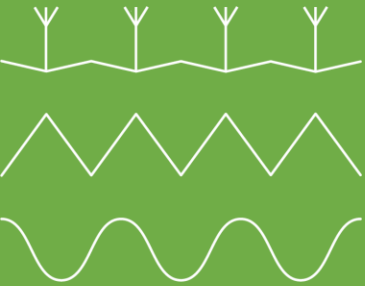


INTRODUCING OPEN SOURCE CARBON REGISTRY AS Digital Public Good

For 4th A6IP Working Group on Tracking and Reporting

October 30 2024



Overview

Challenges with carbon market implementation



Data

Monitoring and managing data on GHG inventory, NDC reporting requirements, and climate finance opportunities is extremely challenging



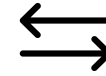
Quality

Quality assurance is difficult in technology projects without deep area expertise in software, privacy, and security



Duplication

Each country, especially in LDCs and SIDS, are expressing needs for developing national digital systems, which could lead to duplicate efforts and funding



Interoperability

Software built without standard international schemas cannot easily interoperate and often requires extensive and expensive rewrites in order to ensure interoperability

Solution: Carbon Registry, an open source, modular toolbox

Data

Quality

Duplication

Interoperability

Solution: A digital tool built on a secure ledger

Enables countries to issue, monitor, trade carbon credits while ensuring data integrity, security

Version hosted on AWS (cloud platform) makes use of its Quantum Ledger Database service

Solution: An open-source code foundation that countries can build on

Countries can re-use source code to reduce time, cost, ensuring interoperability while customizing to their own needs

Our unique Digital Public Good approach

Open Source & Customisable

- Licensed under the GNU Affero General Public License (AGPL-3.0), which permits free use, modification, and sharing of the software.
- Any modifications to the code must be made publicly available by creating a new branch on GitHub.



Based on open source ‘standard’ software, cuts initial development cost by 50-70% than develop from scratch



Allows customization and update as international guidance evolve



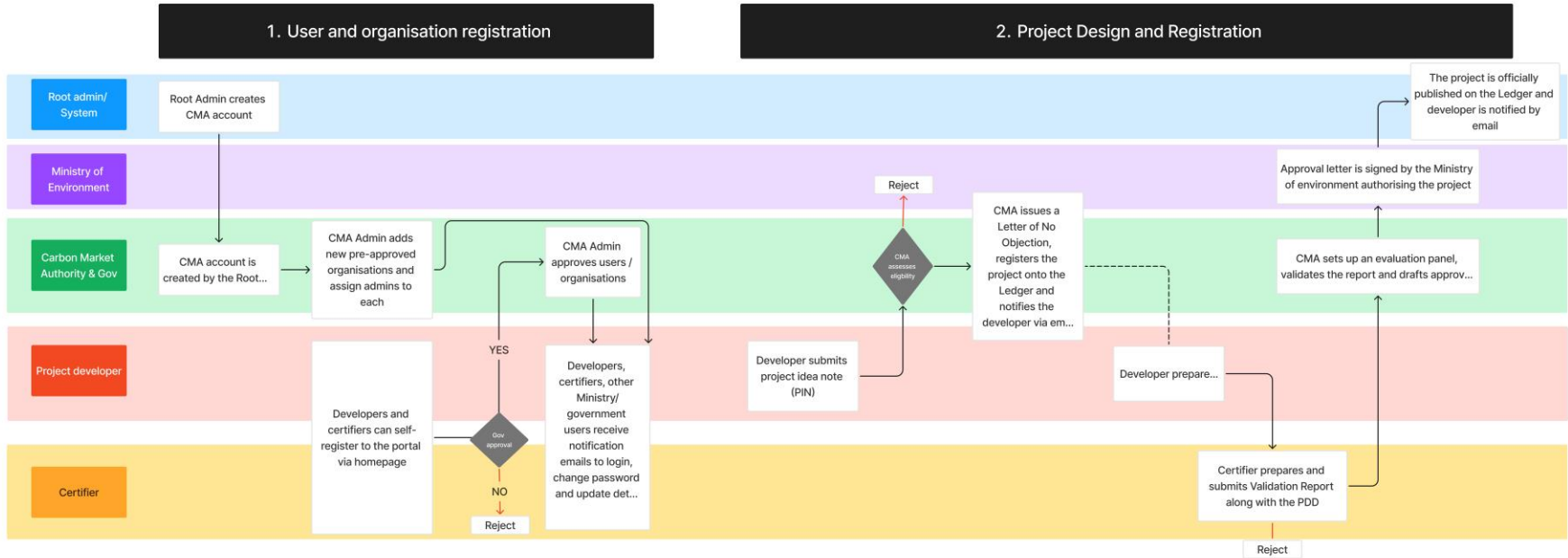
Complete sovereignty and ownership of data and data security



Integrated into national IT policy / digital transformation strategy and contribute to digital capability building efforts

Customisable flow

Cote D'ivoire Carbon Registry Workflow (1)



