Cloud Seeding Market Size Expected to Reach $192.77 Million by 2031

The cloud seeding market was valued at $120.35 million in 2021, and is estimated to reach $192.77 million by 2031, growing at a CAGR of 5.1% from 2022 to 2031.

WILMINGTON, DE, UNITED STATES, July 11, 2025 /EINPresswire.com/ -- By type, the aerial cloud seeding segment is expected to witness the highest growth rate within the forecast period. By application, the increasing precipitation segment incurs the higher share within the market segment. By flare, the end burning flares segment is expected to hold highest growth rate during the forecast period. By seeding technique, the hygroscopic segment holds majority of market share in 2021. At present, North America is the highest revenue contributor and is expected to garner the highest revenue in the global cloud seeding market during the forecast period, followed by Asia-Pacific, LAMEA, and Europe.

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North America dominated the cloud seeding market in terms of growth, followed by Asia-Pacific, LAMEA, and Europe. The U.S. dominated the market share in 2021, and is expected to grow at a significant rate in the market during the forecast timeframe.

The cloud seeding market holds a great potential over the coming years backed by the rise in demand for having periodical weather conditions and cater to water scarcity issues. The rise in global population in coming years, demanding pure water resources will also augment the cloud seeding market. The global population is expected to grow by 40% in next 45 years, ramping up demand of fresh water sources. The rise in requirement is expected to be catered by artificially increasing precipitation activities through cloud seeding technologies. Countries with water scarcity and bolstering population such as UAE and China have already drafted a multiple cloud seeding programs that will be executed till 2025, to fulfil the need of fresh water.

The advancement in cloud seeding techniques and technological development in weather monitoring and forecast equipment to increase operational efficiency within the cloud seeding market. A specific type of cloud with certain temperatures can only guarantee designated outcome, else the operations are expected to be coined as failure. Technological advancement in weather forecasting technologies enables cloud seeding operators to pinpoint the cloud with designated specifications, increasing the success ration of complete operation. However,

challenges like formation of cloud while the moisture is too less, limits the scope of cloud seeding in certain areas. Such challenges are expected to be addressed in coming years.

By type, the cloud seeding market is categorized by aerial cloud seeding and ground based cloud seeding. Depending on application, it is fragmented into increasing precipitation, mitigating hail damage and dispersing fog. By flare type, it is divided into end burning flares, ejection flares, automatic/remote based generator, manual generator, and flare trees. By seeding technique, the market is divided into hygroscopic and glaciogeneic. Region-wise, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

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Factors, such as increase in investment within cloud modification programs, introduction of new technologies, and rise in demand mitigate environmental threats. Rise in application of cloud seeding technologies to generate artificial rain and maintain water level in draught regions is expected to act as a primary market accelerator. Water deprecated regions, including Saudi Arabia have done notable investment within the market. For instance, in April 2022, the Saudi Arabia Council of Ministers announced inauguration of cloud seeding program over three cities to increase rainfall. The program is segmented in two phases. The first phase is stated to include setting up operations in Riyadh, Qassim, and hail region, followed by Asir, Al-Baha, and Taif regions in the second phase. The program is supposed to use advanced meteorological techniques to ensure environmental friendly operations.

According to Dhvanil Dave, Sr. Research Analyst, Aerospace and Defense at Allied Market Research, “By type, the aerial cloud seeding segment is expected to witness the highest growth rate within the forecast period. By application, the increasing precipitation segment incurs the higher share within the market segment. By flare, the end burning flares segment is expected to hold highest growth rate during the forecast period. By seeding technique, the hygroscopic segment holds majority of market share in 2021. At present, North America is the highest revenue contributor and is expected to garner the highest revenue in the global cloud seeding market during the forecast period, followed by Asia-Pacific, LAMEA, and Europe.”

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KEY FINDINGS OF THE STUDY

By type, the aerial cloud seeding segment leads the market during the forecast period.
By application, the increasing precipitation segment leads the market during the forecast period.
By flare, the end burning flares segment is expected to grow at lucrative growth rate during the forecast period (2022-2031).

By seeding technique, the hygroscopic segment leads the market during the forecast period. Asia-Pacific is anticipated to exhibit the highest CAGR during the forecast period.

The key players operating in the cloud seeding market are Weather Modification, Inc, RHS Consulting, Limited, North American Weather Consultants, Inc., Seeding Operations And Atmospheric Research, Snowy Hydro Limited, Mettech S.p.A., AFJets Sdn Bhd, Cloud Seeding Technologies, 3D s.a., and Ice Crystal Engineering LLC.

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