

For COP30

Navigating Sustainable Finance: How Satellite Data Guides Our Journey to the Future

November 2025

COP30
BRASIL
AMAZÔNIA
BELÉM 2025

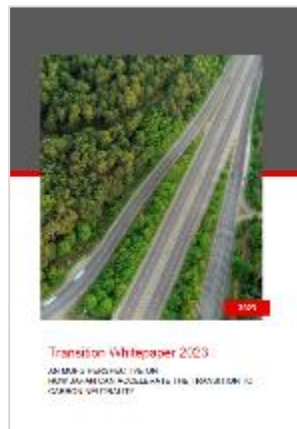
MUFG Whitepapers

Whitepaper 1.0 (2022)



Different path to carbon neutrality
(CN) by country due to
regional characteristics

Whitepaper 2.0 (2023)



Different approaches and policy
structures to CN promoted
by each country

Whitepaper 3.0 (2024)



Common challenges in price
pass-through of CN technologies,
faced by Europe,
the U.S. and Japan

Questions

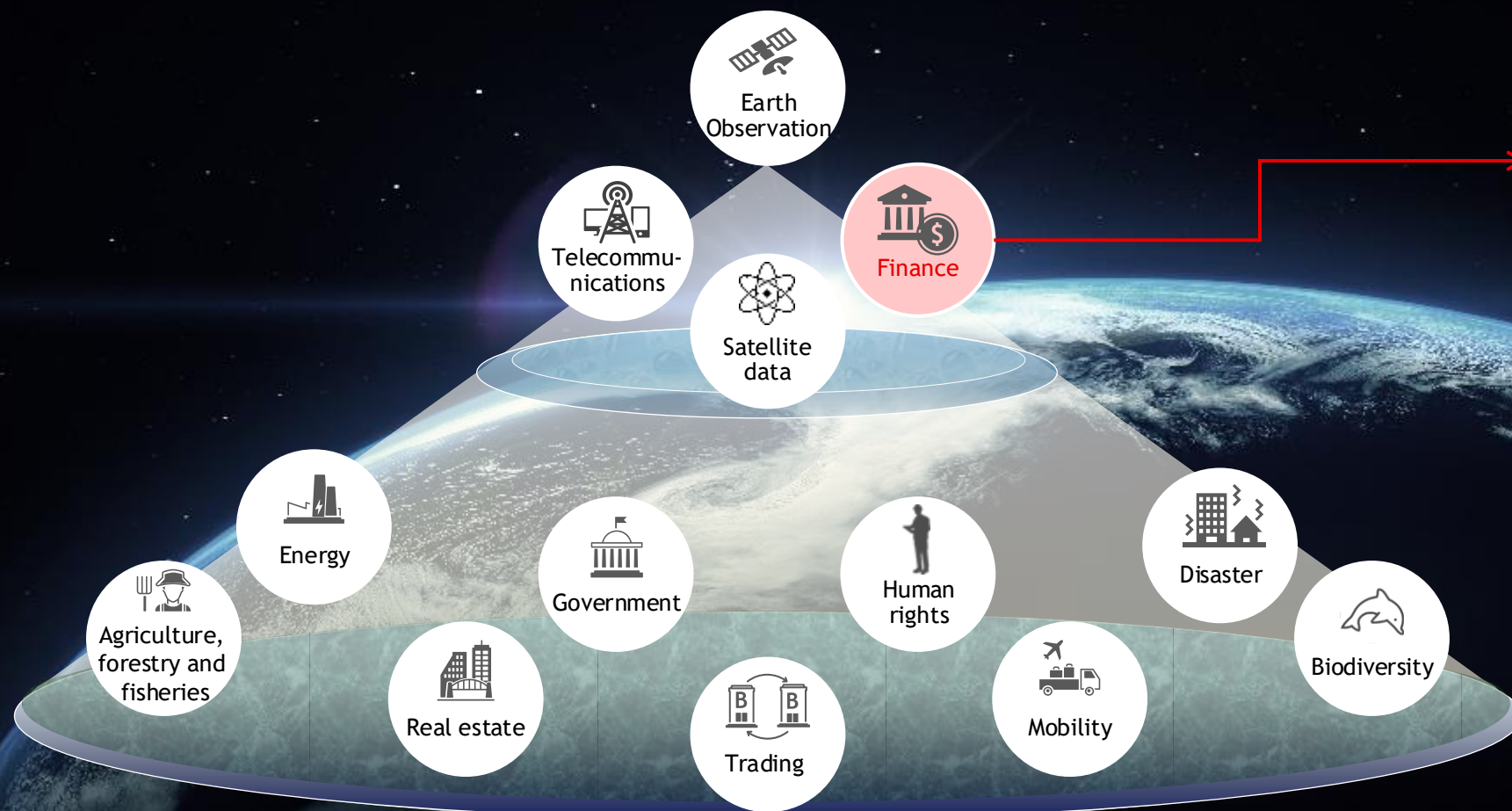
- ① How can the transition technologies be financially supported?
(with wide options)
- ② How can the business without economic viability be supported?
(role of financial institutions for scaling)

