



Climate Warehouse

End-to-End Digital Infrastructure
for Carbon Markets

November 2022
COP27



Post-2020 markets under the Paris Agreement



Post-2020 markets under the Paris Agreement will be built through a **bottom-up approach**, as each party to the Agreement is required to track the greenhouse gas (GHG) emission reductions (or removals) achieved—and has considerable leeway to determine how this will be done.



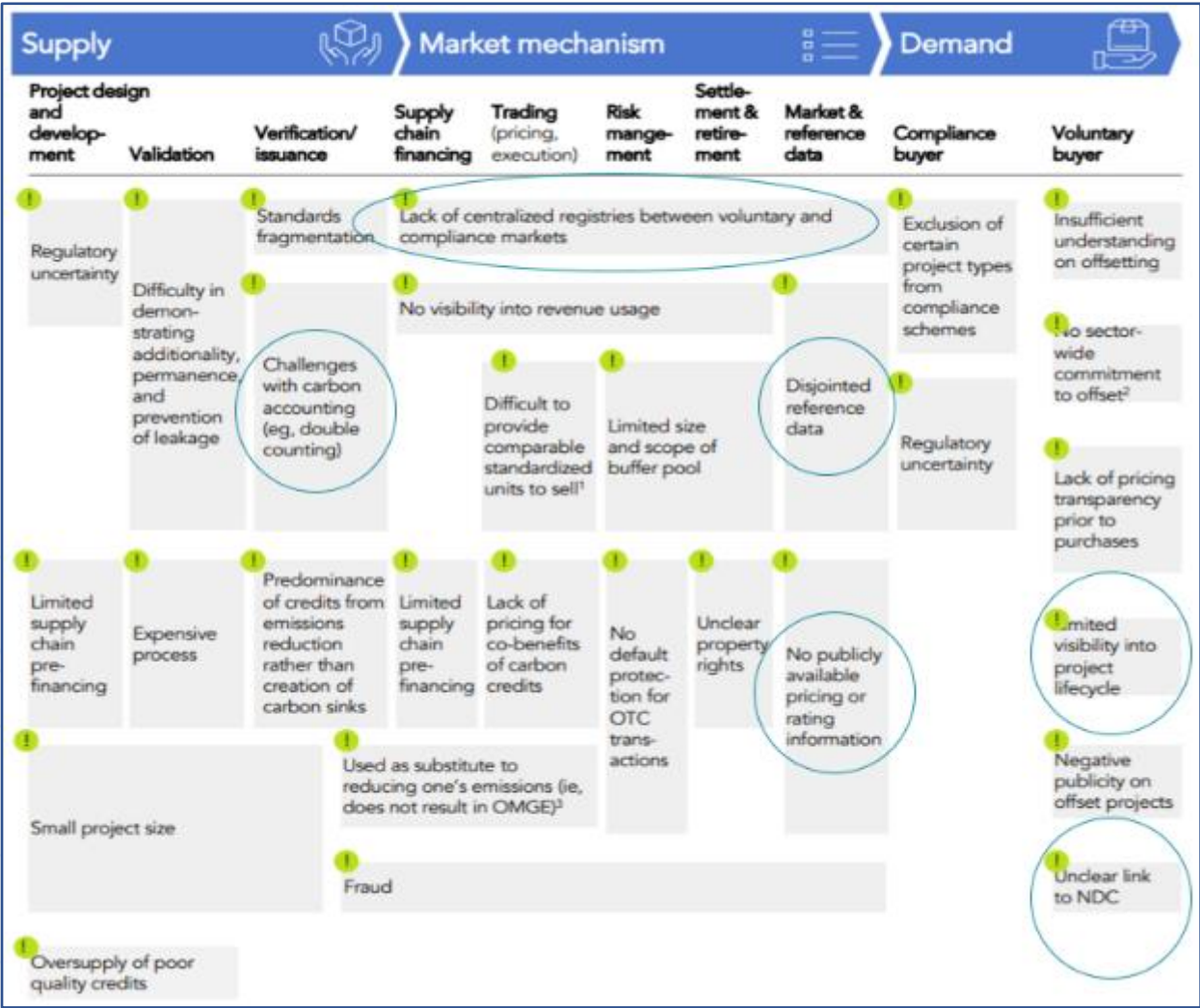
The **bottom-up nature** of future carbon markets comes with **increased complexity and diversity of reporting and verification approaches** for GHG emissions inventories and mitigation outcomes:

- Limited transparency
- Limited liquidity
- Market fragmentation and inaccessibility
- Quality variability
- Lagging methodologies



