

M2022:02237 Remiss av EU-kommissionens förslag om certifieringsramverk för upptag och infångning av koldioxid (CRCF)

Ragn-Sells är ett av Sveriges främsta kompetensföretag inom återvinning och miljö. Vi är en del av Ragn-Sellskoncernen och finns även i Norge, Danmark och Estland. Vi erbjuder nyskapande och effektiva lösningar för att minimera, ta hand om och omvandla avfall till resurser.

Ragn-Sells har fått möjlighet att lämna synpunkter på EU-kommissionens förslag om certifieringsramverk för upptag och infångning av koldioxid (CRCF). Ragn-Sells tycker att förslaget i stort sett är bra och innehåller många relevanta och viktiga förslag men att kommissionen försitter chansen att justera lagstiftningen att bli mer cirkulär och hållbar för en framtida omställning.

Ragn-Sells och forskare i Estland har utvecklat en innovativ och patenterad teknologi för att producera utfällt kalciumkarbonat (PCC) från oljeskifferaska (OSA) och koldioxid – två stora avfallsströmmar – som kan användas för att producera nya produkter (golv, färger och andra konstruktionsmaterial). Användning av PCC minskar därmed efterfrågan på, och brytning av, flera jungfruliga material. Tekniken i sig är koldioxidnegativ eftersom den koldioxid som används i processen fångas upp istället för att släppas ut i atmosfären, vilket gör slutprodukten klimatpositiv. Dessutom, som ett nästa steg, kan material som magnesium (definierat som en kritisk råvara i EU), extraheras från/utvinnas ur askan efter att kalcium har avlägsnats.

EU har som mål att från 2030 producera minst 100 000 ton magnesium inom unionen per år. **Ragn-Sells teknik har, baserat på den första anläggningens beräknade produktion, en potential att stå för cirka 30% av dessa 100 000 ton magnesium årligen.**

Ragn-Sells OSA-projekt har med andra ord potential att minska mängden koldioxid som släpps ut i atmosfären och bidra till den cirkulära ekonomin. Med Ragn-Sells lösning kan utsläpp som är svåra att fasa ut från industrier som exempelvis cementindustrin eller från förbränning av giftigt och farligt avfall tas till vara och bidra till den cirkulära ekonomin. Ny, och existerande, lagstiftning försvårar dock framtagandet av innovationer av det här slaget, bland annat genom att det idag inte finns tillräckligt med koldioxid tillgängligt att använda.

Hinder relaterade till användning och lagring av koldioxid

Tillgången till koldioxid. Tillgången till resurser från avfall är inte tillräckligt understödd eller stimulerad i nuvarande EU-lagstiftning. Material som härrör från avfall, såsom koldioxid, möts återkommande av marknadsbarriärer eller andra administrativa hinder. Nuvarande lagstiftning

förhindrar även gränsöverskridande transport av avfall i stor utsträckning. Detta resulterar i en brist på investeringar i en tid då de behövs mer än någonsin.

Ursprunget till koldioxid. EU stöder avskiljning och lagring av koldioxid och har både visat intresse för att förstå potentialen för användning och lagring av koldioxidavskiljning (CCUS) och uttryckt behovet av denna teknik. På grund av kommissionens starka engagemang att minska fossilbränsleverksamheten i EU möts dock användningen av infångad fossil koldioxid med skepsis. Ragn-Sells stöder kommissionens ansträngningar att avstå fossila bränslen, men i det här fallet hindrar oviljan att stödja användning av fossil koldioxid nya innovationer som på längre sikt kan bidra till att minska den mängd koldioxid som släpps ut i atmosfären.

Definitionen av koldioxidlagring. Eftersom koldioxiden är kemiskt bunden i PCC (man måste tillsätta syror eller förbränna den för att koldioxiden ska frigöras), kan Ragn-Sells lösning betraktas som en permanent lagringsmetod för koldioxid, förutsatt att produkten fortsätts att användas och sedan återvinns. Osäkerheten kring framtida certifiering och användning av koldioxid påverkar affärsmöjligheter för CCUS-projekt, såsom Ragn-Sells OSA-projekt

Ragn-Sells ser ett stort behov och en stor potential för EU att investera i och etablera en europeisk CCUS-kapacitet. **Ett incitament för detta skulle vara att tillåta certifiering av upptag av fossilt koldioxid i den nya förordningen.** Det nuvarande förslaget från den 30 november 2022 speglar dock tydligt EU:s skepsis mot användningen av fossilt koldioxid.