Objective measurement of
decarbonization identifies
“New Values”

Objective and Neutral Traceable Data

As technology advances, space use / satellite technologies have led to
value creation for many ground-based businesses

(Space industry ≠ Space equipment industry (rocket/satellite manufacturing, etc.))



**New value creation via
visualization using
satellite technologies**



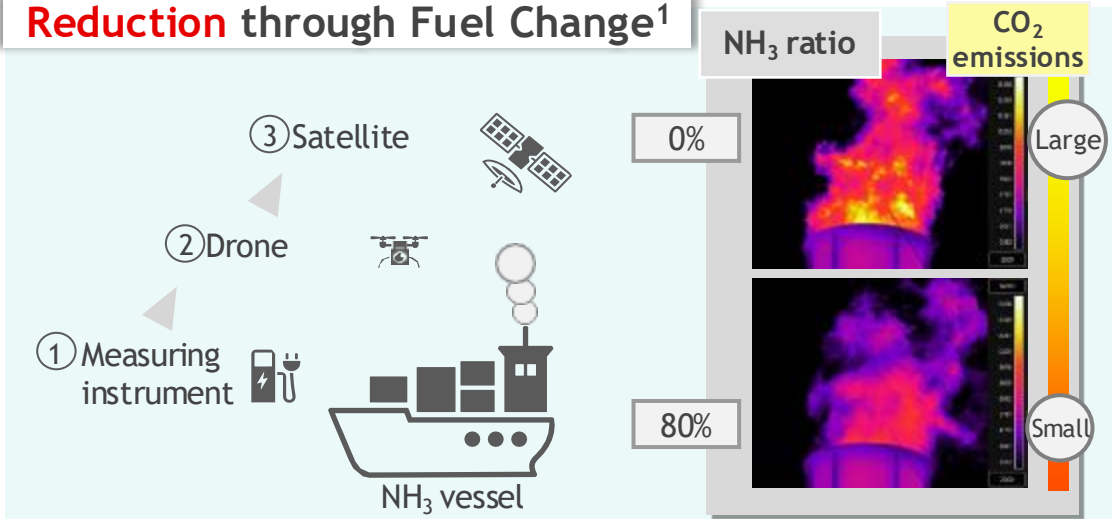
How much GHG is being

- ① Reduced?
- ② Absorbed?
- ③ Emitted?

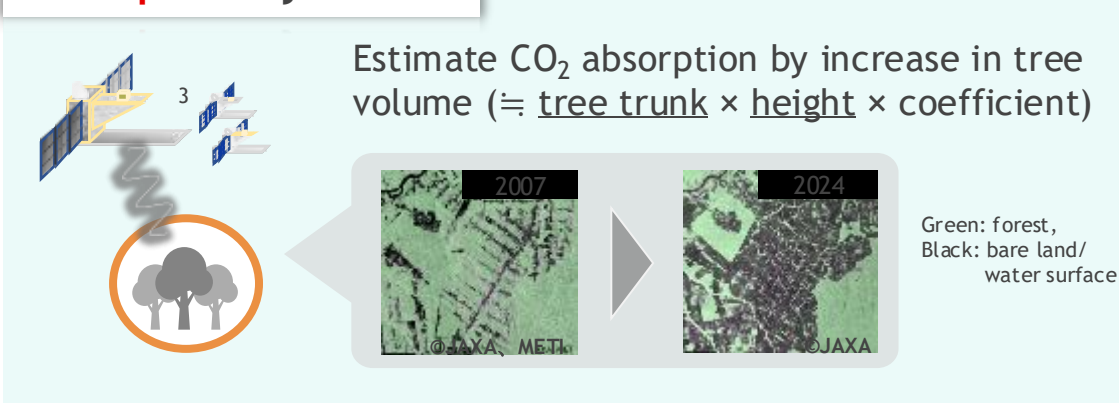
1 2 Visualization of "Reduction" and "Absorption"

