Presentation for the Mental Health Trust, April 2025

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Contact Us:
Terra Verde Inc
bkleinhenz@terraverdeinc.com
www.terraverdeinc.com
907-957-6755

Carbon Markets have become big business

Investopedia + Follow

Why Companies From Microsoft to Shopify Are Investing Millions in Carbon Removal

Story by Mack Wilowski • 1w

CNBC · 7d · on MSN

Amazon follows Microsoft, investing big in carbon capture

Amazon announced Tuesday that it will help fund the world's largest deployment of direct air capture technology.

Seeking Alpha · 8d · on MSN

KRBN: The First Carbon Credit Futures Fund On The U.S. Exchange

Summary Carbon offsets are a growing trend in green investing, with the voluntary offset market expected to continue growing.

MENAFN · 7h

Global Carbon Capture And Storage (CCS) Market Set To Surge A$ 10.2 Billion Forecast By 2033

Carbon Markets Face Scrutiny As They Grow

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The Guardian · 21h

Revealed: top carbon offset projects may not cut planet-heating emissions

Majority of offset projects that have sold the most carbon credits are 'likely junk', according to analysis by Corporate ...

The Guardian · 5d

Rainforest carbon credit schemes misleading and ineffective, finds report

System not fit for carbon offsetting, puts Indigenous communities at risk and should be replaced with new approach, say ...

The Guardian · 12d

Shell signals retreat from carbon offsetting

Oil company is latest firm to act amid indications that carbon credits do nothing to

carbon-pulse.com · 18h

Verra goes on the attack after investigation by Guardian, corporate watchdog levels fresh accusations against VCM

Another expose by the Guardian and a corporate accountability NGO has raised further criticisms against the voluntary carbon market, finding that the majority of credits generated from the market's ...

Carbon Markets Are Diverse

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Compliance Markets

Voluntary Markets

Carbon Markets Are Diverse

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Voluntary Carbon Market (VCM)

Avoidance Credits

Technology Based

- Renewable Energy
- Landfill gas
- Industrial Pollutants
- Energy Efficiency

Nature Based

- REDD+
- Wetland Management
- Methane from Livestock
- Avoided Grassland Conversion

Removal/Reductions Credits

Technology Based

- Direct Air Capture
- Biochar
- BECCS
- Ocean alkalinity enhancement
- CCUS

Nature Based

- Afforestation
- Reforestation
- Wetland Restoration
- Sustainable Grassland Management

cCarbon
formerly CaliforniaCarbon

Visit https://cCarbon.info/cca/ for the latest pricing information

Forestry is an important part of Carbon Markets

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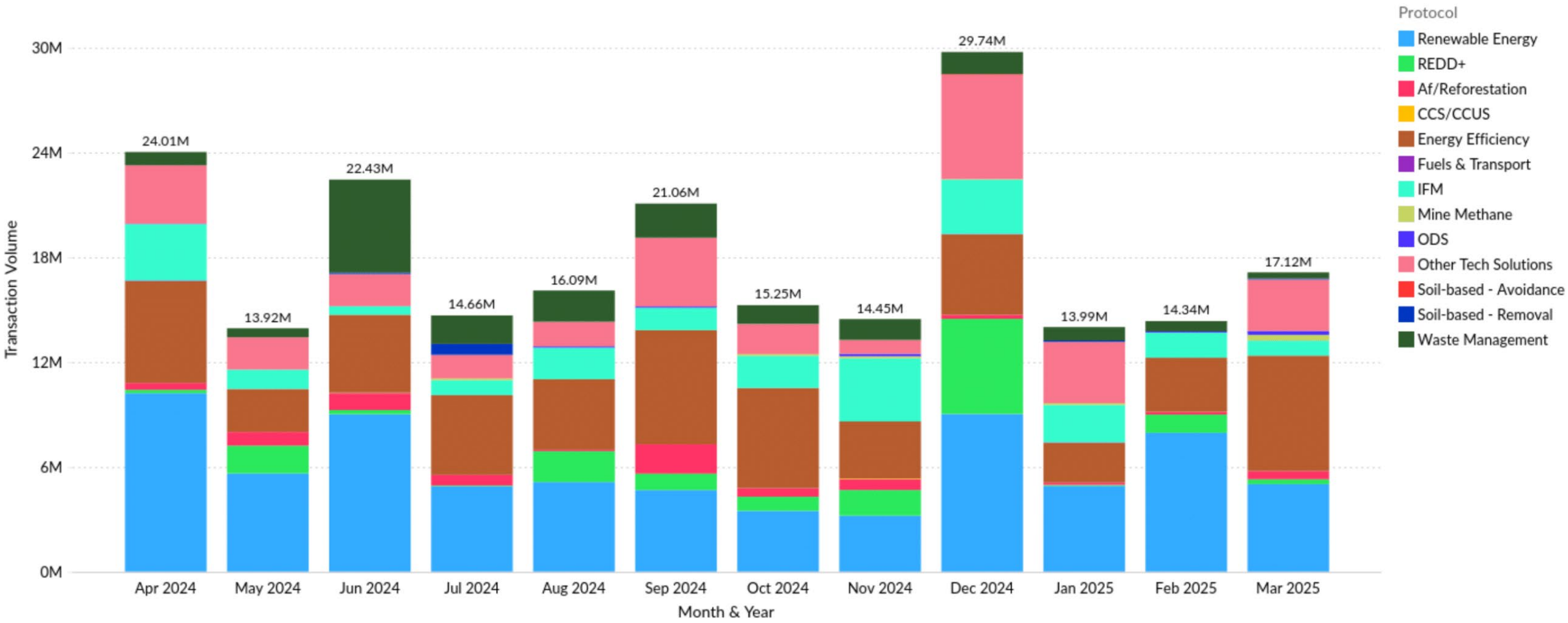
Monthly Credit Issuances Per Protocol



