

27 October 2023

iForest Side Event on 24 October 2023

Rebooting the Vienna Convention for Stratospheric Aerosol Injection Governance

Presentation by David Fahey, Scientific Assessment Panel (SAP) Co-Chair: Climate Intervention and Stratospheric Ozone: Introduction and results from the 2022 UNEP/WMO Scientific Assessment of Ozone Depletion

Summary

Climate intervention refers to cooling the Earth by human means to offset the warming and other impacts due to greenhouse gas accumulation. Should it ever become important for society to cool Earth rapidly, climate intervention by solar radiation modification (SRM) methods is the only way that has been suggested by which humans could potentially cool Earth within years after deployment. Projections of continuing emissions of greenhouse gases and growing impacts from climate change are increasing global interest in climate intervention. The leading SRM method is stratospheric aerosol injection (SAI), which would inject aerosol or aerosol precursors into the stratosphere. Observations following explosive volcanic eruptions along with model simulations confirm that increasing stratospheric sulfate aerosols can substantially cool the planet. SAI is expected to change stratospheric ozone chemistry and stratospheric heating which potentially alters the global ozone distribution. In response to the potential importance of SAI to the future ozone layer, the parties to the Montreal Protocol have made an initial assessment of the potential effects on the stratospheric ozone layer in its 2022 assessment cycle. This presentation introduced the concept of climate intervention, described SAI scenarios and response mechanisms and discussed the expected changes in stratospheric ozone from SAI based on global model results.

The presentation included the reminder that the objectives of the SAP is to provide the scientific foundation for Montreal Protocol policy deliberations and decisions and do not include assessing implementation or governance of stratospheric aerosol injection.

The presentation provided context for the subsequent iForest discussion led by Chandra Bhushan on the Vienna Convention and stratospheric aerosol injection.