Public Consultation: Methodology Framework for Carbon Capture and Storage, Batch 2

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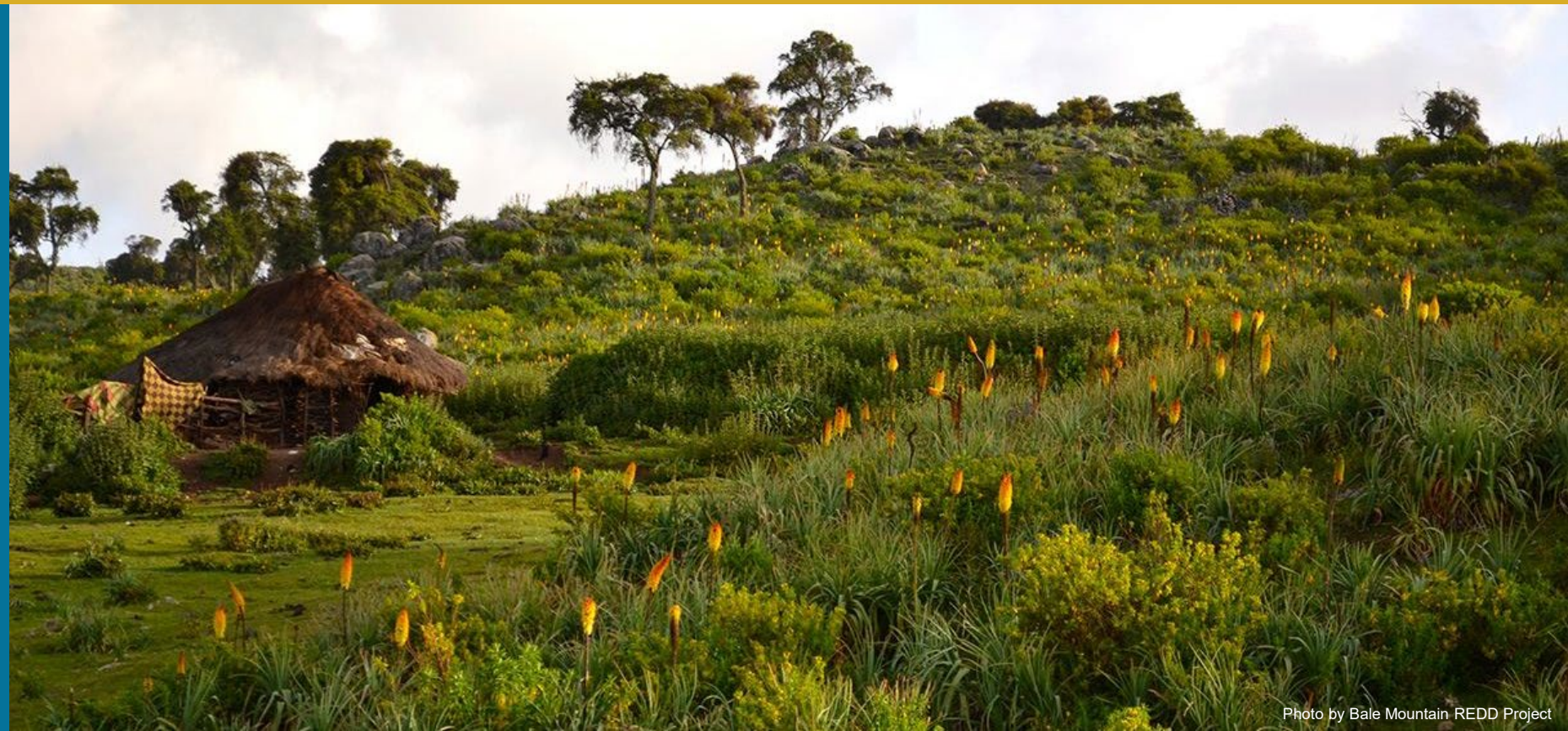

Photo by Bale Mountain REDD Project

Webinar Objectives

- **To present an overview of the proposed 2nd Batch of the VCS Carbon Capture and Storage Modules and Tools, including:**
  - Module for CO2 Capture from Bioenergy Combustion
  - Reductions & Removals tool
  - Non-VCS tool
  - Module for CO2 Storage in Saline Aquifers and Depleted Hydrocarbon Reservoirs

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Agenda


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1. Overview of Verra and the VCS Program
2. Methodology Development and Approval Process (MDRP)
3. CCS+ Initiative
4. Introduction to Batch 2 of the CCS Methodology Framework
5. Q&A