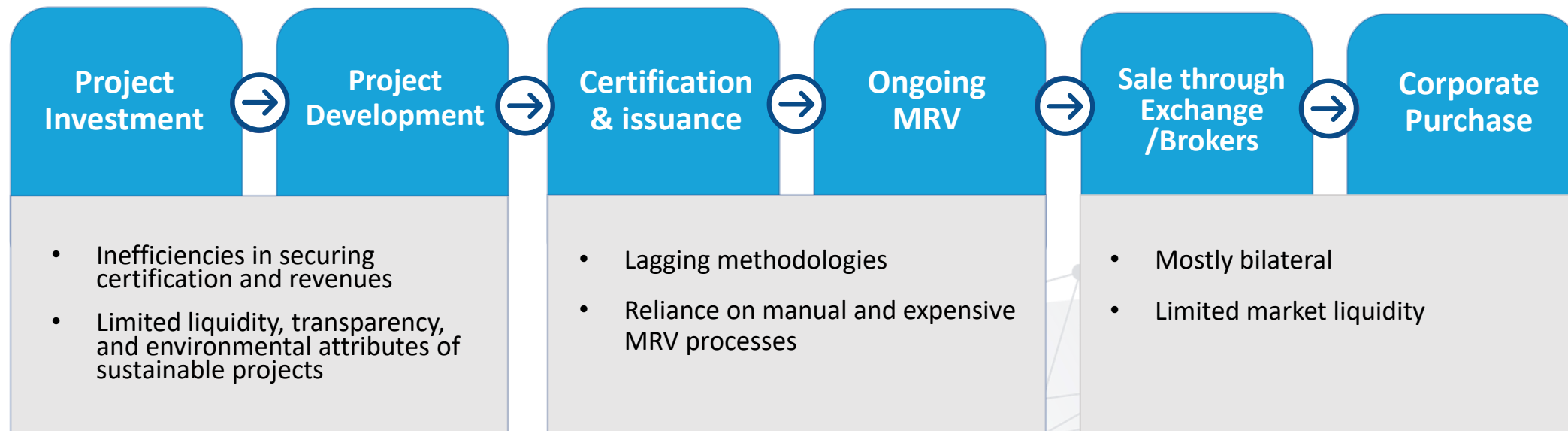
There is significant potential for digital infrastructure to underpin and streamline the functioning of post-2020 carbon markets.

Report by Taskforce on Scaling Voluntary Carbon Markets (TSVCM)



Source: Adams, Tim. Winters, Bill. Nazareth, Annette and Mark Carney Taskforce on Scaling Voluntary Carbon Markets Phase 1 Final Report: January 2021, TSVCM, pg. 45

Challenges in the Scale-up of Voluntary Carbon Markets



How can digital infrastructure alleviate these challenges?

Source: Google Cloud, SIP, Accelerating Digital Environmental Assets Summit, October 19, 2022



World Bank Climate Warehouse Program:

Building an End-to-End Digital Ecosystem for Carbon Markets



Pillar 1: Piloting and Developing Global Public Goods

Making digital infrastructure for carbon markets available to client countries through development, testing and prototyping of innovative digital infrastructure for carbon markets.

Work Streams:

- **Digital for Climate (D4C) Working Group.** Collaboration with EBRD, UNDP, UNFCCC, and WB that aims create a modular and interoperable end-to-end digital ecosystem for carbon markets.
- **Digital Monitoring, Reviewing and Verification (dMRV) systems.** Piloting the connection between dMRV systems with national carbon registries and national MRV systems.
- **National Carbon Registries.** Development of opensource off- and on-chain transaction registries.
- **Climate Action Data Trust (CADT).**
- **Tokenization instruments.** Development of tokenization instruments to tokenize carbon markets



Pillar 2: Global Knowledge and Capacity-Building

Support countries and jurisdictions to in implementation of digital infrastructure for carbon markets needed for GHG mitigation and NDC implementation.

Work Streams:

- **Develop** knowledge base on digital infrastructure and facilitate information exchange through technical discussions and knowledge dissemination
- **Assist** countries to identify and implement best practice approaches and, where relevant, achieve compatibility in design to support the development and linking of digital infrastructure for carbon markets
- **Encourage** international and national cooperation, and inform the domestic and global policy discussions on GHG mitigation by sharing lessons learned and providing a platform for collective innovation on digital infrastructure products



