How Many Cloud-Seeding Flights Does the UAE Conduct?

In a country with a climate as arid and sweltering as that in the UAE, technology can provide a helping hand to the environment. In this vein, the Emirati government has been pouring significant time and resources into the sophisticated technique of cloud-seeding for years. In 2022, the country conducted over 300 flights across almost 1,000 hours.

The phenomenon of cloud-seeding involves injecting a cocktail of chemicals into the clouds in the sky in a bid to enhance the amount of rain they release. In doing so, the UAE authorities hope to improve soil quality, recharge groundwater deposits and firm up both food and water security. With that in mind, the National Centre of Meteorology (NCM) has teamed up with a US-based climate research specialist to launch a month-long programme of study and investigation in September.

Making it rain

The practice of cloud-seeding stretches back to the 1990s and involves using technology to artificially alter weather patterns, with the ultimate objective of producing more precipitation. Although the exact mechanics of the process are extremely complex, it essentially consists of injecting salt flares or other small packages of chemicals into clouds, thus enhancing the moisture contained within them and theoretically generating more rainfall. In 2022, the UAE conducted 311 cloud-seeding flights in total.

The immediate aims of the technique are obvious; more rain will replenish groundwater supplies and shore up drinking water for the country's inhabitants, as well as aiding with agricultural efforts to enhance food security, too. What's more, successfully moderating the extremity and severity of weather patterns could have a beneficial effect on tourism, as well.

The UAE leading the charge

Due to its geographical location, climatic conditions, technical expertise and supreme wealth, the UAE has been at the cutting edge of cloud-seeding research for the best part of three decades now. The NCM's seeding programme initially began in the 1990s and by the turn of the millennium, it was already beginning to work with international partners from all over the globe.

Among its collaborators are some household names in the field of climate research, including the National Aeronautics and Space Administration (NASA) and the National Centre for Atmospheric Research (NCAR). Earlier this year, the NCM announced plans to enhance its cloud-seeding fleet and acquired Wx-80 turboprop aircraft in April, which are

capable of carrying larger quantities of materials and boast more sophisticated safety features.

Introducing Cloudix

In a further signal of that forward-thinking ambition, the NCM has now signed an agreement with the American firm Stratton Park Engineering Company (SPEC), who are experts in climate research. The two entities will work together on a programme called Cloudix across the month of September to carry out key experiments on cloud-seeding practices to assess their effectiveness and optimise operations.

Cloud-seeding aircraft owned by both the Emirati and the American companies will take to the skies, using advanced instruments to gather crucial performance data. “A group of researchers and pilots will cross-examine the performance of different cloud seeding materials with and without electric charges,” explained a spokesperson for the NCM.