

Satellite Technology Usage for Greenhouse Gas Emissions Monitoring and Verification: Policy Considerations for an International System

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Abstract : Accurate and transparent monitoring, reporting and verification of Greenhouse Gas (GHG) emissions and removals is a requirement of the United Nations Framework Convention on Climate Change (UNFCCC). Several countries are obligated to prepare and submit an annual national greenhouse gas inventory covering anthropogenic emissions by sources and removals by sinks, subject to a review conducted by an international team of experts. However, the process is not without flaws. The self-reporting varies enormously in thoroughness, frequency and accuracy including inconsistency in the way such reporting occurs. The world's space agencies are calling for a new generation of satellites that would be precise enough to map greenhouse gas emissions from individual nations. The plan is delicate politically because the global system could verify or cast doubt on emission reports from the member states of the UNFCCC. A level playing field is required and an idea that an international system should be perceived as an instrument to facilitate fairness and equality rather than to spy on or punish. This change of perspective is required to get buy in for an international verification system. The research proposes the viability of a satellite system that provides independent access to data regarding greenhouse gas emissions and the policy and governance implications of its potential use as a monitoring and verification system for the Paris Agreement. It assesses the foundations of the reporting monitoring and verification system as proposed in Paris and analyzes this in light of a proposed satellite system. The use of remote sensing technology has been debated for verification purposes and as evidence in courts but this is not without controversy. Lessons can be learned from its use in this context.

Keywords : greenhouse gas emissions, reporting, monitoring and verification, satellite, UNFCCC

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