I förslaget definierar kommissionen *koldioxidupptagsverksamhet som en eller flera metoder eller processer som lagrar atmosfärisk eller biogen koldioxid i långvariga produkter eller material.* Eftersom tekniken och transportinfrastrukturen för avskiljning och lagring av koldioxid från atmosfären (DACCS) och avskiljning och lagring av koldioxid från förnybara källor (BECCS) inte är fullt utvecklade kommer det inte att finnas tillräckligt med koldioxid för att Ragn-Sells och OSA-projektet ska kunna fortsätta utveckla sin teknik. För att dra nytta av alla innovationer som kan minska mängden koldioxid i atmosfären är det därför viktigt att EU, åtminstone under en övergångsfas, tillåter användning av fossilt koldioxid, och att CCUS-projekt kan komma i fråga för finansiering oavsett koldioxidens ursprung. Detta skulle göra det möjligt för OSA-projektet att fortsätta utvecklas och förhindra stora mängder koldioxidutsläpp.

BILAGA 1:

Ragn-Sells lämnar enligt nedan förslag till omformuleringar till EU-kommissionens förslag om certifieringsramverk för upptag och infångning av koldioxid (CRCF).

Recital 9

The European Commission	Ragn-Sells
<p>A carbon removal activity delivers a net carbon removal benefit when the carbon removals above the baseline outweigh any increase in greenhouse gas emissions due to the implementation of the carbon removal activity. For instance, in the case of activities that deliver permanent carbon storage by injecting carbon underground, the amount of permanently stored carbon should outweigh the energy-related greenhouse gas emissions from the industrial process. In the case of carbon farming, the carbon captured by an afforestation activity or the carbon kept in the ground by a peatland re-wetting activity should outweigh the emissions from the machinery used to carry out the carbon removal activity or the indirect land use change emissions that can be caused by carbon leakage.</p>	<p>A carbon removal activity delivers a net carbon removal benefit when the carbon removals above the baseline outweigh any increase in greenhouse gas emissions due to the implementation of the carbon removal activity. For instance, in the case of activities that deliver permanent carbon storage by injecting carbon underground or permanently chemically bound in a product, the amount of permanently stored carbon should outweigh the energy-related greenhouse gas emissions from the industrial process. In the case of carbon farming, the carbon captured by an afforestation activity or the carbon kept in the ground by a peatland re-wetting activity should outweigh the emissions from the machinery used to carry out the carbon removal activity or the indirect land use change emissions that can be caused by carbon leakage.</p>

Ragn-Sells technology to produce precipitated calcium carbonate (PCC) from oil shale ash and carbon dioxide can be used as material in new products (flooring, paints, and other construction materials). The carbon dioxide is permanently chemically bound in the PCC and can only be released by using acids or by burning it. We, therefore, argue that PCC should be considered a permanent carbon sink.

Recital 13

The European Commission	Ragn-Sells
<p>Atmospheric and biogenic carbon that is captured and stored through a carbon removal activity risks being released back into the atmosphere (e.g. reversal) due to natural or anthropogenic causes. Therefore,</p>	<p>Atmospheric, biogenic The carbon dioxide that is captured and stored through a carbon removal activity risks being released back into the atmosphere (e.g. reversal) due to natural or anthropogenic causes. Therefore,</p>