1. Verra and the VCS

- An overview of Verra and the VCS Program

VERRA

Standards for a Sustainable Future

2007

Founded in 2007 by environmental and business leaders who saw the need for greater quality assurance in voluntary carbon markets

501(c)(3)

Registered nonprofit organization under Section 501(c)(3) of the U.S. Internal Revenue Code

110+

With approximately 110 staff and growing rapidly, Verra is headquartered in Washington, D.C., USA, with staff working remotely internationally

VERRA

Verified Carbon Standard

Jurisdictional & Nested REDD+

Climate, Community & Biodiversity Standards

Sustainable Development Verified Impact Standard

Plastic Waste Reduction Standard

Verified Carbon Standard

The world's most widely used voluntary greenhouse gas program

VERRA

Impact

>2,100
projects

> 1.2 billion
carbon credits issued

Equivalent to the emissions of >260 coal-fired power plants in one year

Environmental Finance
Voluntary Carbon Market Rankings 2023
Winner

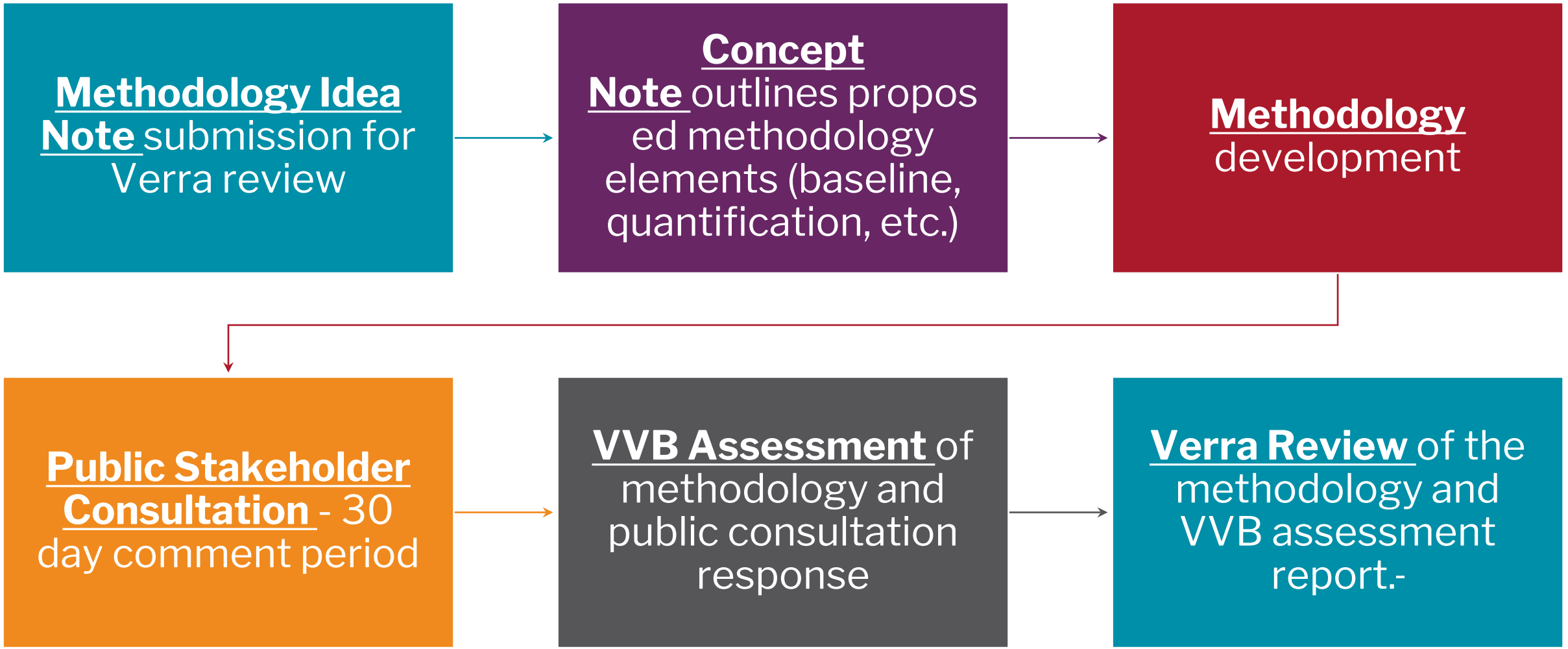
VCS: Best GHG Crediting Programme
2012, 2013, 2014, 2015, 2016, 2018, 2019, 2020, 2021, 2022, 2023

Verra Registry: Best Registry Provider
2021, 2022, 2023

2. Methodology Development and Approval Process (MDRP)

- Procedure for Methodology Development at Verra

2. Methodology Development and Review Process (MDRP)



3. CCS+ Initiative

- Structure, objectives, workstream

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Mission

CCS+ initiative

The CCS+ Initiative aims to scale cutting edge climate technologies by developing a robust carbon accounting infrastructure that promotes environmental integrity. The CCS+ Initiative separately accounts for emissions reduction and carbon dioxide removal solutions.