Customisable user types



Root User

Setup
Admin rights
Overall security



Government Admin

Add/approves new companies to system



Companies (Project Developers)

Add new projects and details
Initiates transfers



Certifiers

Verifies credit calculation methodology
Issues certifications

Carbon Registry Features

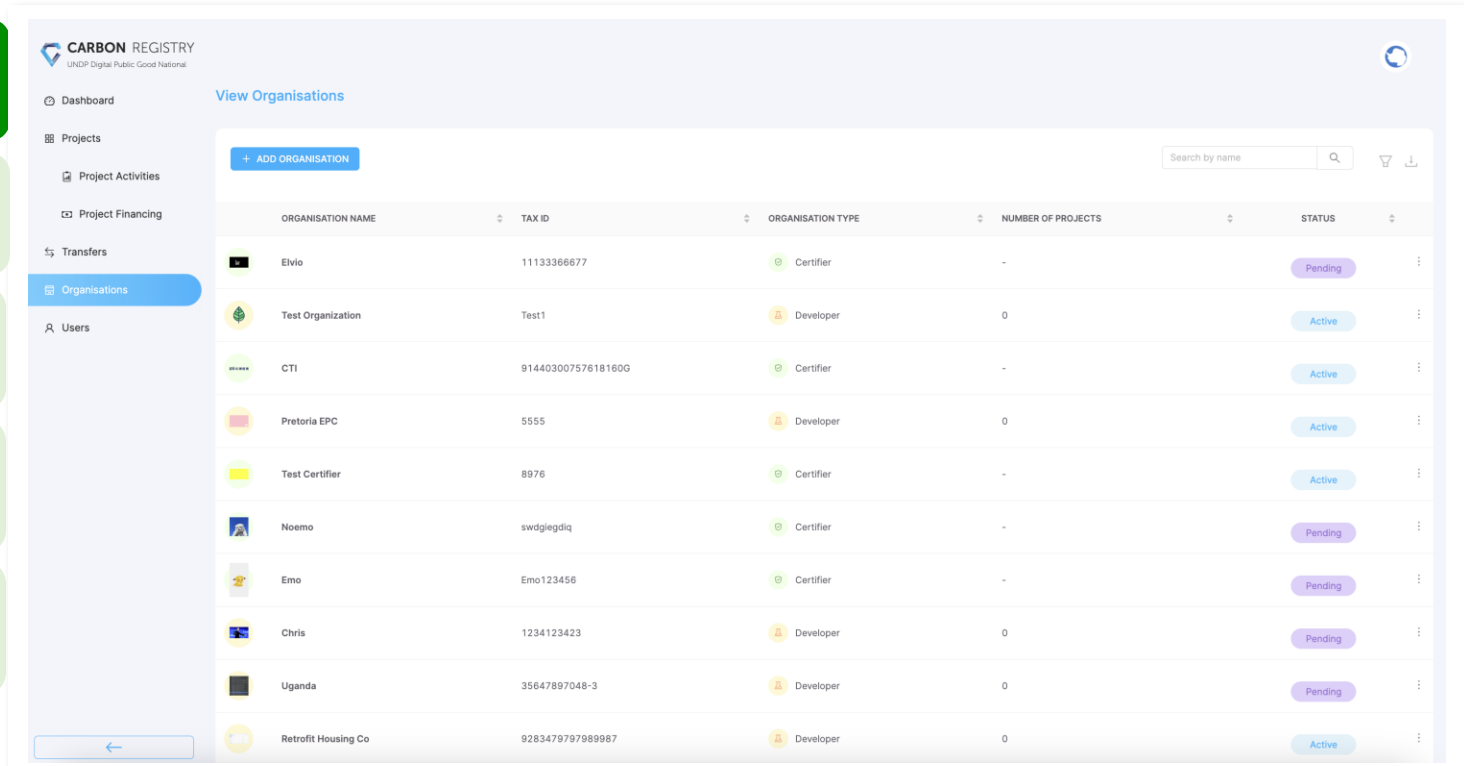
Manage organizations

Register projects

Monitoring and issuance

Transfer a credit

Dashboard/ analytics



The screenshot shows the 'View Organisations' page in the Carbon Registry. The page header includes the 'CARBON REGISTRY' logo and the text 'UNDP Digital Public Good National'. A left sidebar contains navigation options: Dashboard, Projects, Project Activities, Project Financing, Transfers, Organisations (highlighted), and Users. The main content area features a '+ ADD ORGANISATION' button, a search bar, and a table of organizations. The table has columns for Organisation Name, Tax ID, Organisation Type, Number of Projects, and Status. Each row includes a status button (Active or Pending) and a three-dot menu icon.