<p>operators should take all relevant preventive measures to mitigate those risks and duly monitor that carbon continues to be stored over the monitoring period laid down for the relevant carbon removal activity. The validity of the certified carbon removals should depend on the expected duration of the storage and the different risks of reversal associated with the given carbon removal activity. Activities that store carbon in geological formations provide enough certainties on the very long-term duration of several centuries for the stored carbon and can be considered as providing permanent storage of carbon. Carbon farming or carbon storage in products are more exposed to the risk of voluntary or involuntary release of carbon into the atmosphere. To account for this risk, the validity of the certified carbon removals generated by carbon farming and carbon storage in products should be subject to an expiry date matching with the end of the relevant monitoring period. Thereafter, the carbon should be assumed to be released into the atmosphere, unless the economic operator proves the maintenance of the carbon storage through uninterrupted monitoring activities.</p>	<p>operators should take all relevant preventive measures to mitigate those risks and duly monitor that carbon continues to be stored over the monitoring period laid down for the relevant carbon removal activity. The validity of the certified carbon removals should depend on the expected duration of the storage and the different risks of reversal associated with the given carbon removal activity. Activities that store carbon in geological formations, or where carbon dioxide is chemically bound in a product, provide enough certainties on the very long-term duration of several centuries for the stored carbon and can be considered as providing permanent storage of carbon. Carbon farming or carbon storage in products are more exposed to the risk of voluntary or involuntary release of carbon into the atmosphere. To account for this risk, the validity of the certified carbon removals generated by carbon farming and carbon storage in products should be subject to an expiry date matching with the end of the relevant monitoring period. Thereafter, the carbon should be assumed to be released into the atmosphere, unless the economic operator proves the maintenance of the carbon storage through uninterrupted monitoring activities.</p>
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We propose changing “atmospheric and biogenic” carbon to “carbon dioxide”, as we, during a transition period, would like to see a broader interpretation of carbon dioxide than currently given by the Commission. We also propose carbon dioxide mineralisation as an activity that provides enough certainty to be considered permanent storage.

Article 1

The European Commission	Ragn-Sells
<p>1. The objective of this Regulation is to facilitate the deployment of carbon removals by operators or groups of operators. To that end, this Regulation establishes a voluntary</p>	<p>1. The objective of this Regulation is to facilitate the deployment of carbon removals by operators or groups of operators. To that end, this Regulation establishes a voluntary</p>

<p>Union framework for the certification of carbon removals by laying down:</p> <p>(a) quality criteria for carbon removal activities that take place in the Union; (b) rules for the verification and certification of carbon removals; (c) rules for the functioning and recognition by the Commission of certification schemes.</p> <p>2. This voluntary Union framework for the certification of carbon removals does not apply to emissions falling within the scope of Directive 2003/87/EC, with the exception of the storage of carbon dioxide emissions from sustainable biomass that are zero-rated in accordance with Annex IV thereto.</p>	<p>Union framework for the certification of carbon removals by laying down:</p> <p>(a) quality criteria for carbon removal activities that take place in the Union; (b) rules for the verification and certification of carbon removals; (c) rules for the functioning and recognition by the Commission of certification schemes.</p> <p>2. This voluntary Union framework for the certification of carbon removals does apply to any source of carbon dioxide during a 15-year transition period. The framework does, after this transition period, only apply to atmospheric and biogenic carbon dioxide that is captured and stored through a carbon removal activity.</p> <p>Industrial sources that cannot phase out the production of fossil carbon dioxide, including toxic, hazardous waste or cement industry, should, if the Commission after an assessment deems it necessary, have a permanent exception.</p> <p>The framework does not apply to emissions falling within the scope of Directive 2003/87/EC, with the exception of the storage of carbon dioxide emissions from sustainable biomass that are zero-rated in accordance with Annex IV thereto.</p>
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For the EU to become climate neutral by 2050, several hundred million tonnes of carbon dioxide need to be removed from the atmosphere every year. This is, however, hindered due to limited incentives for carbon capture utilisation and storage technologies. According to a [report](#), only “0.1% of carbon removal – around 2.3 million tonnes per year – is performed by new technologies”, such as BECCS or other carbon dioxide removal technologies. Not only is this bad for the environment, but it also creates a shortage of carbon dioxide to use in products. Carbon capture technologies are necessary to guarantee a supply of carbon dioxide and at the same time prevent carbon dioxide from being released into the atmosphere. As long as the technology for direct air capture and storage (DACCS) and the transportation network for biogenic carbon dioxide are not fully developed we see a need for all types of carbon capture technologies and carbon dioxide sources to be covered by this regulation during a

transition period. Broadening the scope of the legislation, not only allowing carbon dioxide from atmospheric and biogenic sources but also making it possible, during a transition period, to certify carbon dioxide from fossil sources would increase the incentives for investments in carbon removal technologies.

