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Payments for ecosystem services with focus on CO₂ storage

Davide Pettenella



UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Outline

- Payments for Environmental Services related to forest C credits: the 2 markets
- Focus on the voluntary forest C markets
- 3 experiences in the voluntary market for forest credits
- Final remarks



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Forest Carbon markets

The most consolidated (but still developing) market for Payment for Ecosystem Services (PES) at international level



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www.sincereforests.eu

Two markets, with different standards, MRV rules, transaction costs, prices

- **Mandatory** (or institutional, regulated, compliance) market
- **Voluntary** (or Over The Counter - OTC) market
 - International Carbon PES schemes
 - Domestic markets (also managed or supported by national public authorities)

Carbon credits & standards

Mandatory

ERU-CER Emission Reduction Unit Certified Emission Reduction

UN and Government Standards:



Clean Development Mechanism
(CDM)



Joint Implementation (JI)



Emissions Reduction Fund (ERF) of
the Australian Government



UK Woodland Carbon Code

Voluntary

VER Verified Emission Reduction

Independent Standards:



American Carbon Registry



Climate Action Reserve



Gold Standard



Verified Carbon Standard (VCS)

Source: <https://www.icroa.org/>

Mandatory and voluntary Carbon markets

The **mandatory C market**: established directly for implementing the UN Framework Convention on Climate Change (UNFCCC).

Used by governments and companies in most advanced economies that are legally mandated to offset their emissions.

The **voluntary carbon market**, operates outside the compliance markets but in parallel, allowing private companies and individuals to purchase carbon offsets on a voluntary basis.

Forests in regulated C markets

- Domestic forest investments are included in the **New Zealand, Australia** and the **California** Emission C trading markets
- For **EU** countries:
 - The **European Trading Scheme** (ETS) market involving several industrial sectors in C quota transactions is **excluding forests**
 - Afforestation, reforestation and (after the Paris Agreement) REDD+ projects outside Europe are generating credits

Why no forests (as well as agricultural) activities in the ETS market?

“They (i.e., forest activities when used to generate C credits) do not bring **technology transfer**, they are inherently **temporary and reversible**, and **uncertainty** remains about the effects of emission removal by carbon sink” (CE, 2003)

Official: EU taking first steps to bring forestry into carbon market

By Frédéric Simon | EURACTIV.com

📅 22 ott 2020 (updated: 📅 23 ott 2020)



"If the standard is good enough and one can be sure that a tonne is tonne, then we might be able to treat carbon credits (like an emission allowance under the ETS)," says Artur Runge-Metzger. [Friends of Eur

<https://www.euractiv.com/section/energy-environment/interview/official-eu-taking-first-steps-to-bring-forestry-into-carbon-market/>

INTERVIEW HIGHLIGHTS:

- "Every tonne" of carbon dioxide in EU forests has to be counted, reported and monitored
- The European Commission is looking at "carbon farming" to encourage farmers to uptake carbon in soils or vegetation
- The European Commission is working on a certification system for carbon removals that should be ready "by 2023"
- Certificates will be issued for each tonne of carbon dioxide stored in forests or agricultural land
- But if a forest goes up in flames, the corresponding certificate will have to be cancelled
- Forests could be brought under the ETS once the certificate is robust enough

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Options to create credits through forestry sector activities in the voluntary market

- **Afforestation / Reforestation** (A/R) → additional sequestration
- **Improved Forest Management** (IFM) → additional sequestration and/or avoided emissions (harvesting level and silvicultural treatments)
- Reducing Emissions from Deforestation and Forest Degradation (**REDD+**) → avoidance of a business-as-usual scenario that would have produced higher emissions
- **Agro-forestry** → agricultural and forestry strategies additional sequestration and/or avoided emissions
- Increasing CO₂ stock in **off-site wood products** (CHWP) → additional sequestration and avoid emissions from fossil fuels
- **Fossil fuel substitution** and energy efficiency → avoided emissions

National Carbon certification schemes for reduction/sequestration projects in Europe