Forestry is an important part of Carbon Markets

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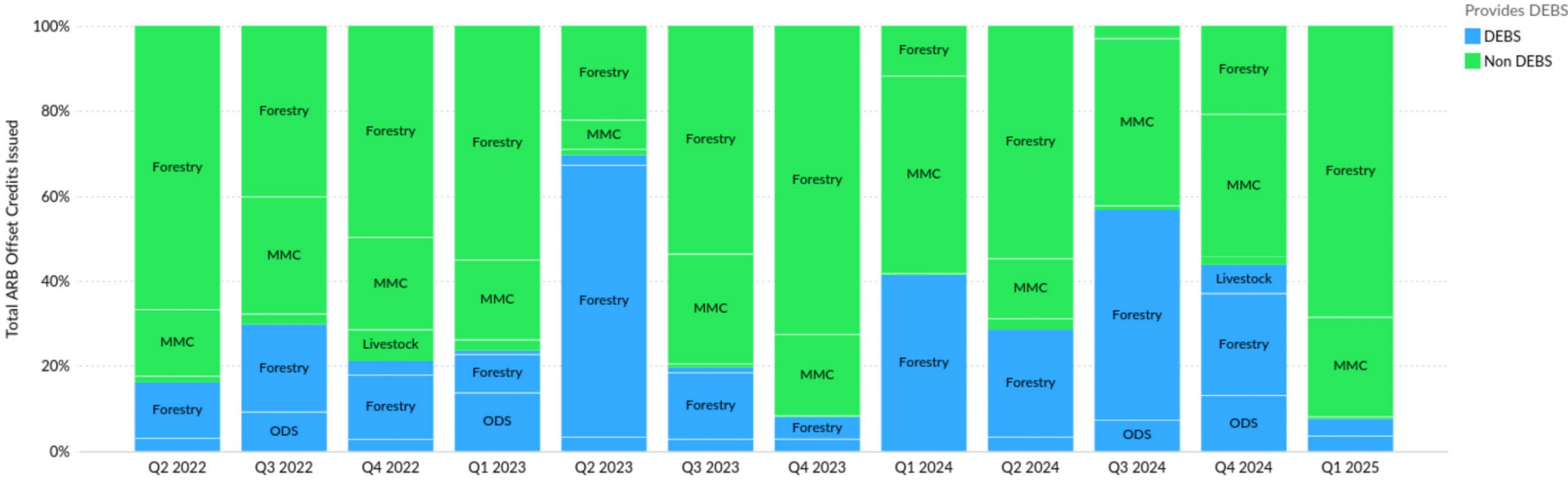
Quarterly CCO Issuances



