

I4CE

INSTITUTE FOR
CLIMATE
ECONOMICS

Une initiative de la Caisse des Dépôts et
de l'Agence Française de Développement



The Basics of carbon economy for the land sector

I4CE Training for *Life Carbon Farming* partners

Thursday 7th December



07-12-2023



The LIFE Carbon Farming project is co-financed by the European Commission's LIFE program as part of the “Climate Change Mitigation” sub-programme, which aims to combat climate change, promote green energy and protect the environment.

Institute for Climate Economics



I4CE FIGURES



31 
Team members

50+ 
Events annually

20+ 
Publications annually

9000+ 
Twitter followers

+7 300 
Newsletter subscribers

400+ 
Press articles

OUR MISSION

The Institute for Climate Economics is a **non-profit research organisation** that **provides independent policy analysis on climate change mitigation and adaptation**

The Climate Clubs : a collective expertise for climate



- **A network of expertise**

- researchers
- institutions
- private organisations

- **Our mission**

- Decoding climate issues in the agriculture and forest sectors
- Mutualising expertise and experience
- Creating tools to facilitate the climate transition

- **Our work:**

- Communicating science
- Public policy analysis
- Economic tools

Our founding partners



THE «LOW CARBON LABEL » (LABEL BAS-CARBONE)

- The 'Label bas carbone' is a public carbon certification standard. It guarantees and measures the positive climate impact of projects, notably in the agriculture and forest sector
- The idea of creating a national certification framework stemmed from the Climate Clubs, in the absence of standards on the national territory

INTRODUCTION

The Basics of carbon economy for the land sector

1. History and evolution of the carbon markets mechanisms
2. Fundamental requirements for carbon certification
3. The integrity of carbon markets
4. Overview of carbon markets
5. Other sources of fundings for carbon certification
6. Carbon certification in the EU climate policies

HISTORY AND EVOLUTION OF THE CARBON MARKET MECHANISMS

The financialization of the environment

- Central assumption: **The environment is considered as a market externality.** In this context, a cost-benefit analysis enables the internalization of the externalities costs, and ultimately to optimise the efforts between the stakeholders and minimise the global costs.
 1. **Instruments establishing a price signal on environmental externalities :**
 - Environmental tax based on the polluter-pays-principle (A. C. Pigou, 1946),
 - Market for the right to pollute (R. Coase, 1960; J Dales, 1968), following a « cap and trade » principle. The regulator defines a maximum threshold that cannot be exceeded. Allowances are sold or allocated for free to companies. The companies can decide to use them to pursue their activity, or sell them on a specific market.
 2. **Development of market solutions in the 1980's et 1990's (« mise en économie de l'environnement », Dominique Pestre, 2016)**
 - Political context:
 - Coalition of liberal actors: industrial actors, World Bank, OECD, economists, opposed to regulatory measures (« command and control »)
 - Protection of the environment delegated to the economic actors themselves, with the idea that it is possible to combine economic and environmental performance

What is carbon offsetting?*

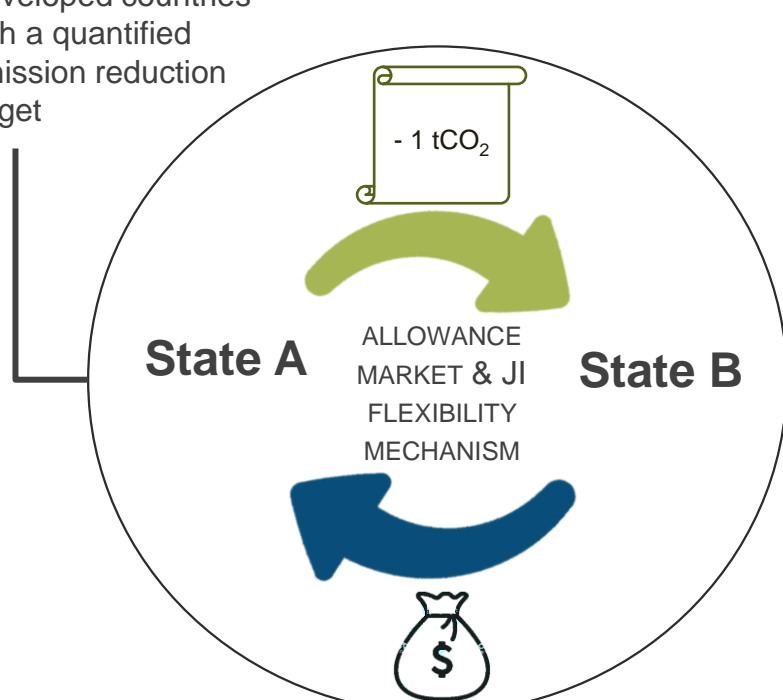
- **Replace a Greenhouse Gas (GHG) emission reduction in a given location by another emission reduction carried out elsewhere (IPCC, 2018)**
 - Biogeochemical dimension linked with the carbon cycle:
Equivalence between:
 - The impact of GHG on climate, independently of where they were emitted
 - Different GHG, using the Global Warming Potential (GWP)
 - GHG emission reductions and CO₂ removals
 - Economical and political dimensions of offsetting
 - Commercial scheme (market instrument, introducing monetary value)
 - Political accountability (Mitigation objectives in the international climate conventions)

Market mechanisms under the Kyoto Protocol

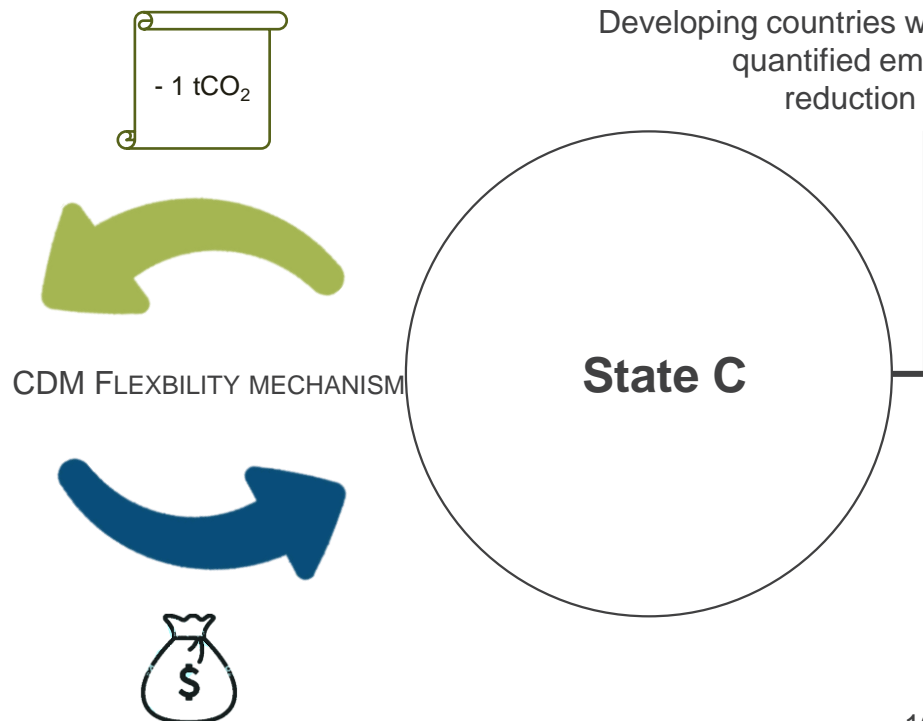
- **Kyoto Protocol, 1997:** Objective : – 5,2% GHG emissions in compared to 1990, for developed countries
 - **1 inter-state market**
 - **2 flexibility mechanisms**, to purchase emission reductions
 - **CLEAN DEVELOPMENT MECHANISM (CDM)**, promoting the certification of projects in developing countries
 - **JOINT IMPLEMENTATION (JI)** promoting the certification of projects in developed countries

Annex 1 countries :

Developed countries
with a quantified
emission reduction
target



Non-Annex 1 countries :
Developing countries without
quantified emission
reduction target



The development of voluntary markets, in connection with compliance markets (Alice Valiergue, 2018)

- 1997: **Creation of compliance markets** under the Kyoto Protocol, Clean Development mechanism (CDM) and Joint Implementation (JI) : formalization of an institutional framework
- 2005: **Development of voluntary carbon standards**: Operating model from the CDM replicated to sell carbon credits to companies that were not submitted to regulatory emission targets and not included in emission trading system.
 - Flexibility compared to the the CDM procedure
 - Finance forest conservation projects : Reducing emissions from deforestation and forest degradation (REDD+), 2008
 - Finance development projects in developing countries
 - Developing the sale of carbon credits associated with sustainability consulting
- **Compliance and voluntary carbon markets evolved together** from the beginning.
- **Voluntary carbon markets allowed some flexibility and a few innovations** compared to compliance markets

Interactions between compliance and voluntary carbon markets

Compliance demand: Regulatory obligation to reduce GHG emissions

- Market mechanisms from the international climate conventions (CDM, JI, from the Kyoto Protocol)
- Regional compliance markets (Emission Trading System, like the EU ETS)

CARBON CERTIFICATION SUPPLY

United Nations
Climate Convention



United Nations Framework
Convention on Climate Change

International private
standards



Verified Carbon
Standard
A VERRA STANDARD

Gold Standard®

Climate Security & Sustainable Development

Voluntary demand: Voluntary approach, independent from regulatory constraints on GHG emission reductions

- Unregulated market, providing over the counter finance for mitigation projects

- Sales of credits certified in the compliance framework on the voluntary carbon markets
Ex: CDM credits purchased by voluntary buyers

- Use of credits certified under voluntary carbon standards to offset emissions in compliance markets
Ex: Use of voluntary credits in compliance markets in California, Colombia etc.