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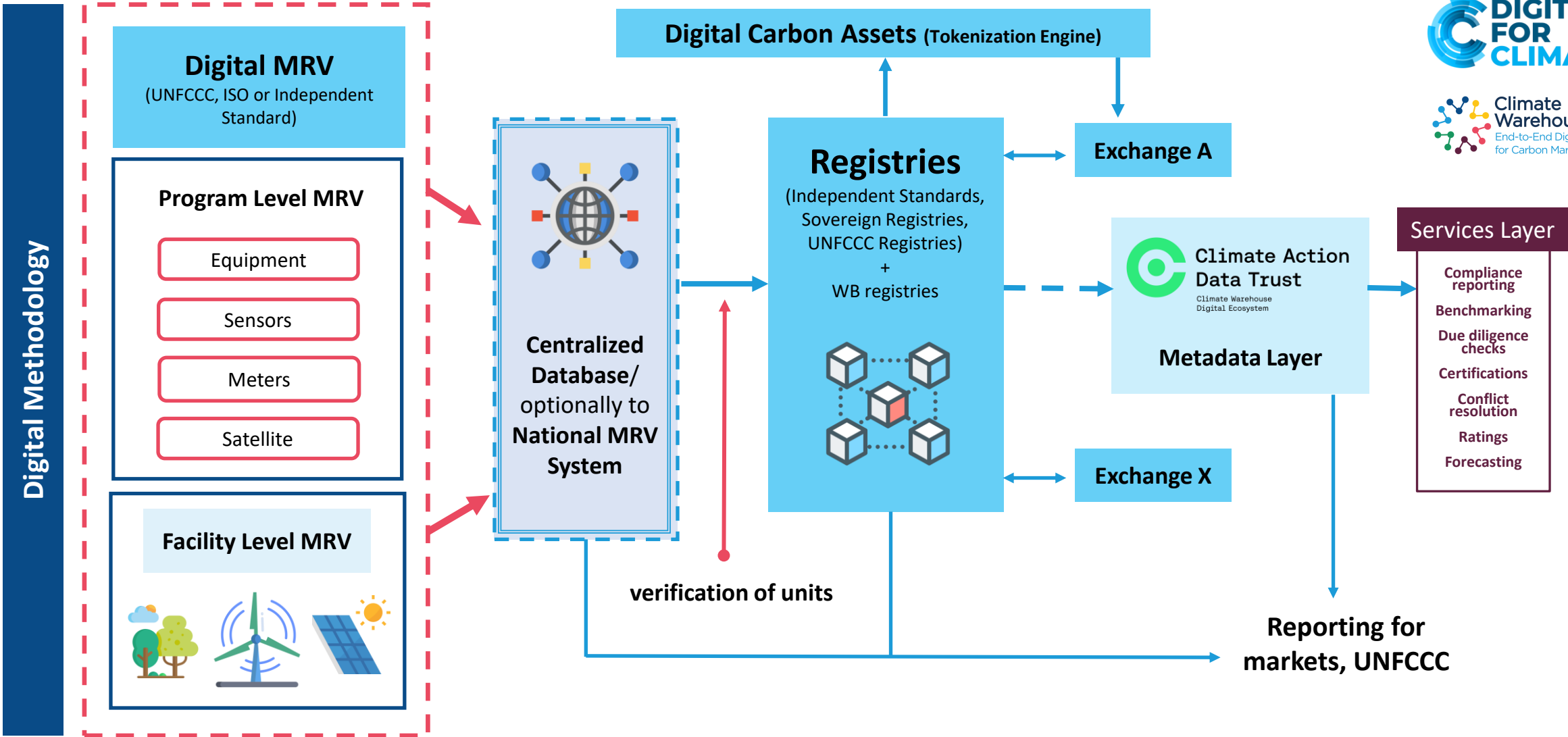


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Data and trade infrastructure is a precondition to scale a transparent and inclusive carbon market

Climate Warehouse is piloting the digitization of the carbon market ecosystem



Digital work-flow

project preparation from document development, approval, validation to registration in applicable standards



Climate Action Data Trust

Outcomes of Simulation III



Platform & Governance

- **Developed operational prototype** as a global public good that aims to empower a new global carbon market infrastructure through a decentralized information technology platform built on blockchain technology
- **Implemented the recommendations from the governance consultations** on the operational platform conducted by IETA and the Government of Singapore:
 - Conducted fundraising
 - Formation of governing bodies
 - Set up independent legal entity anchored in Singapore
 - Official launch in December 6-8, 2022



