



For COP30

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

November 2025

COP30
BRASIL
AMAZÔNIA
BELÉM 2025

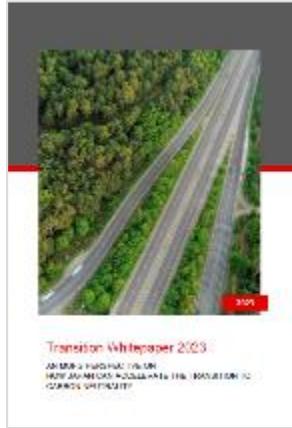
MUFG Whitepapers

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)



Transition
Whitepaper 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

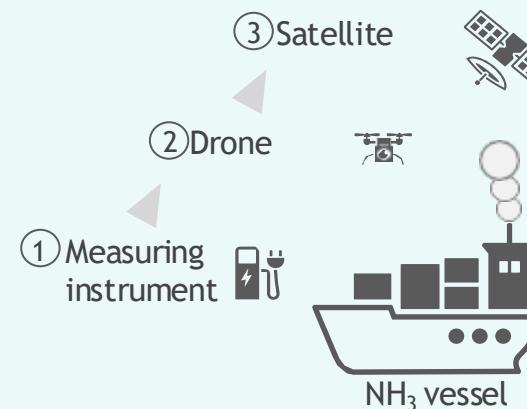
- ① Reduced?
- ② Absorbed?
- ③ Emitted?

1 2 Visualization of "Reduction" and "Absorption"