Country	Name of the initiative	Voluntary/Compliance	Date	Scale	Sector	Eligible activities	Volume of GHG emissions reduced/sequestered	Price
GERMANY	MoorFutures ^a (MF) 	Voluntary	Since 2011	Local	Forestry and land-use	Restoration of peatlands	68,889 tCO ₂ e validated	Between 40 €/tCO ₂ e and 67 €/tCO ₂ e (taxes not included)
UNITED KINGDOM	Woodland Carbon Code ^b (WCC) 	Voluntary	Since 2011	National	Forestry and land-use	Afforestation/ reforestation	6.3 MtCO ₂ e registered whose 3.4 MtCO ₂ e are validated 1.1 MtCO ₂ e are verified*	Between 6 €/tCO ₂ e and 17 €/tCO ₂ e
	Peatland Code ^c (PC) 	Voluntary	Since 2015	National	Forestry and land-use	Restoration of peatlands	6,484 tCO ₂ e on 77 ha validated with 839 ha of projects pending	Between 6 €/tCO ₂ e and 10 €/tCO ₂ e ^d
AUSTRIA	Climate Austria ^e (CA) 	Voluntary	Since 2008	Local	Renewable energy Transport	<ul style="list-style-type: none"> Biomass heating technology Alternatives drives Led lighting Thermal solar energy 	130,000 tCO ₂ e verified	Between 25 €/tCO ₂ e and 40 €/tCO ₂ e
	Ökoregion Kaindorf ^f (OK) 	Voluntary	Since 2007	Local	Agriculture	Carbon in agricultural soil	In 2019, around 25,000 tCO ₂ e** validated	Between 30 €/tCO ₂ e and 45 €/tCO ₂ e
SPAIN	Registro de huella de carbono ^g (RHC) 	Voluntary	Since 2014	National	Forestry and land-use	<ul style="list-style-type: none"> Afforestation/ reforestation Restoring forest areas degraded by fires 	123,590 tCO ₂ e validated whose 19,159 tCO ₂ e are verified	At least 25 €/tCO ₂ e
	Valvocar ^h (Vc)	Voluntary	In development since 2019	Local	Forestry and land-use	N/A	N/A	N/A

National Carbon certification schemes (cont.)

Country	Name of the initiative	Voluntary/ Compliance	Date	Scale	Sector	Eligible activities	Volume of GHG emissions reduced/ sequestered	Price
FRANCE	Label Bas Carbone (LBC) 	Voluntary	Since 2019	National	Forestry and land-use Agriculture	<ul style="list-style-type: none"> Afforestation Restoration of degraded forest areas Converting coppices to high standing trees Improvements in livestock management 	0 for now	N/A
ITALY	Carbomark ⁱ (Ck) 	Voluntary	2009-2011	Local	Forestry and land-use	<ul style="list-style-type: none"> Sustainable forest management Urban forestry Wood products Biochar 	2,760 tCO ₂ e verified	Between 4 €/tCO ₂ e and 80 €/tCO ₂ e
SWITZERLAND	Max.Moor (Mx)	Voluntary	2015-2020	National	Forestry and land-use	Rewetting peatlands	Not Known	Around 110 €/tCO ₂ e
NETHERLANDS	Green Deal ⁱ (GD) 	Voluntary	In development since 2017	National	Forestry and land-use Renewable energy	<ul style="list-style-type: none"> Peatland Management Riothermia to substitute natural gas in heating public building (in development) 	The Green Deal aims at 0.5 MtCO ₂ e/year (projection)	N/A
NORDIC COUNTRIES (FINLAND, BELGIUM, SWEDEN)	Puro.earth ^k (Pu)	Voluntary	Since 2019 legal entity planned for 2019	Several countries	Agriculture Building	<ul style="list-style-type: none"> Carbonated building elements Wooden building elements Biochar 	N/A	Average price of 26 €/tCO ₂ e ^l

Source: Domestic carbon standards in Europe <https://www.i4ce.org/wp-core/wp-content/uploads/2020/02/0218-i4ce3153-DomesticCarbonStandards.pdf>

National carbon certification schemes (cont.)