North American Forest Carbon is a bit different

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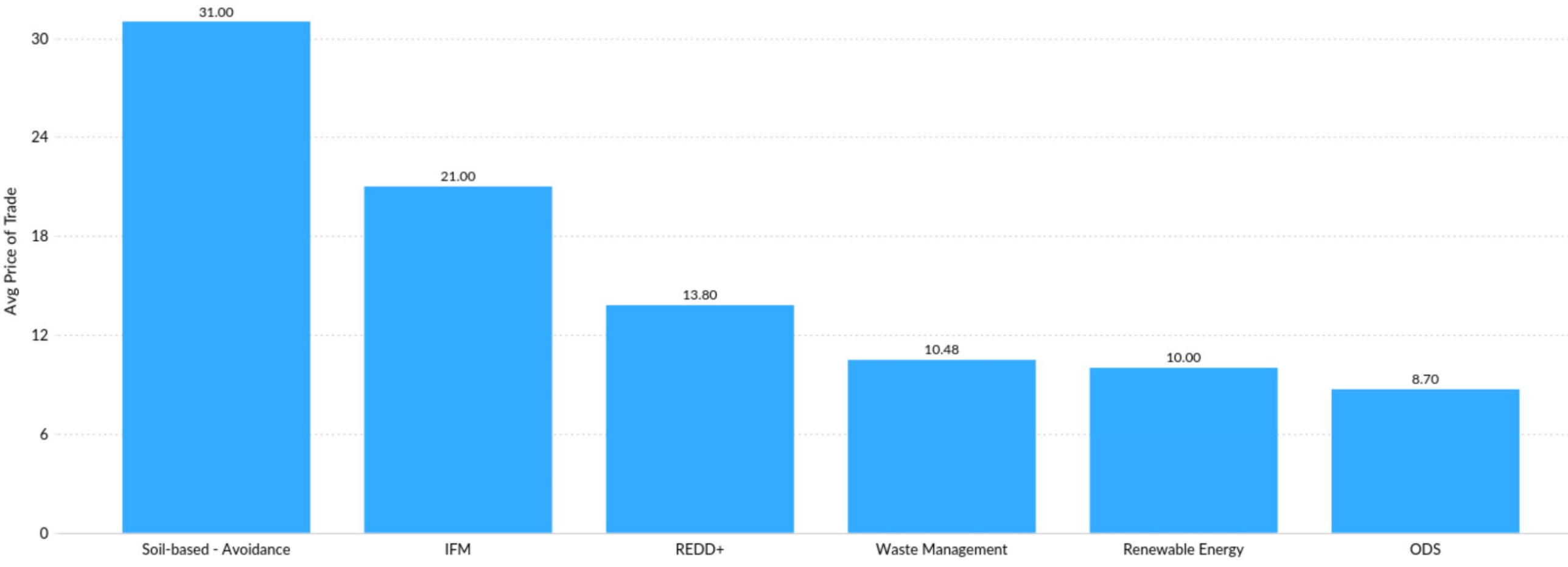
Price Per Protocol – Last Three Months



North American Forest Carbon is a bit different

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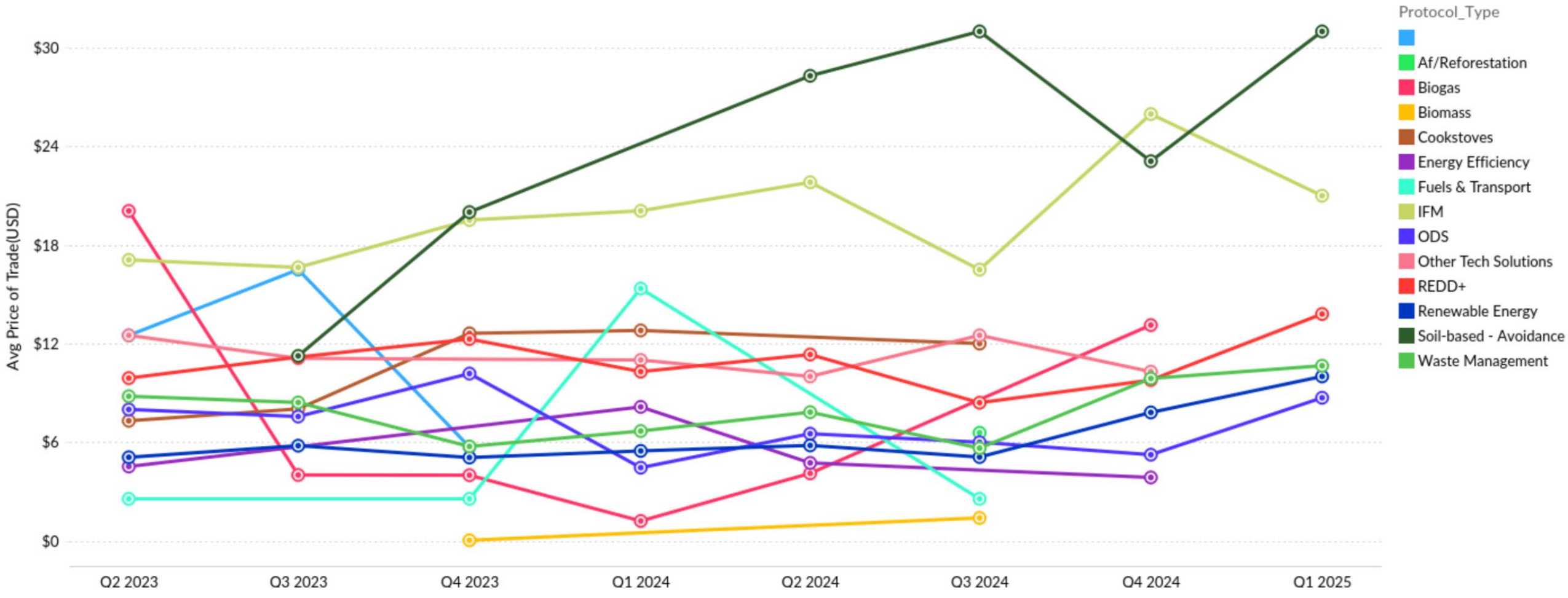
Average Prices Per Protocol Per Quarter