Visualization Initiatives

Reduction through Fuel Change¹

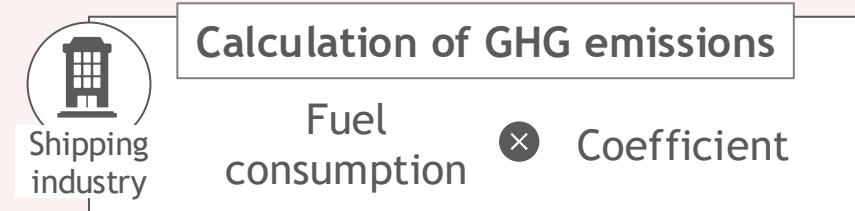


Absorption by Forest²



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

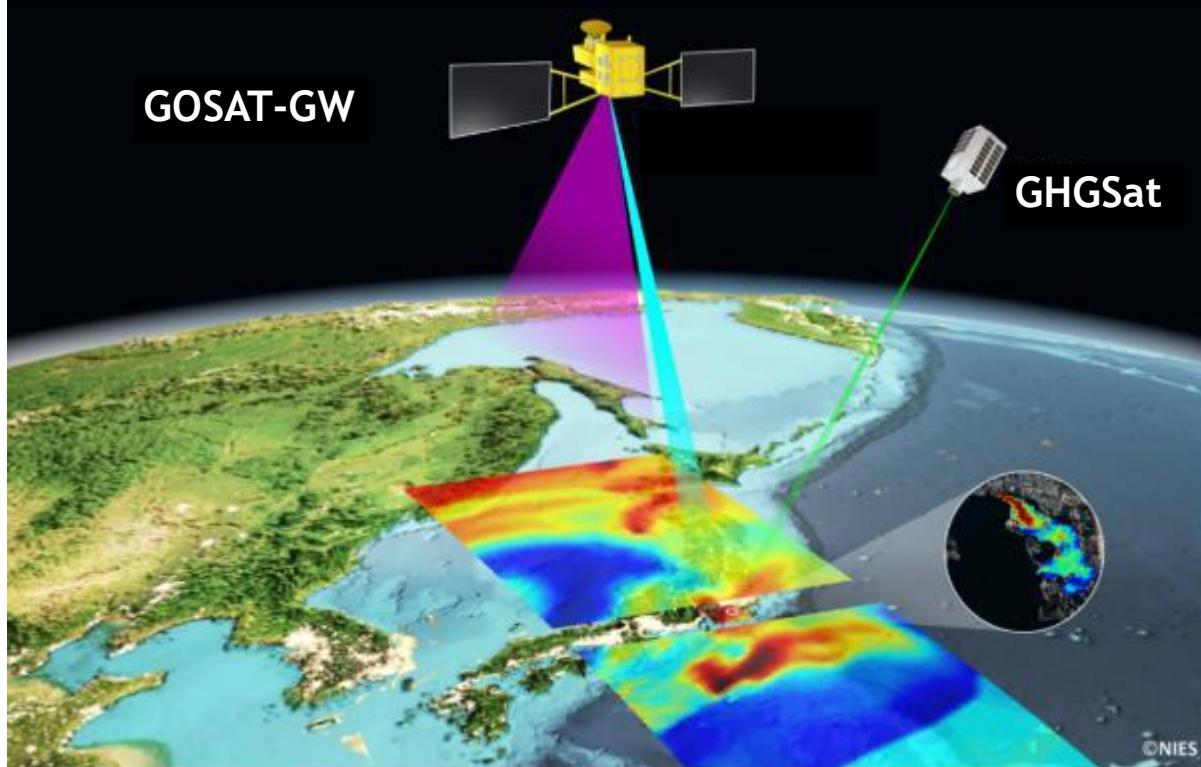


Source: 1. Collaborative demonstration of Nippon Yusen, Nagoya Electric Works, Shimizu Corp., ArkEdge Space, Sunflame, and MUFG
 2. Collaborative demonstration by SDS, Mitsubishi Electric, Archeda, Forest Value, and MUFG (commissioned by JAXA)