New carbon capture technologies are necessary if the EU is to be able to reach its negative emission targets by 2050. We, therefore, propose a transition period where stakeholders during the first 15 years after the framework enters into force are allowed to use any source of carbon dioxide. This period would allow the member states and the industry to use the Carbon Removals Certification framework to incentivise innovation. During these 15 years, the Commission will assess possible sectors where it is considered difficult to phase out fossil carbon dioxide, for example, the cement industry, and where methods such as carbon capture and storage will be necessary permanently.

Article 2. Definitions

The European Commission	Ragn-Sells
<p>1. For the purposes of this Regulation, the following definitions apply:</p> <p>(a) ‘carbon removal’ means either the storage of atmospheric or biogenic carbon within geological carbon pools, biogenic carbon pools, long-lasting products and materials, and the marine environment, or the reduction of carbon release from a biogenic carbon pool to the atmosphere;</p> <p>(b) ‘carbon removal activity’ means one or more practices or processes carried out by an operator resulting in permanent carbon storage, enhancing carbon capture in a biogenic carbon pool, reducing the release of carbon from a biogenic carbon pool to the atmosphere, or storing atmospheric or biogenic carbon in long-lasting products or materials;</p> <p>(c) ‘biogenic carbon pool’ means above-ground biomass, below-ground biomass, litter, dead wood and soil organic carbon as set out in points (a) to (e) of Part B of Annex I to Regulation 2018/841;</p>	<p>1. For the purposes of this Regulation, the following definitions apply:</p> <p>(a) ‘carbon removal’ means either the storage of atmospheric, biogenic or, for the limited transition period specified in article 1.2, any source of carbon dioxide within geological carbon pools, biogenic carbon pools, long-lasting products and materials, and the marine environment, or the reduction of carbon release from a biogenic carbon pool to the atmosphere. In cases where a power plant is using a mix of fossil and biogenic carbon dioxide, it is possible to certify the biogenic part of the carbon dioxide;</p> <p>(b) ‘carbon removal activity’ means one or more practices or processes carried out by an operator resulting in permanent carbon storage, enhancing carbon capture in a biogenic carbon pool, reducing the release of carbon from a biogenic carbon pool to the atmosphere, or storing atmospheric, biogenic or, for the limited transition period specified in article 1.2, any source of carbon dioxide in long-lasting products or materials;</p>