In a nutshell

A unique approach

A high-quality integrated carbon accounting methodology infrastructure for the full suite of CCS, CCU(S) and tech CDR solutions.

Through collaboration

Developed by pooling funding and expertise in carbon markets, climate science and engineering, covering all use cases.

Creating a public good

Subject to public scrutiny, with the aim of creating a public good that adheres to the highest levels of environmental integrity.

Members

Advisory Group

IETA International Emissions Trading Association
ICROA arbon Reduction l Alliance
OGCI Oil and Gas Climate Initiative
IFC International Finance Corporation World Bank Group
Responsible Steel standards & certification
zep zero emissions platform
wbcsd
TNO innovation for life
Negative Emissions Platform
Global CCS Institute

Carbon Consultants

perspectives climate group
south pole

Core Partners

OXY Low Carbon Ventures
Carbon Finance Labs
Northern Lights
TotalEnergies
equinor
RWE
Shell
FS Fueling Sustainability
Energies nouvelles
Mitsubishi Corporation

Partners

Hafslund Oslo Celsio
Ørsted
INPEX
bp
NEXT Carbon Solutions
LANDWÄRME
Baker Hughes
CALPINE
JAPEX Japan Petroleum Exploration Co., Ltd.
MERCURIA Energy Group Ltd
General Electric
JX
Sika
HARSCO Environmental
CEMEX
drax
The Japan Gas Association
JOGMEC Japan Oil, Gas and Metals National Corporation
ENOWA NEOM
enfinium
Kawasaki

Technology Partners

Carbon Engineering
climeworks
CarbonQuest
NeoCarbon
carbyon
Carbonfuture
44.01
Progressive Energy
Kajima Corporation
neustark
Carbon Upcycling technologies
cella
Low Carbon Materials
Carbfix
futurebiogas

Standard Setting Body

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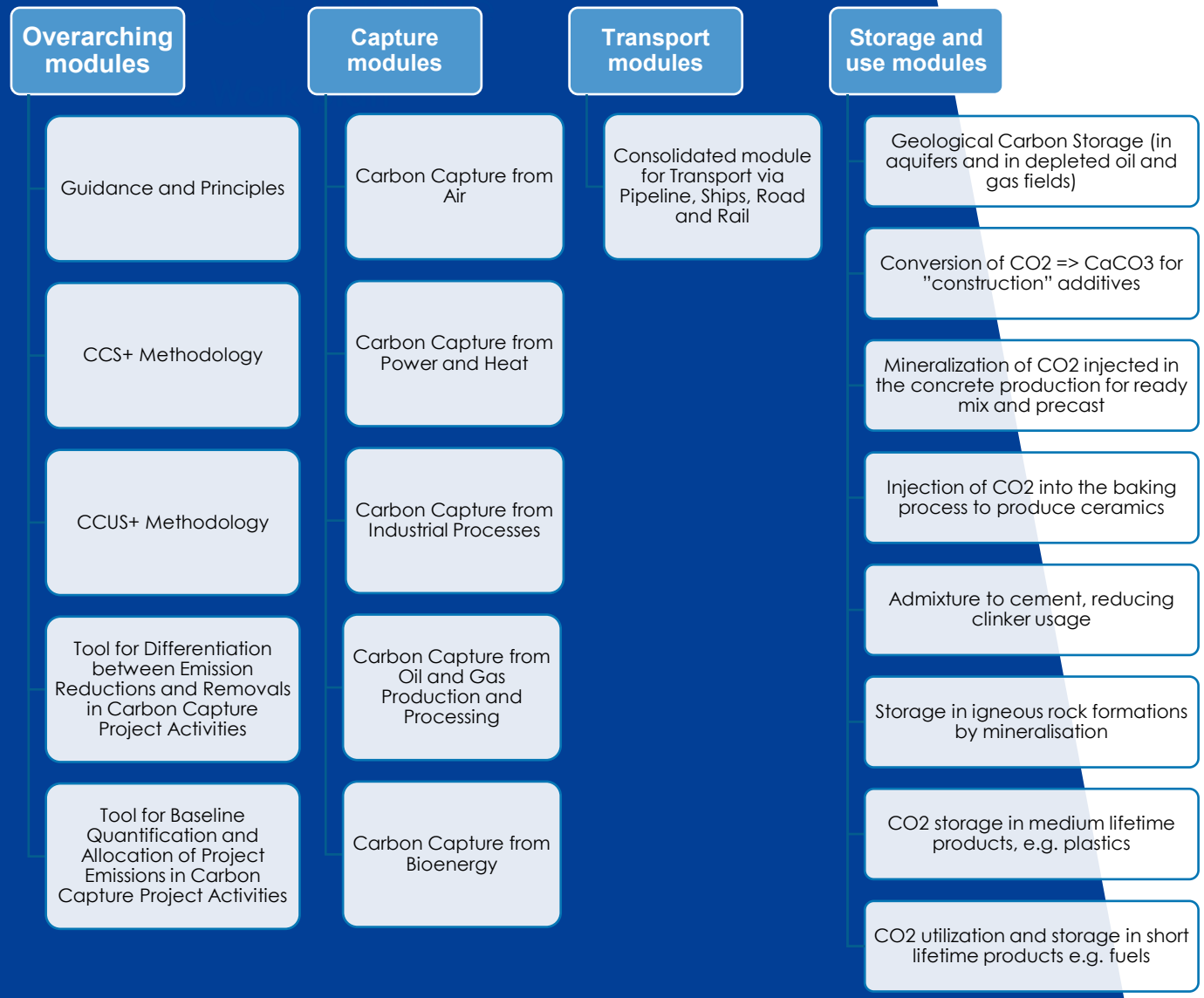