Visualization Initiatives

Reduction through Fuel Change¹

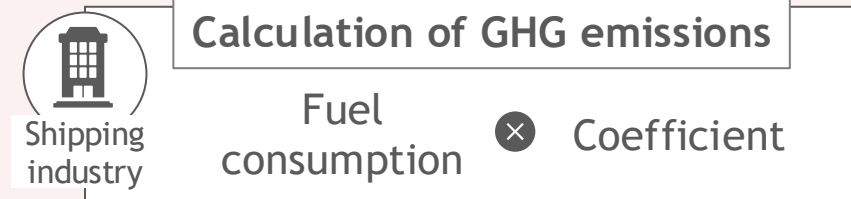


Absorption by Forest²

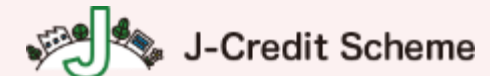


Necessity of Transparency/Objectivity

- A charging system to GHG Emission started in shipping sector (Ex: EU-ETS surcharge)
- **GHG emissions rely on self-reported fuel consumption** from each shipping company, leaving room for improvement in objectivity



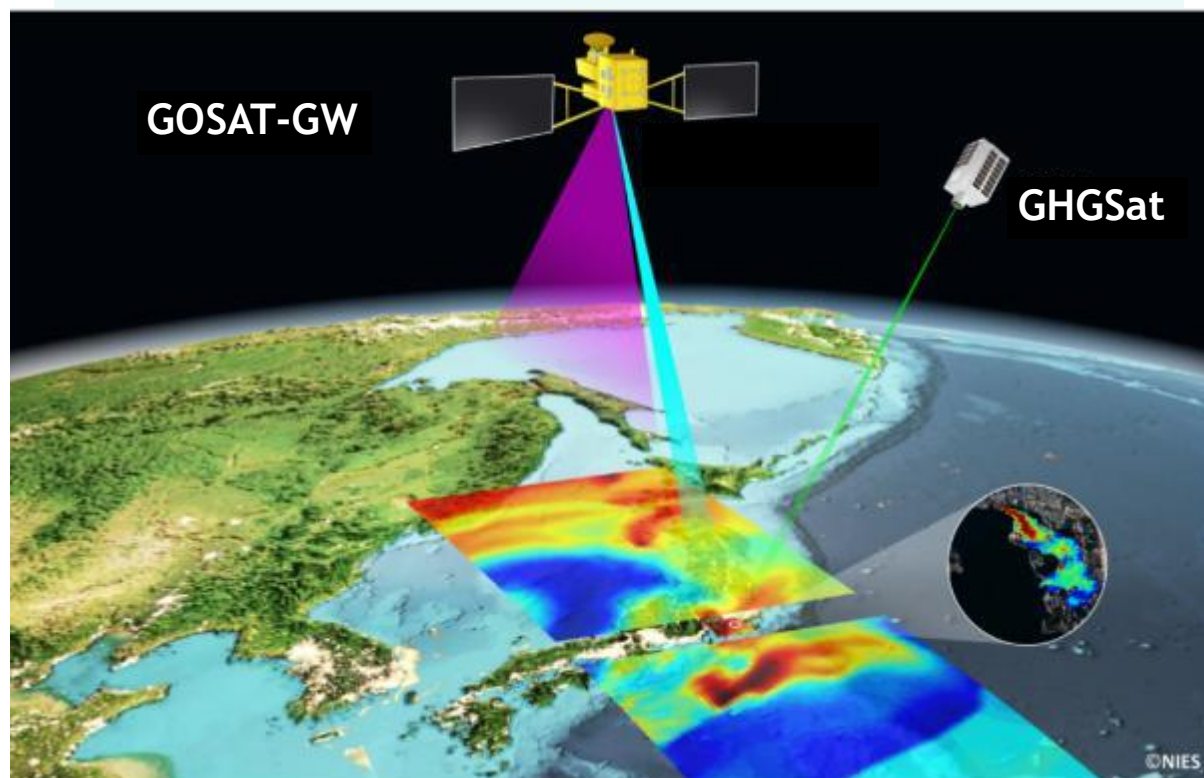
- **Various crediting systems exist** around the world
- **Greenwashing risk exists** due to presence of various evaluation methods to identify the sequestration amount of CO₂