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

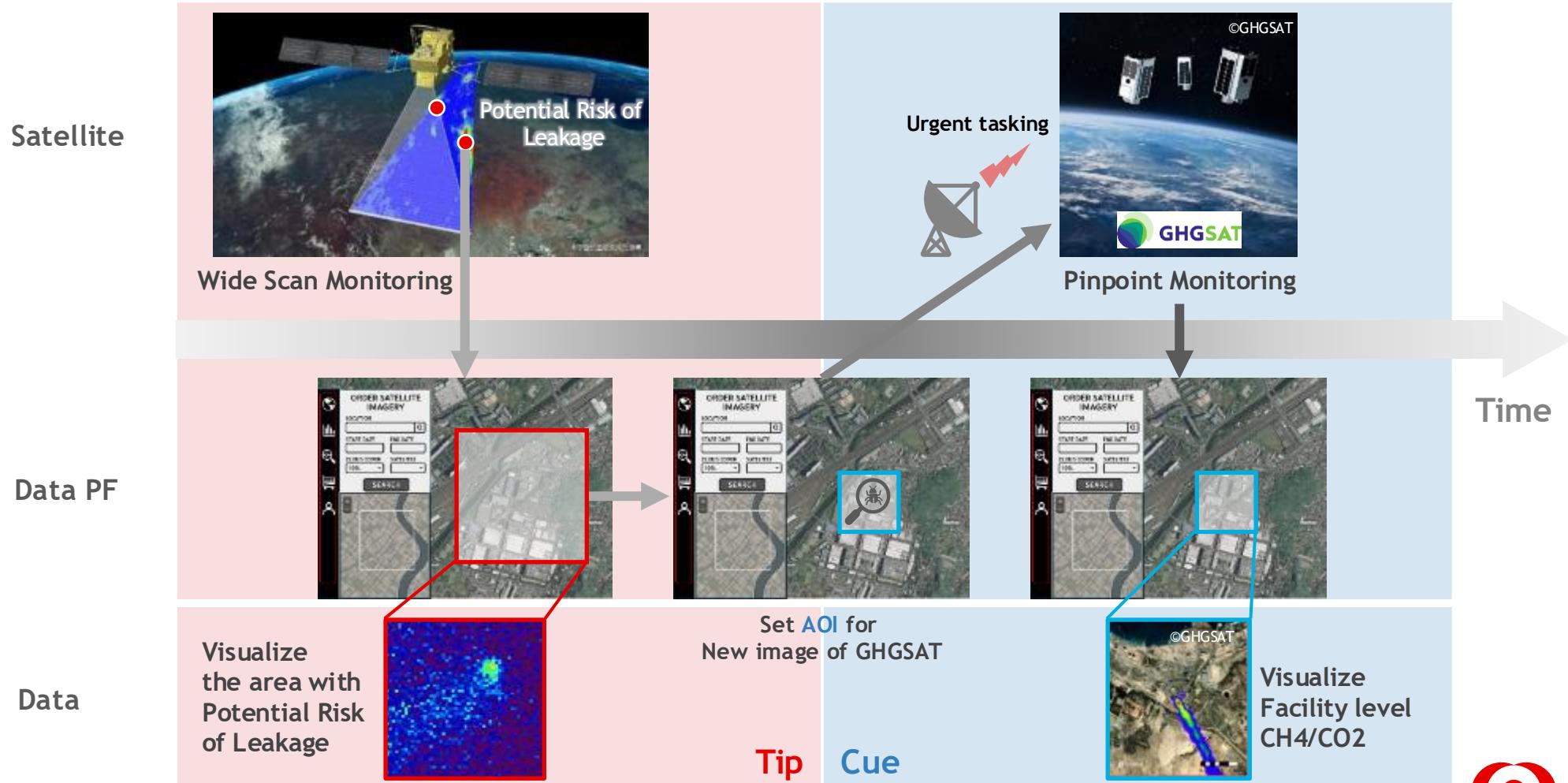


Issues

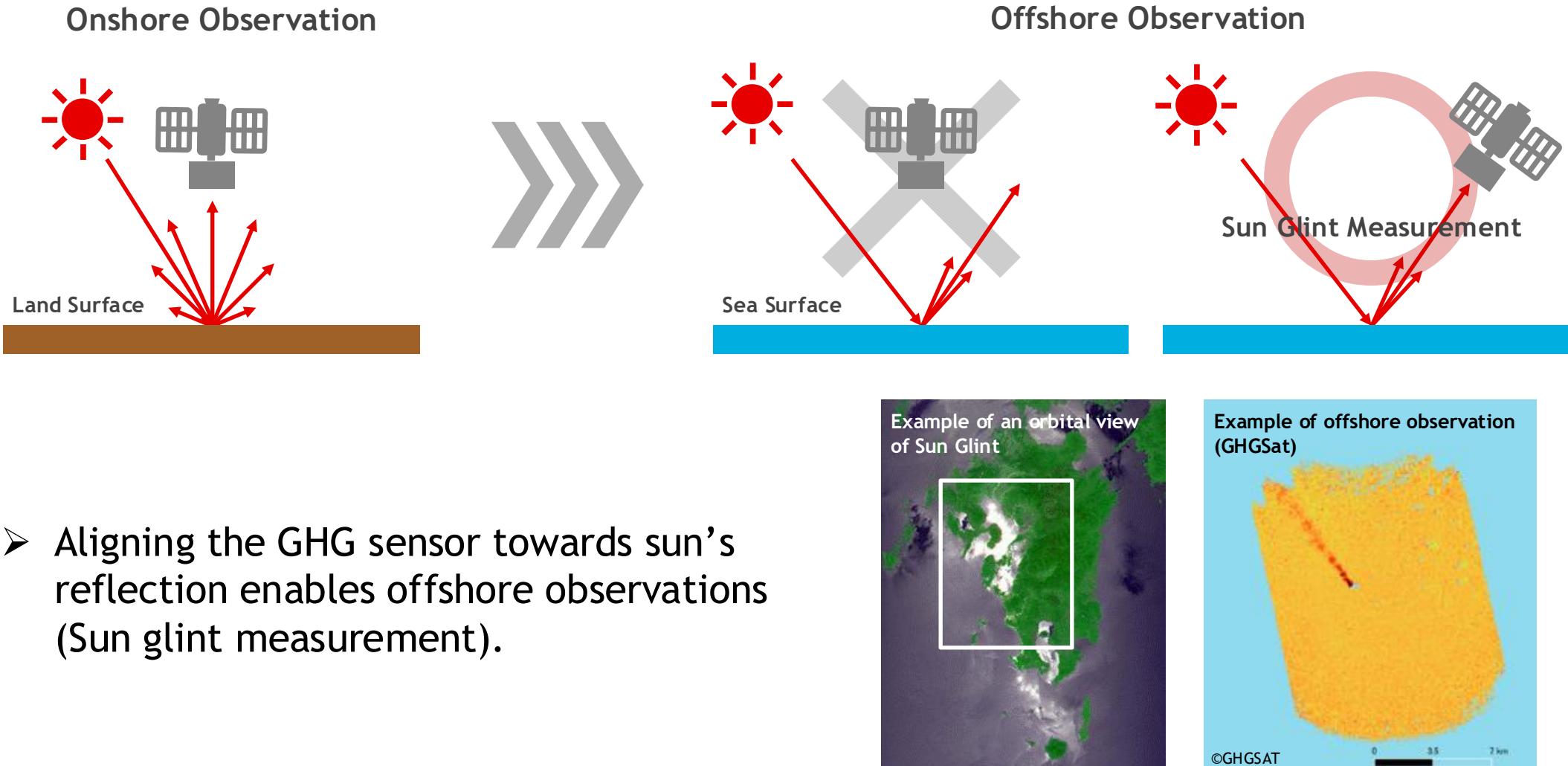
- Earth Observation is attracting global attention including COP28 as one of the objective observation methods
- Need for Japan to actively participate in building a mechanism based on international collaboration