Controversial markets (Alice Valiergue, 2018)

Inefficiency of the system

- Criticism of capitalism and market solutions

Deterrence or dilution of mitigation efforts

- Fear of greenwashing by the financiers

Frauds

- Cheating on the additionality calculations

Socio-environmental risks

- Negative impacts on the environment
- Risks for indigenous populations



Carbon certification ≠ carbon offsetting

BUT

- The mechanics of carbon certification was originally designed for carbon markets
 - Carbon markets remain the main funding channel for carbon projects
 - Carbon certification can exist without carbon offsetting
 - Carbon certification is necessary to guarantee the climate benefit of projects
 - Carbon certification doesn't guarantee the credibility of the financiers
- **Decouple carbon certification from carbon offsetting**
 - **Promote rigorous and transparent frameworks** to evaluate the project quality and to ensure fundings are flagged to climate-friendly actions
 - **Improve carbon certification tools**



Position statement, published in 2021 on Actu-Environnement :

<https://www.actu-environnement.com/ae/news/tribune-compensation-carbone-neutralite-label-greenwashing-36108.php4>

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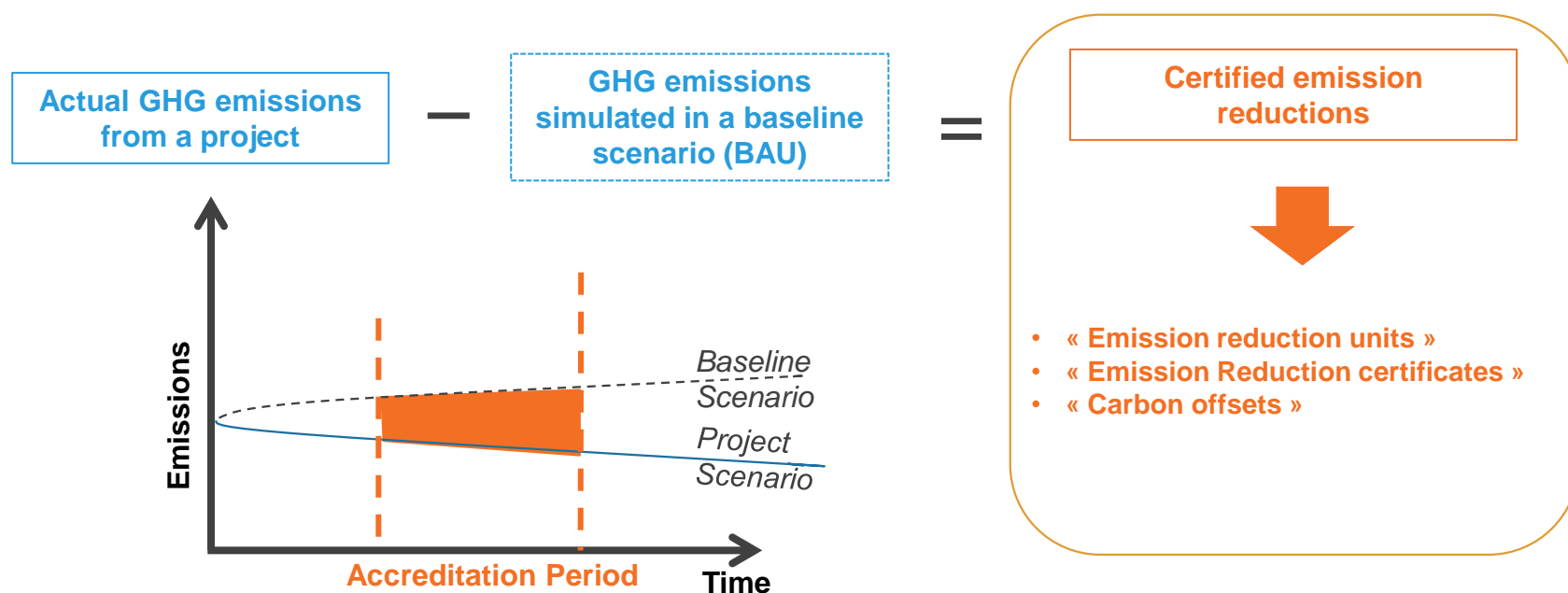
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Questions

REQUIREMENTS FOR CARBON CERTIFICATION

What is a certified low carbon project?

- Certified low carbon projects are based on a **counterfactual scenario**



Carbon certification guarantees a result-based performance.
It is a tool to incentivize progress initiatives.

Measurement of GHG emissions and certification of emission reductions

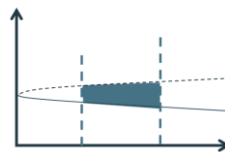
- The **measurement of GHG emissions and the certification of emission reductions are two complementary approaches**, they are both included in the carbon methodologies



Carbon auditing tools to evaluate the level of GHG emission from an activity

Calculation of GHG emission or carbon removals from an activity

Different methodological approaches : Tier 1, 2, 3: use of default emission factors; direct activity data, modelling ; sampling



MRV for carbon certification:

Evaluation of the emission reductions from an activity over the course of a project

Calculation of emission reductions for a low carbon project, compared to the reference scenario

Includes rules to:

- establish the reference scenario
- Demonstrate additionality
- Manage uncertainty
- Manage non-permanence risk
- Auditing practices

- Cap2ER is a carbon auditing tool,
- Cap2ER integrates a module to generate carbon action plans, but it does not include all the procedures and requirements for carbon certification

Fundamental criteria for carbon certification

- **The measurability and monitoring of emissions and removals**, taking into account possible leakage phenomena.
- **Transparency and verification** by an independent third party
- **Uniqueness and traceability** of emission reduction units with the implementation of a registry in order to avoid double counting
- **Permanence of emission reductions and removals or management of the non-permanence risk**
- **Additionality**: demonstrate the project wouldn't have happened without the carbon incentive
- **Co-benefits**: demonstrate the project doesn't have detrimental effects on the environment, or the socio-economic context



Measuring and monitoring of emissions and removals

WHAT IS IT?

- **Quantification methods for emissions reductions, removals or avoided emissions** should be transparent, comprehensive and robust

WHAT ARE THE CHALLENGES?

- **Relying on the latest scientific expertise:** implies to revise the methodologies when necessary
- **Availability and quality of methods and data :** How to ensure data is accessible for the project holders on the ground?
- **Tradeoffs between costs and accuracy :** How to find a balance to ensure credibility without being too costly?

A CARBON FARMING EXAMPLE FROM THE 'LABEL BAS-CARBONE'

- The methodology for crop fields was validated with the contribution of researchers from the public research institute INRAE on soil organic carbon.

Transparency and verification

WHAT IS IT?

- **Public and detailed documentation on the methods, projects and certification**
- **Certification by an independant organization with regular audits**

WHAT ARE THE CHALLENGES?

- **Information asymetry:** How to manage potential information asymetry between the project holder and the auditors ?
- **Auditors:** What kind of actors are acredited for audit? Who authorizes the auditors ?
- **Audit rules :** Is a systematic field audit necessary or can it be a documentation audit? What rules should be applied for sampling?

A CARBON FARMING EXAMPLE FROM THE 'LABEL BAS-CARBONE'

- The forest methodologies for afforestation and reforestation review include more precise information on the sampling methods for the field audit.

Uniqueness and traceability

WHAT IS IT?

- **Managing a registry to ensure that each certificate is attached to a sole tonne of CO₂ equivalent**

WHAT ARE THE CHALLENGES?

- **Double-issuance:** How to ensure that a project holder certifies an emission reduction by a unique standard?
- **Double-use:** How to ensure that a standard sells an emission reduction only once?

A CARBON FARMING EXAMPLE FROM THE 'LABEL BAS-CARBONE'

- Creation and management of a registry, held by the Ministry of Environment, listing projects and fundings, emitted credits and retired ones
- Certificates can't be transferred
- All LBC certificates contribute to the French mitigation effort, there is no double-claiming problem

Permanence

WHAT IS IT?

- **Establishing the project duration and renewal terms**
- **Periodic controls over the project lifetime, including field control**
- **Management of the non-permanence risks**

WHAT ARE THE CHALLENGES?

- **Project duration** : What is the audit frequency?
- **Inclusion of climate change** : How to include climate change in the management of non-permanence?

A CARBON FARMING EXAMPLE FROM THE 'LABEL BAS-CARBONE'

- “No regret strategies”
- Discount rates over the number of credits generated, depending on the level of the non-permanence risk

Additionality

WHAT IS IT?

- **Demonstrate that the low carbon activity wouldn't have occurred in the absence of a project,**
 - **Regulatory additionality:** The project should exceed the existing regulatory commitments, or at least the average practice locally
 - **Financial additionality:** The project is not the most profitable option; the sale of carbon certificates is necessary. Public subsidies can contribute to the funding, provided that they are not sufficient to launch the project.
 - **Technical, social, organisational obstacles etc.**
- **Detailed method to define the reference scenario**

WHAT FOR?

- In order to **limit the windfall effect** and **ensure the efficiency of funding**

WHAT ARE THE CHALLENGES?

- **Maintaining existing carbon stocks:** How to demonstrate carbon stocks are threatened?
- **Setting financial thresholds:** How to define financial thresholds to trigger action?

A CARBON FARMING EXAMPLE FROM THE 'LABEL BAS-CARBONE'

- Public subsidies can contribute to the funding of LBC forest projects up to 50% of the total project costs

Managing uncertainty

INCREASING MRV ACCURACY

- Measuring and monitoring, to ensure best quality data
- Include non-permanence provisions to manage the risk of carbon reversal
- Ensure additionality to avoid adverse selection

REDUCING MRV COSTS

- Standardisation of emissions/removals estimates ; of the additionality demonstration
- Group certification
- With a **CONSERVATIVENESS PRINCIPLE** : discounting approach



- **Arbitration between costs and accuracy**
- **No one-size-fits-all solution**

Questions

THE INTEGRITY OF CARBON MARKETS

Voluntary carbon markets a catch-all sector

- In practice

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- **Explosion of Net 0 commitments**
 - From 25 % of the biggest companies in 2020, to 47 % en 2023 (Net 0 tracker, 2023)
- **Poor quality of the commitments to Net 0**
 - Lack of comprehensiveness, lack of intermediary targets,
- **Confusion on the role of offsetting and removals**
 - Lack of transparency over the use of carbon credits to reach Net 0 commitments
 - Diversity of uses of carbon credits, diversity of claims, different periodicity

