

Swedenergy feedback on the proposal for a regulation establishing a Union certification framework for carbon removals

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Summary

- Swedenergy welcomes and supports the European Commission initiative to prepare an EU-wide and robust certification system for carbon removals, to complement mitigation efforts and reach the net-zero ambitions. Recognizing the need for carbon removals at the global scale to reach the Paris Agreement, it might be pertinent to consider from the onset the treatment of certificates issued outside the EU.
- Swedenergy support the option where the Commission 1) develops certification methodologies in consultation with experts and stakeholders and 2) harmonizes the implementation of the certification framework and of the Q.U.A.L.I.T.Y criteria through recognized certification schemes.
- Swedenergy believes that a large voluntary carbon market (VCM) is a key for large scale carbon removal and cost effectiveness. A certification framework is essential for the formation of an effective VCM.
- While carbon removals will play an indispensable part in reaching the EU's climate neutrality goal for 2050, EU regulations must continue to incentivize the pursuit of greenhouse gas emissions abatement through cost-effective and market-driven solutions, including electrification, phasing out of fossil fuels and deployment of clean and renewable generation capacities.
- A robust and accepted framework for climate reporting, target claiming and accounting of permanent negative emissions needs to be developed. This is to achieve the fastest and most cost-effective development of bio energy with carbon capture and storage (BECCS) projects. Swedenergy has a separate proposal for this.

Detailed views

A need for harmonized standards while ensuring flexibility

Swedenergy welcomes the definition of and is looking forward to the adoption of clearly defined guidelines, including modalities, timelines, and updates. Going

forward, the EU should establish comprehensive standard requirements for carbon removals, e.g., on monitoring, reporting and verification, on the duration of the removal or baseline setting and additionality. A stringent baseline is paramount to guarantee additionality, both from the environmental and financial perspective.

Quality options and governance

Swedenergy support the option where the Commission 1) develops certification methodologies in consultation with experts and stakeholders and 2) harmonizes the implementation of the certification framework and of the QU.A.L.I.TY criteria through recognized certification schemes.

Article 5 – Additionality

The proposed regulation addresses the “physical” additionality. For a BECCS-project it means that it will be additional as the baseline is zero. However, the proposed definition of additionality does not take the financial additionality into account. Financial additionality is important in the voluntary carbon market. Hence, it should be addressed somehow in the regulation. Perhaps by including voluntary financial additionality information in the certificate.

Delegated acts

Swedenergy proposes the Commission to include the delegated acts in the regulation for greater transparency. Furthermore, topics that are regulated in other regulation, e.g. sustainability criteria for biomass, should not be regulated in this regulation. Instead it should be referred to the relevant legislation.

Voluntary carbon market

Swedenergy acknowledges that the proposed certification mechanism is a first step in establishing an EU-wide market for carbon removals. It is thus important that the ownership of the CDR certificate is clearly defined by the Regulation. The certification of a CDR project should result in a delivery of 1) a credits to the company that initiated and financed the CO₂ sequestration and 2) a credit to the state in which the negative emission activity is situated in, and it must follow the trade flow when the corporate credit is sold. A clear and transparent registry should be implemented to ensure that the certificate exchanges are accurately registered and tracked and that the credits used for offsetting emissions are correctly cancelled. This would prevent double counting.

Swedenergy believes that a large voluntary carbon market (VCM) is a key for large scale carbon removal and cost effectiveness. A certification framework is essential for the formation of an effective VCM. It should be explicitly mentioned in the preambles that a purpose of the regulation also is to support the VCM.

Moreover, to increase trust, transparency and clarity, the framework should lead to precise, accurate and timely measurement of removals, while the certification

process should be carried out by independent private entities, guided by strict public control.

Interaction with other legislations and national policies

It is vital to ensure coherence with existing legislation. Specifically, in the case of BECCS, the sustainability of biomass is already ensured via the EU Taxonomy regulation and the Renewable Energy Directive II. Yet, when it comes to sustainability criteria, the current provisions of Article 7 seem to be much stricter than the equivalent requirements in the Taxonomy. They may become a major barrier for any industrial-scale carbon removal project.

Moreover, it is important to acknowledge that capturing CO₂ from industrial processes and waste incinerators, including both fossil and mineral related as well as biogenic CO₂ emissions, brings significant co-benefits and is currently more competitive and mature than Direct Air Carbon Capture and Storage (DACCS). Due to their high electricity demand DACCS will eventually require a system approach, enabling the integration of renewable and carbon-neutral sources and providing grid services. Such benefits should be regarded as a significant contribution to the sustainability objectives mentioned in article 7 (e.g. contributing to the objective of “climate mitigation beyond the net carbon removal benefit referred to in Article 4 (1)”).