<p>(d) ‘operator’ means any legal or physical person who operates or controls a carbon removal activity, or to whom decisive economic power over the technical functioning of the activity has been delegated;</p> <p>(e) ‘group of operators’ means a legal entity that represents more than one operator and is responsible for ensuring that those operators comply with this Regulation;</p> <p>(f) ‘monitoring period’ means a period, the duration of which is determined in accordance to the type of carbon removal activity, over which the storage of carbon is monitored by the operator;</p> <p>(g) ‘permanent carbon storage’ means a carbon removal activity that, under normal circumstances and using appropriate management practices, stores atmospheric or biogenic carbon for several centuries, including bioenergy with carbon capture and storage and direct air carbon capture and storage;</p> <p>(h) ‘carbon farming’ means a carbon removal activity related to land management that results in the increase of carbon storage in living biomass, dead organic matter and soils by enhancing carbon capture and/or reducing the release of carbon to the atmosphere;</p> <p>(i) ‘carbon storage in products’ means a carbon removal activity that stores atmospheric and biogenic carbon in long-lasting products or materials;</p> <p>(j) ‘certification body’ means an independent, accredited or recognised conformity assessment body that has concluded an agreement with a certification scheme to</p>	<p><i>New (j) Carbon capture and storage is a set of technologies aimed at capturing, transporting and permanently storing carbon dioxide that would be otherwise emitted into the atmosphere.</i></p> <p>(c) ‘biogenic carbon pool’ means above-ground biomass, below-ground biomass, litter, dead wood and soil organic carbon as set out in points (a) to (e) of Part B of Annex I to Regulation 2018/841;</p> <p>(d) ‘operator’ means any legal or physical person who operates or controls a carbon removal activity, or to whom decisive economic power over the technical functioning of the activity has been delegated;</p> <p>(e) ‘group of operators’ means a legal entity that represents more than one operator and is responsible for ensuring that those operators comply with this Regulation;</p> <p>(f) ‘monitoring period’ means a period, the duration of which is determined in accordance to the type of carbon removal activity, over which the storage of carbon is monitored by the operator. <i>This duration can be extended if the carbon dioxide is still stored at the end of the monitoring period;</i></p> <p>(g) ‘permanent carbon storage’ means a carbon removal activity that, under normal circumstances and using appropriate management practices, stores atmospheric, biogenic <i>or, for the limited transition period specified in article 1.2, any source of carbon dioxide</i> for several centuries, including bioenergy with carbon capture and storage and direct air carbon capture and storage. <i>Carbon dioxide which has been captured and utilised to become permanently chemically bound in a product, so that it does not enter</i></p>
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<p>carry out certification audits and issue certificates;</p> <p>(k) ‘certification scheme’ means a scheme managed by a private or public organisation that oversees the certification of compliance of operators or group of operators with this Regulation;</p> <p>(l) ‘certification audit’ means an audit carried out by a certification body;</p> <p>(m) ‘re-certification audit’ means an audit carried out in the process of renewing a certificate issued by a certification body;</p> <p>(n) ‘certificate’ means a conformity statement issued by the certification body certifying that the carbon removal activity complies with this Regulation;</p> <p>(o) ‘carbon removal unit’ means one tonne of certified net carbon removal benefit generated by a carbon removal activity and registered by a certification scheme.</p>	<p><i>the atmosphere under normal use, should be considered permanent carbon storage;</i></p> <p>(h) ‘carbon farming’ means a carbon removal activity related to land management that results in the increase of carbon storage in living biomass, dead organic matter and soils by enhancing carbon capture and/or reducing the release of carbon to the atmosphere;</p> <p>(i) ‘carbon storage in products’ means a carbon removal activity that stores atmospheric, biogenic <i>or, for the limited transition period specified in article 1.2, any source of carbon dioxide</i> in long-lasting products or materials;</p> <p>(j) ‘certification body’ means an independent, accredited or recognised conformity assessment body that has concluded an agreement with a certification scheme to carry out certification audits and issue certificates;</p> <p>(k) ‘certification scheme’ means a scheme managed by a private or public organisation that oversees the certification of compliance of operators or group of operators with this Regulation;</p> <p>(l) ‘certification audit’ means an audit carried out by a certification body;</p> <p>(m) ‘re-certification audit’ means an audit carried out in the process of renewing a certificate issued by a certification body;</p> <p>(n) ‘certificate’ means a conformity statement issued by the certification body certifying that the carbon removal activity complies with this Regulation;</p> <p>(o) ‘carbon removal unit’ means one tonne of certified net carbon removal benefit</p>
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	<p>generated by a carbon removal activity and registered by a certification scheme.</p> <p>NEW () “transition period” means a period, the duration of which it is possible to certify the storage of any source of carbon dioxide captured using a Carbon Capture and Storage (CCS) technology;</p>
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We propose some changes according to the transition period stated in article 1.2.

We clarify that it should be possible to certify the biogenic part of the carbon dioxide that comes from energy plants using both fossil and biomass, even if it comes from the same chimney.

We also propose to define carbon dioxide chemically bound in a product as permanently stored carbon. In nature, carbon is stored over long periods – thousands of years in the form of calcium carbonate. Ragn-Sells and scientists in Estonia have developed an innovative and patented technology to produce precipitated calcium carbonate (PCC) from oil shale ash and carbon dioxide – two large waste streams. PCC made from oil shale ash can then be used to produce new products (flooring, paints, and other construction materials), reducing the demand for mining several virgin materials. The carbon dioxide is stored in the PCC until released using acids or by burning the product. Since it is possible to bury the PCC in the ground and thus permanently store the carbon dioxide, we find it important that also carbon dioxide stored in products can be classified as a permanent storage method.

