



Financial Future of Nature-Based Carbon Credits

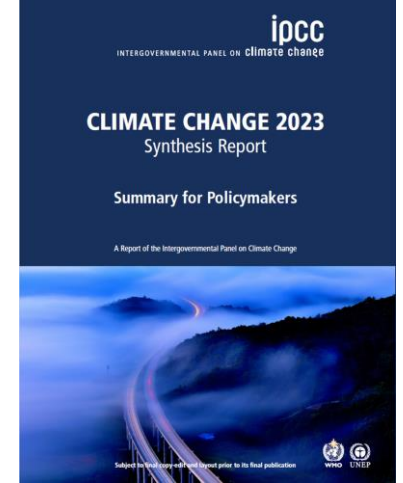
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Rice University

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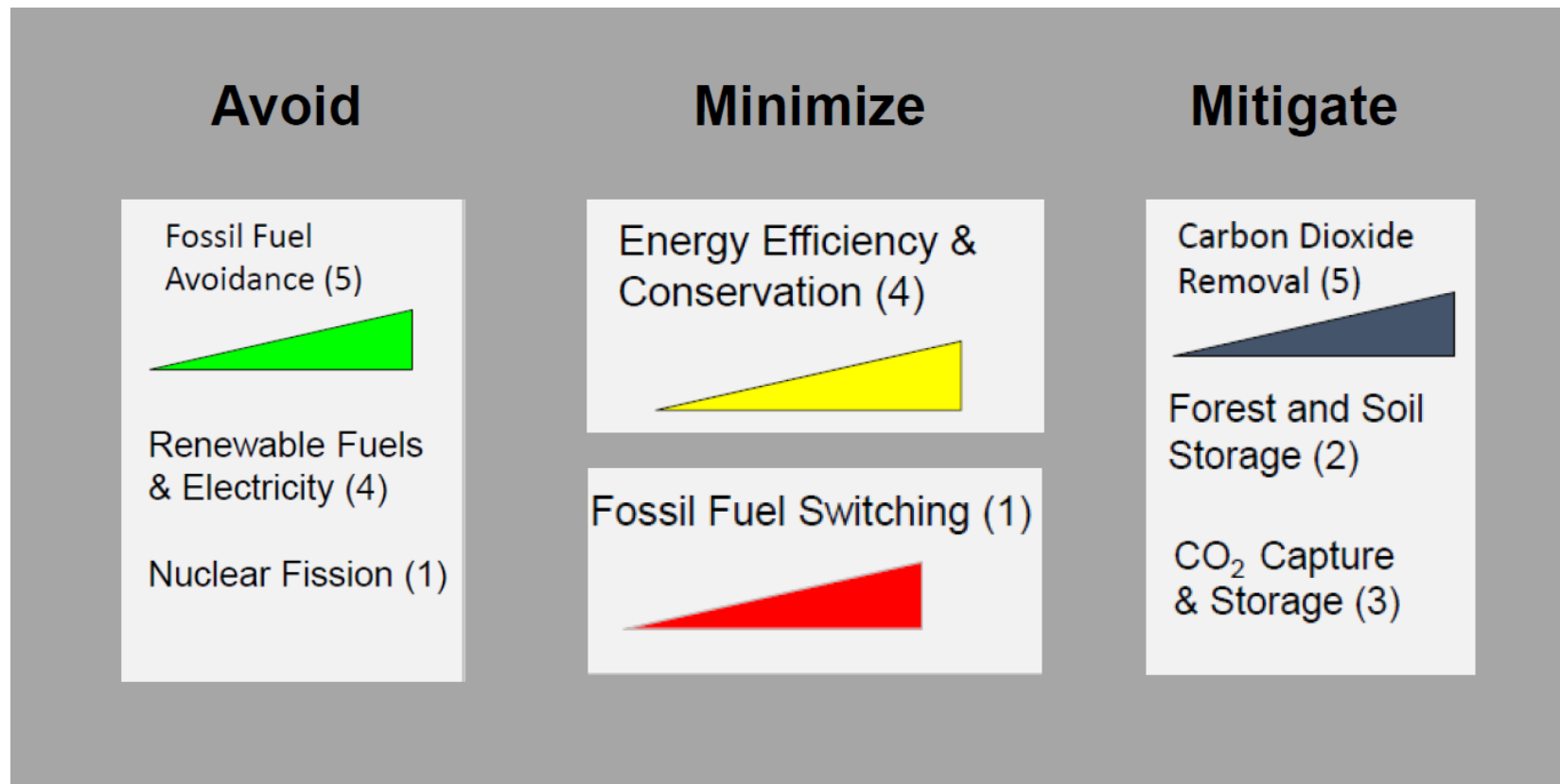
Art by Isabelle Scurry Chapman

