

**Call for Submissions from Baku Climate Conference 2024****Submission from WMO****31 March 2025****Views on Non-Market Approaches (NMA)****Scope for Integrated Global Greenhouse Gas Information System (IG³IS)****Non-Market Approaches (NMA)**

Article 6.8 of the Paris Agreement refers to voluntary cooperation between Parties to achieve their climate action goals without involving the transaction of carbon or quid pro quo operations. It offers a framework for exploring alternative methods to achieve nationally determined contributions (NDCs) and highlights the role of non-market approaches in promoting sustainable development and enhancing resilience to climate change. It aims to:

- Promote mitigation and adaptation ambition.
- Enhance participation of public and private sector and civil society organizations in the implementation of nationally determined contributions; and
- Enable opportunities for coordination across instruments and relevant institutional arrangements.

Parties can collaborate on financial assistance, technology development, and capacity-building. Non-market approaches may include capacity-building programmes, clean energy technology projects, and funding mechanisms like grants and concessional loans to support climate-resilient development.

About IG³IS

The World Meteorological Organization (WMO) and its partners have created the Integrated Global Greenhouse Gas Information System (IG³IS) as a common framework for providing systematic services to the user community to support their greenhouse gas emission reduction ambitions. The initiative strives to provide information at different decision-making scales (from facility to city, sectoral or national scale) through a combination of atmospheric observations and analysis tools using common methodologies. Such information is:

- Consistent across the scales,
- Developed in a transparent/objective manner,
- Can be produced for different gases and sectors, and
- Evolves with the evolution of science.

IG³IS was recommended for use by SBSTA 50 (2019), and the IPCC Task Force on National Greenhouse Gas Inventories (TFI) on the National Emission Inventory refinement (2019) recognized it as a best practice for independently assessing reported emissions using atmospheric data.

IG³IS support for NMA

The WMO-IG³IS initiative has the potential to support NMA by enhancing the efficiency and effectiveness of climate change mitigation efforts, including in the context of the NDC implementation. By leveraging advanced science-based information, it helps stakeholders identify and implement strategies that support their mitigation goals.

Implementation of IG³IS at different scales can help promote mitigation ambition:

- Improved characterisation (e.g. timeliness, spatial resolution or uncertainty) of emissions and uptakes helps set mitigation targets more objectively.
- Improved timeliness allows for improved monitoring of emission reductions and course correction if the measures or policies do not lead to a desired outcome. Such information leads to better insight into whether the Party's investments in new technologies at specific facilities have achieved the expected or claimed reductions.
- The improved spatial resolution allows for the identification of additional or previously unknown emission reduction opportunities (e.g. leakages) and facilitates actions through greater awareness of emission distribution across different cities and sectors.

Engagement with WMO as a facilitator agency for IG³IS methodology development allows for knowledge sharing, capacity building and technology transfer.

One of IG³IS's key contributions is promoting sustainable development, which emerges as a co-benefit of reducing various pollutants that adversely impact air quality. All anthropogenic activities (energy production, transportation, industry, agriculture, waste management) are responsible for the emission of gaseous and particulate pollutants that modify atmospheric composition. By addressing these pollutants, the initiative not only aids in achieving environmental objectives but also supports human and ecosystem health. As a result, it supports the creation of a holistic framework for progress in sustainability and climate resilience.

Barriers to using the NMA Platform and potential solutions, to enable the NMA Platform to be used to its full potential.

The NMA platform has not yet been fully developed. It is missing information on the available support for developing emissions baselines, improving inventories, and monitoring mitigation actions in the countries. Also, there are no region-specific case studies.

IG³IS aims at linking inventory and process-based model information with atmospheric observations and modelling, to provide the best possible estimates of greenhouse gas emissions and removals at the national, urban or facility scale. This initiative is gradually expanding and trying to collect the existing good practices under one umbrella. Currently, IG³IS is engaged in the following activities:

- IG³IS good practices for national-scale emission evaluation (under development). This report builds on the successful implementation in several countries and the general principles outlined in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
- IG³IS Urban Greenhouse Gas Emission Observation and Monitoring Good Research Practice Guidelines intended to provide technical guidance on current state-of-the-art technologies in urban greenhouse gas information systems (undergoing revision).
- Case studies from different countries show the ongoing activities and their outcomes.
- Organization of conferences, workshops, and training to enhance knowledge and capacity within the community.



- Supporting Parties in achieving mitigation targets through better monitoring systems by assisting with technology transfer, capacity building, partnership development and collaboration.