3 Visualization of "Emission"

GHG emission monitoring of LNG plants/pipelines

- Linking Japan's core large satellites with small commercial satellites from overseas to ① **wide-area observation** and ② **pinpoint observation**



Trends in methane emissions management



External factors

- International discussions/initiatives underway to manage methane emissions in LNG value chain



MMRV¹ framework in OGMP² 2.0 etc.



JP-Korea collaboration in LNG value chain

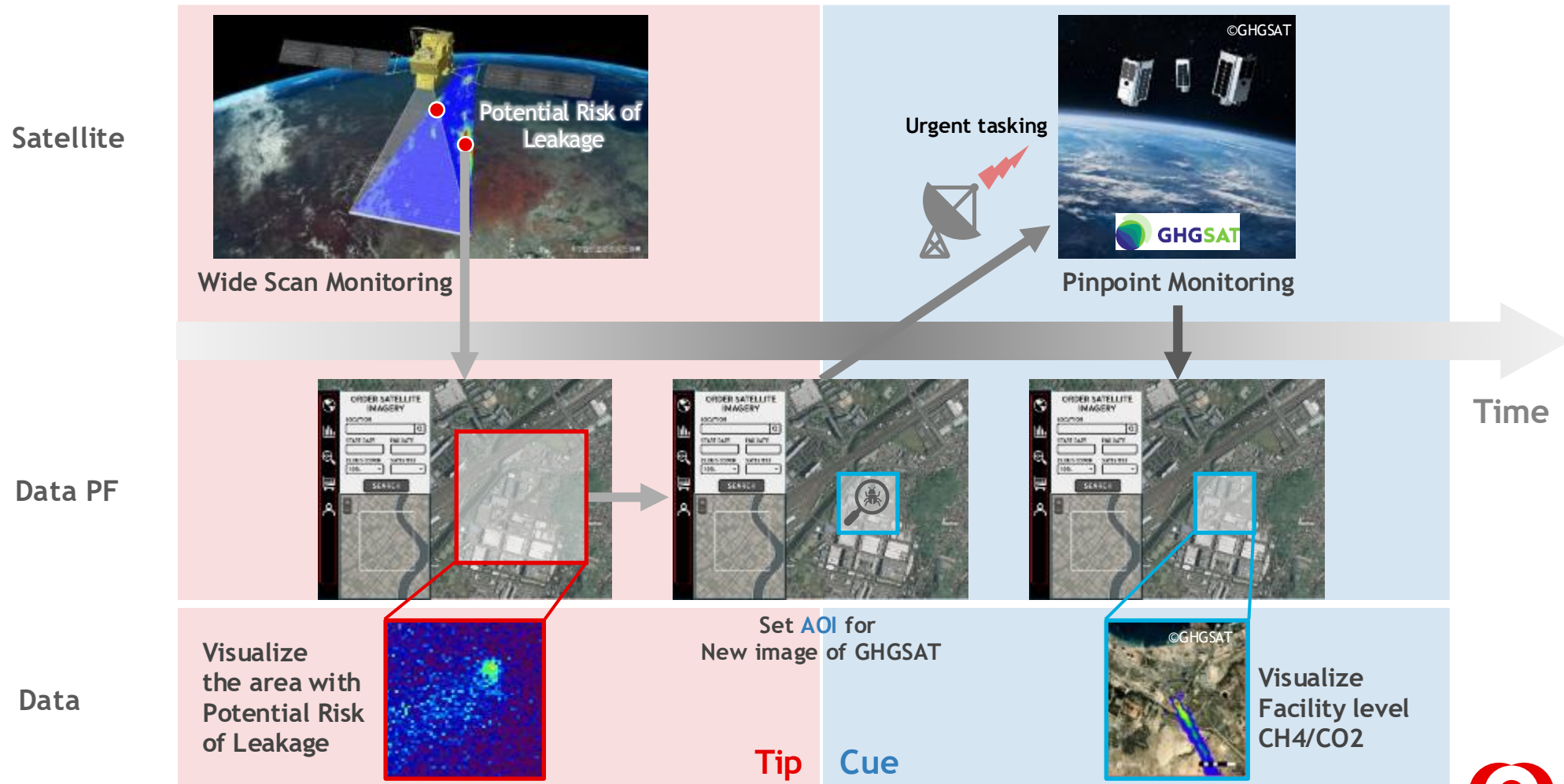


Issues

- Earth Observation is attracting global attention including COP28 as one of the objective observation methods
- Need for **Japan to actively participate in building a mechanism** based on international collaboration

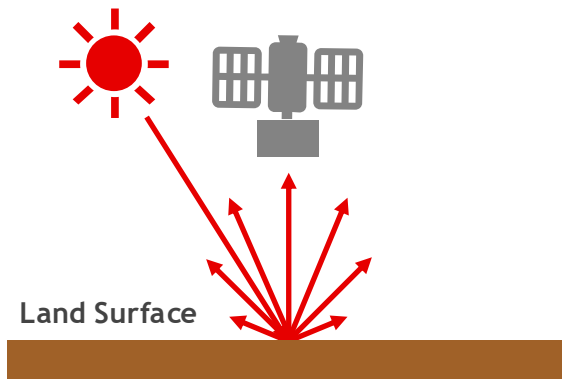
Progress from COP29 ① : Simulating Data Captured by GOSAT-GW

- GOSAT-GW was launched at the end of June
- Simulated GOSAT-GW images using Sentinel-5P and GOSAT-2 data to progress our initiative