- **6 out of the 10** European domestic schemes are involving the forestry sector
- **Plantations** are the most frequent investment typology
- Diverse definition of **additionality**, but no support to the maintenance (or degradation avoidance) activities
- Still very **far** from one common **single market!**

Prices in €/t CO ₂ eq	Forestry and land-use on international voluntary markets (2017)	All-type projects on international voluntary markets (2017)	Land-use projects under domestic standards in Europe
Average price	4.6	2.7	13
Price range	From 2 to 72	From 0.4 to 72	From 6 to 110

Source: Domestic carbon standards in Europe <https://www.i4ce.org/wp-core/wp-content/uploads/2020/02/0218-i4ce3153-DomesticCarbonStandards.pdf>

3 domestic market schemes in the forestry sector

- Woodland Carbon Code (UK)
- Label Bas Carbon (F)
- Natural Capital Exchange (US)

(the main voluntary C schemes in the 3 respective countries)

Woodland Carbon Code (UK)



- **Promoter:** UK Government in cooperation with the forest industry and carbon market experts
- **Start:** 2011
- **Investments to be financed:** plantations (also assisted natural regeneration), “minimum intervention woodland” (less clearfellings). No credits generated by C stored in forest products, change in management regime, substitution
- **Contract duration:** 100 years
- **Prices:** from 6 to 17 €/tCO₂ eq
- **Market size:** 5.7 M tCO₂ eq (over a period of 100 years)
- **Web site:** <https://woodlandcarboncode.org.uk/>

Label Bas Carbon (F)



- **Promoter: Ministère de la Transition écologique +** many other public and private partners
- **Start:** 2019
- **Investments to be financed:** plantations, forest restoration, coppices conversion to highforests made by non-State actors
- **Contract duration:** 30 years minimum
- **Prices:** NA
- **Market size:** 101 projects approved till now (agriculture included; some of quite large size involving many actors)
- **Web site:** <https://www.ecologie.gouv.fr/label-bas>

ÉTAT



Source: <https://www.ecologie.gouv.fr/label-bas>

Natural Capital Exchange (US)



- **Promoter:** SilviaTerra (Yale University's spin-off)
- **Start:** 2019
- **Investments to be financed:** payments for deleting for 1 year harvesting operations; the volume that a forest owner ordinarily would have cut under normal local practices generates credit
- **Contract duration:** 1 year
- **Prices:** as defined through periodic public auctions
- **Market size:** 473,000 ha involved; 130,000 t CO₂ eq sold in 2010
- **Web site:** <https://www.ncx.com/ncx>