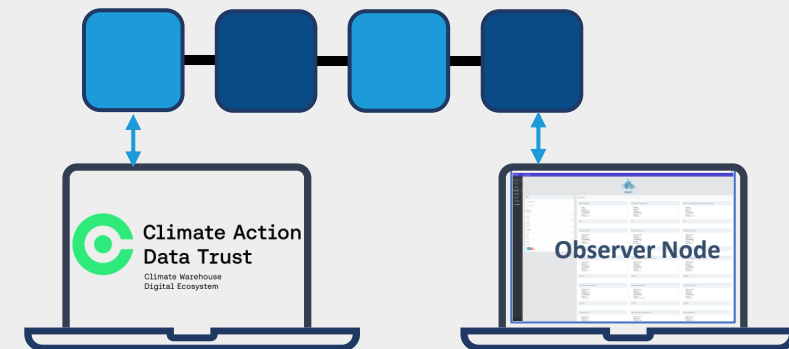
Testing activities

- Since 2019, the World Bank has been testing and prototyping the Climate Action Data Trust (CADT) with partnering governments and organizations. The testing and simulation activities enable participants to envision an interconnected ecosystem, beyond their own standalone system.

Outcomes of Simulation III:

- 75 individual testers**
- 30 participating organizations**
- 11 governments**
- 40 weekly office hour sessions**
- 58 testing sessions**
- 30 kick-off and onboarding meetings**

Participation in CADT Simulation III (2022)



22 full participants:

| | |
|-------------|-------------------------|
| Chile | IFC |
| Japan | WB CATS |
| Peru | WB CMI |
| Rwanda | |
| Senegal | EcoRegistry Colombia |
| Singapore | IHS Markit |
| Sweden | SK Certification Center |
| Switzerland | GenZero |
| UK | |
| Uganda | |

ACR
CAR
GCC
Gold Standard
Verra

8 observers:

| |
|---------------------------|
| Spain |
| EBRD |
| UNDP |
| UNFCCC |
| Climate Ledger Initiative |
| ClimateCheck |
| IETA |
| Open Earth Foundation |



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Climate Action Data Trust

Interim Governance

Inception

Jan 2023

Interim Period

Jan 2025

Permanent Governance

Council (~10 members)

Leads strategy/policy mandate

Secretariat

Technical Committee

- Data specification development
- IT development

User Forum

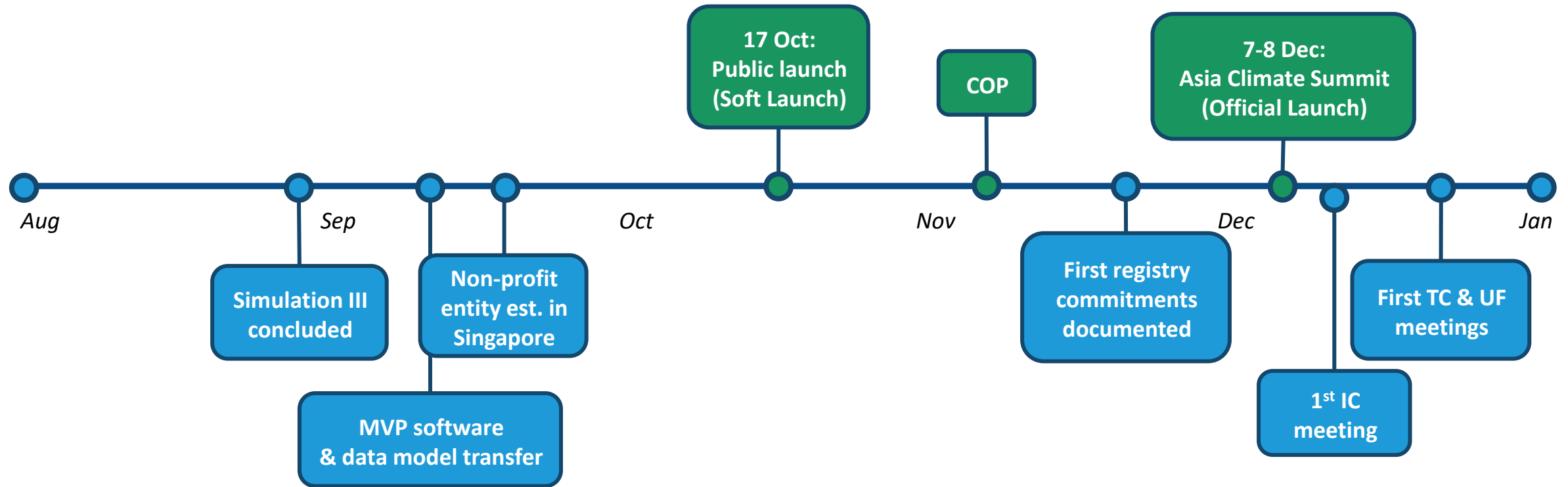
- Open to registered and approved Warehouse community participants
- Community consultation forum
- Potentially: Council recruitment

The governance structure follows the recommendations from the **Governance Consultations** convened by IETA, the government of Singapore and World Bank



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Thank you.