



IHS Markit™

Introduction to IHS Markit's Meta-Registry Solution

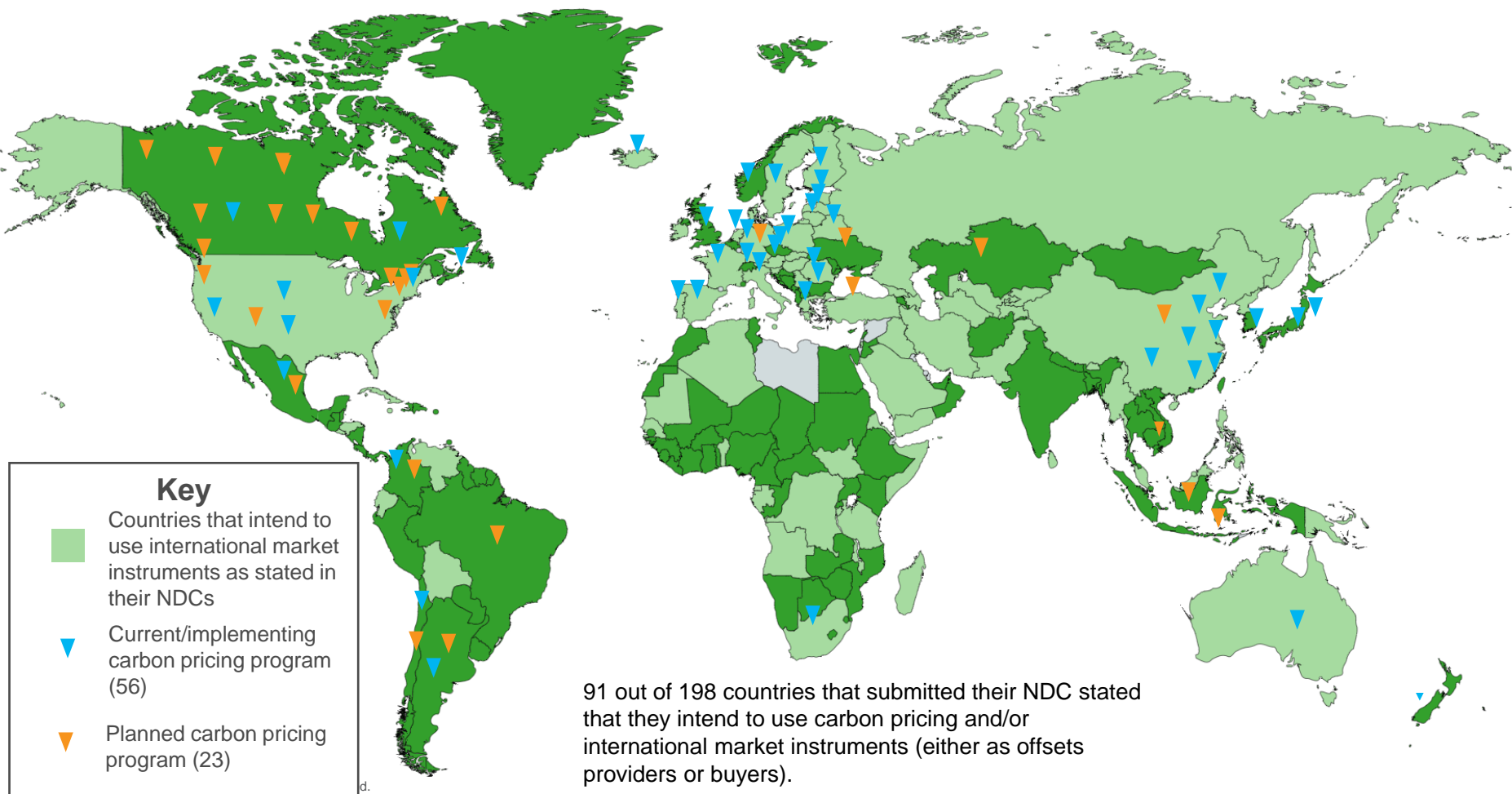
Sustainable Finance

Our Global Footprint in Environmental Markets



Current state of the global carbon markets

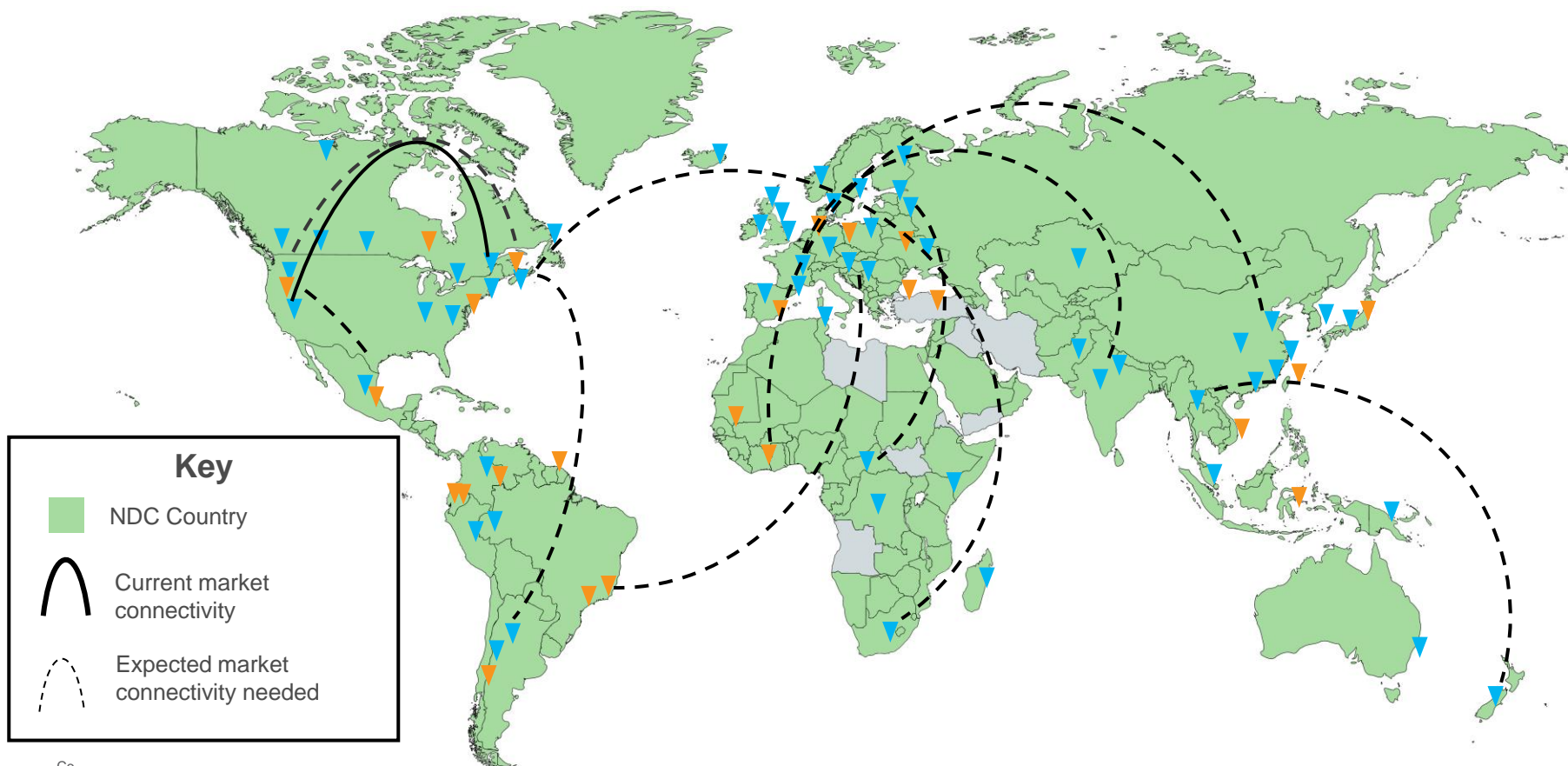
Climate change is a global issue, yet it is being tackled jurisdiction-by-jurisdiction or on a regional basis. The number of compliance/national/voluntary crediting programs is increasing as a result of the Paris Agreement.



Future challenge: Accounting and connectivity at scale

Carbon markets will look to connect in order to gain efficiencies and to lower costs of abatement, yet none are preparing to do so on the global level required.