How Forest Carbon Offset Projects Come Together

There are three major cost centers involved in creating forest carbon offsets.

Compliance and Contracting:

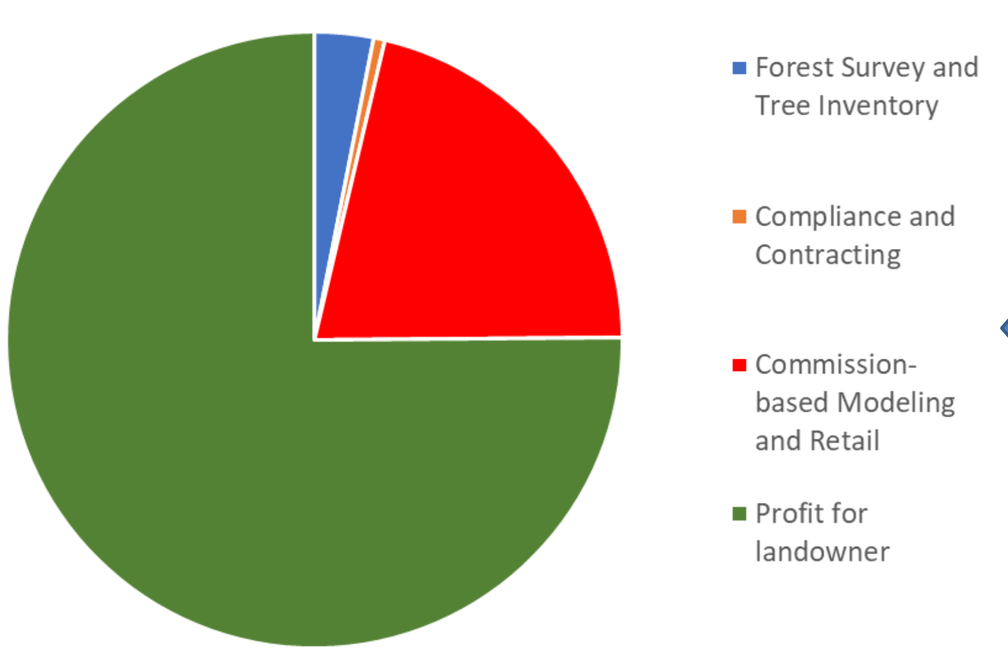
- Third party listing
- Third party verification