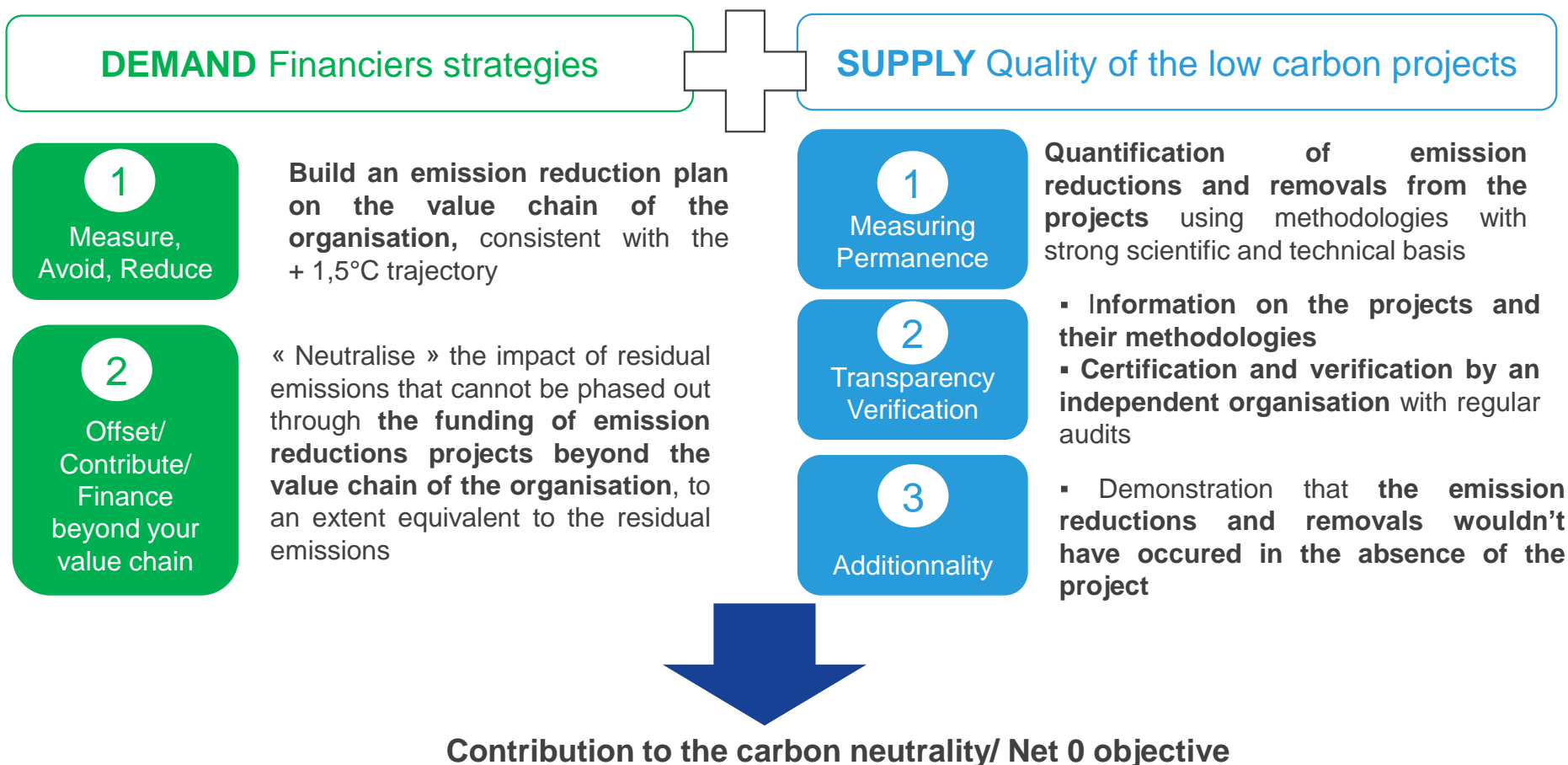
SUPPLY

- **Different products and services** labelled as « carbon credits »
- **Level of quality varies** depending on the standards
Different requirements for
 - Additionnality
 - Permanence
 - Monitoring etc.


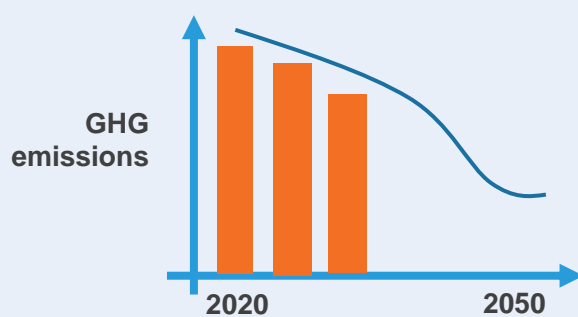
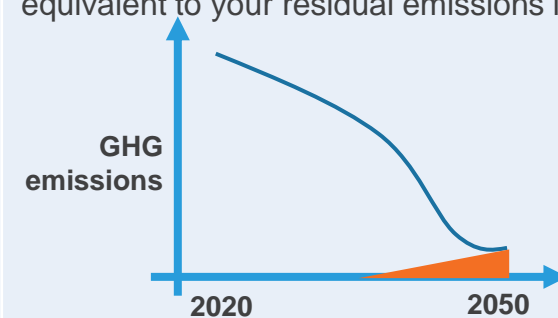
➤ **No international regulatory governance**

The guiding principles for supply and demand

- Variety of standards and guidelines to support the integrity of voluntary carbon markets, on the demand and supply side and



Carbon neutral VS Net 0, a distinction gradually emerged

	Carbon neutral	Net 0
 Time	Claim <u>at the present moment</u> each year of the emission reduction trajectory	Future status <u>futur, for 2050</u>
Mitigation effort	GHG emission reduction trajectory	GHG emission reduction trajectory
Scope	Scope 1, 2, 3 of an organisation, or limited to a brand, a product, a service	Scope 1, 2, 3 of an organisation
Compensation of residual emissions/ Financing beyond your value chain	<p>Offsetting/ Beyond Value Chain mitigation: Financing low carbon projects beyond your value chain through the purchase of carbon credits, to an extent equivalent to your yearly residual emissions</p>  <p>► Accounting neutrality</p>	<p>Neutralization: Financing removals either on your value chain or beyond your value chain, to an extent equivalent to your residual emissions in 2050</p>  <p>► Physical neutrality</p>
Examples	<ul style="list-style-type: none"> Carbon Neutral standard PAS 2060 carbon neutrality standard (Bsi) 	<ul style="list-style-type: none"> Science Based Targets Initiative (Sbti)

The integrity of carbon markets

A multitude of voluntary guidelines with different scopes

Guidelines scopes (I4CE based on Trove Research, 2022)	GHG emission reductions	GHG Accounting	Reporting and transparency	Use of carbon credits	Communication claims	Quality of carbon credits
United Nations' High-Level Expert Group on the Net Zero Emissions Commitments of Non-State Entities	X		X	X		
Science-Based Targets Initiative (Sbti)	X	X	X	X	X	
Voluntary Carbon Markets Integrity Initiative (VCMI)		X	X	X	X	
Integrity Council for Voluntary Carbon Markets						X
UNFCCC's Race to Zero campaign	X		X	X		
Code of Best Practice for Voluntary Compensation (Nordic Dialogue on Voluntary Compensation)				X		X
Carbon Credit Quality Initiative						X
ISO Net zero guidelines	X	X	X	X	X	
International Sustainability Standards Board (ISSB)		X	X			
Guide de la Compensation de l'Ademe					X	X
Info Compensation Carbone				X	X	X
Net Zero Initiative (Carbone 4)			X	X	X	
Comment valoriser et communiquer sur l'action climatique réalisée dans le cadre du Label-Bas-Carbone ? (I4CE)				X	X	

Common leading principles for financiers

On the mitigation efforts :

- **Prioritise your own emission reductions over financing beyond your value chain**
- **Emission reductions should cover all the scopes**
- **Precise and regular reporting on the emission reductions**

On beyond value chain mitigation:

- **Funding of carbon credits beyond your value chain should cover a wide scope**
- **Quality carbon credits**
- **Careful communication**

At the international level, Sbti, VCMI and ICVCM lead the way

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SUPPLY



Science based targets initiative (Sbti)

<https://sciencebasedtargets.org/>

- Emission reduction trajectories by sector
- “Net 0 Standard” to characterize beyond value chain mitigation

- What will be the recommendations for beyond value chain mitigation for companies ?

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Voluntary Carbon Markets Integrity Initiative (VCMI)

<https://vcmintegrity.org/>

- Claims Code of Practice to guarantee the integrity of the financiers approach (Silver, Gold and Platinum labels)

- Will companies buying carbon credits actually reach the minimum level for the « Carbon Integrity » claims ?

SUPPLY



Integrity Council for Voluntary Carbon Markets (ICVCM)

<https://icvcm.org/>

- Core Carbon Principles (CCP), to guarantee carbon credit integrity

- How many credits will meet the CCP criteria ?

Need for regulation

- **Multiple guidelines on voluntary carbon markets**, with different scopes, different criteria and different levels of recognition

But

- **No international regulatory governance**
- **No national regulations in most countries**
- **No penalty system for malpractices**



Emerging regulatory frameworks

- **The European Union started regulating environmental claims** [currently under negotiation]
 - **Empowering consumers in the green transition**
 - Extension of unfair practices to the environmental sphere:
 - Ban on vague and generic environmental claims, unless they prove their excellent environmental performance
 - Legal framework for sustainability labels (that should include verification)
 - ➡ ○ **Ban on carbon neutral claims on products** when based on the purchase of carbon credits
 - **Green Claims Initiative**
 - Justification of the environmental impact, regulation of the communication claims and verification of the claims
 - Measures to limit environmental claims and labels
 - Obligation of ex ante verification
 - Regulation for new environmental labels
 - ➡ ○ **Required information for climate and offsetting claims**
 - Distinction between emissions and carbon credits
 - Communication on the activity generating carbon credits (removals or emission reductions)
 - Communication on the methodology used to guarantee the carbon credit integrity
- **Criteria for climate and offsetting claims remain very limited**

Emerging regulatory frameworks

France regulated carbon offsetting, carbon neutrality claims for products and services and the use of Label bas carbone credits

- 1 Arrêté du 11 février 2022 modifiant l'arrêté du 28 novembre 2018 définissant le référentiel du label « Bas-Carbone » sur les réductions d'émissions certifiées par le Label Bas-Carbone
- 2 Article R. 229-102-1 du code de l'environnement, 28 avril 2022 sur la compensation obligatoire et volontaire
- 3 Décret n° 2022-539 du 13 avril 2022 sur la compensation carbone et aux allégations de neutralité carbone dans la publicité pour des biens et des services

SUPPLY Quality of the carbon credits

Regulations

including requirements on

- **Measurability**
- **Permanence**
- **Verification**
- **Additionality**



DEMAND Financiers Approach

1

Label Bas-Carbone credits:

- **Communication on the « Measure and Avoid » activities**

2

Voluntary or regulatory carbon offsetting:

- **Transparency on the fundings** : Project, methodologies, management of non-permanence & price of the credits

3

Carbon neutrality claims for products and services:

- **Detailed demonstration of the activities to « Avoid, Reduce, and Offset » emissions**
- **Transparency on the fundings** : Project, methodologies, management of non-permanence & price of the credits