IPCC 2023 Report

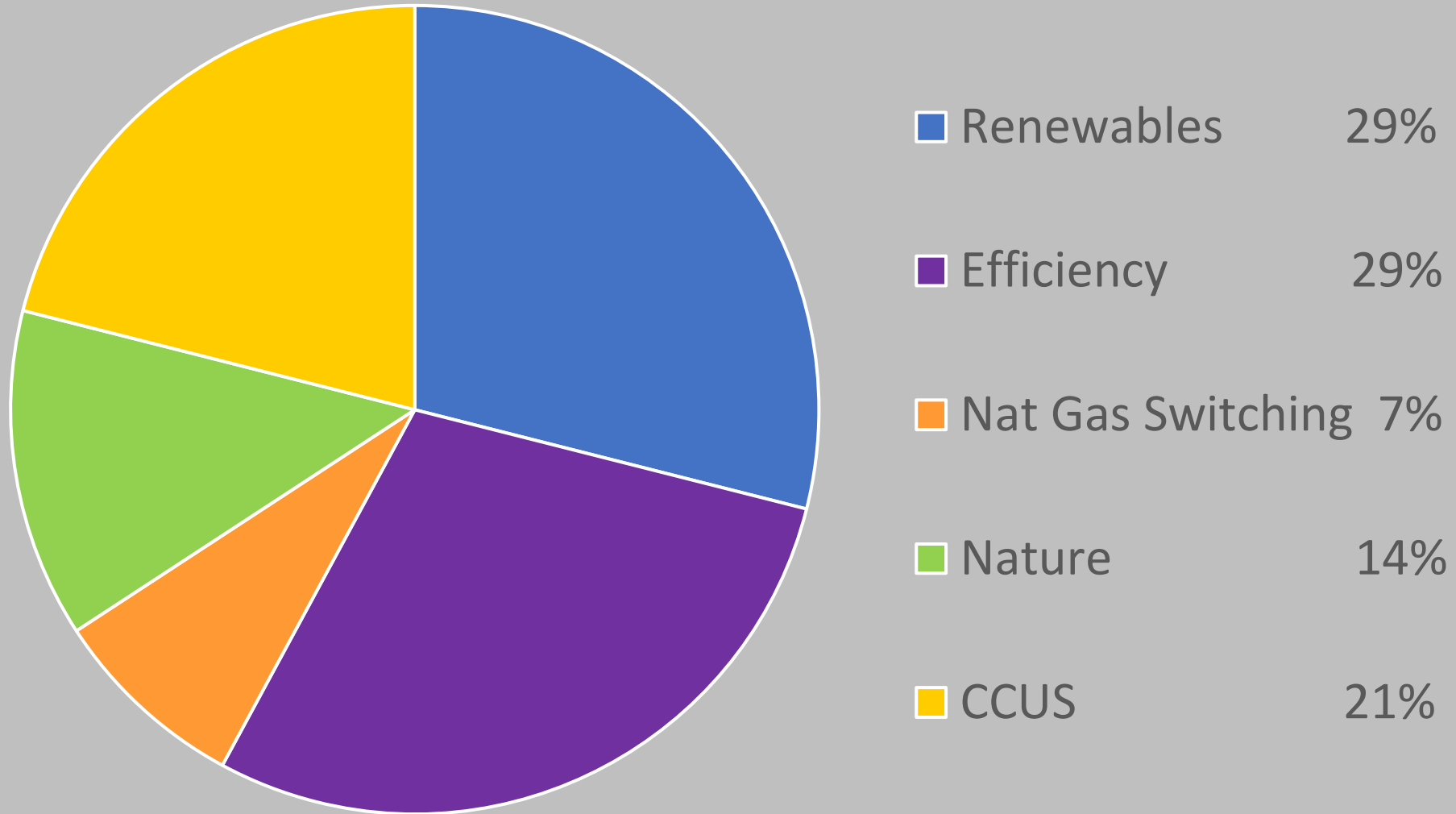


- Human activities unequivocally causing climate change
- Climate change already affecting weather and climate extremes
- Can slow down climate change with deep carbon emission cuts
- Current assessment of future impacts much worse than previous
- Adaptation options that are feasible today will become less so
- Limiting climate change requires net zero
- Modeled pathways to stabilization require rapid, deep and in most case immediate emission reductions **this decade**
- Net negative may be required is exceed 1.5 degrees C