Engagement with the NMA Platform and the challenges encountered in unlocking its full potential.

There is a gap between the scientific community and the stakeholders. Many of the countries do not use science-based approaches for mitigation monitoring which results in increased uncertainty. This is mostly because they are unaware of the available information or whom to reach out to.

IG³IS has a well-connected community working on science-based approaches for GHG observations and monitoring, and it is expanding. It integrates methodologies that can support improving mitigation monitoring for emissions and removals. However, IG³IS works with scientists, researchers, and data providers and is not so well connected with the stakeholders who might need IG³IS support.

Engagement with the NMA platform can be a bridge between IG³IS and the stakeholders, allowing them to access the knowledge materials and support available under IG³IS.

How non-market approaches can support a Party's implementation of the nationally determined contribution?

The IG³IS methodology's scalability allows it to be used by a diverse community of stakeholders, leading to improved participation of the public and private sectors in implementing nationally determined contributions (NDCs).

Some of the examples are as follows:

- IG³IS helps with continuous and near-real-time monitoring of mitigation actions. This helps to address the challenges the Parties face while developing proposals for climate funds and bilateral/multilateral support.
- IG³IS methodologies can be implemented at different scales and for various sectors and gases. This allows the Parties to monitor sectoral emissions, improve inventories and contribute to global stocktaking.
- Atmospheric observation-based approaches help estimate the net fluxes and split them into big categories of emissions (e.g. fossil fuel related, natural etc). This helps to identify any gaps in the inventories and supports better decision-making.
- A common methodology for everyone and easily comparable between the parties. This contributes to reducing uncertainties for the global stocktake.

IG³IS for NDCs: Endorsed Project in Korea

The Republic of Korea has committed to achieving carbon neutrality by the year 2050. In line with this ambitious goal, the National Institute of Meteorological Sciences (NIMS), which operates under the Korea Meteorological Administration (KMA), has initiated an important project titled 'INVERSE-Korea'. This project aims to bolster the country's greenhouse gas (GHG) reduction strategies by systematically addressing and reducing the uncertainties associated with the national emissions inventory. To accomplish this, 'INVERSE-Korea' focuses on integrating and reconciling both bottom-up and top-down estimates of national GHG emissions. By harmonizing these different methodologies, the

project seeks to enhance the accuracy and reliability of the national emissions estimations. The key objectives of the project are:

- Understanding the variations in natural net greenhouse gas emissions stem from climate changes.
- Refining the uncertainty of the emission of non-CO₂ gases such as CH₄, N₂O, and F-gases.
- Identifying the missing or sporadic emission sources with the help of integrating characteristics of the top-down method.
- Resolving the discrepancy between the national total emission and the integrated emission from the local governments.
- Prioritizing research areas of reducing emission uncertainty based on the differences between the top-down and bottom-up emissions.
- Evaluating the impact of greenhouse gas reduction policies.

More details about the INVERSE-Korea project are available [here](#).

More examples of IG³IS-related activities are available on the webinar series webpages:

[Spring webinar series of IG3IS | World Meteorological Organization](#)

[IG3IS Webinar Series \(Q3-Q4, 2024\) | World Meteorological Organization](#)

[IG3IS Webinar Series \(Q1-Q2, 2025\) | World Meteorological Organization](#)

Overcoming Potential Challenges

WMO realizes that the implementation of IG³IS by individual countries can be challenging:

- 1) Implementation requires building the observational infrastructure on the ground and sustaining it for a long period of time;
- 2) The implementing country should have modelling capabilities in one of its institutions for data analysis;
- 3) Human capacity is required to perform the measurements and analyse the data.

WMO has opportunities for capacity development in the countries that are missing these capacities. WMO using its extended expert network can assist countries in drafting funding proposals.

In recent years, WMO initiated the development of the global operational system Global Greenhouse Gas Watch (G3W). Several modelling centres that plan to participate in this system have the capability to produce monthly gridded net fluxes of CO₂ and CH₄ using assimilation of the available observational data. These products can provide initial insights on the net fluxes over the countries and be helpful in the establishment of the net fluxes (balance between sources and sinks) and tracking the progress with overall mitigation under NDCs, though these products have large uncertainty in the areas where observations are limited.

WMO can also help countries establish partnerships with bilateral or multilateral donors, the private sector, and other relevant funding agencies to access climate finance. Endorsement from IG³IS will help boost the proposed activity's visibility and international recognition. This heightened awareness can attract interest and support, facilitating access to additional funding and resources.