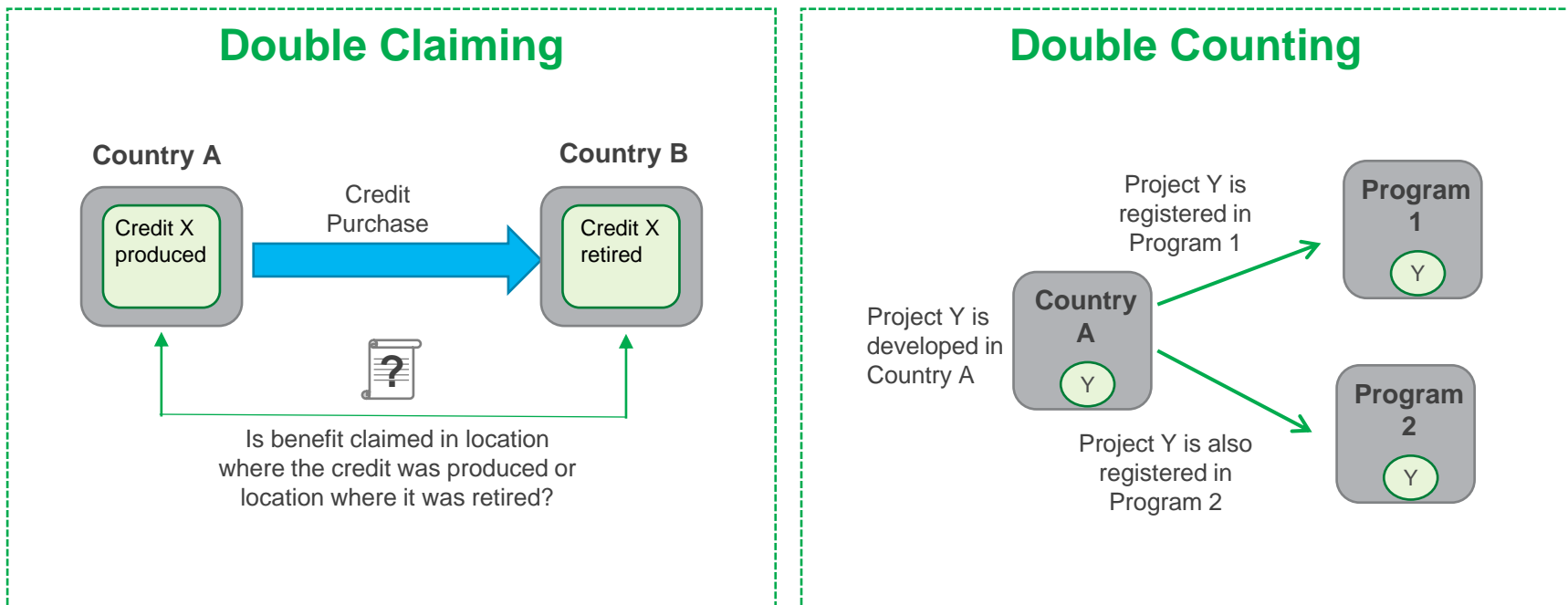
A solution is needed that provides clear, effective accounting and seamless connectivity among market participants. Importantly, it must be able to scale as markets grow and connect on a global level.



Challenges for growth: Double claiming and double counting

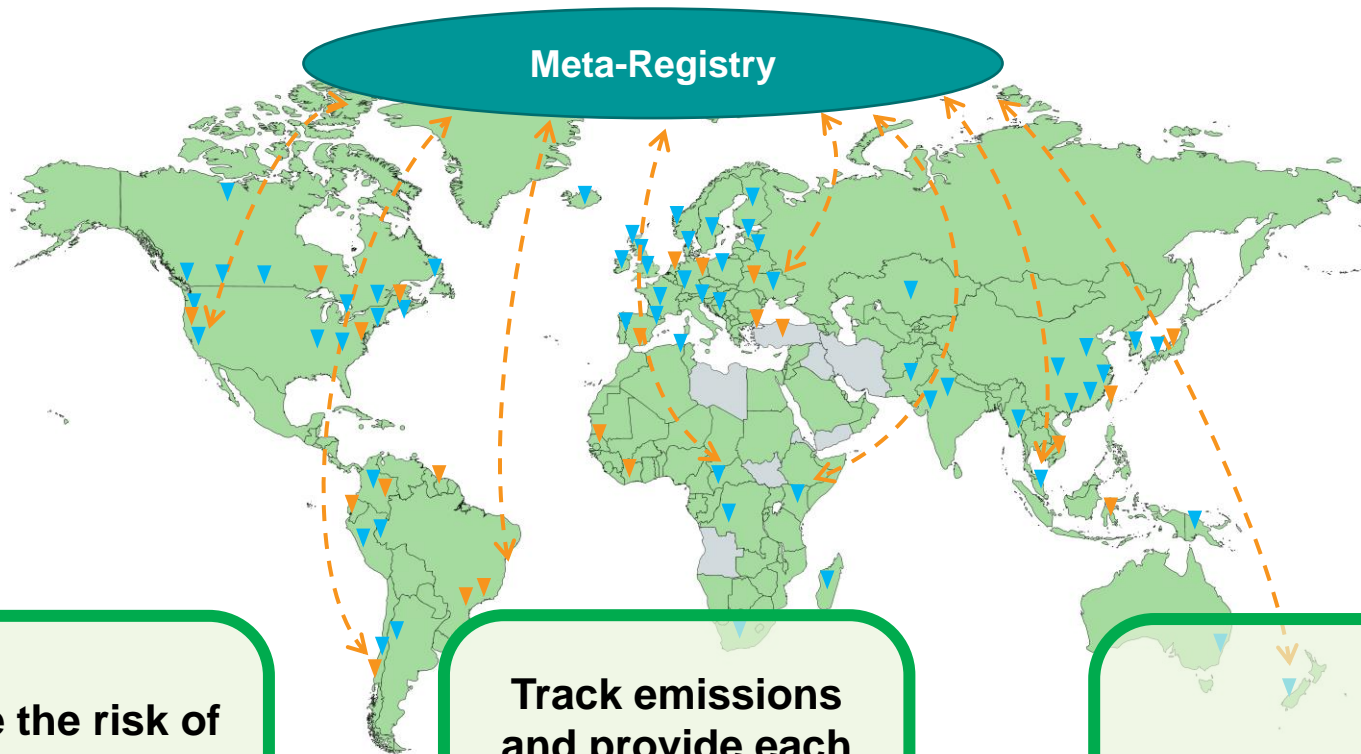
Double claiming and double counting can cause inefficiencies and risks that could undermine markets.

