts, 2022-2032 (USD Million)
- TABLE 16. U.S. Cloud Seeding Market Estimates & Forecasts by Segment 2022-2032 (USD Million)
- TABLE 17. U.S. Cloud Seeding Market Estimates & Forecasts by Segment 2022-2032 (USD Million)
- TABLE 18. Canada Cloud Seeding Market Estimates & Forecasts, 2022-2032 (USD Million)

TABLE 19. Canada Cloud Seeding Market Estimates & Forecasts by Segment
2022-2032 (USD Million)

TABLE 20. Canada Cloud Seeding Market Estimates & Forecasts by Segment
2022-2032 (USD Million)

.....

This list is not complete, final report does contain more than 100 tables. The list may be updated in the final deliverable.

List Of Figures

LIST OF FIGURES

- FIG 1. Global Cloud Seeding Market, Research Methodology
- FIG 2. Global Cloud Seeding Market, Market Estimation Techniques
- FIG 3. Global Market Size Estimates & Forecast Methods.
- FIG 4. Global Cloud Seeding Market, Key Trends 2023
- FIG 5. Global Cloud Seeding Market, Growth Prospects 2022-2032
- FIG 6. Global Cloud Seeding Market, Porters 5 Force Model
- FIG 7. Global Cloud Seeding Market, PESTEL Analysis
- FIG 8. Global Cloud Seeding Market, Value Chain Analysis
- FIG 9. Global Cloud Seeding Market by Segment, 2022 & 2032 (USD Million)
- FIG 10. Global Cloud Seeding Market by Segment, 2022 & 2032 (USD Million)
- FIG 11. Global Cloud Seeding Market by Segment, 2022 & 2032 (USD Million)
- FIG 12. Global Cloud Seeding Market by Segment, 2022 & 2032 (USD Million)
- FIG 13. Global Cloud Seeding Market by Segment, 2022 & 2032 (USD Million)
- FIG 14. Global Cloud Seeding Market, Regional Snapshot 2022 & 2032
- FIG 15. North America Cloud Seeding Market 2022 & 2032 (USD Million)
- FIG 16. Europe Cloud Seeding Market 2022 & 2032 (USD Million)
- FIG 17. Asia Pacific Cloud Seeding Market 2022 & 2032 (USD Million)
- FIG 18. Latin America Cloud Seeding Market 2022 & 2032 (USD Million)
- FIG 19. Middle East & Africa Cloud Seeding Market 2022 & 2032 (USD Million)
- FIG 20. Global Cloud Seeding Market, Company Market Share Analysis (2023)

.....

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