Article 6. Long-term storage

The European Commission	Ragn-Sells
<p>1. An operator or group of operators shall demonstrate that a carbon removal activity aims at ensuring the long-term storage of carbon.</p> <p>2. For the purposes of paragraph 1, an operator or group of operators shall comply with both of the following criteria:</p> <p>(a) they shall monitor and mitigate any risk of release of the stored carbon occurring during the monitoring period;</p>	<p>1. An operator or group of operators shall demonstrate that a carbon removal activity aims at ensuring the long-term storage of carbon.</p> <p>2. For the purposes of paragraph 1, an operator or group of operators shall comply with both of the following criteria:</p> <p>(a) they shall monitor and mitigate any risk of release of the stored carbon occurring during the monitoring period;</p>

<p>(b) they shall be subject to appropriate liability mechanisms in order to address any release of the stored carbon occurring during the monitoring period.</p> <p>3. For carbon farming and carbon storage in products, the carbon stored by a carbon removal activity shall be considered released to the atmosphere at the end of the monitoring period.</p>	<p>(b) they shall be subject to appropriate liability mechanisms in order to address any release of the stored carbon occurring during the monitoring period.</p> <p>3. For carbon farming and carbon storage in products, the carbon stored by a carbon removal activity shall be considered released to the atmosphere at the end of the monitoring period. <i>The monitoring period can be extended if the operator or group can guarantee the continued storage of the carbon dioxide in the product.</i></p>
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The carbon dioxide is stored in the PCC until released using acids or by burning the product. We, therefore, propose to make it possible to extend the monitoring period for products where the carbon dioxide is not at risk of being released.

Article 4

The European Commission	Ragn-Sells
<p>1. A carbon removal activity shall provide a net carbon removal benefit, which shall be quantified using the following formula: Net carbon removal benefit = CRbaseline – CRtotal – GHGincrease > 0 where:</p> <p>(a) CRbaseline is the carbon removals under the baseline; (b) CRtotal is the total carbon removals of the carbon removal activity; (c) GHGincrease is the increase in direct and indirect greenhouse gas emissions, other than those from biogenic carbon pools in the case of carbon farming, which are due to the implementation of the carbon removal activity.</p> <p>2. In the case of carbon farming, CRbaseline and CRtotal shall be understood as net greenhouse gas removals or emissions in accordance with the accounting rules laid down in Regulation (EU) 2018/841.</p>	

<p>3. Quantities referred to in paragraph 1, points (a), (b) and (c), shall be designated with a negative sign (-) if they are net greenhouse gas removals and with a positive sign (+) if they are net greenhouse gas emissions ; they shall be expressed in tonnes of carbon dioxide equivalent.</p> <p>4. Carbon removals shall be quantified in a relevant, accurate, complete, consistent, comparable and transparent manner.</p> <p>5. The baseline shall correspond to the standard carbon removal performance of comparable activities in similar social, economic, environmental and technological circumstances and take into account the geographical context.</p> <p>6. By way of derogation from paragraph 5, where duly justified, the baseline may be based on the individual carbon removal performance of that activity.</p> <p>7. The baseline shall be periodically updated.</p> <p>8. The quantification of the carbon removals shall account for uncertainties in accordance with recognised statistical approaches.</p> <p>9. To support the quantification of carbon removals generated by carbon farming, the operator or group of operators shall gather data on carbon removals and greenhouse gas emissions in a manner compatible with national greenhouse gas inventories under Regulation (EU) 2018/841 and Part 3 of Annex V to Regulation (EU) 2018/1999.</p>	
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As regards baseline calculation, we understand the rationales to only consider the net carbon removal benefits. In order to calculate the greenhouse gas increase we do, however, foresee plenty of difficulties regarding how to distribute emissions-related machinery and infrastructure needed to enable the reductions. If, for example, a new ship is needed as part of a carbon storage solution, how is the “carbon footprint” of the ship then calculated? How are the emissions allocated if the ship is used for two different solutions? The administrative

burden to do these calculations will be massive – and will require a very detailed set of regulations to create true values.

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