Modular approach

- **Modules** are grouped along the project value chain, i.e. capture or removal, transport, utilization and storage.
- **Staggered approach** to methodology and tool development, starting with the most mature and impactful use cases.
- **Additional modules** can be added where there is a technical overlap, conditional upon funding.

Plug-and-play application

Approach for application of "methodology" to project activity

Step 1 – Framework Methodology

- Check if capture / removal, transport and storage technologies proposed are eligible under Methodology Frameworks

Step 2 – Capture Modules

- Select modules for the applicable capture / removal technologies

Step 3 – Transport Modules

- Select modules for the applicable transport technologies

Step 4 – Storage Modules

- Select modules for the applicable storage technologies

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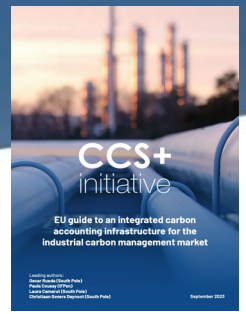
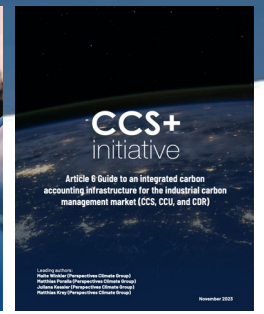
Bridging markets





Compliance guidance

for regulatory and voluntary schemes

MRV FRAMEWORKS

Policy instrument design (Article 6, Subsidy schemes, tax rebates, …)

Cross-border accounting

VCM and compliance markets

Supra-national level

National level

Regional level

Project level (methodology framework + modules)

Financing, piloting & scaling

INNOVATION

CCS+ initiative

Compliance guidance

- EU compliance
- Compliance with Article 6 transactions
- US regulatory incentives (e.g. 45Q, LCFS)
- Three domestic use cases: Kenya, Switzerland, Sweden
- VCM compliance
- Gulf region compliance
- Three cross-border use cases