Buyer Obligation – Diverse Set of Strategies Cannot Rely Solely on Offsets

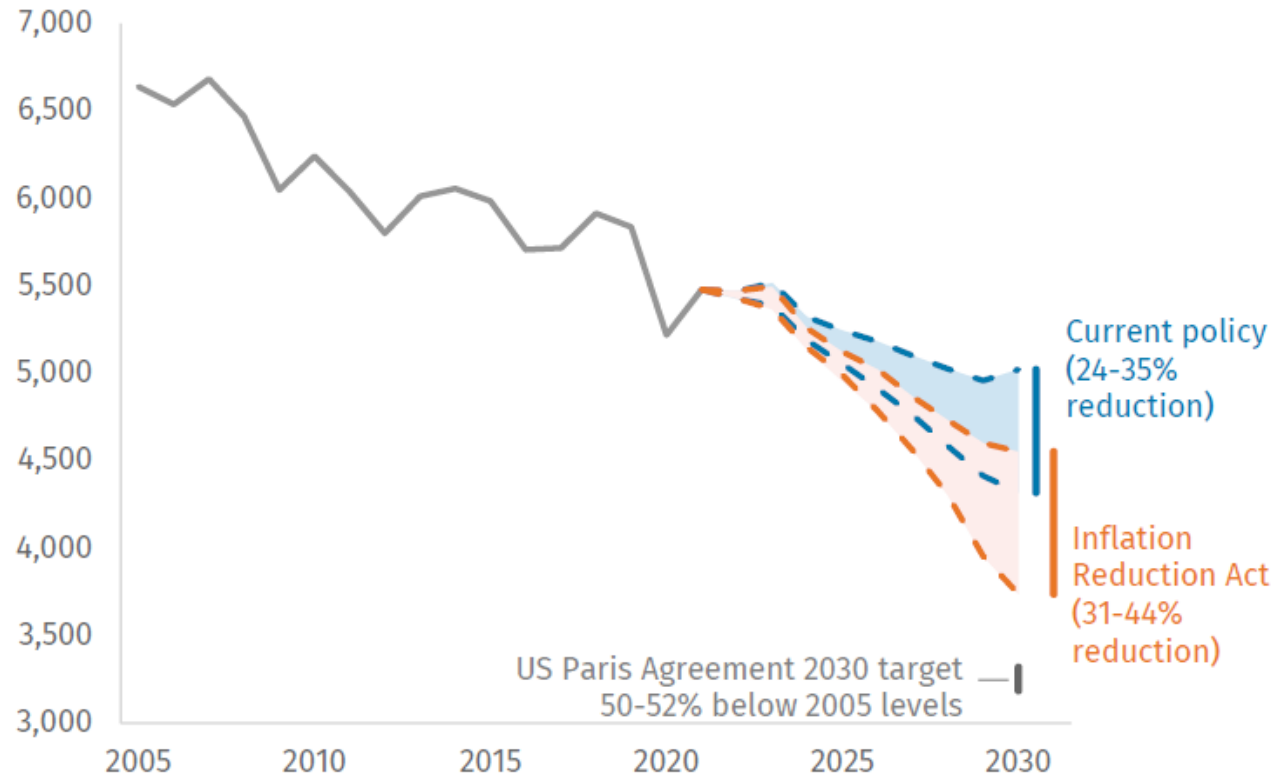


The Path To Net Zero



Progress Toward 50% Drawdown by 2030

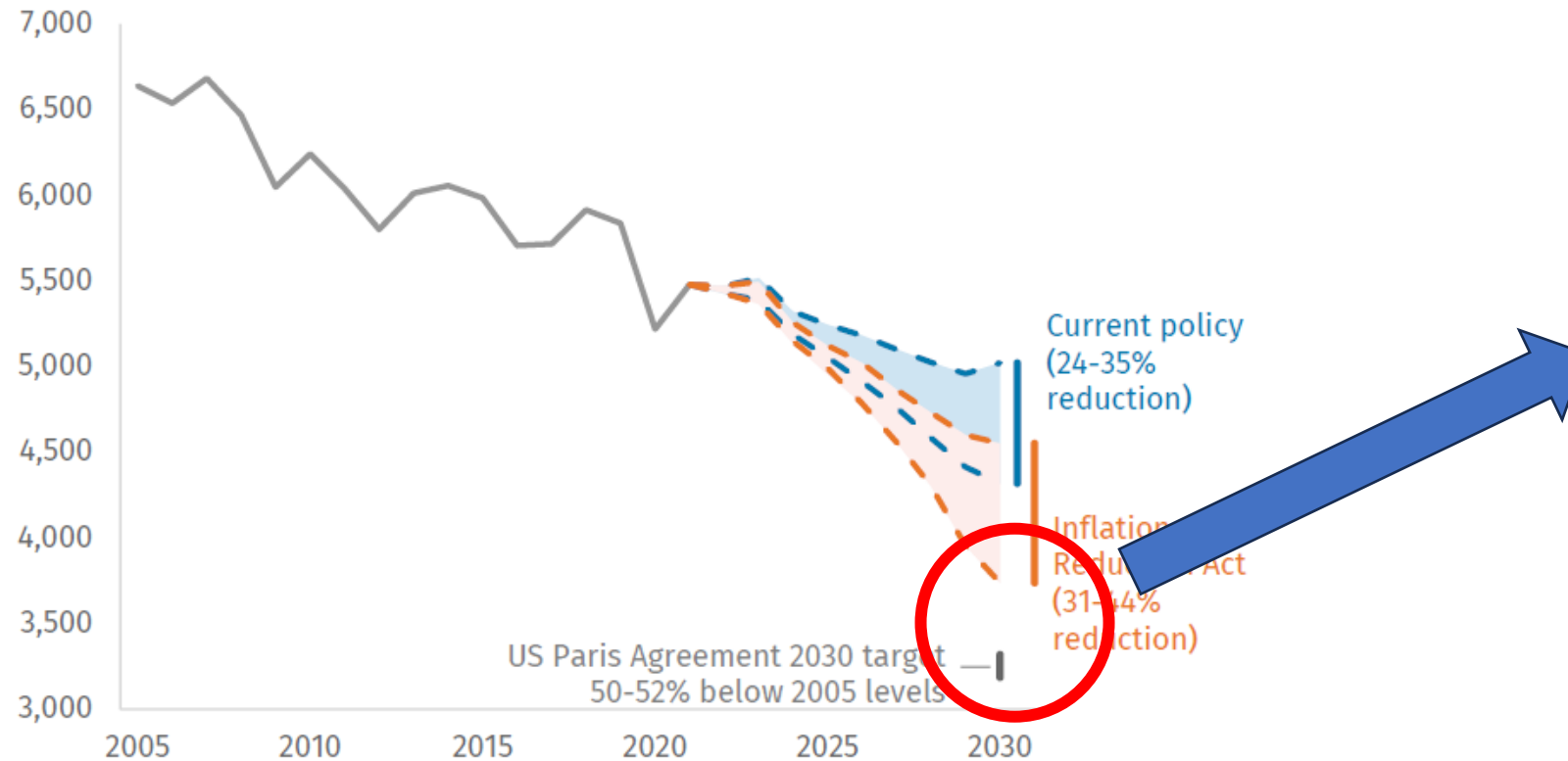
FIGURE 1
US greenhouse gas emissions
Net million metric tons (mmt) of CO₂-e



Source: Rhodium Group. The range reflects uncertainty around future fossil fuel prices, economic growth, and clean technology costs. It corresponds with high, central, and low emissions scenarios detailed in [Taking Stock 2022](#). Under the central scenario (not shown), the IRA accelerates emissions reductions to a 40% cut from 2005 levels.

Nature-Based Solutions Have A Major Future Role For 2030

FIGURE 1
US greenhouse gas emissions
Net million metric tons (mmt) of CO₂-e



21% to 45% gap remaining in 2030 to be filled by either DAC or nature-based credits

Shortfall of 600 million to 1.35 billion tons

Demand expected to accelerate as 2030 approaches

Source: Rhodium Group. The range reflects uncertainty around future fossil fuel prices, economic growth, and clean technology costs. It corresponds with high, central, and low emissions scenarios detailed in [Taking Stock 2022](#). Under the central scenario (not shown), the IRA accelerates emissions reductions to a 40% cut from 2005 levels.

Types of Nature-Based Credits

CO2 Removal and Storage in Natural System

- Grasslands
- Forests
- Coastal “Blue Carbon”

Avoided Conversion of Previously Captured and Stored Carbon

- Forests
- Coastal “Blue Carbon”

Emissions Reduction in Agricultural Practices

- N2O emission reduction
- Methane emission reduction

January 2023: Verra's REDD+ scandal

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The
Guardian

SourceMaterial

- Many of Verra's REDD+ projects drastically inflate baseline scenarios and fail to bring about substantial decreases in deforestation
- **94%** of credits from 29 projects in the Brazilian Amazon should never have been approved
- **400%** inflation of baseline scenarios across 32 projects across the world
- Key takeaways:
 - **Metrics and data validation** must be central to protocols at every step of the way
 - Ongoing **relationships** with developers help to ensure project quality
 - Robust and reliable **modeling** are vital for predicting any business-as-usual scenarios

Current Problems

- March: EU bans carbon neutral claims based on offsets alone, rules that companies must distinguish between reductions in their own emissions and use of offsets.
(<https://carbonmarketwatch.org/2023/05/11/european-parliament-abandons-neutrality-in-anti-greenwashing-drive/>)
- May: UK moves towards greater scrutiny in ads with terms like “Carbon neutral”, “nature positive” (<https://www.theguardian.com/environment/2023/may/15/greenwashing-era-is-over-say-ad-agencies-as-regulators-get-tough>)
- June: Dutch court rules to proceed with KLM airline’s Greenwashing lawsuit – “fly responsibly” ad campaign presented misleading green claims to customers. Like Delta, they engage in carbon offsetting
- August: Delta asks federal judge to toss the proposed class action lawsuit. The lawsuit alleges violation of state consumer protection laws and laws prohibiting unfair and fraudulent business practices – would not have purchased the ticket without “allegedly inaccurate environmental representations” (<https://www.reuters.com/legal/litigation/delta-air-lines-asks-judge-toss-lawsuit-over-carbon-neutral-claims-2023-08-21/>)