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



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

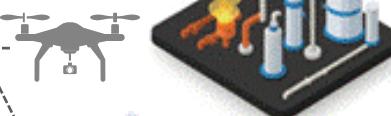
Satellites



Ground Sensor



Drones



Demonstration Schedule

25

FY2025



Protocol design & site selection

26

FY2026



Launch joint PoC with JOGMEC Continuous monitoring & data trials

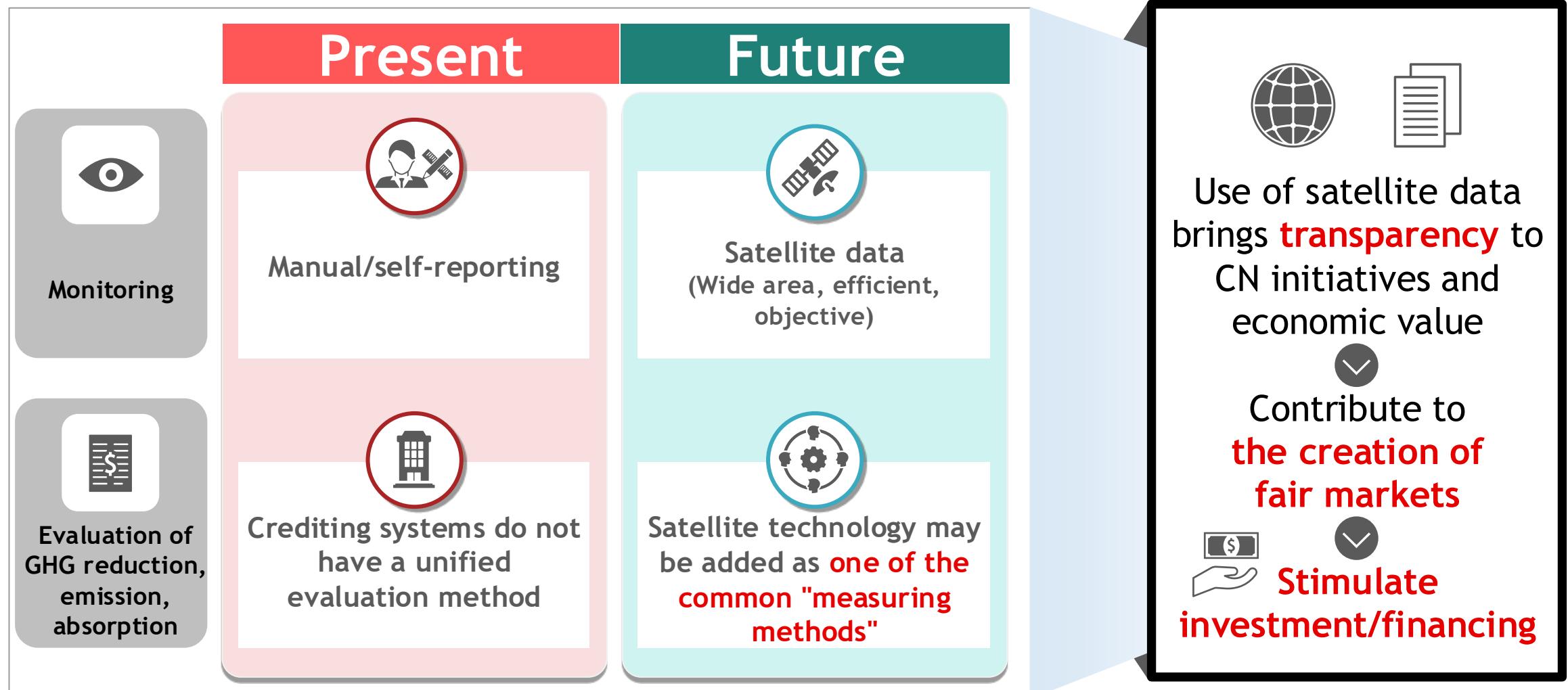
27+

FY2027+



Algorithm enhancement & scale-up

Outcomes from satellite use





Sustainability is the ultimate accountability

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