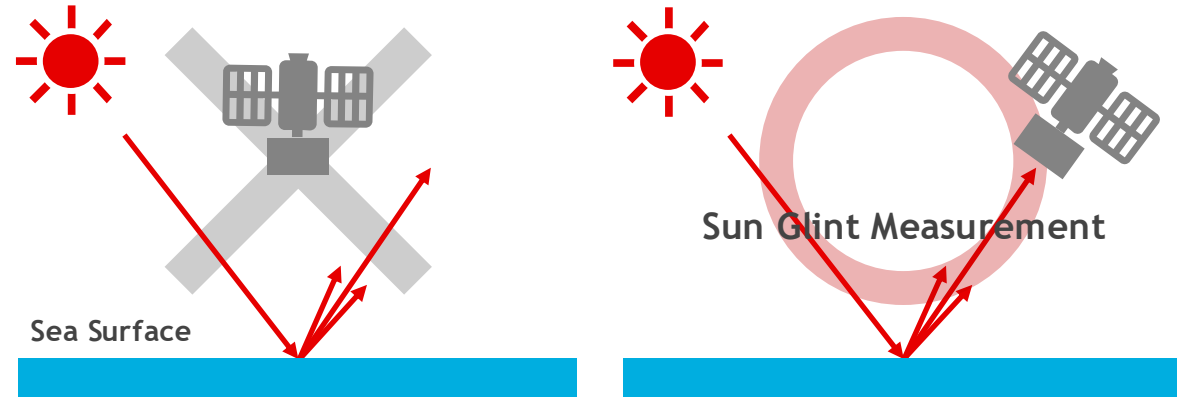


Progress from COP29 ② : Sun-Glint Mode for Offshore Observation

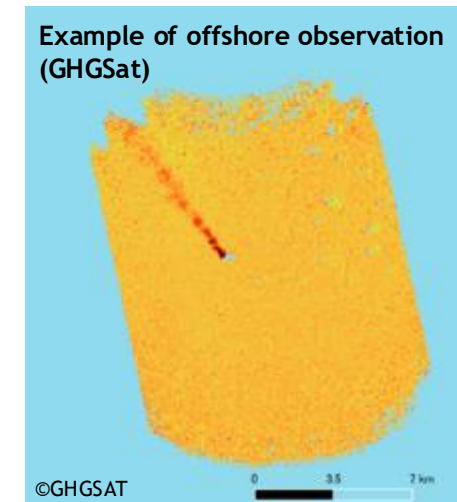
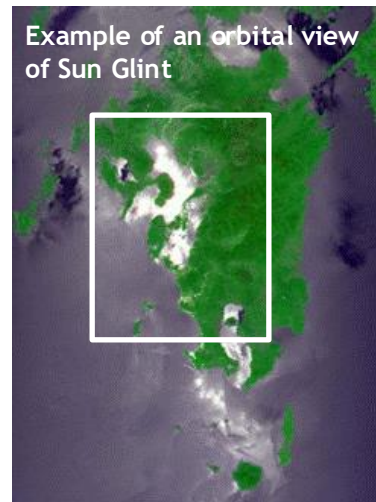
Onshore Observation



Offshore Observation

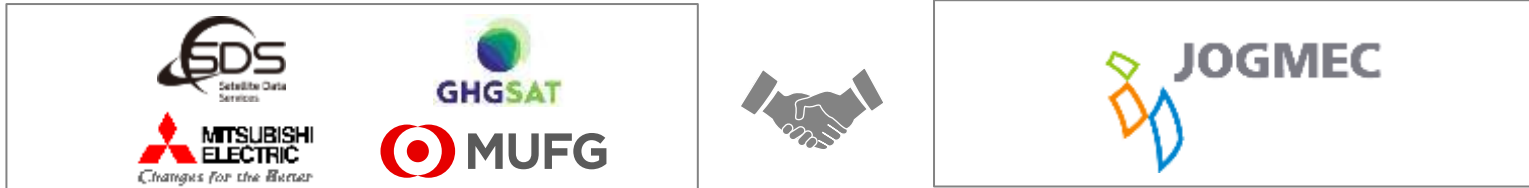


- Aligning the GHG sensor towards sun's reflection enables offshore observations (Sun glint measurement).