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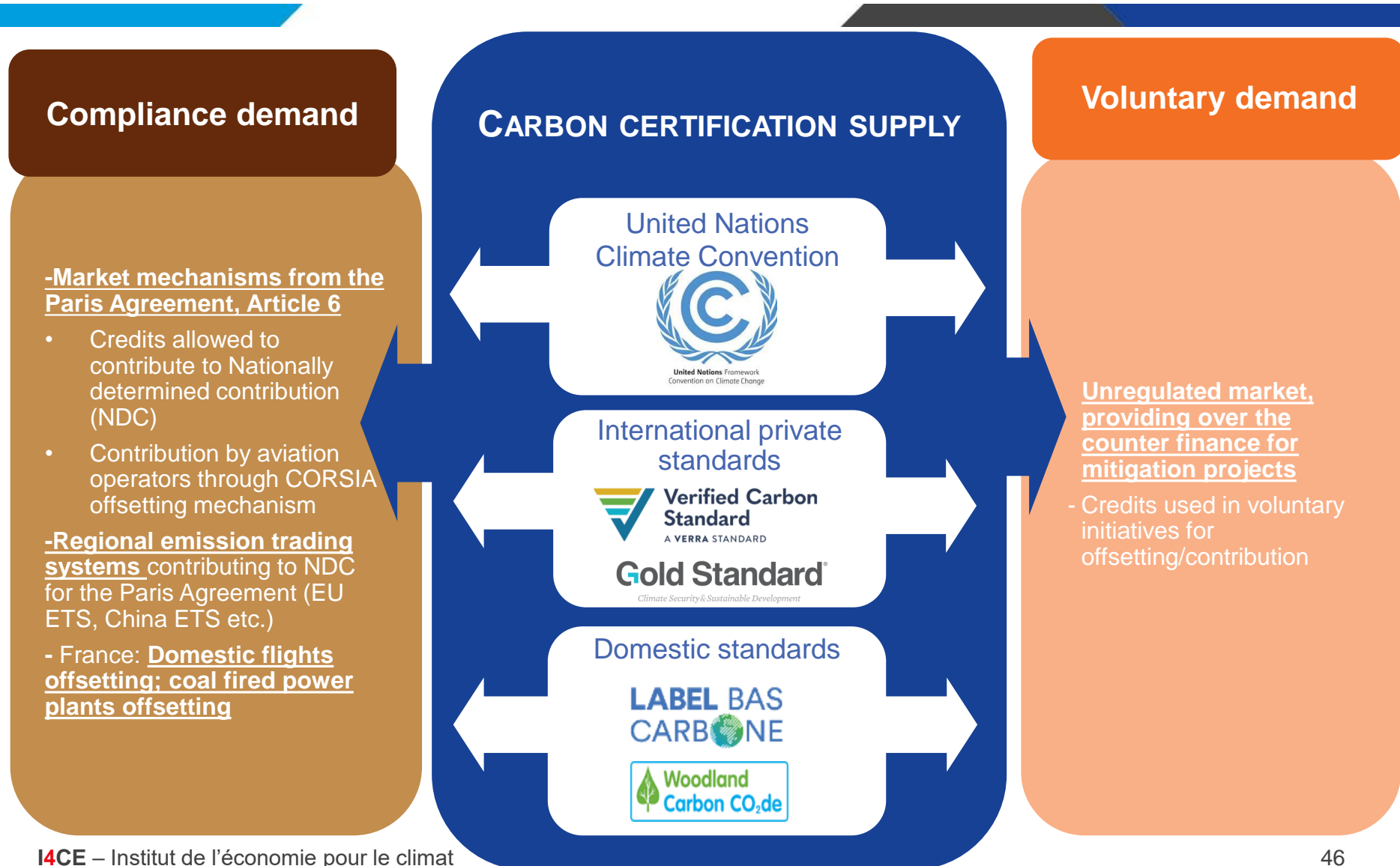
Questions



Break

OVERVIEW OF CARBON MARKETS

Compliance and voluntary carbon markets today



Focus on the market mechanisms from Article 6

- Objectives:
 - **Trade emission reduction/removal units** to achieve the Paris Agreement's objectives
 - **Potential source of revenues for developing countries**, to finance a low carbon development
- **Article 6.2:**
Cooperative approaches between States
Transfers of Internationally Transferred Mitigation Outcomes (ITMOs) between States to contribute to their Nationally determined contribution (NDC)
- **Article 6.4:**
Sustainable Development Mechanism
Market mechanism managed by the UNFCCC: Transfers of emission reduction/ removal units to different actors: States; aviation operators under CORSIA; and other private actors
- The Paris Rulebook, adopted at COP26, introduced **corresponding adjustment measures aimed at avoiding double counting between States**
- **Article 6 does not regulate voluntary carbon markets** : corresponding adjustments are not required for voluntary carbon markets

Bibliographic references

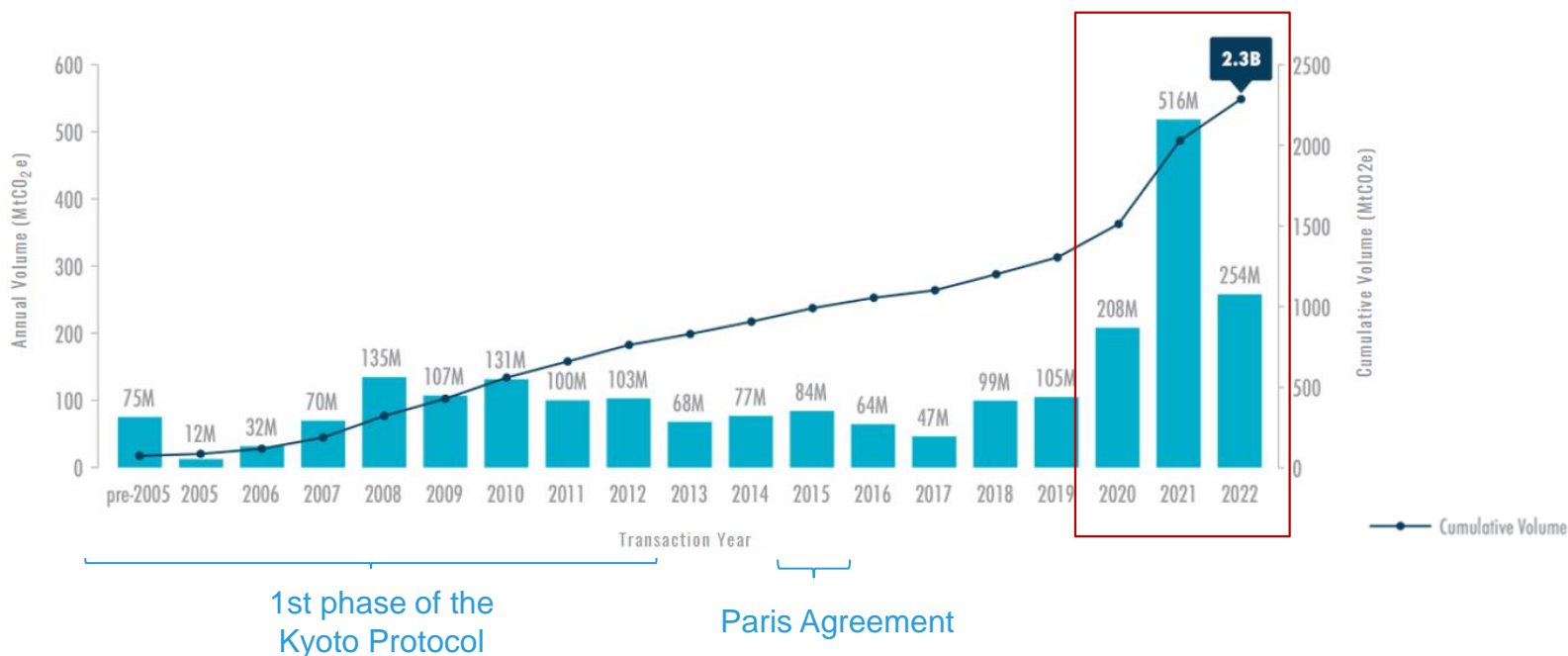
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- Les comptes mondiaux du carbone en 2023, I4CE, 2023; <https://www.i4ce.org/publication/comptes-mondiaux-carbone-2023-climat/>