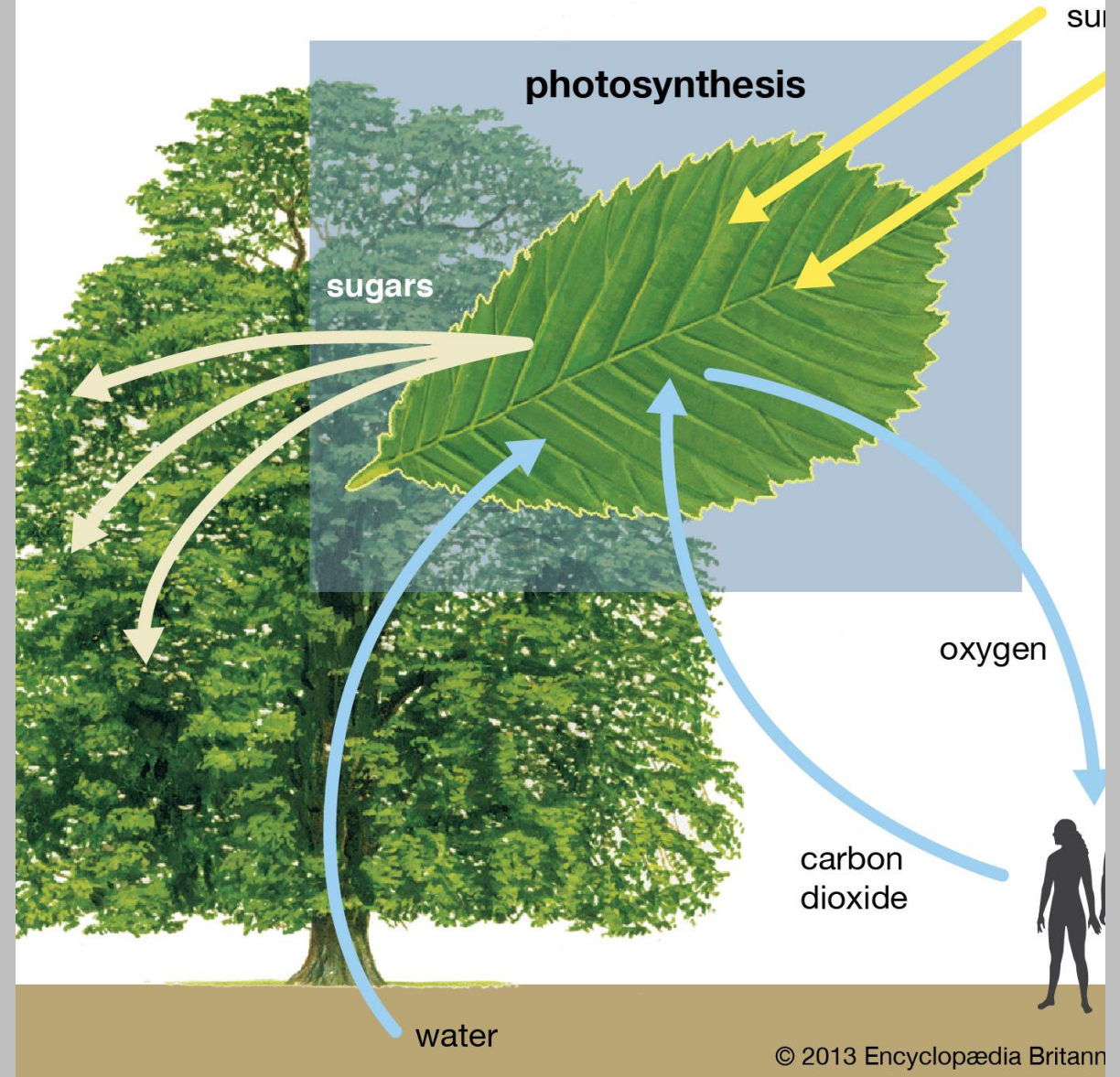
The Carbon Market of the Past

Global Carbon Offset Supply by Type (%) - 2020

Most Offsets Aren't Actually Removing CO₂

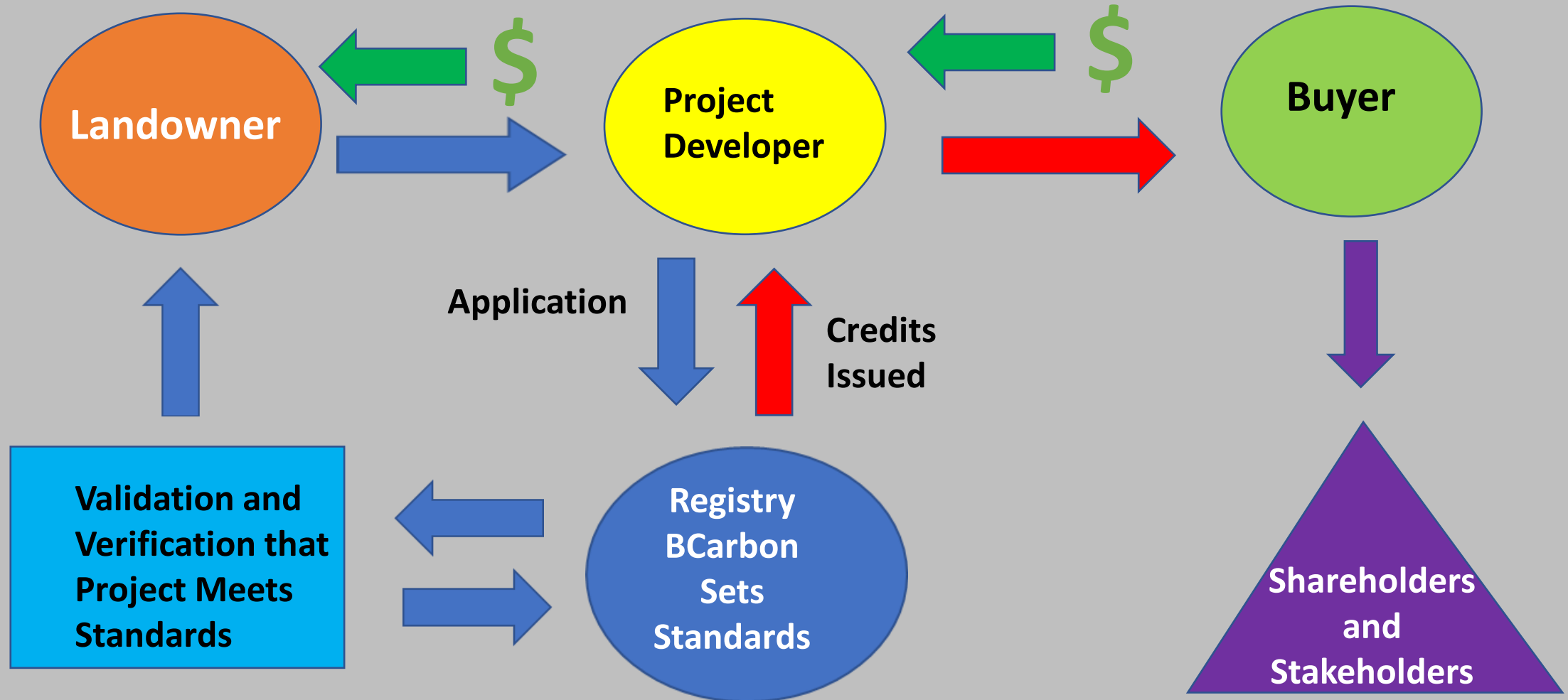
Percentage share of offsets market in 2020