ORGANISATION NAME	TAX ID	ORGANISATION TYPE	NUMBER OF PROJECTS	STATUS
Elvio	11133366677	Certifier	-	Pending
Test Organization	Test1	Developer	0	Active
CTI	91440300757618160G	Certifier	-	Active
Pretoria EPC	5555	Developer	0	Active
Test Certifier	8976	Certifier	-	Active
Noemo	swdlegdlq	Certifier	-	Pending
Emo	Emo123456	Certifier	-	Pending
Chris	1234123423	Developer	0	Pending
Uganda	35647897048-3	Developer	0	Pending
Retrofit Housing Co	9283479797989987	Developer	0	Active

Carbon Registry Features

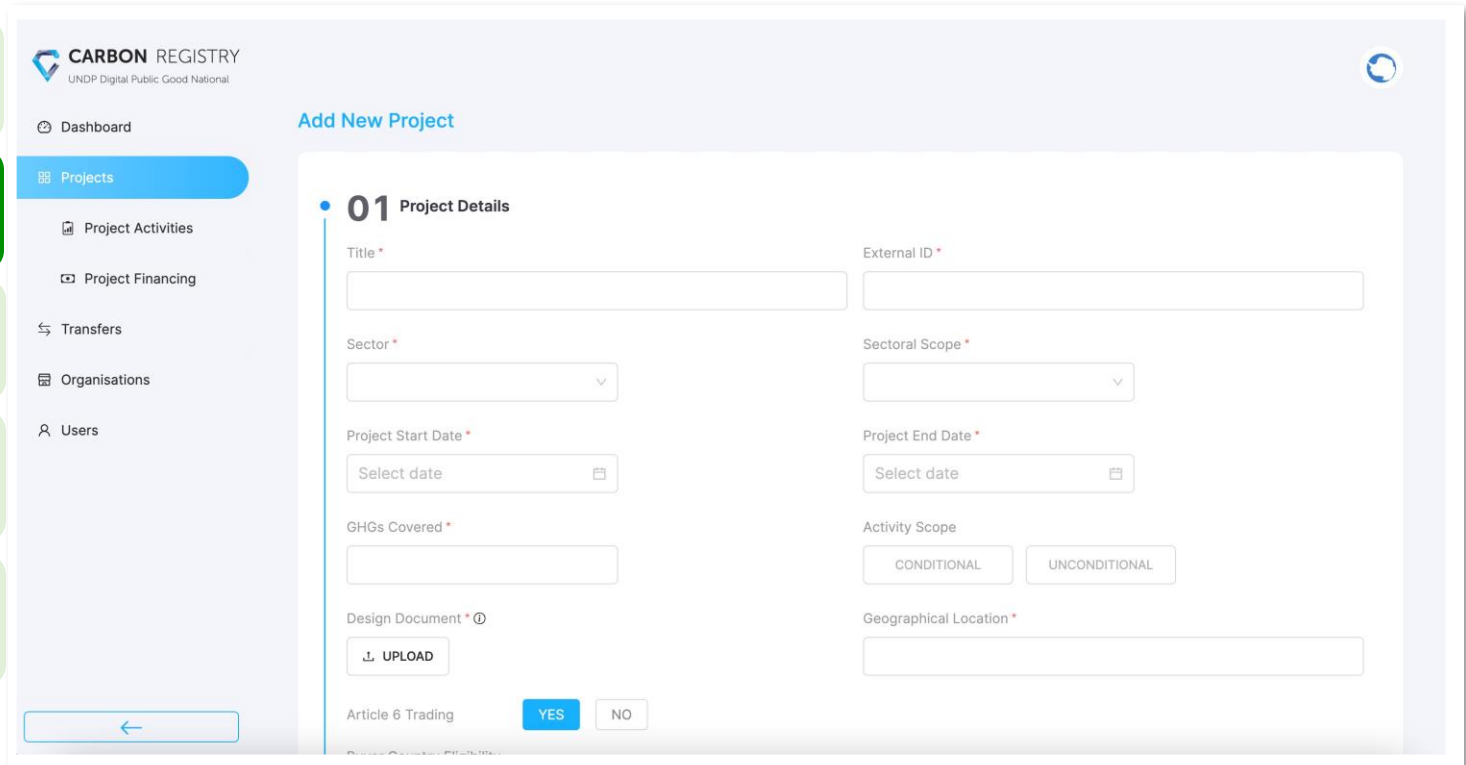
Manage organizations

Register projects

Monitoring and issuance

Transfer a credit

Dashboard/ analytics



CARBON REGISTRY
UNDP Digital Public Good National

Dashboard

Projects

Project Activities

Project Financing

Transfers

Organisations

Users

Add New Project

01 Project Details

Title *

External ID *

Sector *

Sectoral Scope *

Project Start Date *

Project End Date *

GHGs Covered *

Activity Scope

CONDITIONAL UNCONDITIONAL

Design Document *

UPLOAD

Geographical Location *

Article 6 Trading YES NO

Carbon Registry Features

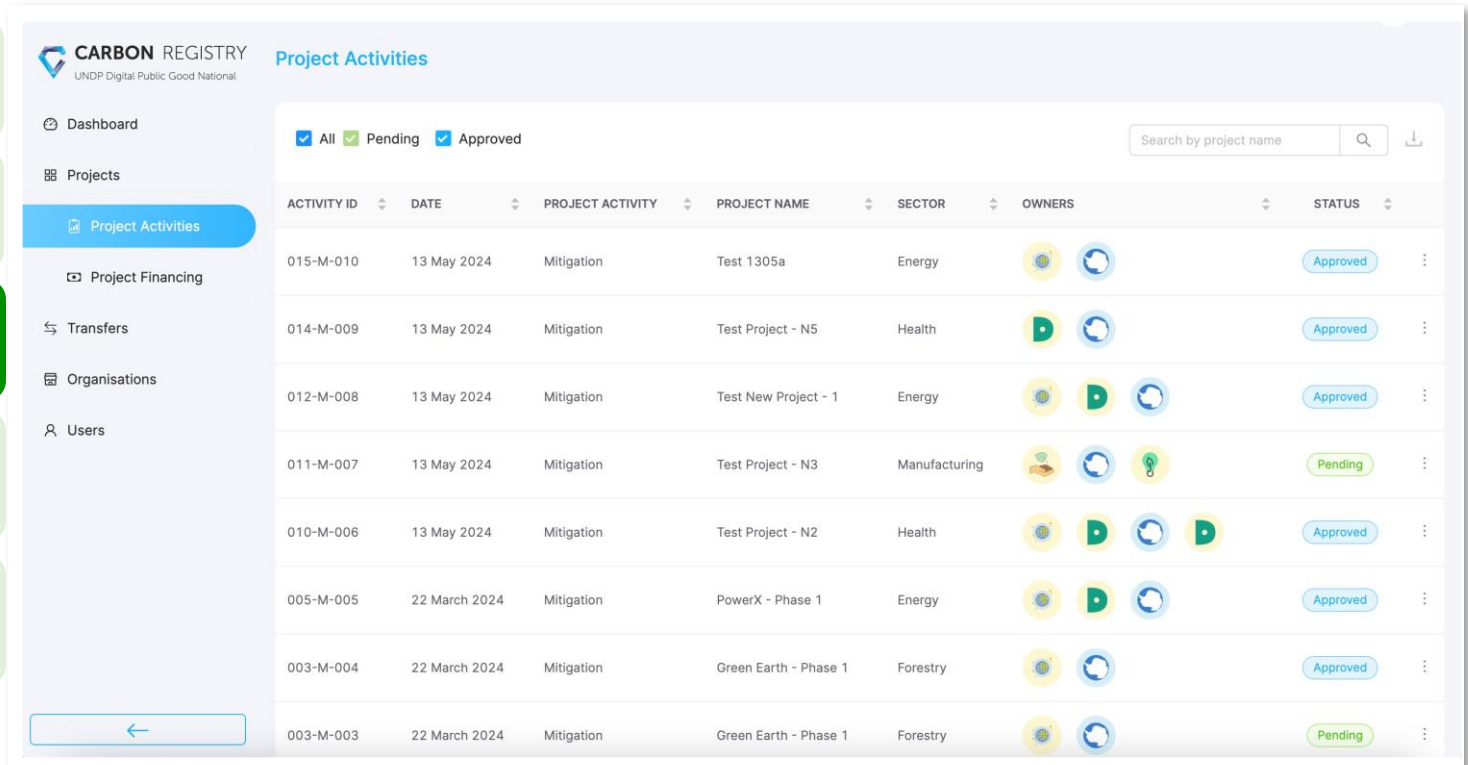
Manage organizations

Register projects

Monitoring and issuance

Transfer a credit

Dashboard/ analytics



The screenshot shows the 'Project Activities' dashboard in the Carbon Registry. The header includes the logo and 'UNDP Digital Public Good National'. A left sidebar contains navigation options: Dashboard, Projects, Project Activities (highlighted), Project Financing, Transfers, Organisations, and