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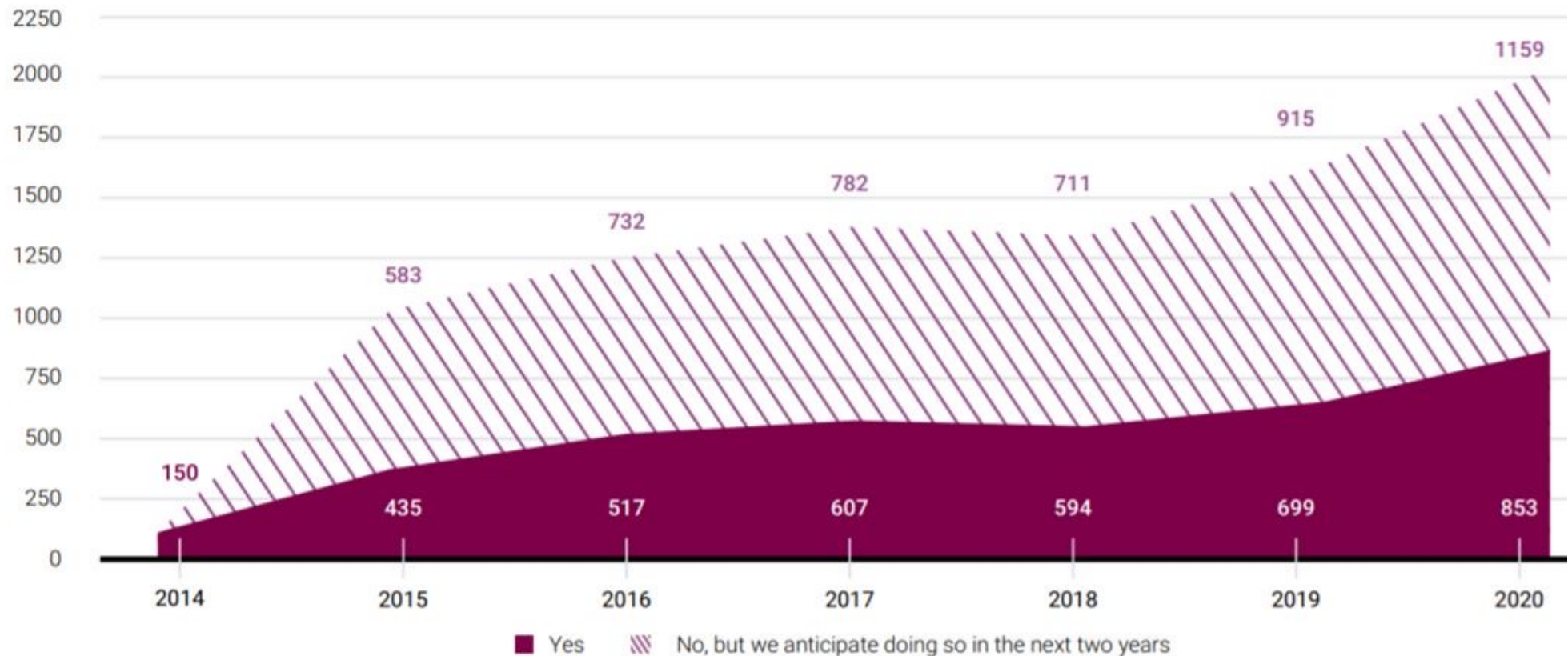
5,900 companies reporting their Carbon commitments (2020), a figure rapidly increasing.

Almost 2,000 companies have adopted or are adopting an internal pricing systems of their Carbon emissions (median internal price: **25 US\$/tCO₂ eq**)

Source: Putting a price on carbon. The state of internal carbon pricing by corporate globally - CDP Report 2021

→ Demand for Carbon offset is potentially higher than supply

Almost 2000 companies with internal Carbon pricing commitments (adopted or under adoption)



Source: Putting a price on carbon. The state of internal carbon pricing by corporate globally - CDP Report 2021 <https://www.cdp.net/en/research/global-reports/putting-a-price-on-carbon>

To make to market functioning

we need rigorous, common and coordinated rules for generating forest C credits

- **Additionality** (very diverse standards)
- **Permanence** (from 30 to 100 yrs)
- **Risk management and MRV**

(Leakage and Double counting: no much relevant problems in Europe)

State authorities should play an active role in promoting domestic standards (as done in UK and France) and in preventing «forest Carbon cow-boys»