Technological Carbon Capture vs. Nature Based Capture

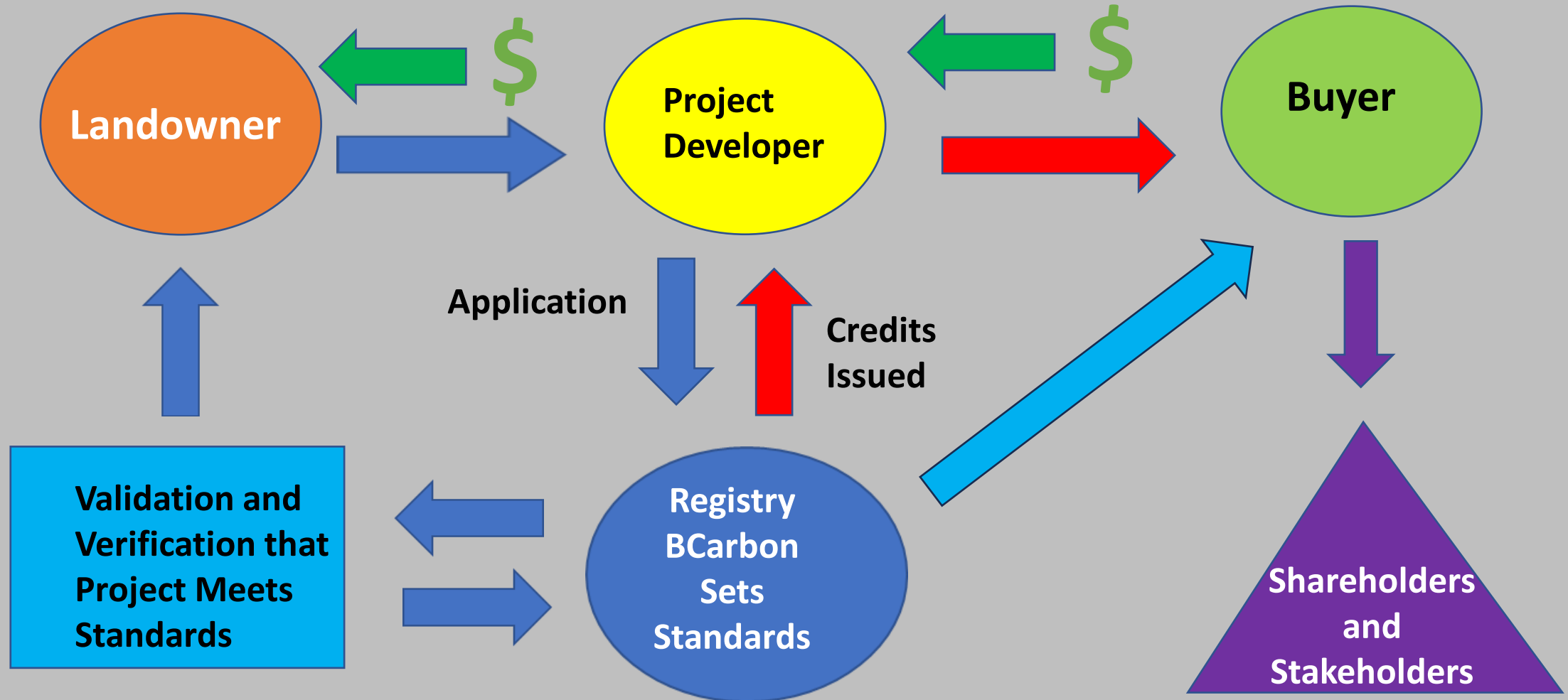
The World of Carbon Credit Transactions



Buying Nature-Based Carbon Credits Is Like Buying a Car



The World of Carbon Credit Transactions

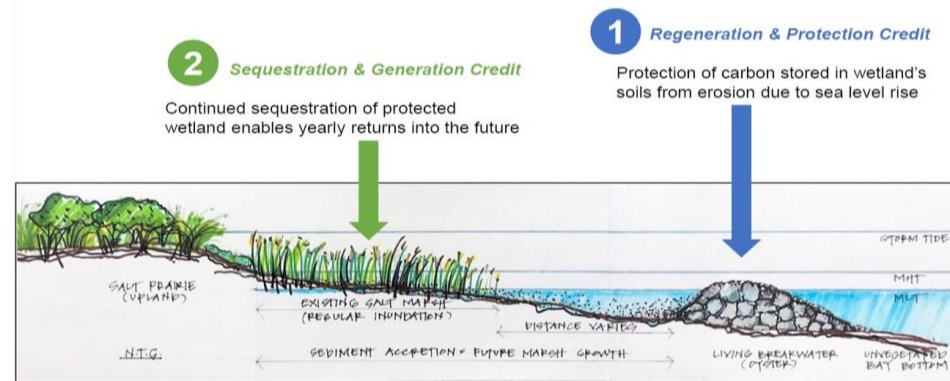


Working With Buyer Knowledge of Credits

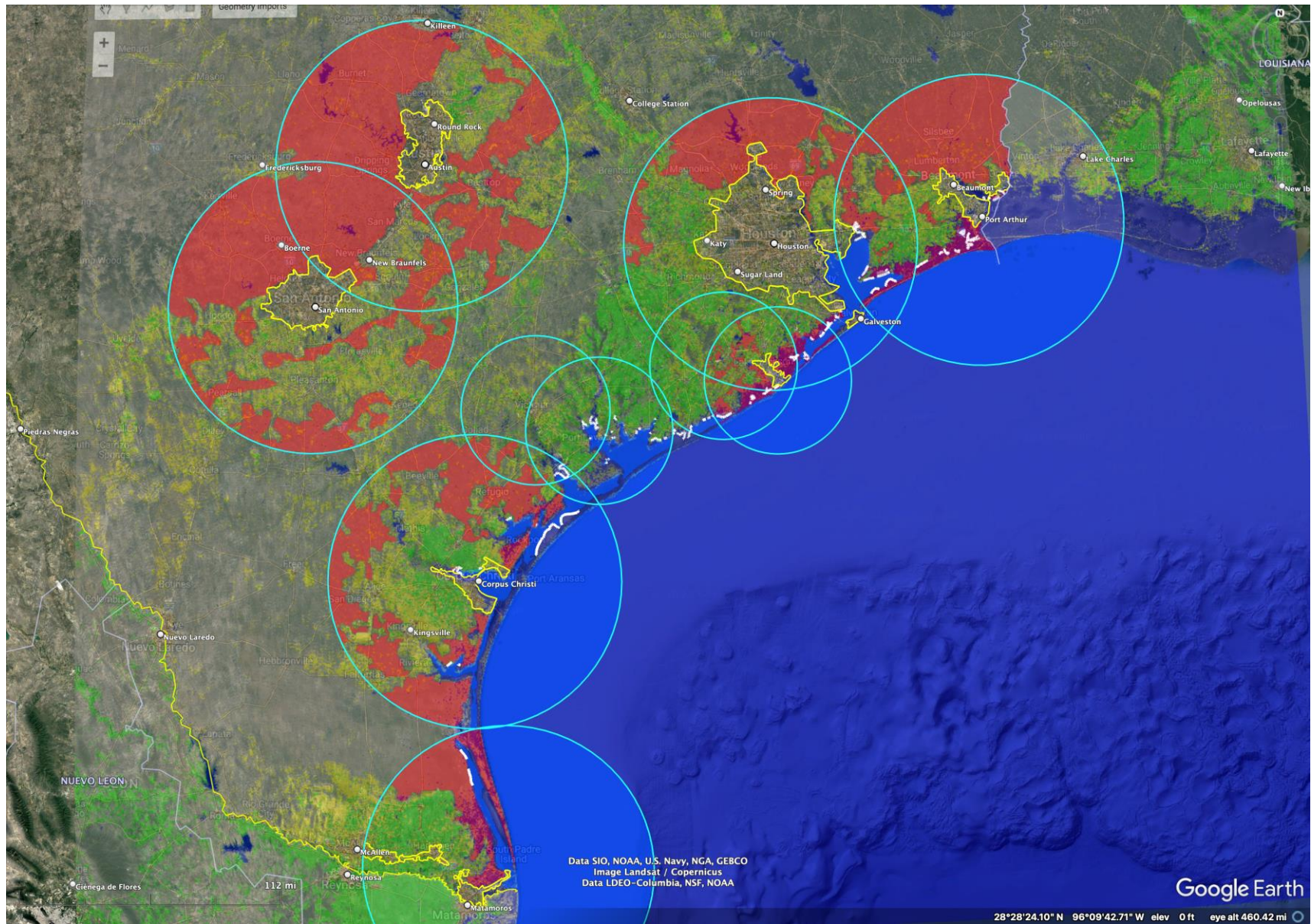
- Focus on credits that are **provable – Measured**
 - Drawdown credits
 - Physical improvement/protection credits