Questions

OVERVIEW OF THE VOLUNTARY CARBON MARKETS

A slump after 2021 record-breaking year

Volumes of transactions from 2005 to 2022 >>

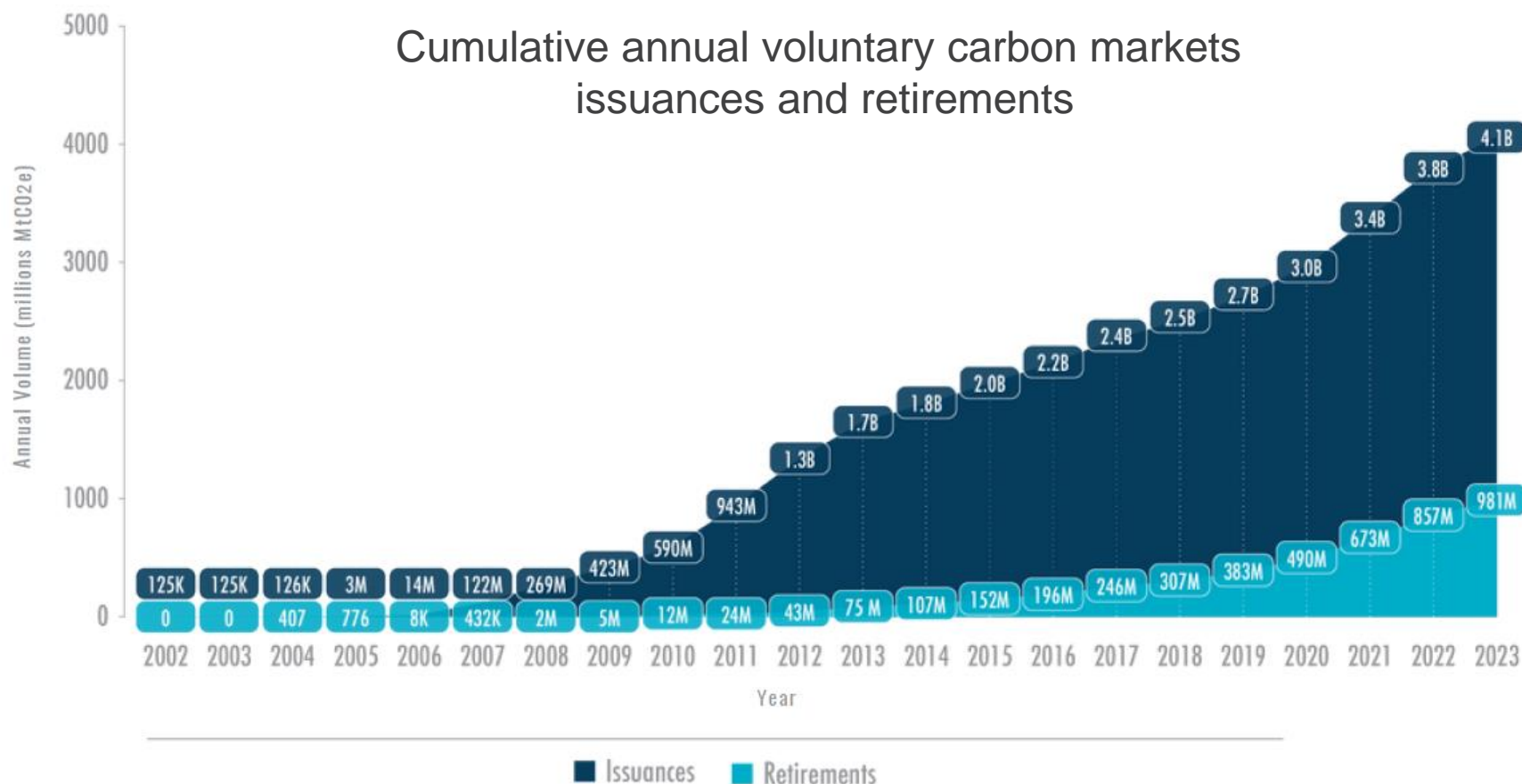


Volumes and prices 2021-2023 >>

2021			2022			2021-2022 PERCENT CHANGE			2023 (YTD)*		
VOLUME (MtCO ₂ e)	VALUE (USD)	PRICE (USD)	VOLUME (MtCO ₂ e)	VALUE (USD)	PRICE (USD)	VOLUME	VALUE	PRICE	VOLUME (MtCO ₂ e)	VALUE (USD)	PRICE** (USD)
517	\$2.1Bn	\$4.04	254	\$1.9Bn	\$7.37	-51%	-10%	+82%	49.2	\$343M	\$6.97

Source: Ecosystem Marketplace, 2023

The unbalance between issuances and retirements

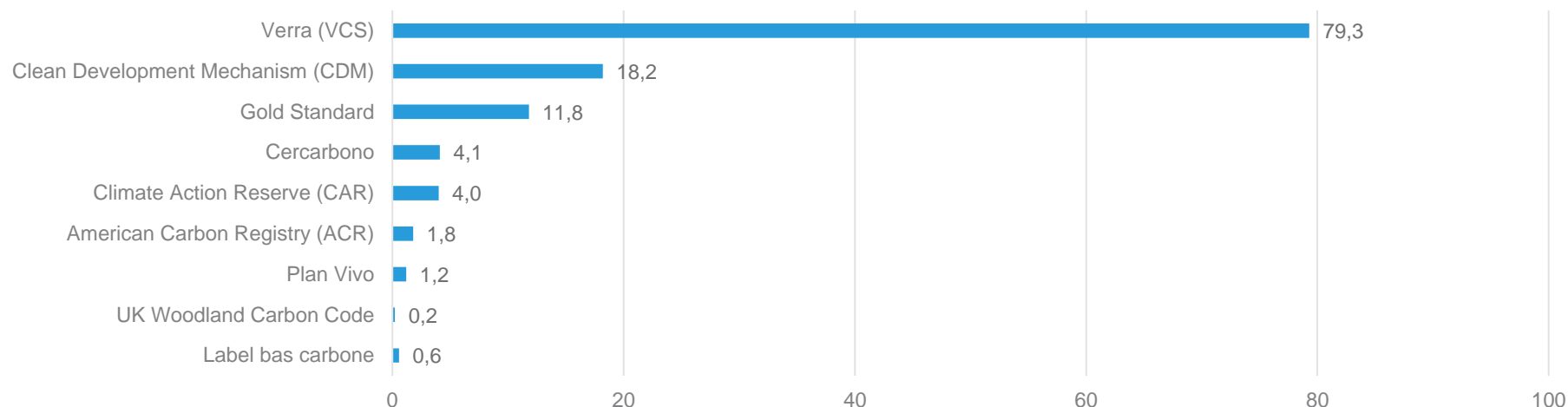


Note: Includes data on credit issuances and retirements from ACR, CAR, CDM, City Forest Credits, Global Carbon Council, Gold Standard, Plan Vivo, and VCS registries. 2023 YTD data is partial and includes issuances and retirements through October 16, 2023.

Source: Ecosystem Marketplace, 2023

Certification standards

Volumes traded on voluntary carbon markets in 2022 (MtCO₂eq)



Source: I4CE, from Ecosystem Marketplace 2023 (2022 data)



Founded in 2006-2007, by economic actors close to World Economic Forum



Founded in 2003, by NGOs, including the WWF. Since 2017, the standard is also adapted to certify Sustainable Development Goals (SDGs)

UN Climate Convention



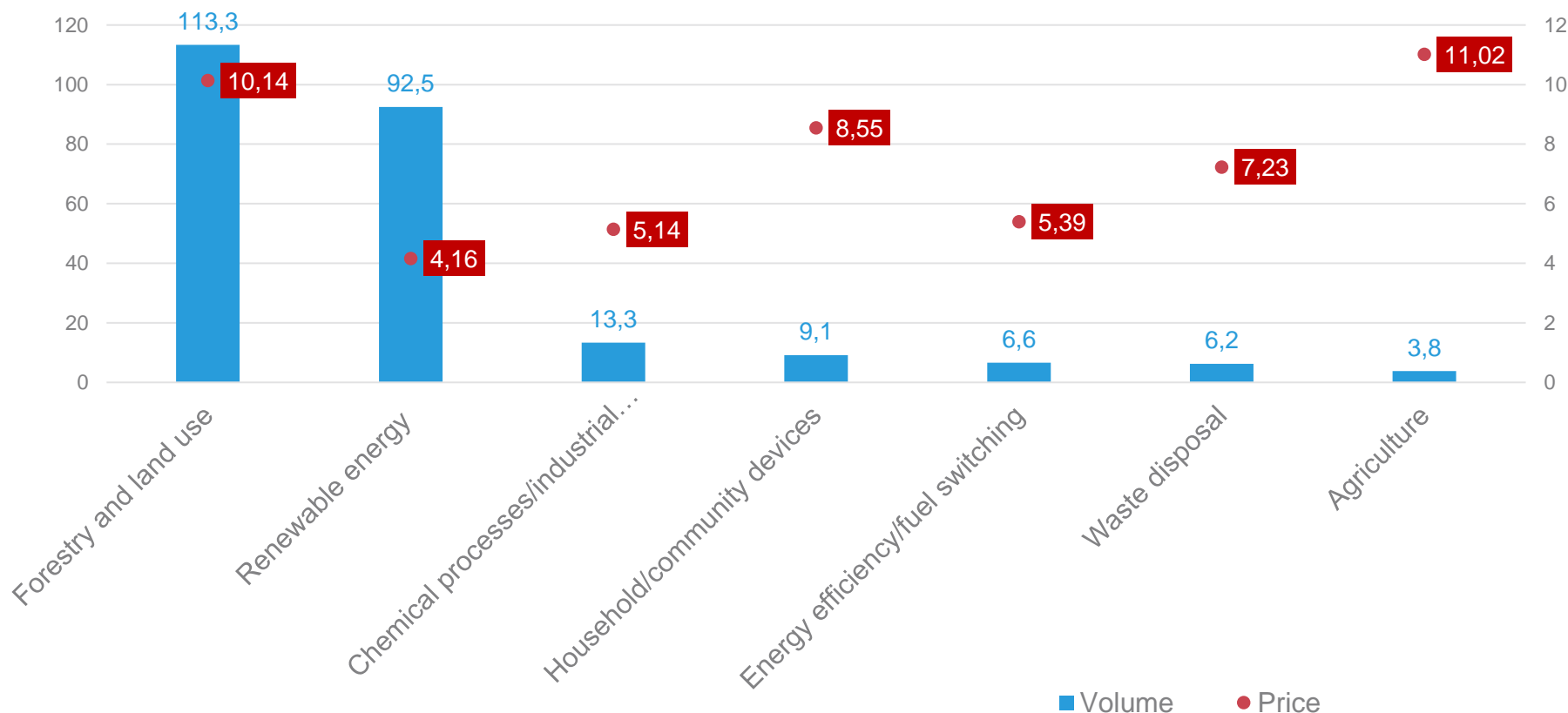
The Clean Development Mechanism (CDM) was established in 2005 by the UNFCCC within the framework of the Kyoto Protocol

+ Domestic voluntary standards



Volume and prices by project categories at the international level

Volume (MtCO₂eq) and price (\$/tCO₂eq) by project categories



Carbon credit prices

Carbon credit prices	Average price
Credits sold internationally (Ecosystem MarketPlace, 2023, sur 2022)	~ 7 \$/tCO ₂ eq
Label bas-carbone credits in France (INFOCC, 2023, on 2021)	~ 34 €/tCO ₂ eq

High variability of prices, but key factors determining the price:

- 1) Localisation,
- 2) Certification
- 3) Category of activities
- 4) Vintage
- 5) Co-benefits
- 6) Volume of credits purchased
- 7) Number of intermediaries and their commissions

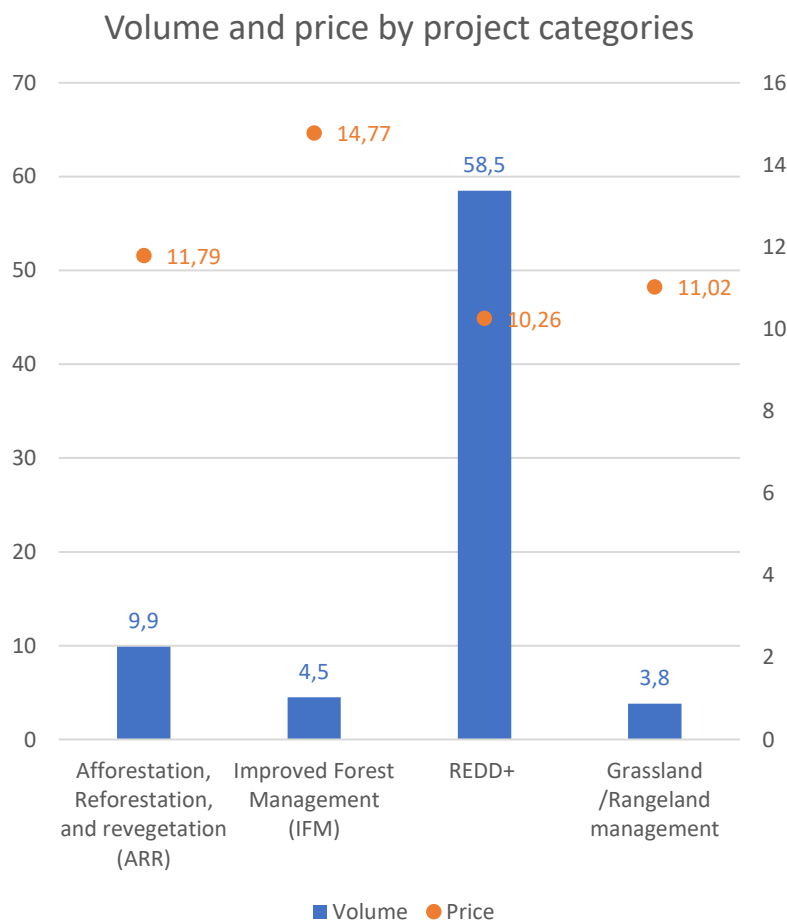
A few numbers from the Label bas Carbone