Forest Survey and Tree Inventory

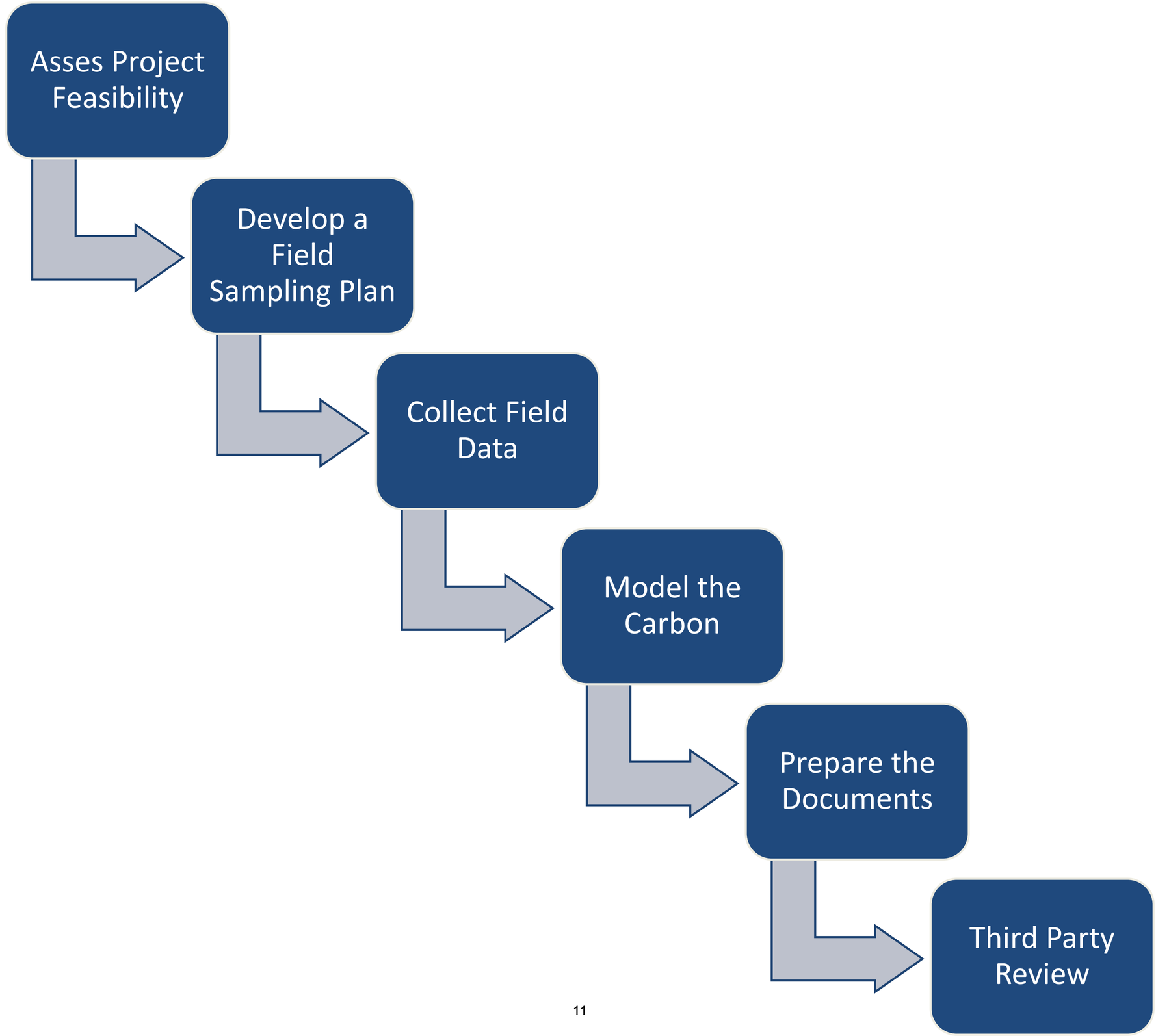
- Mapping of Forests
- On the ground field survey
- Logistics (trucks, boats, helicopters)

Retail Sale, Computer Modeling and Calculations

- Often paid for with a commission fee per credit
- Includes management of regulation and paperwork
- Calculation of current carbon
- Long range forest growth modeling to establish carbon over time



Hypothetical Alaska Project of about 1 million offsets


Asses Project Feasibility
Develop a Field Sampling Plan
Collect Field Data
Model the Carbon
Prepare the Documents
Third Party Review

1) Assess Project Feasibility

Potential projects are assessed for feasibility utilizing imagery, existing forest inventory data, and professional experience to quickly and efficiently determine target project size, returns, and costs.

Assess Type of Project	Determine Additionality and Financial Feasibility
✓Compliance, Voluntary, National, or other	✓Does the project create climate benefit?
✓Improved Forest Management, Afforestation, Reforestation, Restoration or other	✓Can the project create adequate revenue to cover development costs?