Two types of credits over a 50-year term

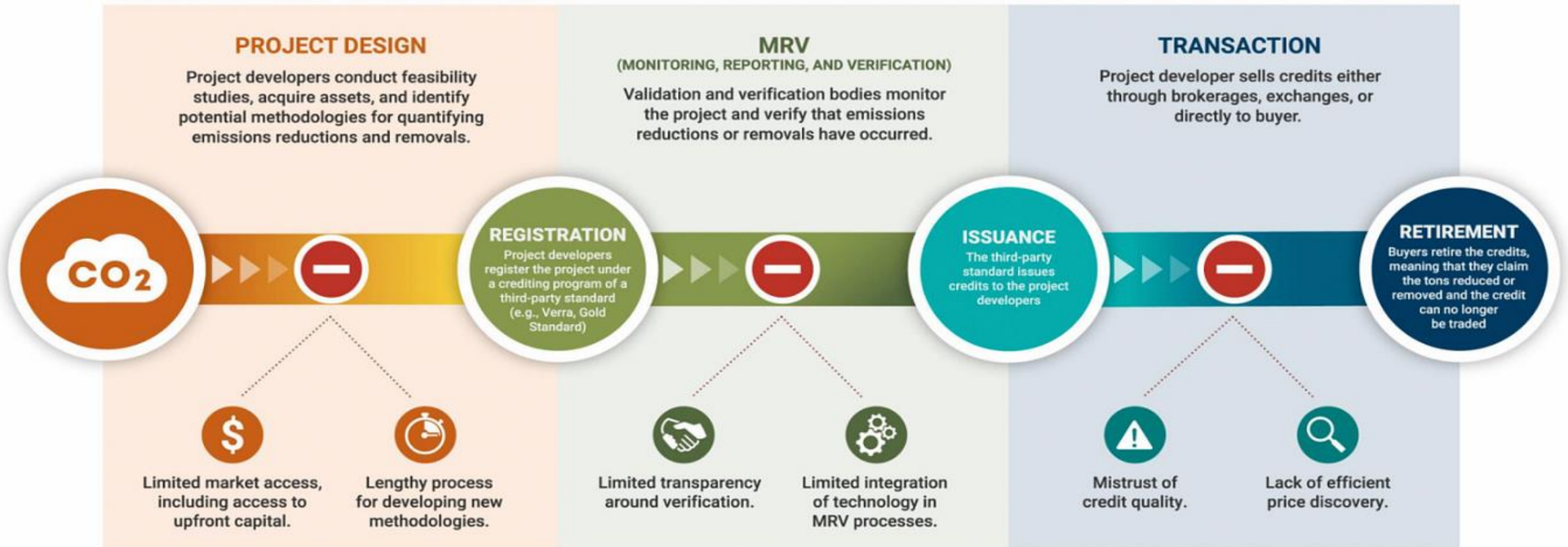


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Digital MRV – Opening Up Transactions

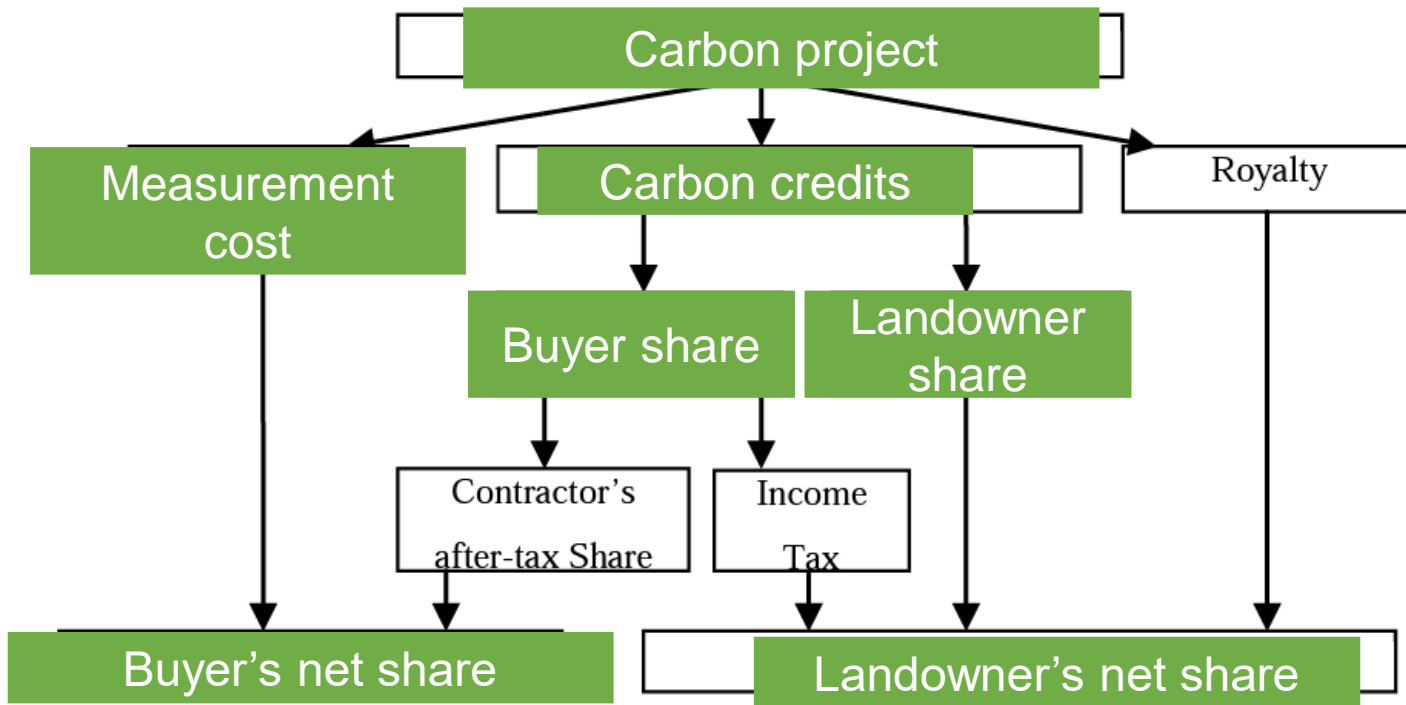
The voluntary carbon market (VCM) has a scarcity, trust & transparency problem.