Future Action: Collaboration with JOGMEC

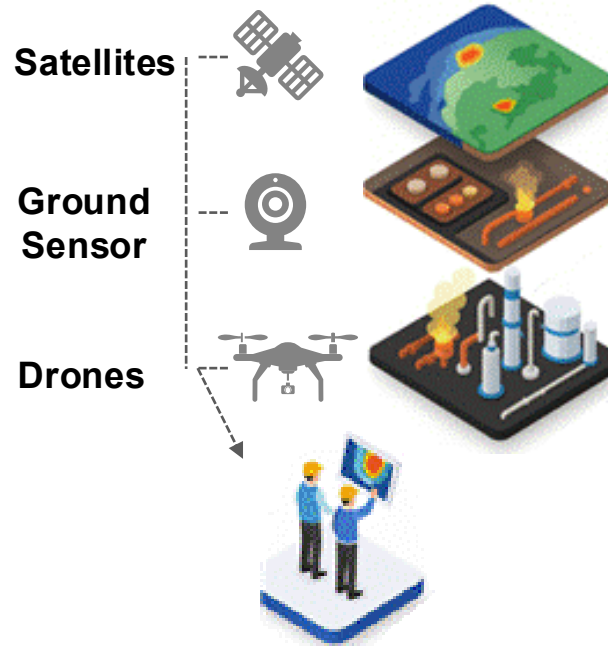
We are partnering with JOGMEC to develop Full-Stack Satellite Methane MRV solution ready for global methane regulations such as OGMP 2.0



Joint Verification Scheme

-  **GOSAT-GW**
wide-area detection
-  **Tip & Cue**
high-resolution focus
-  **GHGSAT**
pinpoint tracking