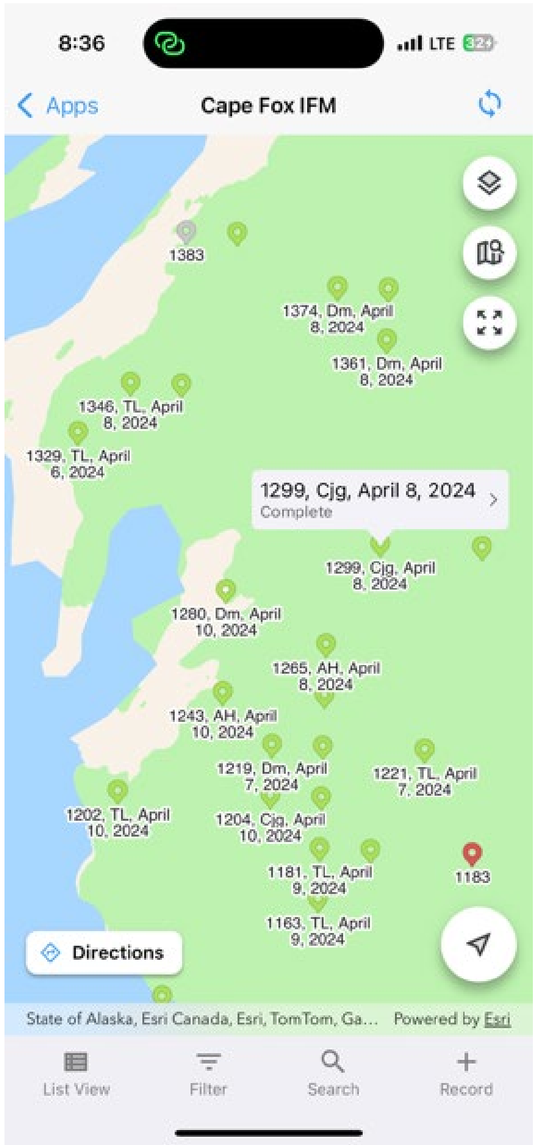
1) Develop a Field Sampling Plan

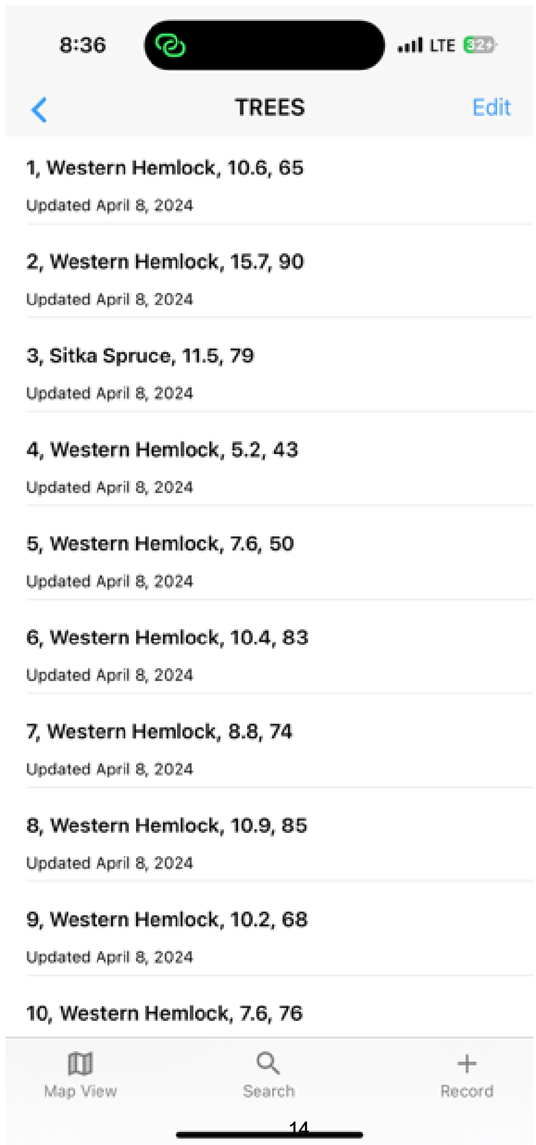
Forest Carbon Inventory field sampling is performed using optimized field data collection protocols. Samples are designed to effectively produce reliable estimates within statistical target range at an economical price