- Projects validated account for around **2,4 MtCO₂eq** of credits
- **815 validated projects**, mostly afforestation/ reforestation and mixed crop and livestock mitigation
- **179 projects entirely financed**
- **567 000 credits sold in 2022** at an average price of **33€/tCO₂**

Source: Info Compensation Carbone, 2023

Agriculture and forest projects on the voluntary carbon markets

- At the international level



Source: Ecosystem Marketplace, 2023

- The French Label bas-carbone

Distribution of projects	Potential emission reductions/removals (tCO ₂ e)	Average price (€/tCO ₂ e)
Afforestation	138 073	32,1
Reforestation	112 498	35,2
Improved Forest Management	1 636	
Mixed Livestock & Crops methodology (Carbon'Agri)	138 766	
Planting of orchards	690	
TOTAL	391 663	31,8

Source: INFOCC 2022 (data from 2021)

Bibliographic references

- ## - Ecosystem Marketplace Reports

<https://www.ecosystemmarketplace.com/>

- ## - Info Compensation Carbone

<https://www.info-compensation-carbone.com/>

- ## - Climate Focus Dashboard

<https://app.powerbi.com/view?r=eyJrljoiNGI5ZDY1ZWUtZGU0NS00MWRmLWFKNjQtMTUyYTMxMTVjYWQyliwidCI6IjUzYTJlRjNzZkLWI2MjUtNGFhNi1hMTAzLWQ0M2MyYzIxYTMsMiIsImMiOi9&pageName=ReportSection68c2510fa4171bdf82a9>

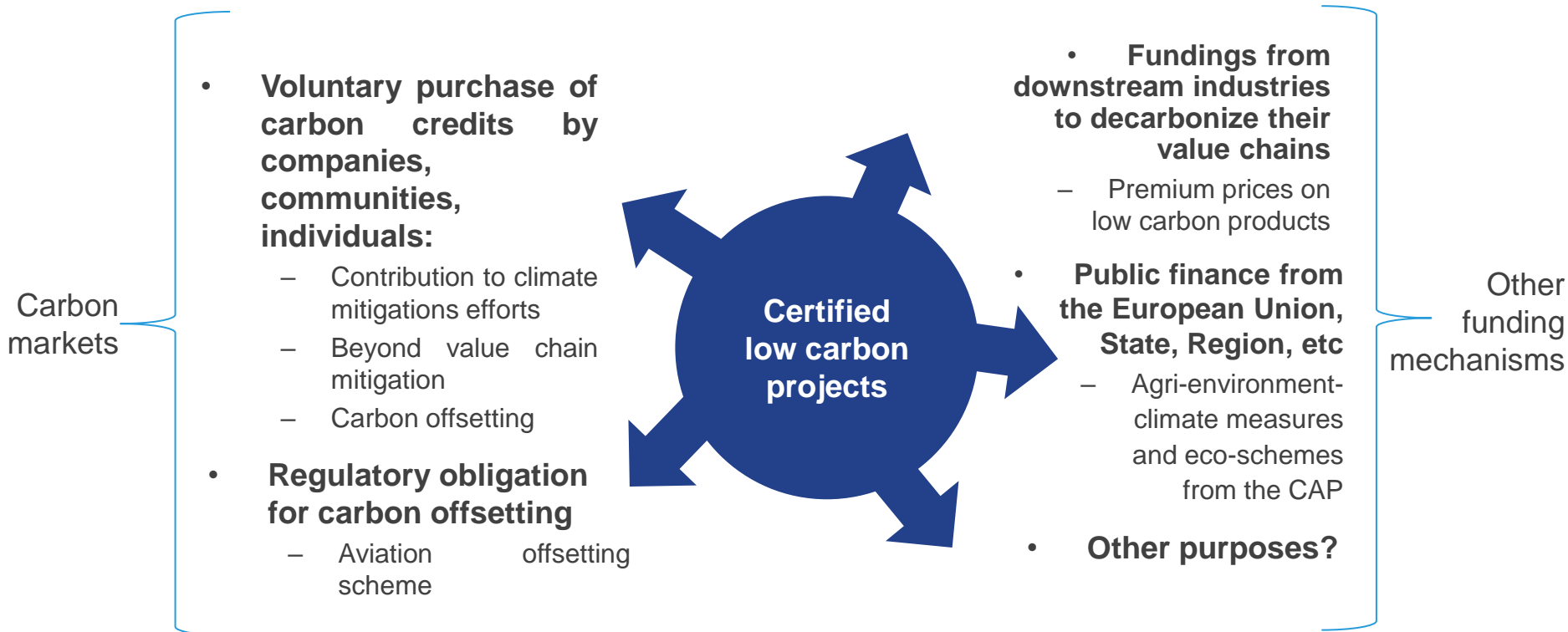
- ## - Les comptes mondiaux du carbone en 2023, I4CE, 2023

Questions

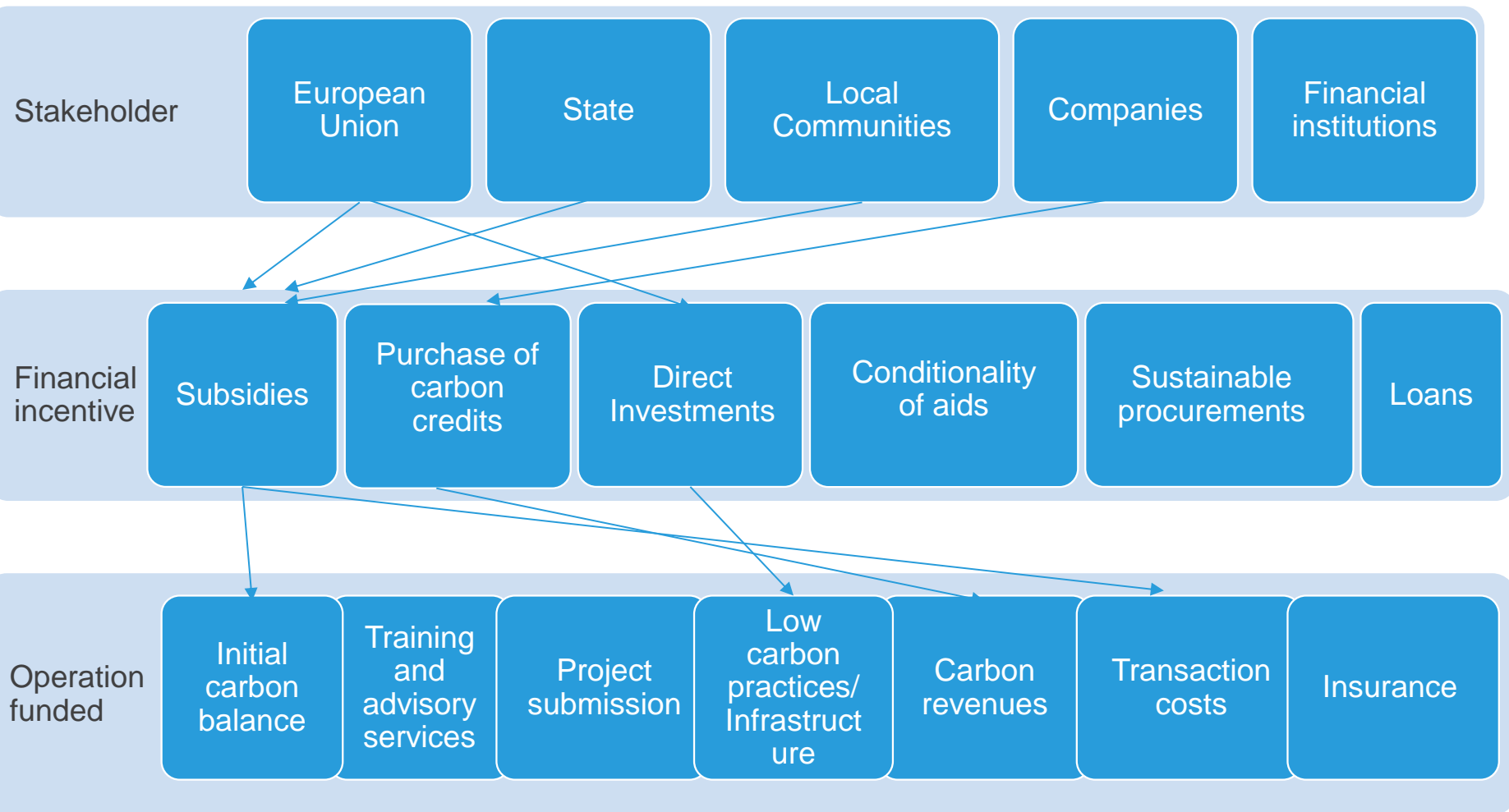
OTHER SOURCES OF FUNDING

Carbon certification is a multi-functional finance instrument

- Carbon certification refers to a **guarantee scheme for positive climate impacts**
- A **mix of different actors, purposes and tools** use certified low carbon projects



Developping co-financing schemes



Next step : extend and coordinate sources of funding and end-uses

- **Map out the different policies and funding schemes** that could use carbon certification
- **Clarify end-uses and claims** between regulatory accountability / voluntary commitments / Corporate sustainability reporting
 - Establish pragmatic and coherent accounting frameworks
 - Legitimate double claiming (state /voluntary buyer; between value chain stakeholders)
- **Organise combinations between public and private support**
 - Additionnality rules that facilitate combinations of public and private interventions
 - Avoid double funding

