

Space4Climate Market Breakthrough Funding

Uniting to lower the barriers to adoption of satellite-based climate services

Theme: Greenhouse Gas Emissions

Data and knowledge around global greenhouse gas (GHG) emissions, trends and sources are becoming key levers to support national and international climate action across policy and business. Earth Observation (EO), notably satellite-based EO, is recognised as the most powerful tool to provide a synoptic monitoring and reporting on Earth's changing climate over time.

33+ relevant satellite missions and instruments - both in orbit and in planning - funded by public, private and not-for-profit entities were identified in the database of GHG monitoring capabilities from space underpinning this theme's analysis. These missions have potential to not only contribute to National GHG Inventories and the Global Stocktake (GST) but also to accelerate innovation in building climate tools to understand industry level emissions and ESG (Environmental, Social and Governance) performance.

The rapid increase of GHG emission data sets presents an opportunity for the satellite-based climate services sector to innovate and develop tools to support with corporate and industry level emissions monitoring guided by market regulations like ESG and TCFD (Task Force on Climate-related Financial Disclosures) both which include the measurement of Scope 1, Scope 2 and Scope 3 emissions. However, we are yet to see the mainstream adoption of satellite-derived emission products across sectors, often due to the perceived technological and commercial barriers but also due to complex GHG accounting requirements.

The activity looks to prepare the community now to be futureproofed in years to come as we gain practical knowledge on the workings of regulatory frameworks, lessons from the first Global Stocktake and the emerging urgency to ramp up reporting and disclosures. This could be through a flexible and scalable framework or set of recommendations that informs sectors when, where and how satellite-based emission data can be incorporated across the reporting chain, bridging the gap between analysis and impact and guiding data interoperability among stakeholder organisations.

The 33+ relevant satellite missions and instruments present an opportunity to innovate to support corporate and industry level emissions monitoring, guided by market regulations. We must work to understand the market as we start to gain practical knowledge on the workings of the regulatory frameworks, [lessons from the first Global Stocktake](#) and the emerging urgency to ramp up reporting and disclosures.