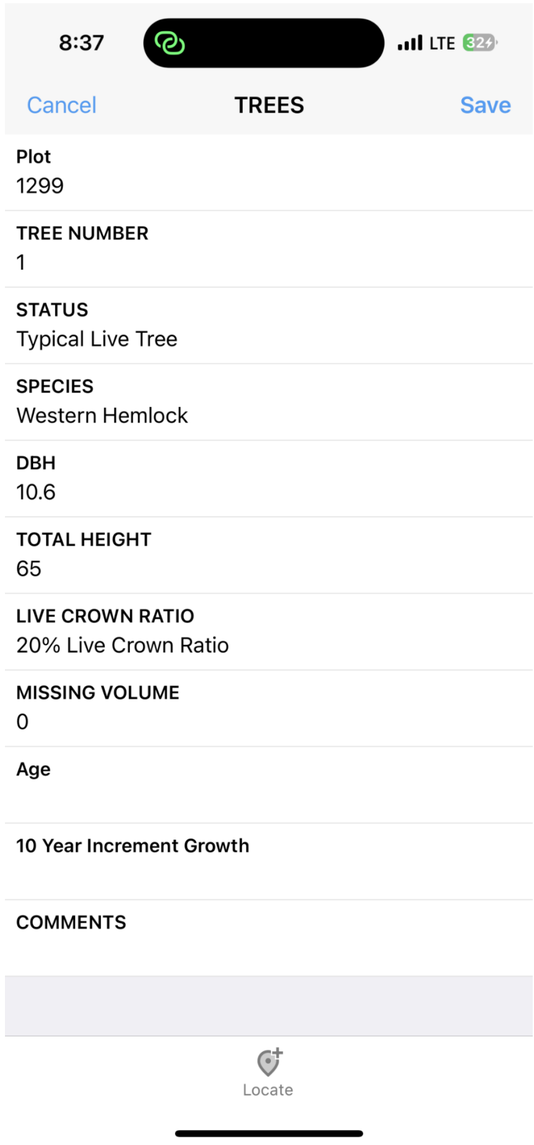
Sample Design	Logistical and QA/QC Planning
✓Mapping ✓Determine number of sample points to hit statistical target	✓Field season schedule, crew size and transportation support
✓Optimize sample point design	✓Robust plan to assure high quality field work

1) Implementation of Field Data Collections

Field efforts are completed in an effective manner including all logistics needed to accomplish the job. Remote access, seasonal constraints, and aggressive terrain are all factors.