For many programs, these challenges are handled via manual processes and at risk for error. Without a more efficient solution, the current process will not scale as the carbon markets grow in size, complexity, visibility and ambition in the years ahead.



Solution: The Meta-Registry

The Meta-Registry is a platform that connects disparate carbon market infrastructure to:

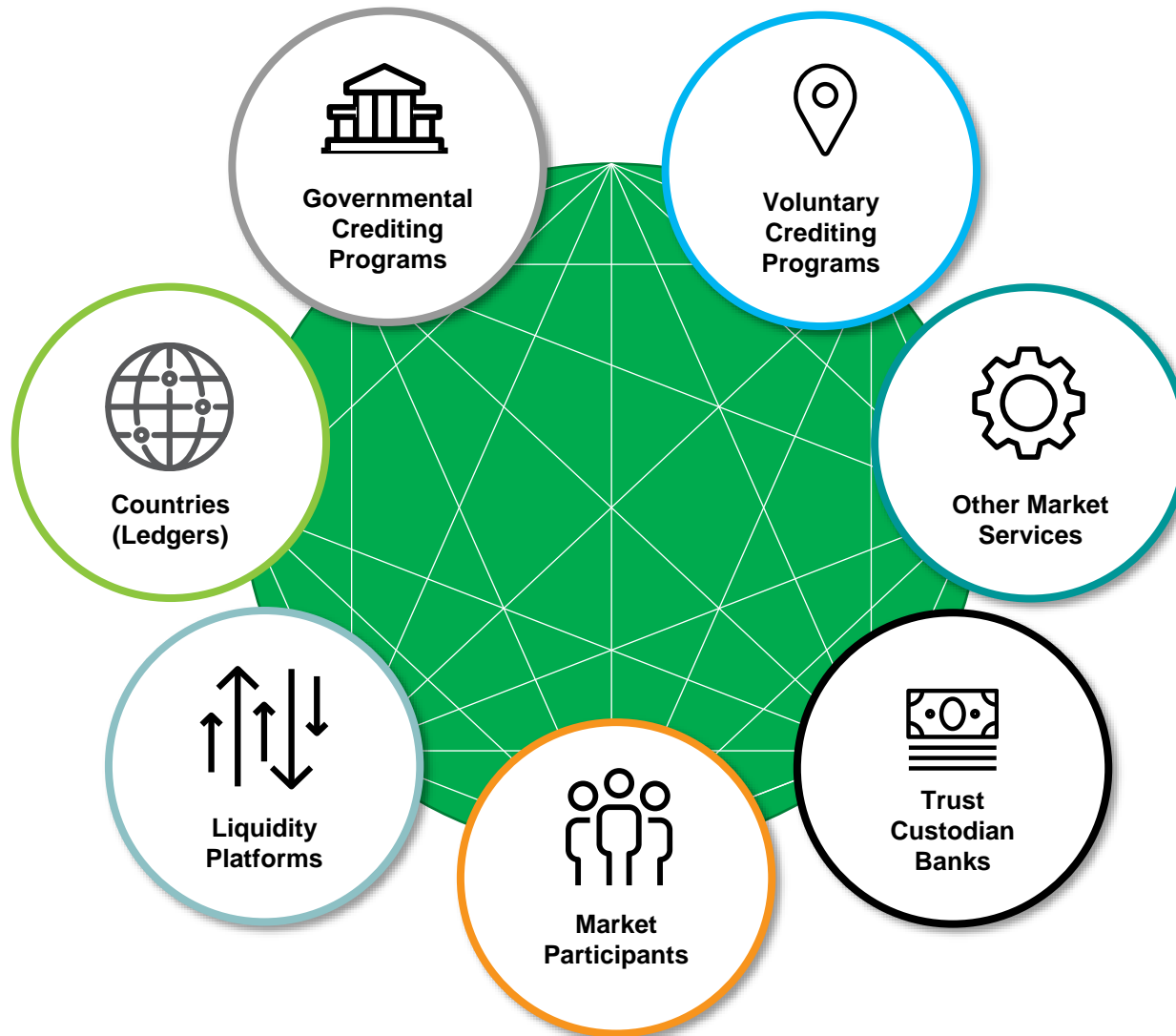


Reduce the risk of double counting and double claiming

Track emissions and provide each country with their own jurisdictional ledger

Promote liquidity and transparency

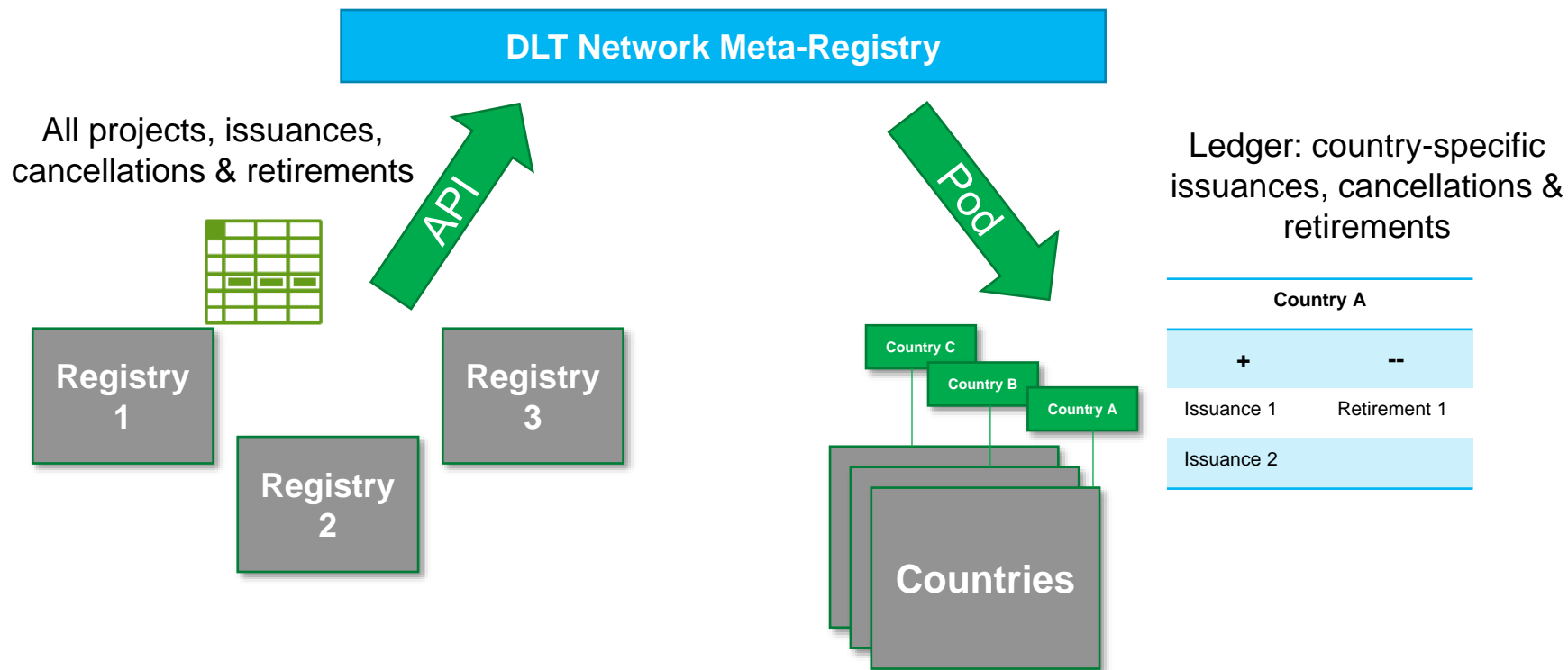
Meta-Registry conceptual model



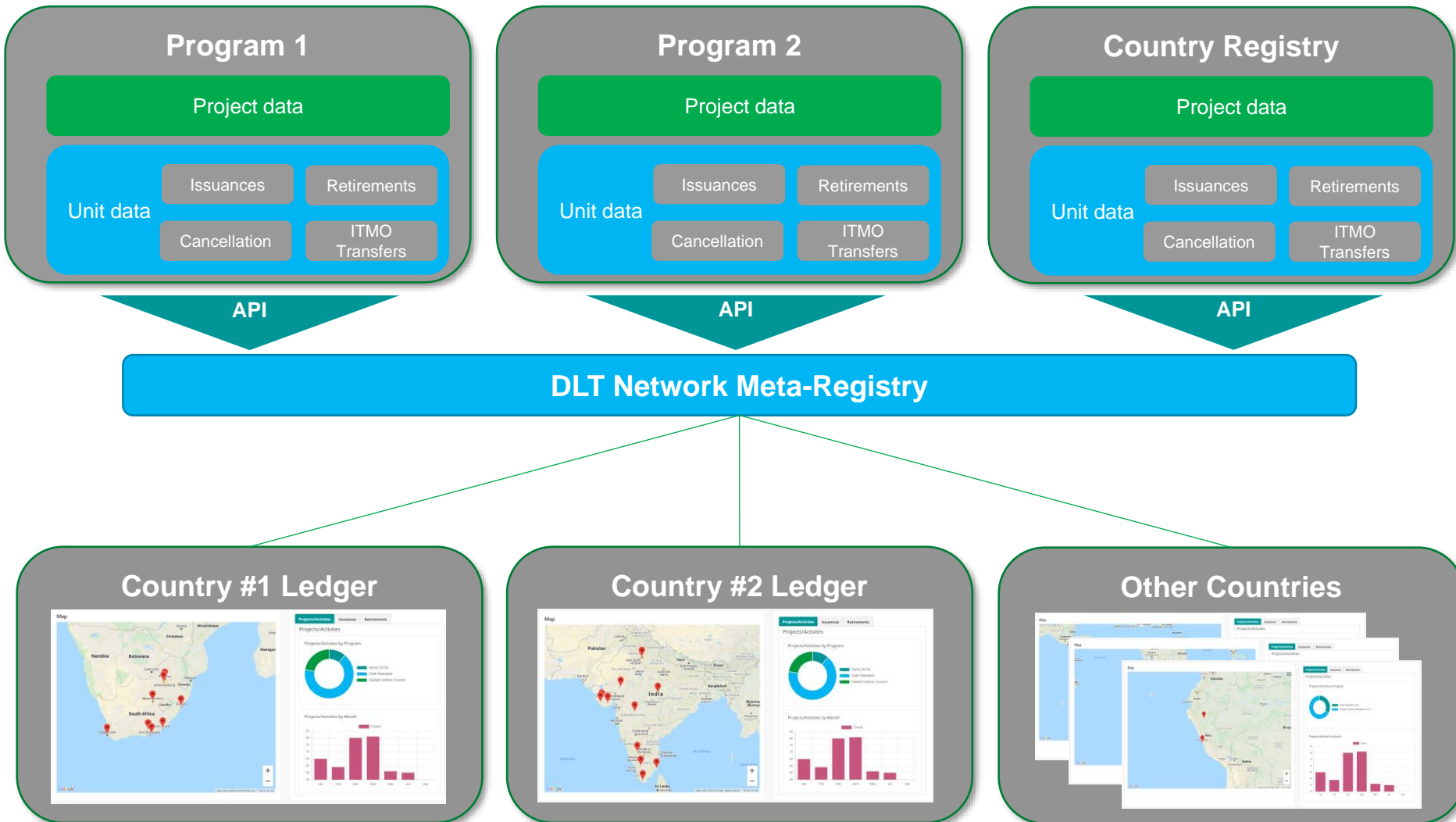
The Meta-Registry: How it works (Phase I)

Initially, all registries (via API) feed information regarding projects, issuances, cancellations and retirements to the Meta-Registry, including their GPS coordinates.

Via an Enterprise DLT network, the Meta-Registry then effectively creates a carbon ledger including issuances (+) and retirements/cancellations (-) and provides this to each country who is participating in the network.