EU should raise its ambitions on carbon removals by 2030

Swedenergy encourages the European Commission to increase the level of ambition of 5 Mt CO₂ industrial carbon removals considering the current plans of the business community and the significantly higher target for carbon farming (42 Mt CO₂). Compared to nature-based solutions, technology-based carbon removals can be measured and verified more accurately, while also offering more high-quality and long-duration (permanent) removal of CO₂ from the atmosphere. To the extent that methodologies already exist (e.g. ETS, CCS, Innovation Fund) they should be utilised for the speedier development of carbon removals framework, which is urgently needed to incentivise investment in technology-based solutions.

The Commission should also consider proposing a binding EU-wide goal-trajectory for CO₂ annually removed from the atmosphere and permanently stored for every year to 2045 and beyond. The trajectory should be based on the maximum quantity negative emissions allowed to offset other greenhouse gases each year needed to reach the EU climate targets.

It is important to clarify that the use of carbon removal credits must always be a complementary measure to reach net-zero GHG emissions, meaning that it should not to any extent replace the efforts to reduce GHG emissions by phasing out fossil fuels. At the same time, carbon removal will be necessary to achieve the global 1,5 °C target as well as the EU goals, hence it is important to focus on both types of climate action at the same time.

Permanent storage of CO₂ is a large share of the total CCS-cost. Therefore, EU should stimulate competition by removing legal barriers and provide support to close the financial gap for storage projects.

There is a need of quicker process for certification of technical carbon removals

Swedenergy urges the Commission to consider splitting the establishment of a framework for the certification of carbon removals utilising carbon farming and industrial removal respectively into two separate processes. A certification for carbon farming is considerably more complex and time consuming compared to the relatively straightforward process regarding industrial removal. Hence, there is an obvious risk that the certification for industrial process will be delayed due to the complexity of certification of carbon farming.

Numerous energy companies with combined district heat and power (CHP) in Sweden have shown great interest in contributing to negative emissions using carbon capture and storage of CO₂ from biomass (BECCS) as an additional societal benefit linked to CHP. The district heating sector want to contribute to society reaching the long-term climate goals. Approximately 15 companies are already conducting feasibility studies on BECCS-solutions. We believe that BECCS can contribute to large CO₂ reductions in a cost-effective way. The goal for these companies is to contribute with between 3 and 4 million tonnes per year of negative carbon dioxide emissions 2035 by installing and utilizing BECCS technology in at least a dozen facilities of various sizes. Swedish CHP uses sustainable biomass according to the definition of sustainable biomass in current version of the RED directive. However, the ongoing negotiations on the RED-directive might drastically reduce the potential Swedish negative emissions contribution if the European Parliament definition on primary woody biomass is included in the directive.

The development of a robust certification scheme through a stepwise legislative approach (Regulation, delegated acts etc) should not delay the ramp up of carbon removal technologies. Swedenergy encourages policymakers to ensure that even at the early stages of the policy development, investors receive the right signal to start investment in carbon removal projects.

Naturally, accelerating the technology-based carbon removals should not delay the works on the methodological reinforcement of nature-based solutions, which have additional contribution to the combat against biodiversity loss. In the area of nature-based solutions a stepwise approach for the development of certification might be reasonable.

Policy incentives to achieve carbon removals should be developed

A Swedish tendering system for providing financial support to full scale bio-energy CCS-projects are underway and some of the projects will most likely also get co-financing via the EU's Innovation Fund. Looking further ahead, it will be increasingly important to establish a market-based and EU-wide policy for scaling up and delivering the carbon removals that are required. In many regards, achieving negative CO₂ emissions is truly a common interest for the EU.

A certification system for carbon removals alone is not enough to promote this type of climate projects. In view of the elaboration of 2040 climate targets, Swedenergy welcomes the early preparation new policy incentives, which lead to an increased demand for CDR credits, including support schemes and EU funds. An EU market-based policy design is needed to incentivise the large-scale deployment of the solutions identified in this proposal and reach the objectives. Therefore, new policy incentives need to be developed in parallel with the EU certification framework.

A framework for reporting, claiming and accounting of permanent negative emissions is needed

No framework for reporting permanent negative emissions (PNE) exists in the EU. On the other hand, there is a process underway within the EU Commission which initially aims to develop a framework for certification of PNEs. The EU Commission may take further initiatives, but there is uncertainty in the choice of priorities and timetable for any such process. This is a major shortcoming because regulatory development takes time and large-scale BECCS can be realized within a few years. The creation of a robust and accepted framework is a prerequisite for effective trade in certificates based on PNEs.