Published

Under development

To be scoped

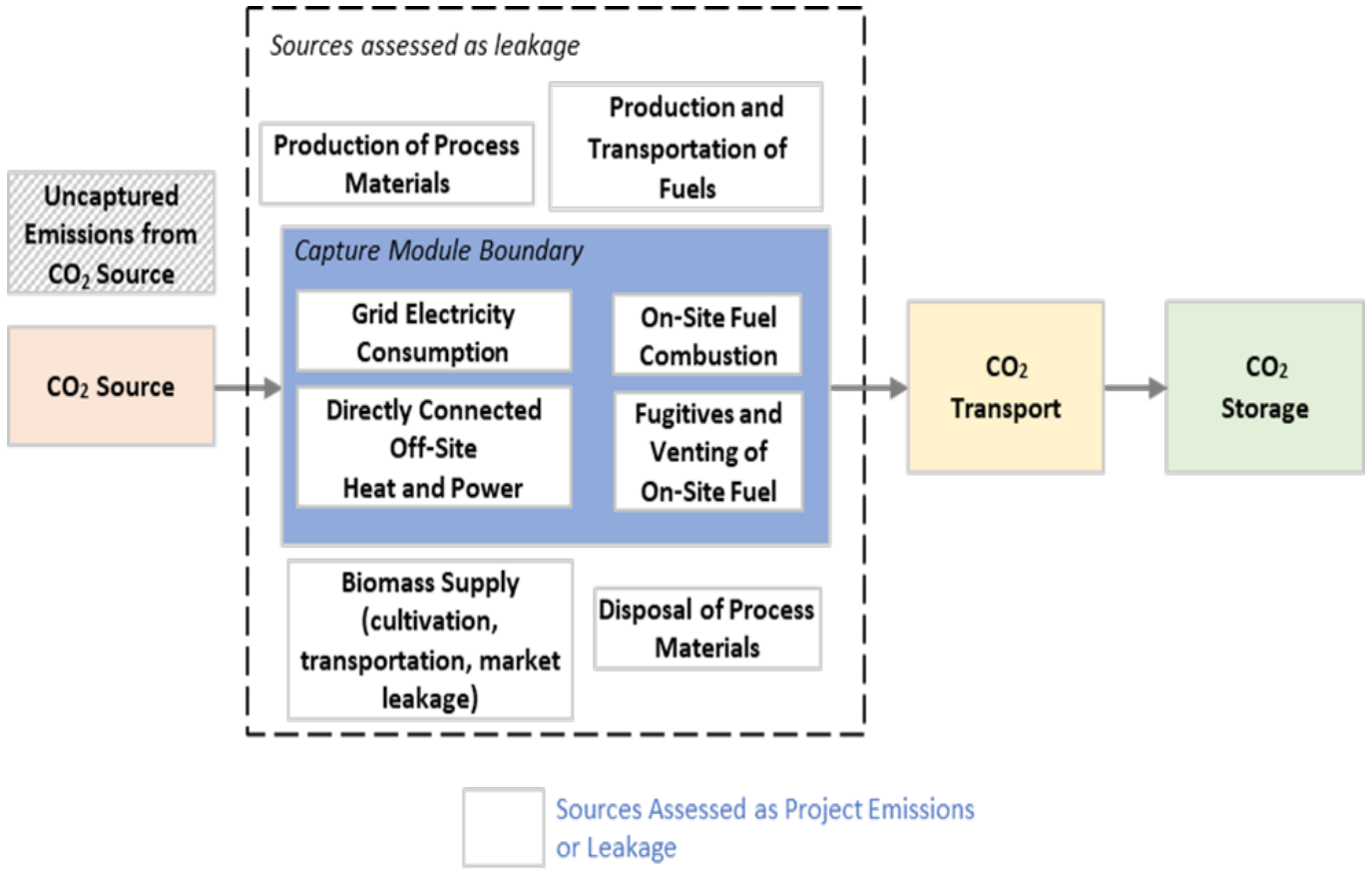
4. Introduction – Batch 2 of the CCS Methodology Framework

Objectives:

- Expand the eligibility of CCS to projects capturing CO_2 from Bioenergy Combustion
- Safeguard the sustainability of biomass feedstocks
- Differentiate CO_2 reduction & removals in projects with both types of mitigation impacts.
- Facilitate the establishment of CCS hubs and shared infrastructure
- Expand storage options

Module for CO_2 Capture from Bioenergy Combustion (BECCS)

- *Applies to bioenergy facilities producing heat and power*
- *Accounts for the removal of carbon dioxide from short-lived biogenic storage*
- *Covers emissions from biomass lifecycle*



Requested feedback

BECCS:

1. In what ways could the proposed method for assessing project and leakage emissions associated with BECCS projects be improved?
2. Are there existing standards, regulations, or other sources that could provide guidance on better accounting for these emission sources, especially market leakage, from the use of biomass feedstocks?
3. In what ways could the proposed methods for differentiating baseline emissions and allocating project and leakage emissions between emission reductions and removals be improved?

Safeguards for Sustainable Biomass

Land use and biodiversity	Sustainable forest management	Soil health	Water
Food security	Social sustainability	LULUCF	Land-based leakage

Projects must:

- Demonstrate regulatory compliance or sustainability certification, and
- Maintain chain of custody documentation