Project “Pipeline” Problem

- With market down, new starts are few
- Very few companies thinking of longer-term needs
- Takes time to develop nature-based credits
- Companies might want to consider developing a “pipeline” of credits by working with landowners today for credits maturing 2028-2030 time period
- Can possibly hedge crazy pricing nearer to 2030

Production Sharing Agreement: reducing cost, increasing certainty



What might it look like to apply a similar model of risk and profit sharing to the carbon market?

Living Shorelines Stakeholders



ExxonMobil



Hilcorp



AECOM



GALVESTON BAY
FOUNDATION

Valero



The Nature Conservancy



Tetra Tech

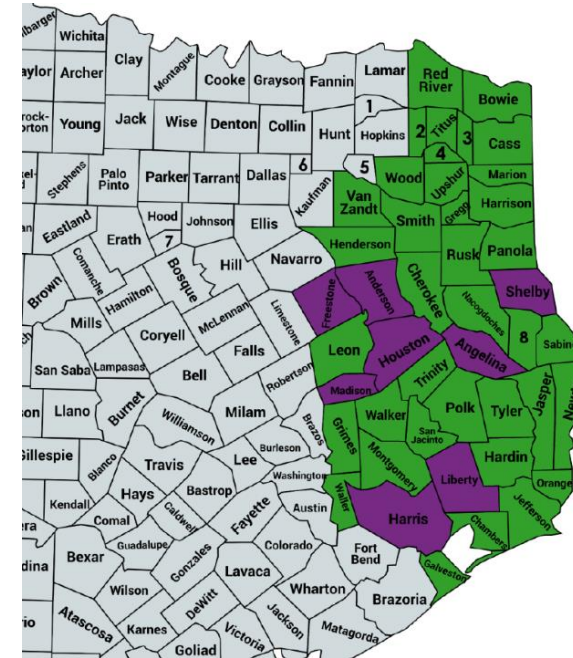
TEXAS
The University of Texas at Austin

TEXAS A&M
UNIVERSITY

BCarbon

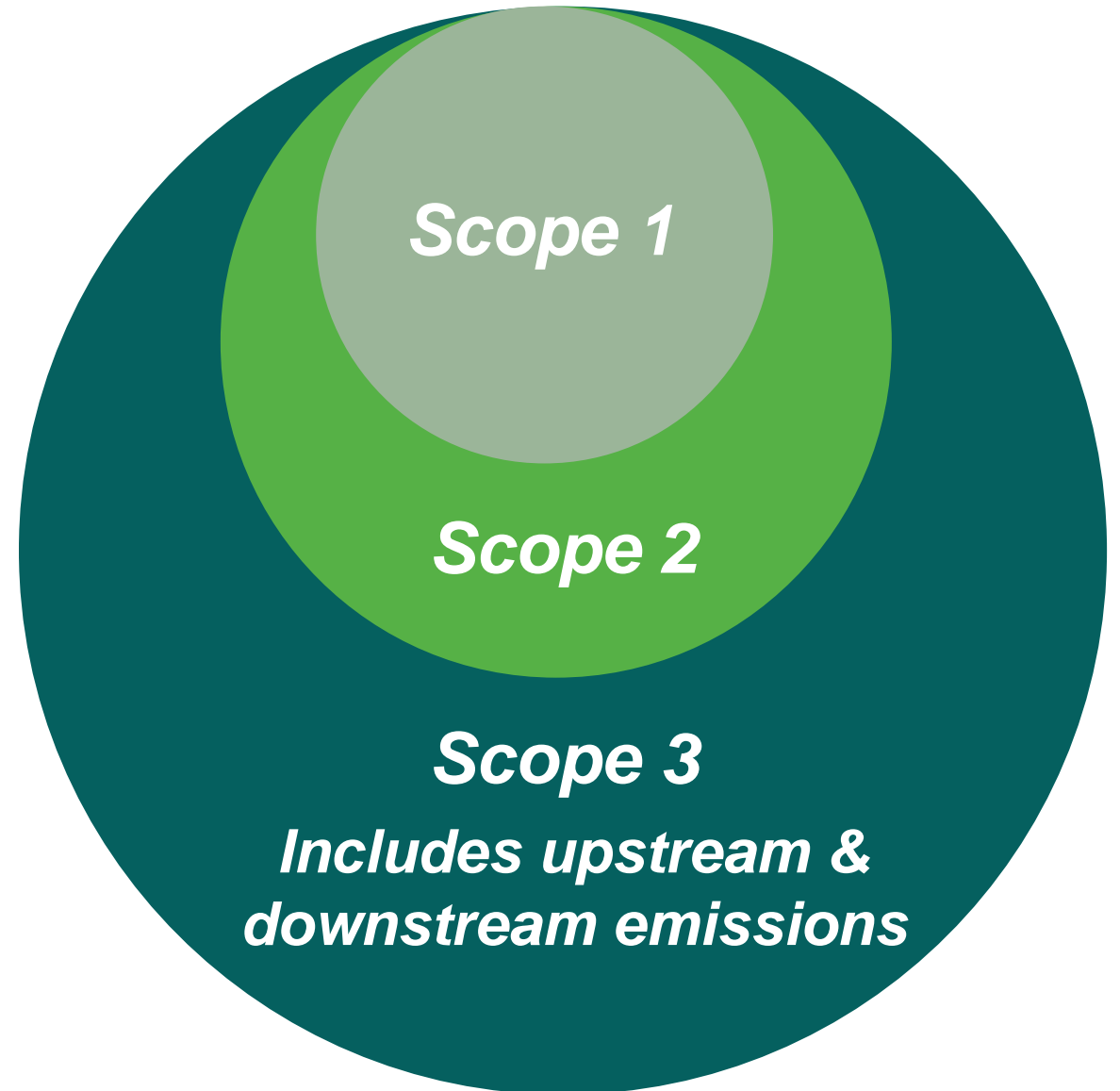
Potential Solution: Meeting Multiple Goals