Overall Meta-Registry view



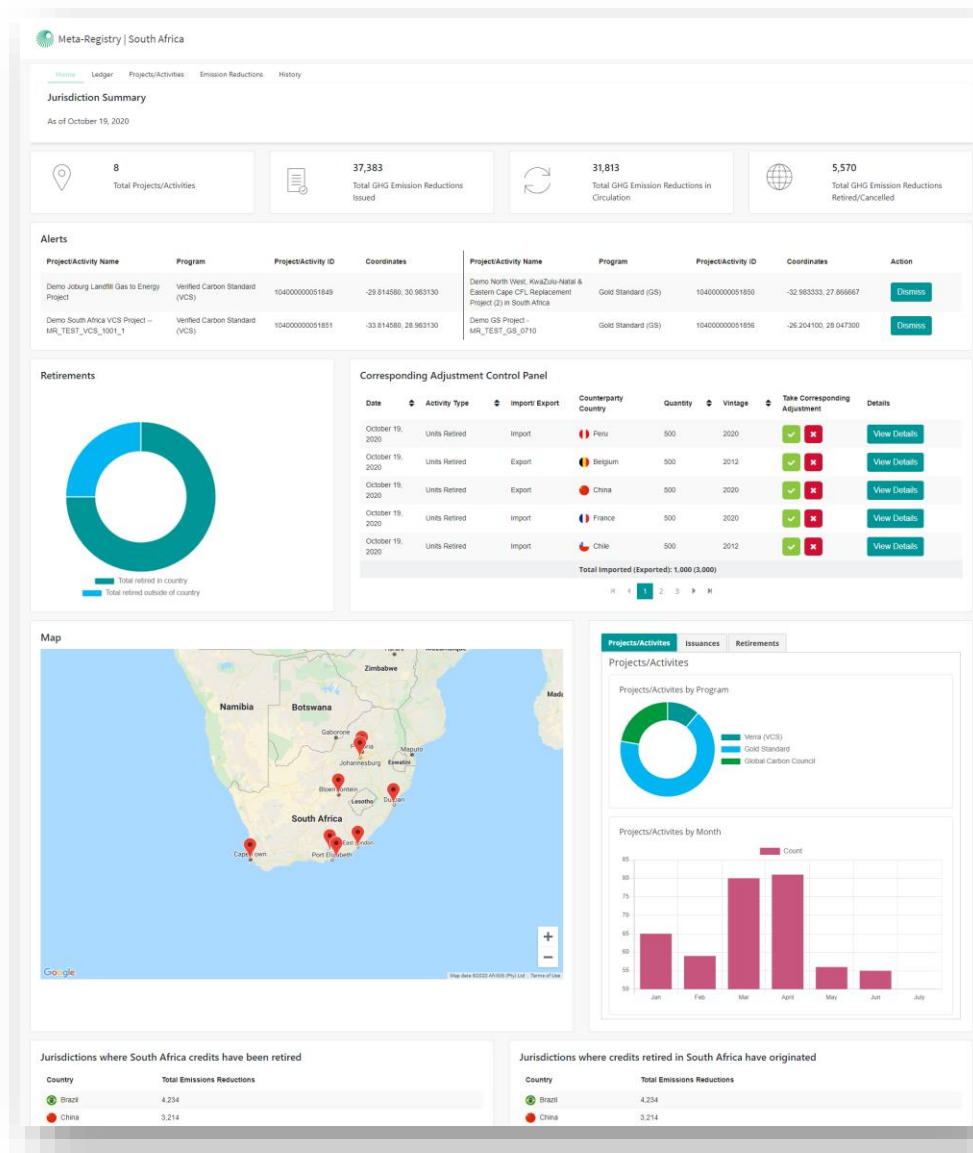
Participant Features

- **Simplicity**
 - > Dashboard
 - > Map and List of All Projects/Activities

- **Transparency**
 - > Jurisdictional Ledger
 - > Emission Reductions Details
 - > Corresponding Adjustment Tracking

- **Accountability**
 - > Unit Overlap Alerts
 - > Project Overlap Alerts
 - > View Jurisdiction Metrics
 - > Reference Identifiers

- **Utilize Enterprise DLT (blockchain)**
 - > Peer-to-peer, no middlemen
 - > Accurate record-keeping
 - > Security
 - > Transaction speed
 - > Cost-effective



Meta-Registry | South Africa

Home Ledger Projects/Activities Emission Reductions History

Jurisdiction Summary

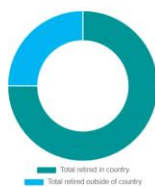
As of October 19, 2020

8 Total Projects/Activities	37,383 Total GHG Emission Reductions Issued	31,813 Total GHG Emission Reductions in Circulation	5,570 Total GHG Emission Reductions Retired/Cancelled
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Alerts

Project/Activity Name	Program	Project/Activity ID	Coordinates	Project/Activity Name	Program	Project/Activity ID	Coordinates	Action
Demo Joburg Landfill Gas to Energy Project	Verified Carbon Standard (VCS)	10400000051849	-29.914580, 30.963130	Demo North West, KwaZulu-Natal & Eastern Cape CFL Replacement Project (2) in South Africa	Gold Standard (GS)	10400000051850	-32.963333, 27.866667	Dismiss
Demo South Africa VCS Project -- MR_TEST_VCS_1001_1	Verified Carbon Standard (VCS)	10400000051851	-33.814580, 28.963130	Demo GS Project -- MR_TEST_GS_0710	Gold Standard (GS)	10400000051856	-26.204100, 28.047300	Dismiss

Retirements

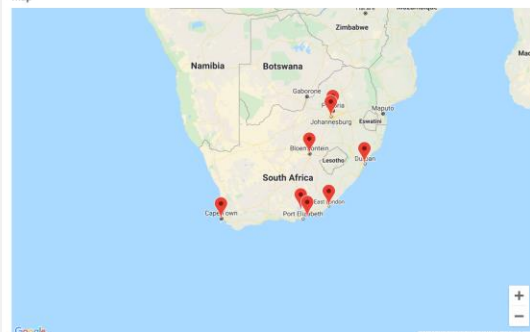


Corresponding Adjustment Control Panel

Date	Activity Type	Import/Export	Counterparty Country	Quantity	Vintage	Take Corresponding Adjustment	Details
October 19, 2020	Units Retired	Import	Peru	500	2012	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	View Details
October 19, 2020	Units Retired	Export	Belgium	500	2012	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	View Details
October 19, 2020	Units Retired	Export	China	500	2020	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	View Details
October 19, 2020	Units Retired	Import	France	500	2020	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	View Details
October 19, 2020	Units Retired	Import	Chile	500	2012	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	View Details