Requested feedback

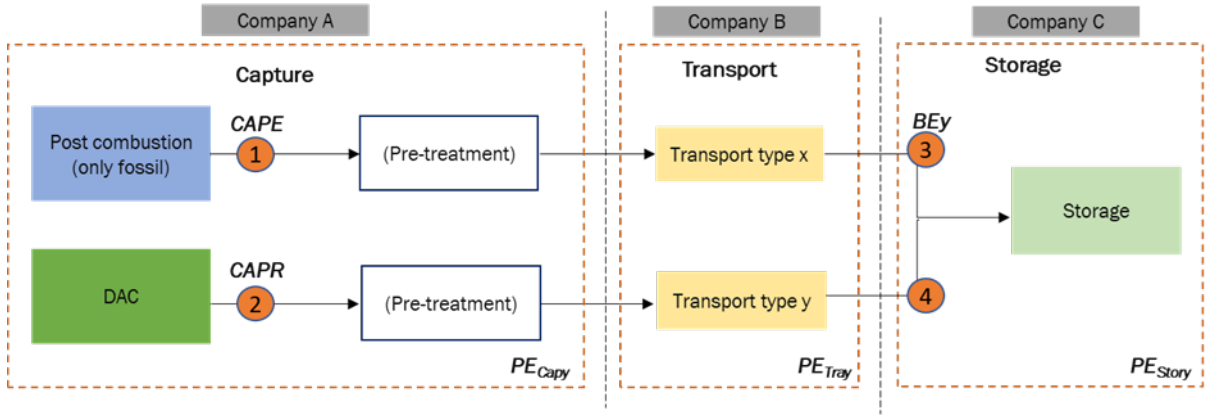
Sustainability safeguards:

1. What are the limitations or gaps in the current approach used to demonstrate the sustainability of biomass feedstocks and safeguarding against potential negative environmental and social impacts from their use?
2. What specific challenges or complexities do you anticipate in applying this approach in a global context?

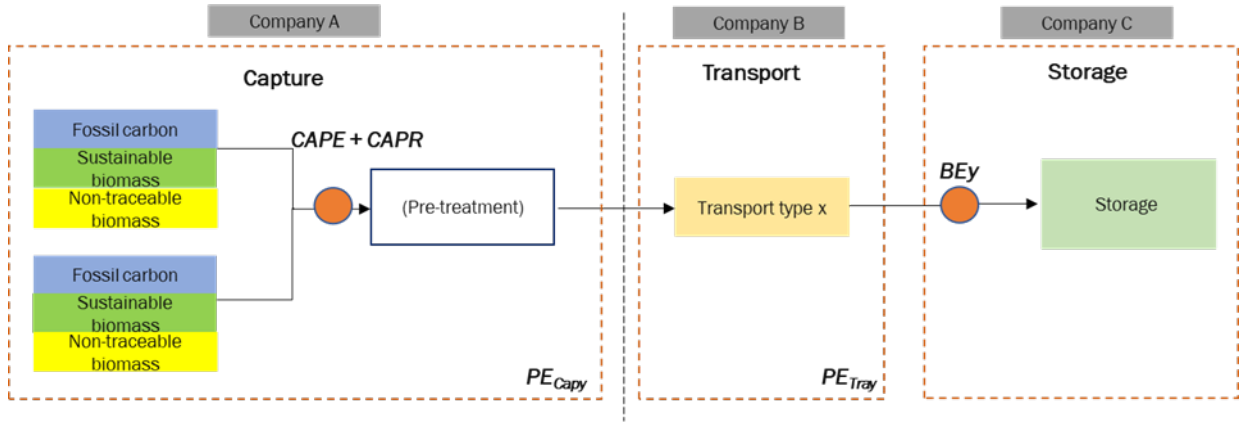
Tool for Differentiating Reductions and Removals in CCS Projects

- *Applies to projects with facilities dealing with mixed feedstocks*
- *Protects integrity and market signal for removals*
- *Incents a move away from non-traceable biomass*