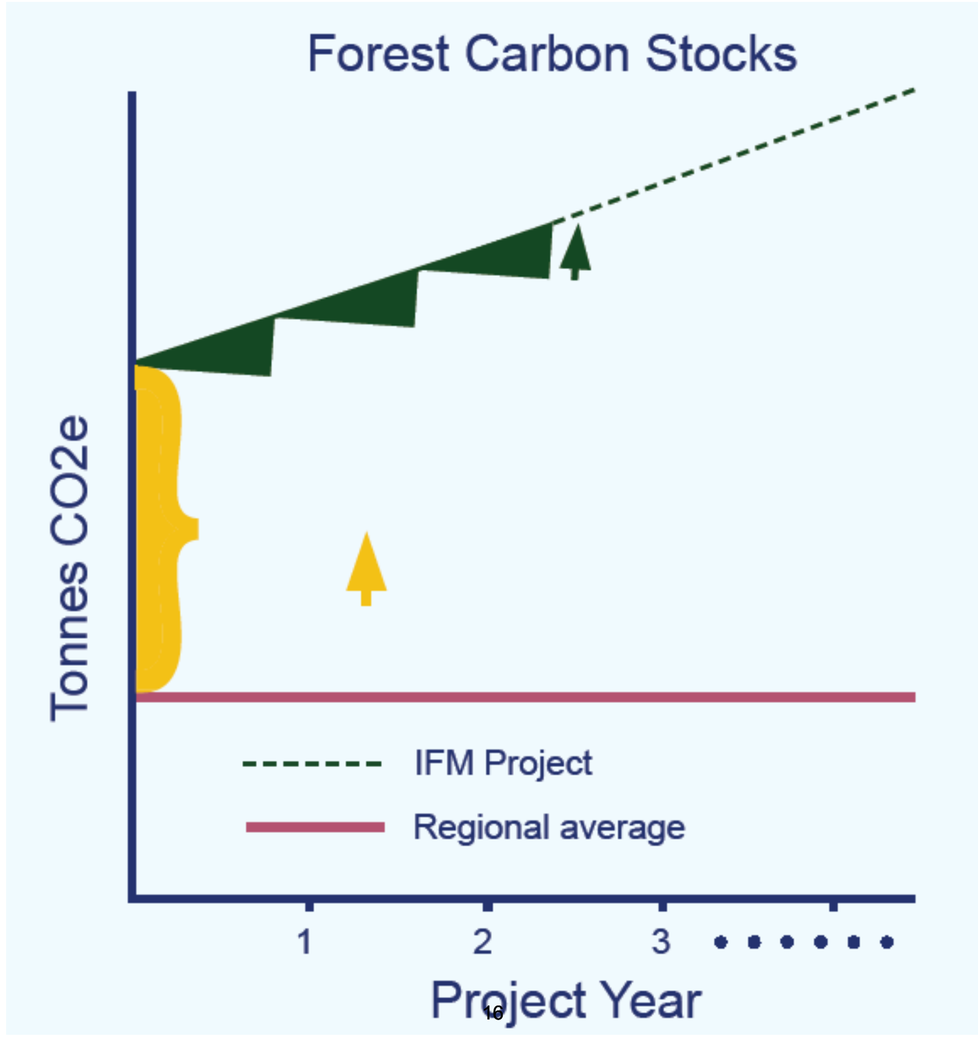


Field Inventory in Alaska

1) Model the Forest Carbon

Existing Forest Carbon Stocks are modeled using the collected field data and forest growth and yield computer models for the entire project duration, as well as baseline scenarios developed that are optimized for project performance and landowner objectives.

Must determine annual growth. Annual theoretical cut may not exceed annual growth!



Carbon Credits generated must be some part (but no more than all) of annual growth!

1) Prepare Reporting Documents

Prepare all required documentation including Greenhouse Gas Plan, Reporting Period Forms, Carbon Calculation Spreadsheets, and other associated documents

B5. BASELINE

The baseline scenario represents a harvest regime that could have happened in the project area if it were not enrolled in a forest carbon project under current financial pressures. The modeled baseline for the Wolverine Copper is the maximum allowable harvest as prescribed under the current management plan approved by the state of Michigan, with consideration of all restrictions on harvesting. The baseline is targeted at maximizing net present value at a 4% discount rate, as required for non-federal public lands in the methodology. Baseline harvest prescriptions, acreage allocations, and all restrictions are described technical detail in Section E.

B6. PROJECT SCENARIO

The project scenario consists of managing the forestland for the generation of wood products, and for the preservation of water quality and wildlife habitat, as described in Section A6. Project Action.

B7. REDUCTIONS AND ENHANCED REMOVALS

The project will achieve greenhouse gas reductions through natural growth on forestland that is otherwise more heavily cut in the Baseline Scenario, as technically detailed in Section E. Less intensive harvest regimes in the Project Scenario will enhance removal rate to maintain carbon stocks above the values expected on state-managed forestlands.

B8. PERMANENCE

Project Proponent must conduct their risk assessment using the *ACR Tool for Risk Analysis and Buffer Determination*. All Project types must claim a value from risk categories A, B and C. Additional values that must be selected by project type include:

Forestry projects claim one value from each:

D	Conservation Easement (if applicable)
E	Fire
F	Disease/pest
G	Levee failure/water table changes (required only if forested wetlands comprise more than 60% of project area)
H	Other natural disaster risk scores.

Table of Contents

1) Third Party Review

High quality forest carbon projects go through multiple layers of third-party review

Field Review	Modeling Review	Registry Oversight
✓Detailed check of plot and tree measurements	✓Review all calculations and assumptions	✓Provides standards for verification team
✓Audit Ownership and critical operational assumptions	✓Audit reports and documents for completeness	✓High level review of verification team work and final approval

1) Annual Monitoring and Verification

Projects last for a long time (often longer than 40 years) and require annual maintenance and reporting.

Monitoring	Annual Reporting	Regular Verifications
✓Plots are remeasured on a regular basis	✓Reports are submitted each year	✓Desk Audits occur each year
✓Project area is monitored for disturbance and harvest	✓Key changes and adherence to plans are noted	✓Field audits occur every 5-6 years

Common Questions on Forest Carbon Offsets

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- Is the land locked up? What are the restrictions? What about hunting, fishing, mining and subsistence?
- Would the State still own the land? What about the trees?
- What if the trees burn down?
- Is a landowner getting paid for something they are already doing?
- Who is buying these credits?
- Is there a real climate benefit, is this greenwashing?
- Why is forestry so often used to create carbon offsets?

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