Total Imported (Exported): 1,000 (3,000)


Map



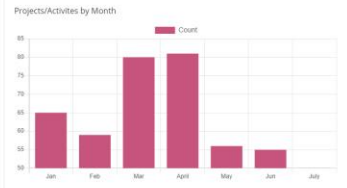
Projects/Activities

Issues Retirements

Projects/Activities by Program



Projects/Activities by Month



Country	Total Emissions Reductions
Brazil	4,234
China	3,214

Jurisdictions where South Africa credits have been retired

Country	Total Emissions Reductions
Brazil	4,234
China	3,214

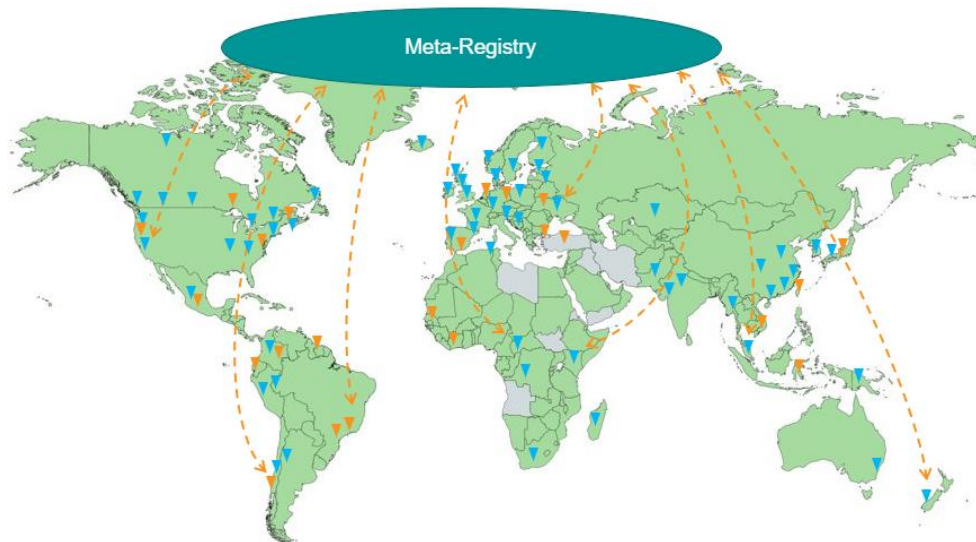
Jurisdictions where credits retired in South Africa have originated

Country	Total Emissions Reductions
Brazil	4,234
China	3,214

Phase 2 vision

Over time, Phase 2 would provide greater connectivity for existing and new markets, while allowing participants in markets to mitigate risks, increase operational efficiencies, and reduce costs. Services would include:

- Cash and position settlement for all transactions, whether OTC or exchange-traded
- Connectivity with exchanges/auction platforms
- Electronic trade confirmations
- Reference identifiers
- Portfolio view for market participants



Meta-Registry Services (Phase 2)

For countries and programs:

- Connectivity through Meta-Registry and routing to other connected registries and exchanges
- Corresponding adjustment and export authorization tracking allowing for simplified accounting
- Tracking live data from private projects within a jurisdiction
- Registry for countries/programs without a registry (registry-in-a-box)

For custodians:

- Sub-custodial software for custodians with position settlement

For exchanges:

- Routing for bids and offers from registries to exchanges
- Position settlement

For market participants:

- Portfolio view and reconciliation for active market participants to view positions across markets in one dashboard
- Portfolio view for corporates/end buyers to simplify engagement with market
- Transfers (Position-only or DVF settlements)
- Position and cash (DVP) settlement
- Trade confirmation
- Reference identifiers for units and projects/activities

Meta-Registry Advisory Board

Advisory Board Membership

- Temasek
- Goldman Sachs
- Hartree Capital
- Gold Standard
- Chevron
- UK Woodland Carbon Code
- Global Carbon Council
- Conservation International
- Bluesource
- ISDA
- MEXICO2
- Standard Chartered
- Bank of America
- Microsoft
- Verra
- CBL Markets
- Macquarie
- World Bank (observer)
- Environmental Defense Fund
- REDD.plus
- UK Peatland Code
- Plan Vivo Foundation
- International Emissions Trading Association
- DBS
- TD Bank
- Government of Peru
- Government of Jalisco (Mexico)
- Government of British Columbia (Canada)
- Government of Acre (Brazil)
- Government of Chile
- Equinor
- TMX
- Santander
- Abaxx Exchange
- Citi

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