Such a framework for PNEs at both national and company levels has four dimensions that all need a solution:

1. In which of the EU sector targets (LULUCF, ETS, ESR, or a new separate sector) should PNEs be accounted
2. Reporting of the physical PNEs
3. Accounting, *i.e.*, which claims different parties can make
4. Public registries of the certificates. A standardization of what information a PNE certificate should carry.

Swedenergy has a proposal on a framework for reporting, claiming and accounting. This proposal is also attached to the feedback.



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Framework for certificates of permanent negative emissions – reporting, claiming and accounting

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Summary

- Permanent negative emissions are needed for the EU to reach the goal of climate neutrality by 2050. This is because there will be emissions of greenhouse gases that are difficult, impossible and/or very expensive to mitigate. To reach net zero emissions for these remaining emissions need to be compensated with permanent negative emissions.
- A robust and accepted framework for climate reporting, target claiming and accounting of permanent negative emissions needs to be developed. This is to achieve the fastest and most cost-effective development of bio energy with carbon capture and storage (BECCS) projects.
- A new separate sector should be created within EU's climate framework for permanent negative emissions such as BECCS and direct air with capture and storage (DACCS).
- The sector should have its own target trajectory that is significantly higher than the ambition of 5 Mton p.a. by 2030 proposed by the EU Commission.
- Permanent negative emissions must not be used to compensate emissions which should be mitigated according to national climate targets and climate laws.
- Two different certificates for each permanent negative emission should be created. The first is issued to the company that has financial control over the value chain that generates the permanent negative emission. The second belongs to the home nation (in the case of EU, the Member State) in which the owner of the first certificate operates.
- The two different certificates are to be kept strictly separate, one in the corporate world of companies and the other in the realm of nations. In this way, double counting is avoided.
- Trade in certificates should be allowed to take place between nations and between companies, but not between nations and companies.

Permanent negative emissions

Bioenergy with carbon capture and storage (BECCS) and direct air with carbon capture and storage (DACCS) stored in the bedrock mean that carbon dioxide is permanently removed from the atmosphere and thus become permanent negative emissions. Swedenergy's members are mostly engaged in BECCS projects, but the following is also relevant for DACCS projects.

Permanent negative emissions (PNEs) are needed for the EU to reach the goal of climate neutrality by 2050 and will also play an important role before then. This is because there will be emissions of greenhouse gases that are difficult, impossible and/or very expensive to mitigate. In order to achieve net zero emissions, these remaining emissions need to be compensated with the corresponding amount of PNEs.

Purpose of this proposal

Swedenergy's members main driver regarding PNEs is that they will be essential in reaching our climate goals, to contribute to the fulfillment of the goals of the Paris Agreement and ultimately to reduce the concentration of carbon dioxide in the atmosphere. A robust regulatory framework for PNEs is needed to achieve the fastest and most cost-effective development of BECCS projects. In practice, the regulations need to enable an efficient trade in certificates from PNEs to be carried out between companies on the one hand and between nations (Member States) on the other, and to enable co-financing between the national and corporate actors of actual BECCS projects. BECCS projects must be able to become profitable through revenues from the market for large scale PNEs to be realized.

Terminology

There is some conceptual confusion about climate accounting, climate reporting, target claiming and public registries regarding PNEs. All compilation of physical data falls within the concept of "reporting". For everything that deals with climate goals and goal fulfillment, the term "accounting" is used.

Nations reports physical emissions to the UNFCCC. Companies often report physical emissions in accordance with the Greenhouse Gas Protocol (GHGP). On a company level, the GHGP lays the foundation for reporting, whereas, for example, the Science Based Targets (SBTi) Net Zero standard set rules on how to set targets and how to manage claims towards these targets, "accounting". When a nation or a company wants to use PNEs to reach its target, they do so by making a claim in this regard.

A framework for reporting, claiming and accounting of permanent negative emissions is needed

No fixed framework for reporting PNEs exists in the EU. On the other hand, there is a process underway within the EU Commission which initially aims to develop a framework for certification of PNEs. The EU Commission may take further

initiatives, but there is uncertainty in the choice of priorities and timetable for any such process. This is a major shortcoming because regulatory development takes time and large-scale BECCS can be realized within a few years. The creation of a robust and accepted framework is a prerequisite for effective trade in certificates based on PNEs.