- Carbon +
- Meeting DEI ESG Goals
 - Working with BIPOC landowners
 - Involvement of minority community in projects
- Meeting biodiversity Goals
 - Endangered Species
 - Species diversity

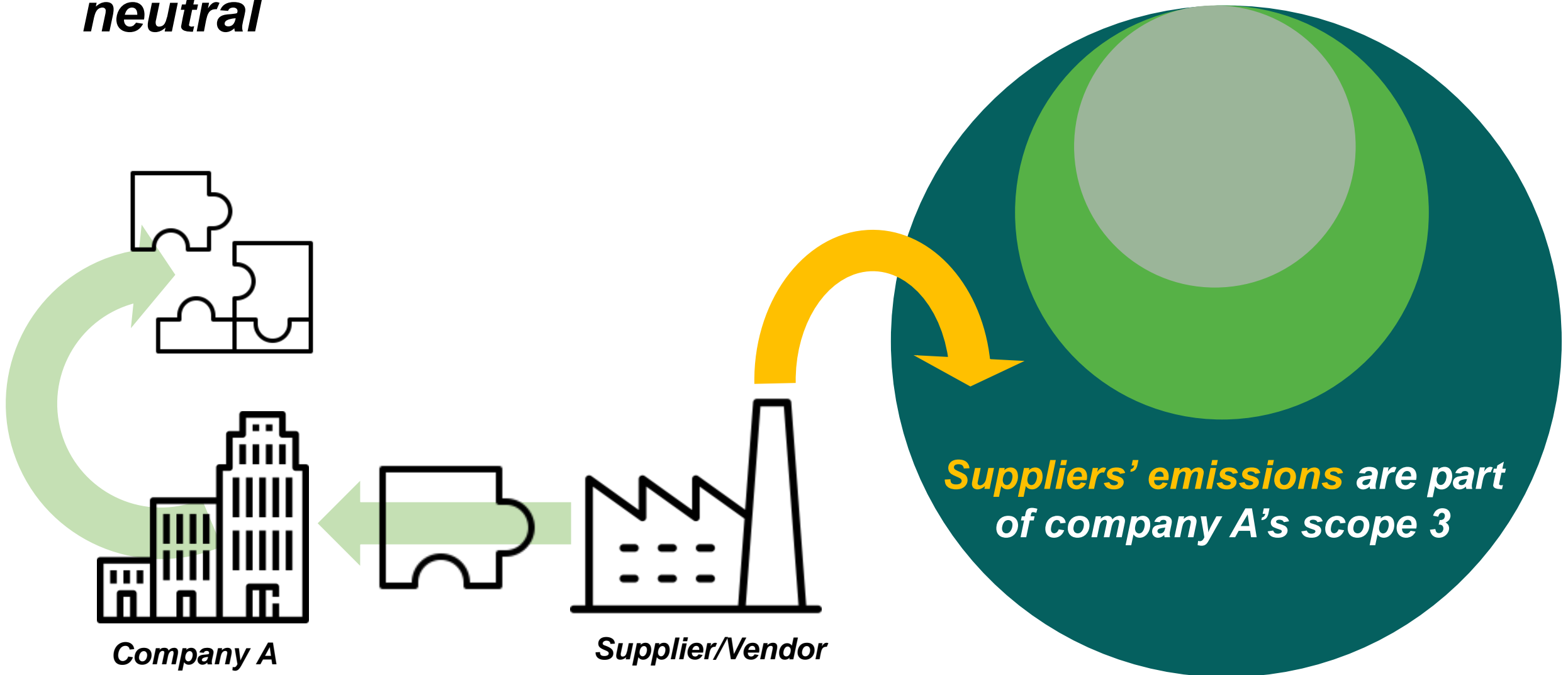


Focusing on insetting and supply chain

***Could credits be the answer
to scope 3 emissions
challenges?***



If Company A has a carbon neutral purchasing requirement, their ***suppliers will need to go carbon neutral***



Potential Solutions – New/Targeted Protocols

Existing Protocols

- Measured Soil
- Measured Forest
- Coastal Living Shoreline
Blue Carbon
- Methane Capping

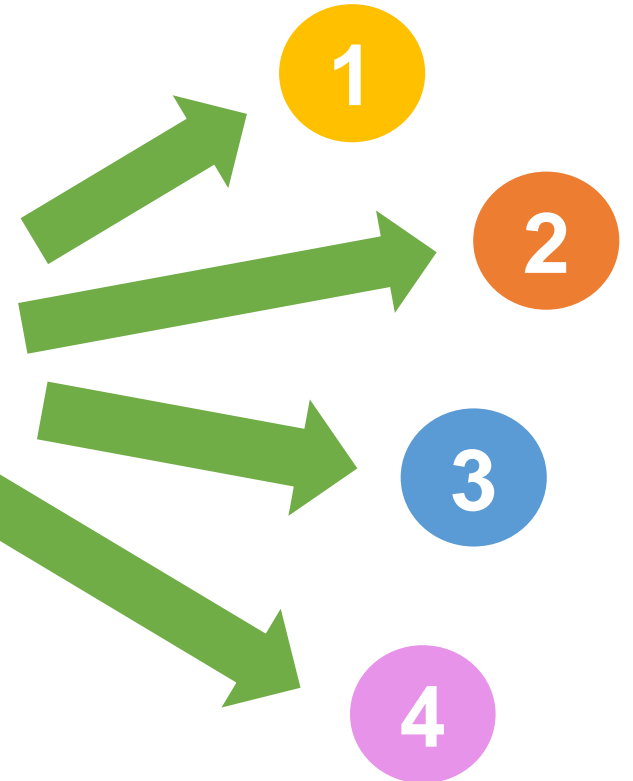
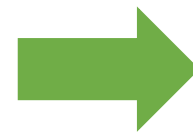
New Proposed Protocols

- DEI Small Landowner
- Commercial Timber
- Biochar
- Excellent Steward
- Biodiversity
- Indigenous Populations
- Photovoltaic + Soil

Facilitating buyer/project connections

How can we respond to increasing buyer interest in front-end involvement?

- Conference or webinar with educational focus
- Virtual or in-person “buyer-developer meetup”



Example concept:
buyer visits BCarbon
website to view portfolio
of available projects for
investment

Is Regulation The End Game?

- Government Control of Voluntary Carbon Market
- Commodities Future Trading Commission
- Securities and Exchange Commission
- U.S. Department of Agriculture
- Fixed Price For Carbon?



Financial Summary

- Need to clean-up the market
- Need informed buyers
- Credits will be needed
- Good quality nature-based credits will be hard to find by 2030
- High Quality Credits – prices in the \$20 to \$30 per ton range in the next year
- Price will increase toward 2030
- \$100 per ton potential for high quality, drawdown credits by 2030 – maybe higher

Thank You

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