Multiple sources, each with a single feedstock type



Multiple sources, each with mixed feedstock



Requested feedback

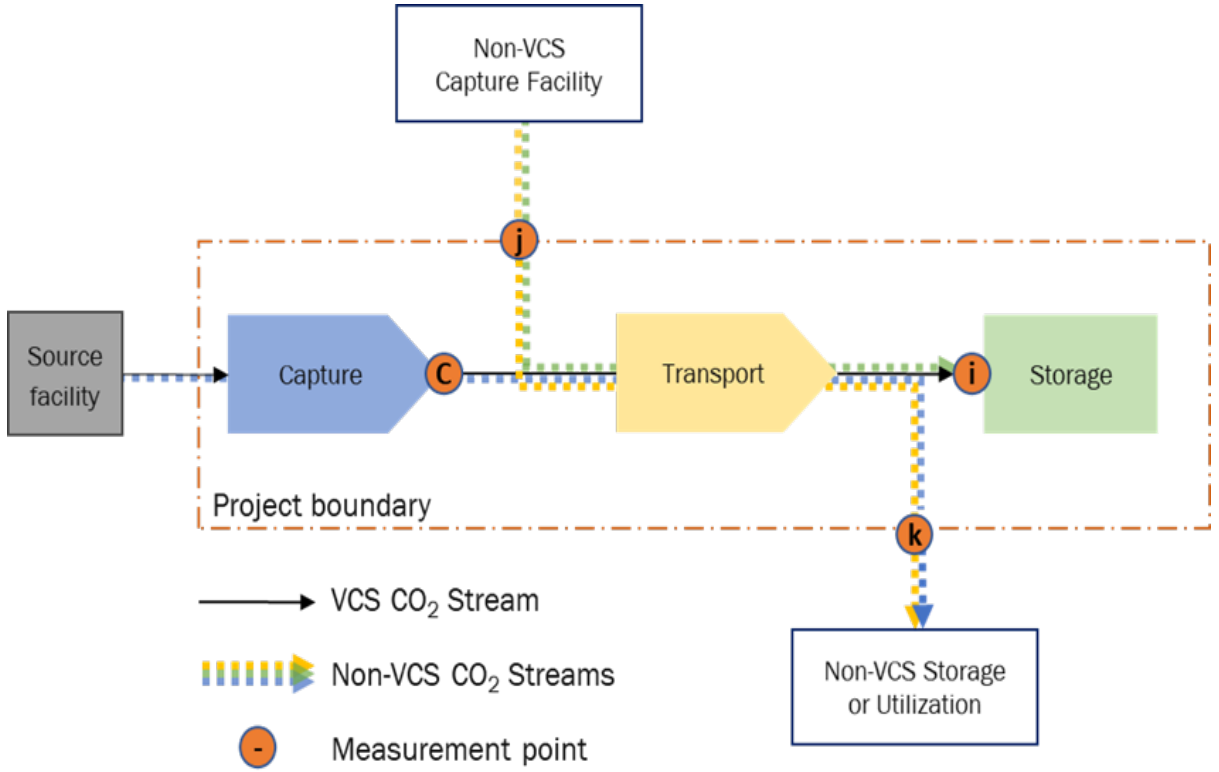
Reduction and Removals tool:

1. The tool seeks to incentivize projects to reduce the use of non-traceable biomass over time in two ways:
   - By discounting the reductions generated by projects that exceed a decreasing annual limit of non-traceable biomass consumption in the first crediting period, and
   - Making non-traceable biomass ineligible to generate reductions after that.

   Do you believe this approach is adequate to incentivize the reduction of non-traceable biomass use over time? If not, are there any adjustments or considerations you would suggest? Is this approach equitable or will some projects experience outsized impacts?

Tool for Accounting Non-VCS CO2 in CCS Projects

- *Applies to projects with facilities dealing with VCS and Non-VCS CO_2*
- *Allocates project and leakage emissions to both*
- *Supports the development of shared infrastructure*