Users. The main content area features a table of project activities with columns for Activity ID, Date, Project Activity, Project Name, Sector, Owners, and Status. A filter bar at the top allows selection of 'All', 'Pending', and 'Approved' projects. A search bar is also present.

ACTIVITY ID	DATE	PROJECT ACTIVITY	PROJECT NAME	SECTOR	OWNERS	STATUS
015-M-010	13 May 2024	Mitigation	Test 1305a	Energy		Approved
014-M-009	13 May 2024	Mitigation	Test Project - N5	Health		Approved
012-M-008	13 May 2024	Mitigation	Test New Project - 1	Energy		Approved
011-M-007	13 May 2024	Mitigation	Test Project - N3	Manufacturing		Pending
010-M-006	13 May 2024	Mitigation	Test Project - N2	Health		Approved
005-M-005	22 March 2024	Mitigation	PowerX - Phase 1	Energy		Approved
003-M-004	22 March 2024	Mitigation	Green Earth - Phase 1	Forestry		Approved
003-M-003	22 March 2024	Mitigation	Green Earth - Phase 1	Forestry		Pending

Carbon Registry Features

Manage organizations

Register projects

Monitoring and issuance

Transfer a credit

Dashboard/ analytics

Country Code/ ID (as per ISO 3166)	Type of Credit/ Unit	Sectoral Scope Number (as per CDM)	Unique Project ID/ Project Identifier	Year	Blank / any other	Unit Serial Block Start	Unit Serial Block End
VU	ITMO	1-15	XXX	20XX		1-X	XXXXXX

Each verified project credit is assigned a unique serial number, based on UNFCCC-CDM methodology. All transfers and retirements are immutably recorded, enhancing the efficiency and reliability of carbon credit transactions.