Such a framework for PNEs at both national and company levels has four dimensions that all need a solution:

1. In which of the EU sector targets (LULUCF, ETS, ESR, or a new separate sector) should PNEs be accounted
2. Reporting of the physical PNEs
3. Accounting, *i.e.*, which claims different parties can make
4. Public registries of the certificates. A standardization of what information a PNE certificate should carry.

Permanent negative emissions should be reported in a separate sector in the EU's regulatory framework

There are clear benefits with BECCS and DACCS being reported in the same sector. The rationale is that quantification of captured carbon dioxide can be done with high accuracy and the underground storage of the carbon dioxide is permanent. Furthermore, it differs compared to the storage of carbon dioxide in forests and land, which have a shorter lifespan and have significantly greater risks of leakage.

PNEs have no natural place in either the LULUCF, the ETS or the ESR sector. Therefore, Swedenergy recommends that a new separate sector (a new "pillar") should be created. The sector should have its own target trajectory corresponding to the PNEs needed to compensate for the greenhouse gases that are technically difficult/impossible to mitigate and the emissions that are too expensive to mitigate. The target trajectory is built up by summing up each Member State target trajectory for PNEs. Swedenergy advise that the target should be significantly higher than the ambition of 5 Mton p.a. by 2030 proposed by the EU Commission.

Two certificates for permanent negative emissions should be created

Swedenergy propose a system with two different certificates to incentivize an efficient trade in PNEs and to create a basis for co-financing between the nations and private actors engaging in BECCS projects. A system with two certificates also avoids the risk of double counting. This is described in the following section.

When a certified body has confirmed that one tonne of biogenic carbon dioxide or carbon dioxide directly captured from the air is permanently stored, two certificates are issued. These certificates, which are mirror-images of each other, are kept separate in a public register run by a designated authority or accredited company, preferably at EU level.

One of the standardized certificates is issued to the company who has ownership and/or contractual control over the value chain (usually but not necessarily whoever owns the removal plant). This certificate is here named *Carbon Removal Certificate for Corporations* (CRCC) and is tradable between companies both domestically and across national borders. However, nations are not allowed to trade with them.

The second certificate, here called *Carbon Removal Certificate for Nations* (CRCN), is issued to the home nation where the receiver of the first CRCC is active and may be traded between nations within, but not between the nations and companies.

This model implies that both the company and the nation will and indeed must report the PNE and that they must be able to count it towards their respective targets.

The two mirror-imaged certificates are to be kept strictly separate, one in the corporate world and the other in the realm of nations. No trade between nations and companies may take place. This procedure secures that the climate accounting framework does not allow companies to use CRCNs in their accounting and that nations are not allowed to use CRCCs in theirs. In this way, no double reporting of the PNE occurs.

One can ask whether there are simpler ways to enable co-financing of the public and voluntary market. The answer is that, of course, co-financing can be achieved without allowing international trade in CRCCs, *i.e.*, each project is a matter solely between the company and the home nation of the project owner. However, this approach drives increased costs, since there will be no marketplace international demand and supply to meet and no efficient pricing of the PNEs, and it means in practice that significantly fewer projects are likely to be realized. It is also possible not to issue CRCNs, but then every transaction that two nations would want to carry out between themselves will be burdened with complicated and specific agreements.

Climate reporting – "reporting"

Emissions from company activities are reported in various climate reports and form the basis for the climate reporting. This is typically done through the application of GHGP's methodology. At the time of writing, the GHGP is under revision regarding how PNEs are to be reported, but a likely outcome is that whoever captures the carbon dioxide and through contract or ownership controls the physical chain from capture to storage may report the PNEs in their scope 1 ("the chimney scope"). The same PNEs will also be included in the nation's reporting in its National Inventory Report ("NIR") and submitted to the UNFCCC. Hence, just as is the case with regular emissions, reporting of the same PNE is being made by both a company and a nation. Nations' climate reporting includes the emissions of its actors, and this is how it already works today with regard to fossil carbon dioxide emissions; they are reported both by the companies in the nation and by the nation itself. Another aspect of this question is how the

companies' emission factors should be calculated when PNEs are included, and in what scope (2 or 3 or both) these should be reported by the customers of the energy provided by the bio-energy facility. In that part, the GHGP's review is ongoing at the time of writing so no definite answer can be given yet.