Questions

CARBON CERTIFICATION IN THE EU CLIMATE POLICIES

Carbon removals certification framework (CRCF)

- November 2022 : Commission proposal to create an EU Carbon Removal Certification Framework

Objectives:

1. **Contribute to the achievement of the European LULUCF objective** (-310MtCO₂ in 2030) by increasing all removals: in the land sector as well as technological removals
2. **Standardisation of a monitoring, reporting and verification (MRV) framework to certify removals**
 - **Guarantee the quality of projects, including in the land sector**, with a reliable, fair, efficient and simple scheme, while relying on existing certification schemes, like the Label bas-carbone
3. **Develop result-based payments** for public and private finance
 - Keep the possible uses as open as possible

Different uses for the CRCF certificates

- The Commission proposal is agnostic about the uses of the certificates, but

- **In the short term**

Public fundings

- Contribution to the climate targets (LULUCF, Restoration of natural ecosystems, etc)
- Targeted support from the CAP, from the Innovation Fund

Private fundings

- Value chain contracts
- Voluntary carbon markets
- No link with current emission trading systems: ETS1 and ETS2

- Contribution to the sustainability reporting of companies : CSRD, environmental claims

- **In the medium term**

Post 2030 climate policies

Climate Law: Proposition of climate objectives for 2040

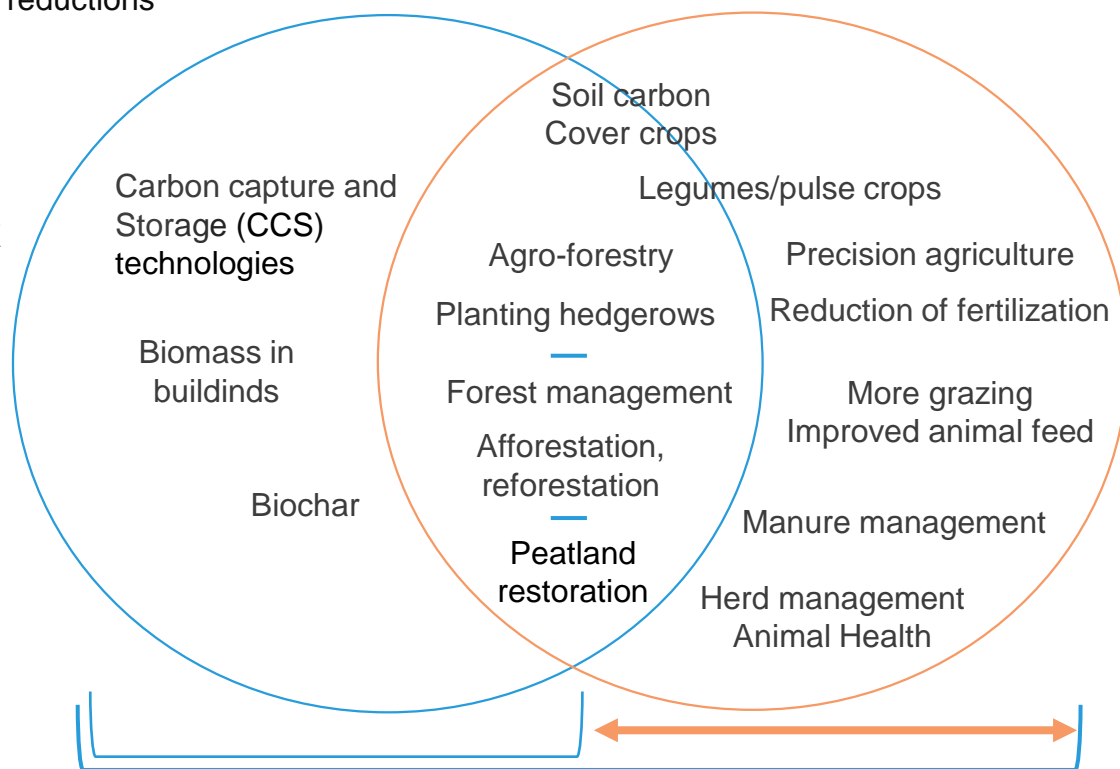
Evaluation of the inclusion of permanent removals in the ETS1 and the inclusion of Carbon Farming in an Agricultural ETS (2026)

Evaluation of the inclusion of Carbon Farming in the next CAP (2028)

The scope of Carbon Farming under discussion

- The initial proposal by the Commission included exclusively removals:
 - **Permanent storage** : Carbon capture and Storage technologies, CCS, DACCS, BECCS);
 - **Carbon storage in long lasting products** : biomass in buildings
 - **Carbon Farming** : afforestation, reforestation, improved forest management, restoration of peatlands (no emission reductions)

Carbon Removal Certification Framework



Carbon Farming

- To what extent will Carbon Farming be included?

The Commission « Quality » criteria



QUANTIFICATION

Carbon removal activities are measured accurately and deliver unambiguous benefits for the climate

- **Net Removal Benefit = CO₂ Removals – increase in GHG emissions**
- Accounting for the possible increase in GHG emissions
- No certification of the GHG emission reduction
- Accounting scope may be insufficiently attractive for farmers



ADDITIONALITY

Carbon removal activities go beyond market practices and what is legally required

- **Limited demonstration of additionality**
- Incentive to use a generic reference scenario (directly assumed to be additional)
- On the contrary, the use of a specific reference scenario is associated with requirements to demonstrate additionality
- The reference scenario design remains unclear



LONG-TERM STORAGE

Certificates clearly account for the duration of carbon storage and distinguish permanent storage from temporary storage

- **Temporary credits**, associated with buffer pools
- Expiry date, corresponding to the end of the monitoring period. Carbon is considered released in the atmosphere when monitoring stops
- Re-certification every five years
- Liability mechanisms to be defined in case of carbon release



SUSTAINABILITY

Carbon removal activities do not harm the environment or even benefit other environmental objectives such as biodiversity

- Projects shouldn't have negative impact on other environmental issues

Legislative agenda

- November 2022 : Commission's proposal
 - March 2023: Launch of an Expert Group organised by the Commission
 - November 2023:
 - Adoption of the Parliament Report
 - Adoption of the Council position
 - First trialogue meeting
 - Autumn 2023: Scoping papers by the Expert Group discussing key criteria of the methodologies
- Attempt to reach a final decision before June legislative elections

Some negotiation hotspots

- Scope

Commission	Parliament	Council
Removals only	Removals / Carbon farming / Storage in products	Removals / Carbon farming / storage in products / <i>Oceans</i>
Discounting the potential increase in GHG emissions in agriculture	<i>Carbon farming</i> Removals + CO ₂ , N ₂ O et CH ₄ emission reductions (including livestock mitigation)	<i>Carbon farming</i> : Removals + <u>Soil</u> emission reductions (excluding livestock mitigation)

- Co-benefits

Commission	Parliament	Council
Do no significant harm principle (DNSH): the impact should be « at least neutral »	DNSH + Carbon Farming should demonstrate at least one positive impact on adaptation/water/circular economy/pollution/biodiversity + A specific methodology should describe the co-benefits	DNSH + Carbon Farming should demonstrate at least one positive impact

Questions

Towards a « carrot-and-stick » policy for the land sector?



Certification of carbon removals

> Pay for carbon removals

- **Payments for Environmental Services (PES), paying for CO₂ removals in the ecosystems (Carbon Farming)**
 - Cover crops
 - Agro-forestry,
 - Restoration of wetlands
- ▶ Contribution to the LULUCF objective (CO₂)
- Under negotiation:
Commission proposal in November 2022
Ongoing dialogue
- Issues: What criteria? Quels critères? How attractive for farmers?
- **The removals in the ecosystems would be financed through the ETS revenues.**



Agriculture Emission Trading System (AgETS)

>Sanction agricultural emissions

- **Emission Trading System, establishing a polluter-pays-principle for the CH₄ et N₂O emissions**
 - Improved fertilization,
 - Improved manure management,
 - Improved animal feed
- ▶ Contribution to the Effort Sharing Regulation (ESR) (N₂O and CH₄)
- At the stage of thinking:
Publication of a report commissioned by DG Clima
- Issues: Who are the obligated parties: Farmers? Processors ? Upstream actors ?

Applying the polluter-pays-principle to agricultural emissions in the European Union

European Court of Auditors (2021) Special report 16/2021

Context:

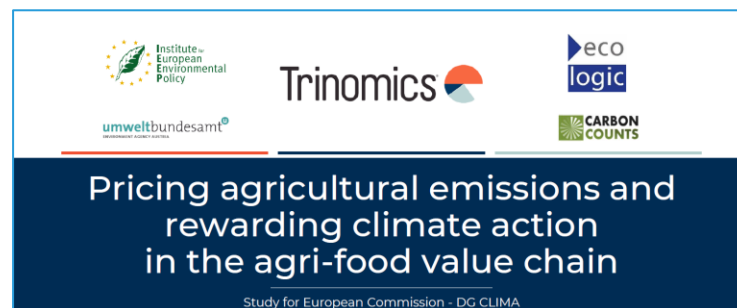
- Funds dedicated to climate action in agriculture are overestimated
- Little impact of the CAP funds on climate mitigation
- Most mitigation measures supported have a low mitigation potential:
 - Livestock: no incentive to reduce livestock, on the contrary promotion of animal products
 - Carbon removals: little protection of carbon stored in grasslands, little effective mitigation measures on arable land including limited agroforestry or afforestation implementation
 - Fertilizers and manure: little effective measures
 - Peatland: Support for farmers cultivating on drained peatlands; little support for rewetting wetlands

Recommendations for the Commission

- take action for the CAP to reduce emissions from agriculture
- reduce emissions from cultivated drained organic soils
- report regularly on the contribution of the CAP to climate mitigation
- **Assess the potential to apply the polluter-pays principle to emissions from agricultural activities, and reward farmers for long-term carbon removals.**

Applying the polluter-pays-principle to agricultural emissions in the European Union

- **Study commissioned by the European Commission (DG Agri) on the potential to apply the polluter-pays principle to emissions from agricultural activities, and reward farmers for long-term carbon removals**
- **Strong bias from the Commission to translate the polluter-pays-principle into an Agricultural Emission Trading System (AgETS)**
 - Advantages :
 - Changes in practices via price signal, mitigation at the lowest economic costs
 - Regulatory flexibility in mitigation actions: on farm; up- and downstream
 - Legal feasibility
 - Other instruments left aside
 - Tax instruments are less favoured, associated with difficulty to reach unanimity in the Council
 - CAP's primary purpose is considered to be income support, not designed to focus on climate mitigation
 - Direct regulations like IED doesn't make economic operators directly liable for the costs of the damage
 - Broad environmental standards like Water directive and air quality standards involve more diffuse liability
- **Publication by Trinomics, IEEP, Ecologic Institute, Carbon Counts, November 2023**
 - 1 Assess different configurations of Emission Trading System (ETS) on agricultural emissions
 - 2 Develop policy models how AgETS revenues could be used to reward farmers and landowners for long-term carbon removals