Carbon Registry Features

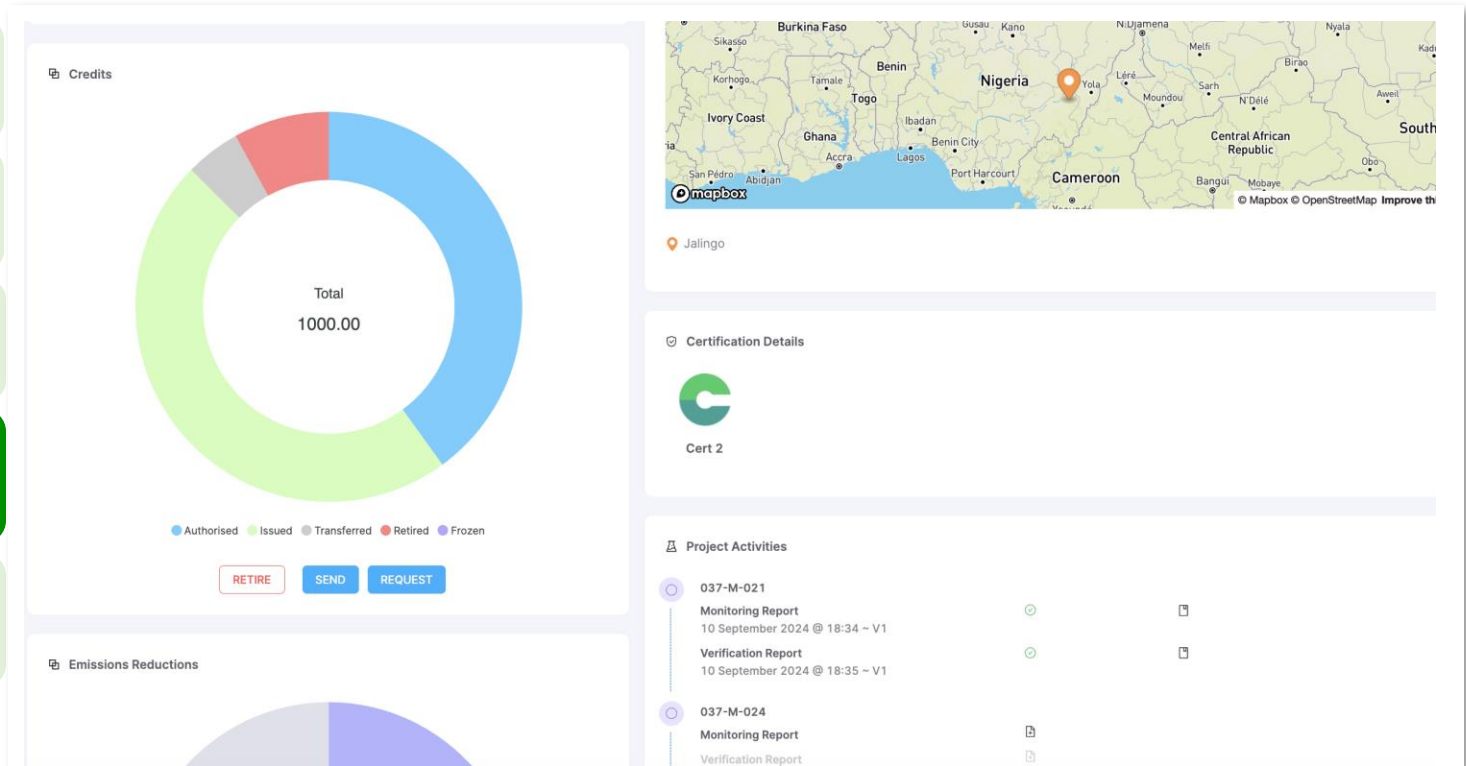
Manage organizations

Register projects

Monitoring and issuance

Transfer a credit

Dashboard/ analytics



Carbon Registry Features

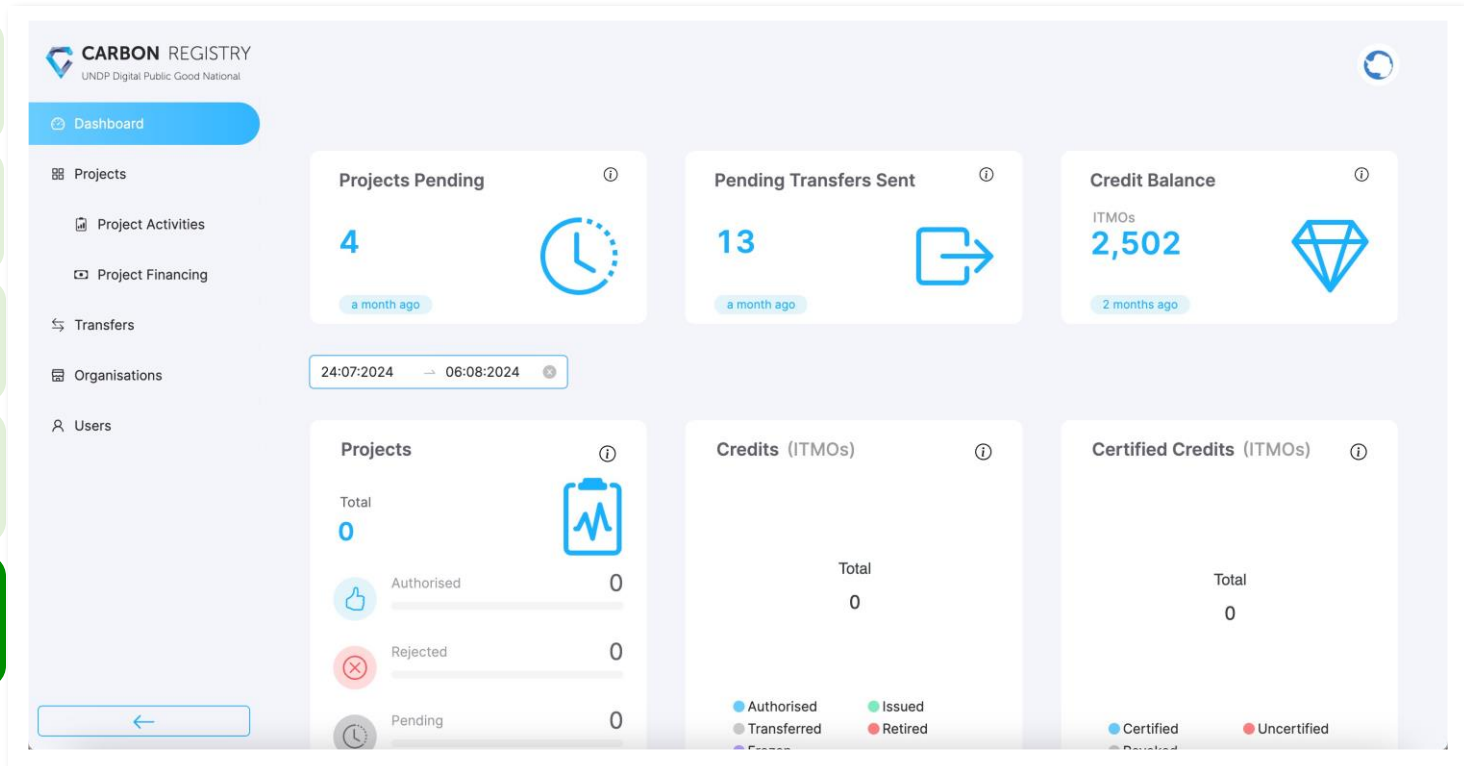
Manage organizations

Register projects

Monitoring and issuance

Transfer a credit

Dashboard/
analytics



Interoperable data

















Data model is aligned with the CAD Trust Data Model, ensuring interoperability. An open RESTful API allows for the development of innovative transparency tools and seamless integration with other external systems.

CARBON REGISTRY
UNDP Digital Public Good National

Project Activities

All Pending Approved

Search by project name

ACTIVITY ID	DATE	PROJECT ACTIVITY	PROJECT NAME	SECTOR	OWNERS
015-M-010	13 May 2024	Mitigation	Test 1305a	Energy	 
014-M-009	13 May 2024	Mitigation	Test Project - N5	Health	 
012-M-008	13 May 2024	Mitigation	Test New Project - 1	Energy	 
011-M-007	13 May 2024	Mitigation	Test Project - N3	Manufacturing	 
010-M-006	13 May 2024	Mitigation	Test Project - N2	Health	 
005-M-005	22 March 2024	Mitigation	PowerX - Phase 1	Energy	 
003-M-004	22 March 2024	Mitigation	Green Earth - Phase 1	Forestry	 
003-M-003	22 March 2024	Mitigation	Green Earth - Phase 1	Forestry	 