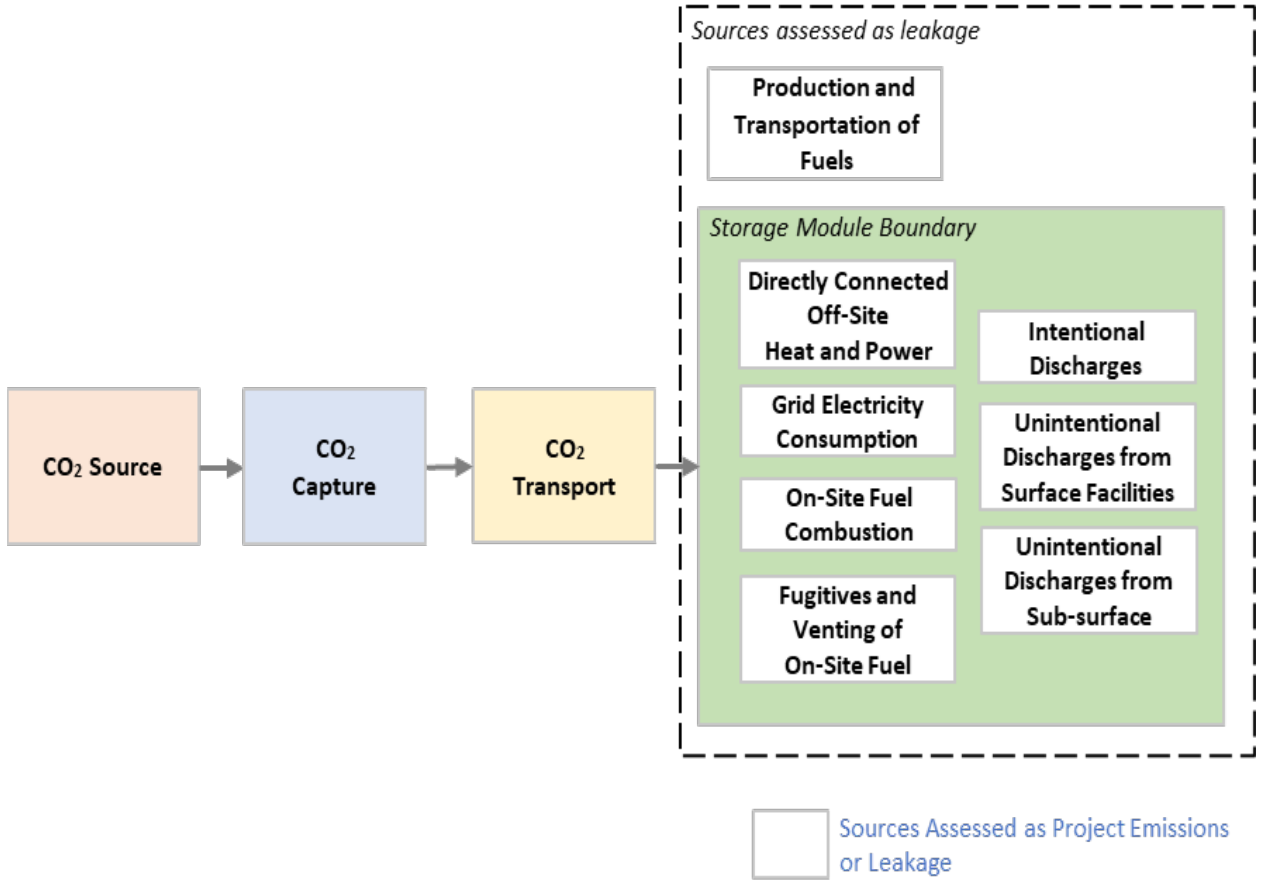
Requested feedback

Non-VCS tool:

1. In what ways could the procedures for quantifying the allocation of project emissions and leakage emissions for projects involving captured CO_2 that is not eligible for crediting in the VCS be improved? What specific challenges or complexities do you anticipate in applying this approach?
2. Option 1 of the non-VCS tool, allocates all project and leakage emissions to the VCS CO_2 stream. How confident are you in the accuracy and reliability of this approach? Are there any potential drawbacks or limitations to consider when applying Option 1, particularly in cases where non-VCS CO_2 emissions may be significant?

Module for CO2 Storage in Saline Aquifers and Depleted Hydrocarbon Reservoirs

- *Applies to projects that store CO_2 in:*
  - *Saline Aquifers or,*
  - *Depleted Hydrocarbon reservoirs*
- *Module was updated based on public consultation*
- *Expands storage options*



Requested feedback

Storage:

1. Do the revised definitions for 'Depleted Hydrocarbon Reservoir' and 'Legacy Wells' improve the clarity and operational guidance of the storage module? Please provide specific feedback on their applicability and any areas for further refinement.
2. How does the exclusion of certain CO_2 Injection activities affect the comprehensiveness of the CCS+ methodology? Are there any considerations that may have been overlooked in determining these exclusions?
3. Please suggest any best practices or methodologies for the monitoring of CH_4 emissions from depleted Hydrocarbon Reservoirs. Additionally, do you agree with the inclusion of this requirement in the framework?
4. Are the new monitoring plan requirements sufficiently comprehensive to ensure the permanent storage of CO_2?

Public Comment Period

- Available at Public Consultation: Carbon Capture and Storage Tools and Modules
- Open for public comment from **1 March - 15 April**
- Submit comments to *methodologies@verra.org*

Next Steps for Batch 2

March 1 to April 15	**Consultation period**
May 2024	**Modules revised per input from consultation**
Q3 2024	**Module validation**
Late 2024	**Revised modules and tools publication**

Ongoing or Future Work Related to CCS

Related to this draft methodology:

- Please see existing requirements document:
  - *Methodology for Carbon Capture and Storage documents*
  - *Geologic Carbon Storage (GCS) Requirements* document
  - *GCS Non-Permanence Risk Tool* document
- *Draft consultation for program changes* related to:
  - Embodied carbon and construction emissions (particularly relevant to DACCS project activities)
- Potential future updates related to CCS work:
  - An electricity tool for making consistent measurement of electrical energy consumption and providing guidelines for 'purpose-built green PPAs'
  - VCS definition for sustainable biomass and requirements for sustainable feedstock sourcing

4. Questions

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Thank You


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