Not an option, but their **duty!**

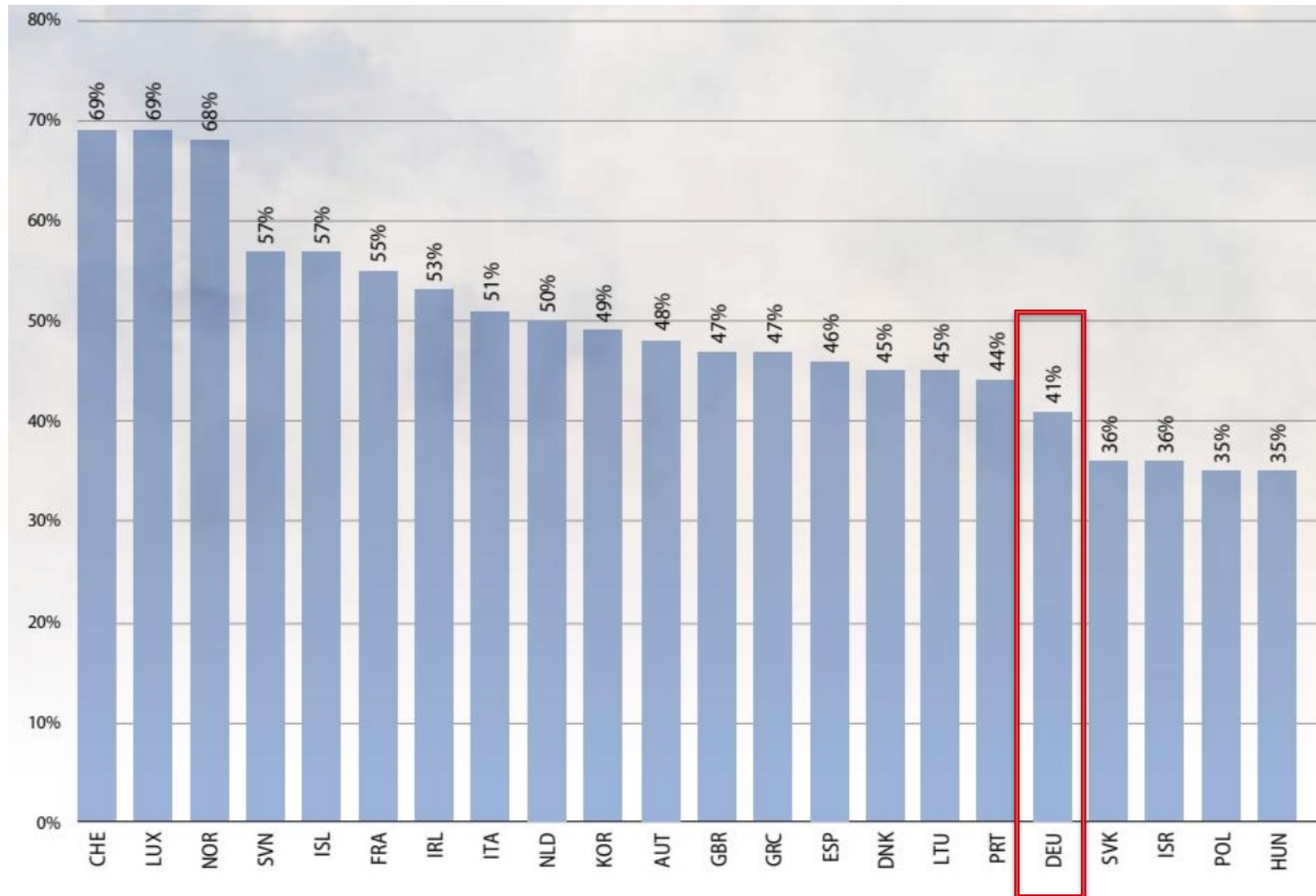
(from the Paris Agreement)

118. Welcomes the efforts of non-Party stakeholders to scale up their climate actions, and encourages the registration of those actions in the Non-State Actor Zone for Climate Action platform;

*119. Encourages Parties to **work closely with non-Party stakeholders to catalyse efforts to strengthen mitigation and adaptation action***

Still a lot of work to be done in Germany in Carbon pricing

Carbon pricing score at € 60€/t CO₂. Source: OECD, Carbon pricing scores 2021



<https://www.oecd.org/tax/tax-policy/effective-carbon-rates-2021-0e8e24f5-en.htm>

State authorities should play an active role in promoting domestic standards (as done in UK and France) and in preventing «forest Carbon cow-boys»

Not an option, but their **duty!**

... and an investment that, if well done, has with 3 dividends:

- on climate conditions
- on biodiversity
- on the revenues of the forest owners