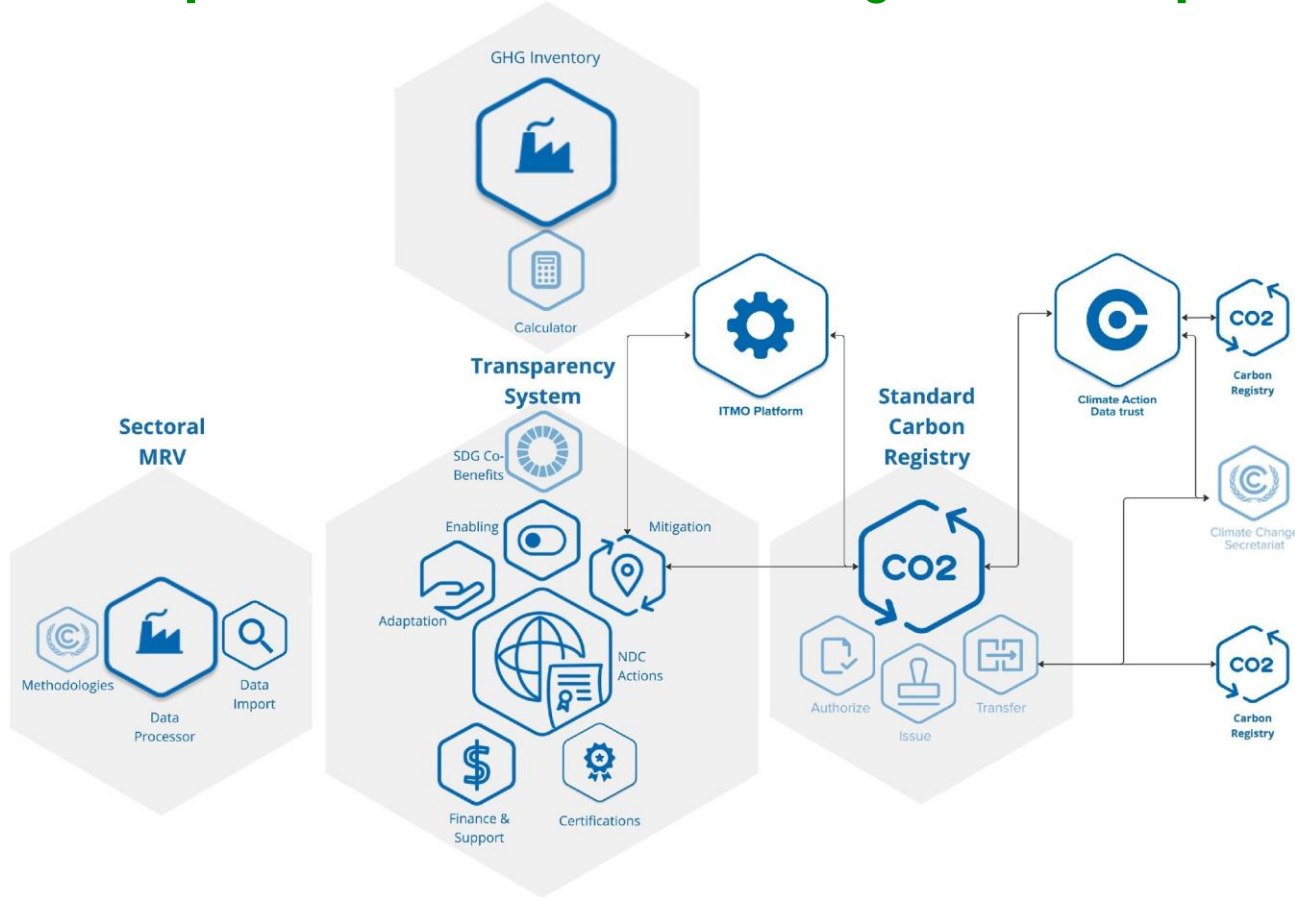
It can integrate with the ITMO Voluntary Bilateral Cooperation Platform for ITMO process flow, managed by UNDP.