Target claiming – "accounting"

Swedenergy's preferred model means that a PNE is accounted by both the company and the nation, but within different claiming systems. Both parties claim the PNE, one in the system that includes nations and one in the system that includes companies. This is already the case when it comes to "ordinary" emissions. If an emission reduction occurs by measures undertaken by a company, both the nation and the company will claim the reduced emission in their respective accounting (provided that the company has committed to an emission reduction target). The nation claims this in relation to its climate target (and in the case of Member States, its National Energy and Climate Plan ("NECP")). All Member States have a NECP, and they can be said to form a basis for the EU's common Nationally Determined Contribution ("NDC"). The company makes the claim towards its target, for example according to the SBTi Net Zero standard. All this is standardized procedure and takes place within a variety of activities at the nation and company levels.

Swedenergy's preferred model is therefore that a PNE should be treated in an analogous way to a fossil emission. Please note, however, that claims pertaining to net zero-targets should be made only to neutralize emissions that cannot be mitigated through reasonable reduction measures for nations and in accordance with commitments in, for example, SBTi Net Zero for companies. Such emissions that are difficult, impossible or very expensive to mitigate are called residual emissions, and they are the ones that the PNEs are proposed to neutralize in order to make a net zero-claim. However, on a voluntary basis companies may use PNEs to neutralize any emission they consider need to be compensated for.

When certificates are used for target claiming purposes, by nations or companies, they must be cancelled. This must be reported to the register-keeping body. Cancellation of "mirrored" CRCN and CRCC are separate from each other and would normally take place at different times.

Trading of certificates, regardless of whether it takes place between nations or between companies, is thus a way of transferring the right to claim the PNE between the parties involved in the transaction. The certificate can cross national borders, and nothing prevents a company in one nation from claiming a certificate (CRCC) at the same time as another nation claims the mirrored certificate (CRCN) in the system of nations. Such transactions are also to be registered in the certificate register.

Public registers and trade in certificates

Issuing two certificates creates an opportunity for nations to trade PNEs in the shape of CRCNs, in a simple and standardized way. If Sweden sells a CRCN to

another nation, Sweden refrains from claiming that certificate in its target claiming (a "corresponding adjustment" is made), while the buying nation can instead use the certificate to claim the PNE towards its own target. Hereby a trading mechanism is created for nations. Please note that only nations, but not companies, are allowed to trade in CRCNs.

This also creates an opportunity for companies to trade PNEs in the shape of CRCCs in a simple and standardized way, and for these companies to generate revenue from the Voluntary Carbon Market ("VCM"), to finance their BECCS project (the same applies to DACCS projects), and so that nations can more easily build up an industry for such PNEs. Furthermore, a international market price for CRCCs can contribute to increased predictability and more efficient allocation of means towards PNE projects. Hereby a trading mechanism is created for companies. Note that only companies, not nations, may trade CRCCs.

Finally, the proposed model facilitates co-financing of projects by the public and voluntary markets. If public grants (for example, EIF grants or through national reverse auctions) can be combined with income from VCM, this means that the pace of the transition can increase and that the projects can be realized more quickly.

Illustration of the three dimensions

The table shows how to handle PNEs (BECCS or DACCS) in terms of reporting, registration and accounting of claims in two separate systems, one for nations, one for companies.

Treatment of one tonne of stored biogenic carbon dioxide (analogous to fossil emission treatment)	Reporting of emissions	Registration of certificates	Accounting of claims towards targets
National level	NIR	CRCN (when sold, an ITMO)	NDC/NECP
Corporate level	GHGP Scope 1	CRCC	SBTi Net Zero (or other)
<i>Co-counting – things that should happen once at each level, the national and the corporate</i>	Reporting by both one nation (NIR) and one corporation (GHGP Scope 1)	Registration of issuance, trade and retiring for both one nation (CRCN) and one corporation (CRCC)	Accounting both by one nation (NDC/NECP) and one corporation (SBTi Net Zero)
<i>Double counting – things that should never happen twice at one level</i>	No double booking by any two nations or any two corporations	No double issuance to and no double use by any two nations or any two corporations	No double counting by any two nations or any two corporations

An important conclusion of the table is that jointly claims or "co-counting" or "co-claiming" by a nation and a company against their respective climate target – NECP/NDC for the nation and SBTi Net Zero (or equivalent) for the company – is not double counting or double claiming. Instead, co-claiming by a nation and a company of a PNE against their respective targets is merely a mirror image of how fossil emissions are already treated within their respective target systems. A further conclusion, after trading has taken place in CRCCs and/or CRCNs has taken place, is that a company’s claim based on a CRCC could be made in a different nation than the nation making a CRCN-based claim. Note, finally, that whoever sells a certificate, regardless of whether it is a nation or a company, must report that this has happened and thus not count it in their accounting.