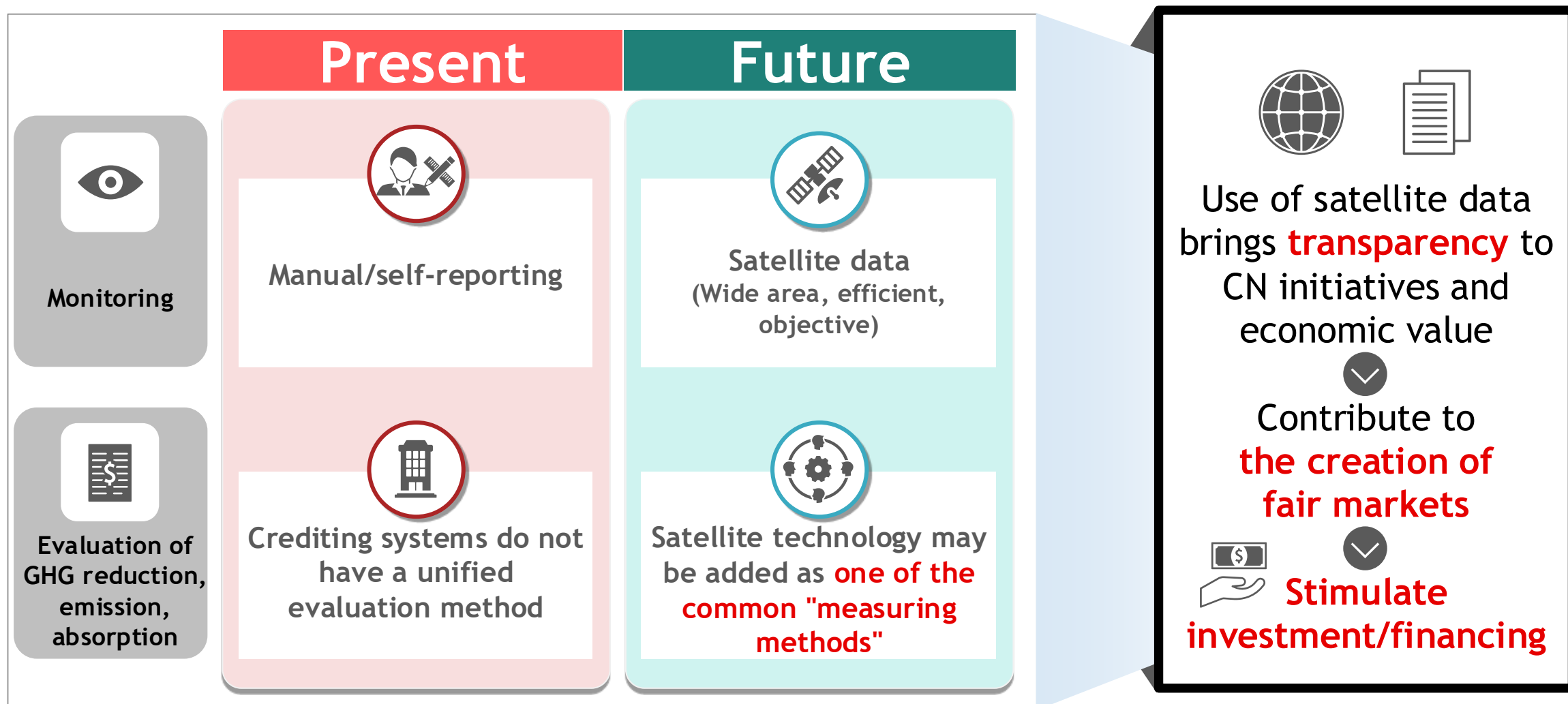
Hybrid Integration



Demonstration Schedule

- 25 FY2025** ✓
Protocol design & site selection
- 26 FY2026** ▶
Launch joint PoC with JOGMEC Continuous monitoring & data trials
- 27+ FY2027+** ↗
Algorithm enhancement & scale-up

Outcomes from satellite use



A composite image showing the Earth's horizon from space, with city lights visible on the surface. The background is a deep blue space filled with the Milky Way galaxy and numerous stars.

Sustainability is the ultimate accountability

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