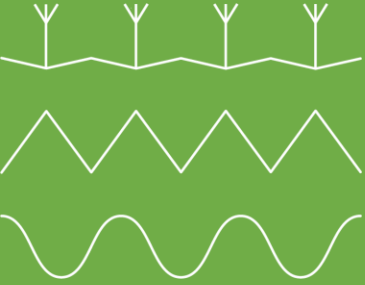


Interoperable with national MRV system if applicable

Coming soon: Data fields to be Article 6 AEF reporting-ready for pre-filling

Interoperable with an ecosystem of partners





Development and operating cost

How it works

UNDP source code on
Github



Code can be customised
to country's custom
design



Software installed in
location and domain
name of your choice

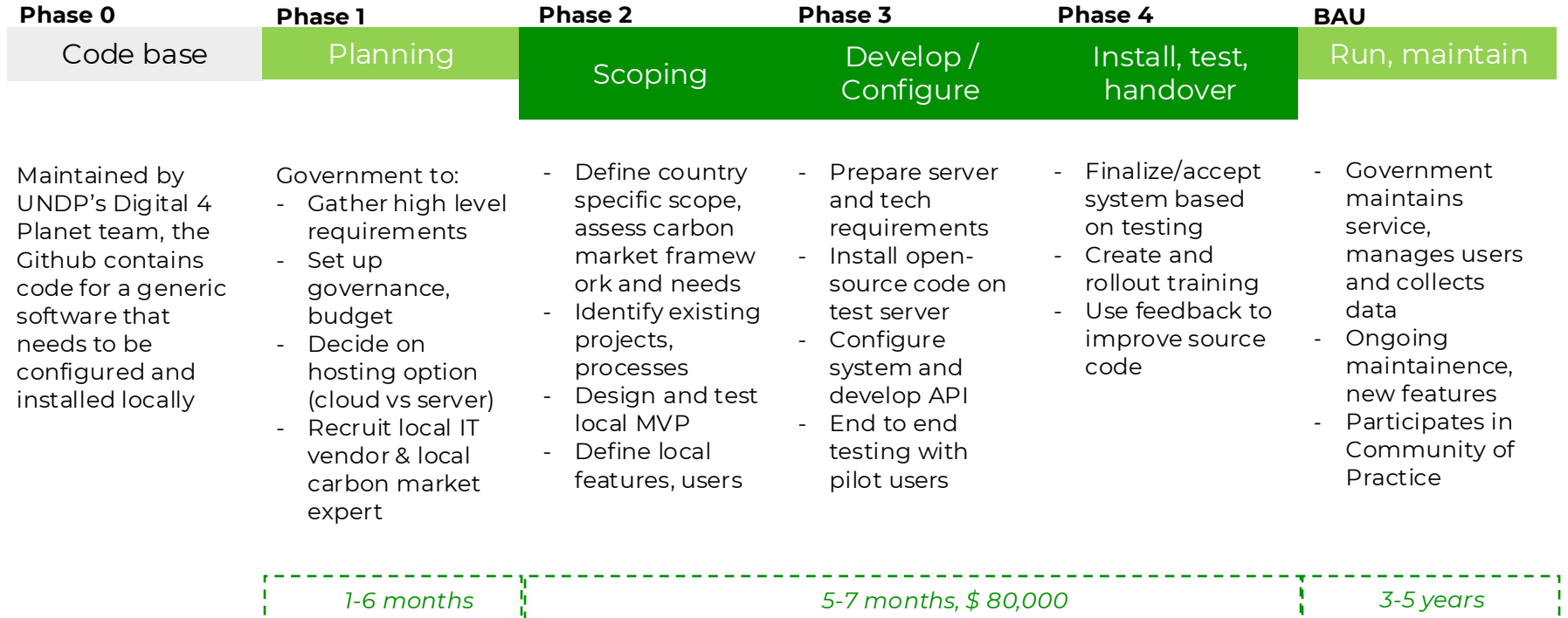


Tool is actively used by
approvers, developers,
certifiers, etc.



Issues are addressed, tool
is maintained and
improved over time

Each country needs to set up and configure



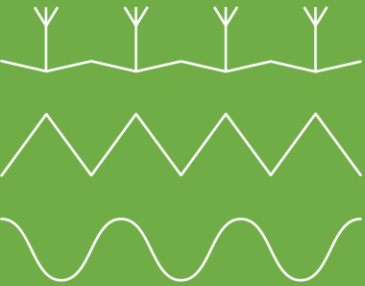
Governance and skills needed

	Decision-makers / board	Delivery team
Carbon market policy	<p>Carbon Market Focal Point</p> <ul style="list-style-type: none"> Product owner - makes final decisions on requirements Admin rights to tool – adds users, approves projects, issues credit Accountable for long term use, success 	<p>Carbon Market Expert</p> <ul style="list-style-type: none"> An in-house expert or external consultant can be appointed to take the lead on stakeholder engagement, requirements gathering, turning the carbon market framework into a process flow
Digital IT	<p>National IT Focal Point</p> <ul style="list-style-type: none"> Decision maker on hosting, storage, data, security based on national policy, standards, interest 	<p>Design/Dev team</p> <ul style="list-style-type: none"> A full stack digital team (covering design and software) responsible for turning gathered requirements into custom configuration, user testing, installation

Task Force & Project Manager

Biweekly convening of a task force including decision makers, delivery team, key stakeholders and advisors to review progress, agree on decisions, next steps

Dedicated project manager to keep pace, manage budget, and convene people



Accessing support

UNDP supports government via country office

UNDP HQ multi-disciplinary team develops and improves open-source code, provides capacity support to countries through country offices:

Resources and Templates
Technical Assistance:

- Scoping and design
- Product management
- IT advisory
- As part of carbon market framework support

Community of Practice



Ongoing support

Planning

Zimbabwe

Scoping

Nigeria

Develop /
Configure

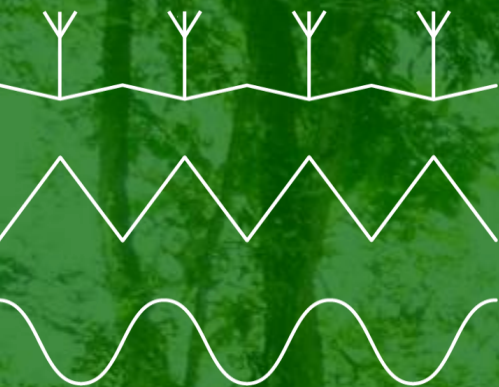
Sri Lanka

Install, test,
handover

Namibia

Cote D'ivoire

Climate Promise
Carbon Market Support Projects
CBIT
E-governance, Digital Transformation Projects



Thank you! For Further information contact :

Digital4planet@undp.org