Five AgETS options

• Different scopes and distributional impacts

	On farm ETS			Upstream ETS	Downstream ETS
	All GHG	Livestock	Peatlands only		
Point of obligation	Farm-level (farmers, landowners)			Manufacturers and importers of fertilisers and feeds	Processors of meat dairy (slaughterhouses and dairies)
Emissions sources and GHG	All on-farm GHG emissions* CO₂, CH₄, N₂O	Livestock emissions CH₄, N₂O , potentially CO ₂	Drained peatland CH₄, N₂O, CO₂	Livestock emissions, fertiliser and urea use CH₄, N₂O, CO₂	Livestock emissions (meat dairy) CH₄, N₂O
Coverage**	426 MtCO ₂ eq	245 MtCO ₂ eq	~ 95 MtCO ₂ eq	305 MtCO ₂ eq	245 MtCO ₂ eq
Obligated entities (thresholds suggested)	<ul style="list-style-type: none"> • 680 000 farms >50ha • 67 700 cattle farms > 150 LSU ➤ ~700 000 farms 	<ul style="list-style-type: none"> • 67 700 cattle farms > 150 LSU ➤ ~70 000 farms 	<ul style="list-style-type: none"> • 26 900 farms ➤ ~25 000 farms (without threshold) 	<ul style="list-style-type: none"> • ~3800 manufacturers for farm animal feed • ~1500 for fertilisers ➤ ~5 000 companies (without threshold) 	<ul style="list-style-type: none"> • 2600 meat processing companies >50 employees • 900 dairy companies >50 employees ➤ ~3 500 companies
Member States impacted	<ul style="list-style-type: none"> • All MS 	<ul style="list-style-type: none"> • Large livestock: France, Germany, Spain • High share of livestock emissions : Ireland, Denmark, Austria, Luxembourg 	<ul style="list-style-type: none"> • Drained peatlands with high levels of emissions : Germany, Poland, Ireland 	<ul style="list-style-type: none"> • Strong farm feed and/or fertiliser production • Agricultural relying on commercially supplied feed and fertilisers • Spain, Poland, Italy, Germany, France, the Netherlands and Belgium. 	<ul style="list-style-type: none"> • Large livestock: France, Germany, Spain • High share of livestock emissions : Ireland, Denmark, Austria, Luxembourg

Source: I4CE, adapted from Trinomics, 2023

• Possible combination of approaches:

- processor approach combining upstream and downstream points of obligation
- Largest polluters from the livestock and peatlands options

- : excl energy use. The report suggests the inclusion of on-farm energy use in the ETS2

** : 2021 emissions

Five AgETS options

- Different kind of incentives**

	On farm ETS			Upstream ETS	Downstream ETS
	All GHG	Livestock	Peatlands only		
Point of obligation	Farm-level (farmers, landowners)			Manufacturers and importers of fertilisers and feeds	Processors of meat dairy (slaughterhouses and dairies)
Incentives	<ul style="list-style-type: none"> Changes in inputs (fertilizer use, number of livestock) Adoption of new on-farm management practices (precision farming, and higher legume share) Increased price of agricultural commodities 			<ul style="list-style-type: none"> Moderate incentive for reducing agricultural emission reductions, since the price signal is not directly applied to farming activities 	
				<ul style="list-style-type: none"> Product reformulation for low-emitting feed and fertilisers Increased price on fertilizers and feed for a more efficient use of feed and fertilisers or switching to lower-emissive products. 	<ul style="list-style-type: none"> Increased price on animal products for agro-industries Reduction of animal products, meat replacement Substitution to lower emission animal products
Use of carbon credits	<ul style="list-style-type: none"> Non-obligated farmers can sell certified on-farm voluntary credits to obligated farmers 			<ul style="list-style-type: none"> Vertical arrangements facilitated: up-stream and downstream entities may provide financial support for changing production practices on farms through payments for certified on-farm voluntary credits. 	

Source: I4CE, adapted from Trinomics, 2023

- Upstream and downstream options influence only indirectly mitigations measures on farms.
- All ETS options mention the opportunity for farmers to generate certified voluntary on-farm credits to reinforce the incentive to change agricultural practices

Underlying interactions with carbon certification and voluntary carbon markets



1. Carbon auditing tools

- Need for a **harmonised GHG reporting tool** in the EU.
- Opportunity for obligated entities to use **certified methods**, rather than default values
 - Need to sort out the various methodologies and models



2. MRV for carbon certification

- Introduction of **certified on-farm voluntary credits** based on emission mitigation
 - Participation of non-obligated farms for all ETS options
 - Vertical arrangement in the agri-food chain for up- and down-stream ETS options
 - Adjustments needed in the cap
 - Double counting issues

Assessment of AgETS options

Criteria	Indicator	All-GHGs	Livestock	Peatlands	Upstream	Downstream
		ETS	ETS	ETS	ETS	ETS
Effectiveness	Incentivise actors along the value chain to mitigate agricultural emissions					
	Biodiversity co-benefits					
	Impacts on consumer budgets and welfare					
	Distributional impacts on Member States					
	Speed/ease of implementation					
	Distributional impacts on farms					
	Stakeholder acceptance					
Efficiency	Impacts on sectoral competitiveness and trade balance					
	Risk of carbon leakage					
	Administrative burden and costs					
Relevance	Incentivise responsible actors to innovate and change practices					
Coherence	Coherence with EU policies					
Added value	EU added value					

Source: Trinomics, 2023

Complex implementation of
on-farm options

Easier implementation
of off-farms options

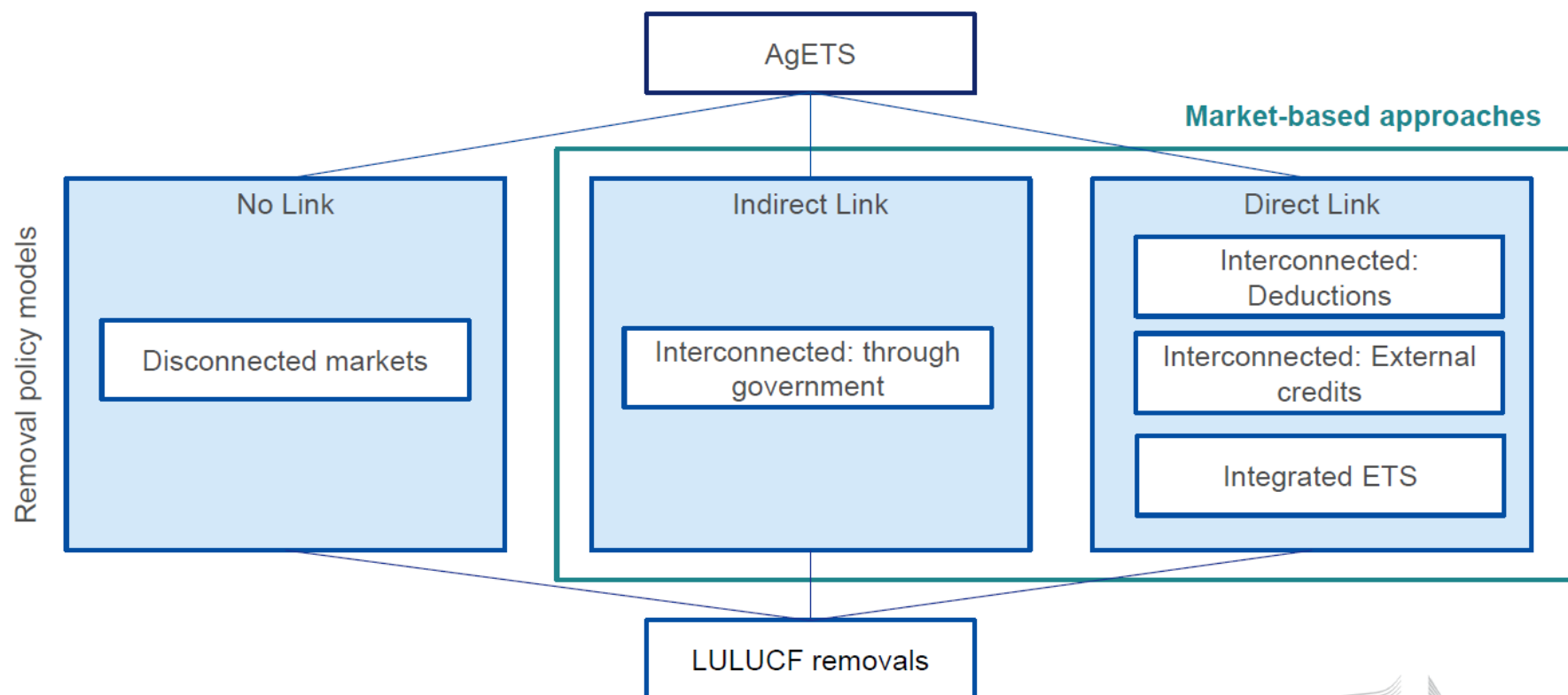
- No direct incentive for farm mitigation

- Up- and downstream options offer easier implementation conditions, but they do not provide direct incentive for farmers

AgETS: The cart before the horse?

- Need for a **harmonised GHG reporting tool** in the EU.
- Need for **transitional aid through the form of subsidies, grants, and loans for farms**, prior to implementation (CAP)
 - Financial support to de-risk upfront costs
 - CAP alignment with ETS revenues
 - Risk sharing mechanisms between private and public finance

Linking the AgETS to the CRCF



Assessment of policy design AgETS-CRCF

		No link	Indirect link	Direct link		
		No link: Disconnected' market	Interconnected: through government	Deductions	Interconnected: External credits	Integrated ETS
Effectiveness	Increased land-based removals					
	High quality removals					
Efficiency	Static efficiency					
	Dynamic efficiency					
	Economy-wide efficiency					
	Administrative costs					
	Participant transaction costs					
Coherence	AgETS match					
Political/legal feasibility	Absence of legal/political barriers					

Source: Trinomics, 2023

- The most integrated options highlight the key challenges of **managing non-equivalence, non-permanence and emission deterrence**
- The study underlines the possible **sequencing of policy designs**: starting from a disconnected market, heading towards a more integrated model, following a learning by doing approach

Questions



Merci de votre
attention

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