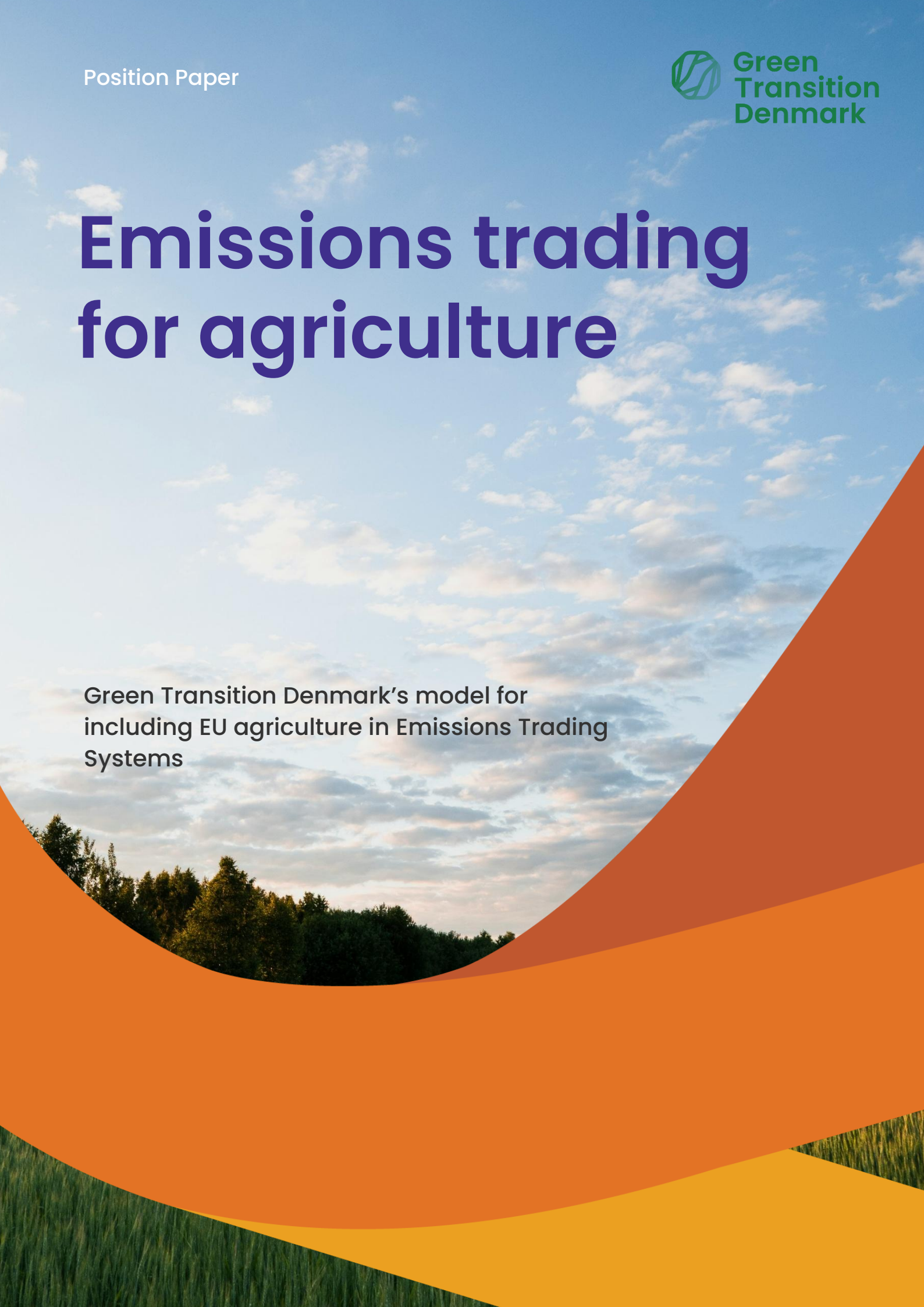
Position Paper

Green Transition Denmark

Emissions trading for agriculture

Green Transition Denmark's model for including EU agriculture in Emissions Trading Systems



KEY CONCLUSIONS:

- Individual farms in the EU must be exposed to robust price signals on their greenhouse gas emissions (GHGs) to the extent possible via extension of emissions trading (ETS).
- An agri-ETS should combine the following key elements:
    - Suppliers of fossil fuels and mineral fertilizers must buy and surrender allowances equaling emissions related to end-use and pass on costs to end-users.
    - Peat-soils must be rewetted to preserve direct payments under the EU Common Agricultural Policy. Owners of non-rewetted peat soils should buy a minimum of 10 allowances per hectare.
    - Large livestock farms shall submit GHG-accounts for their livestock emissions and buy and surrender allowances matching emissions – considering documented mitigation measures undertaken.
    - Downstream processors of livestock from small livestock farms shall buy and surrender allowances for estimated livestock emissions from these farms. Small farms may sell certified-on-farm voluntary credits to down- stream processors for documented mitigation measures.
    - All allowances for agriculture shall be auctioned. Carbon leakage shall be avoided by robust Carbon Border Adjustment Measures for imports of agricultural products.
    - Pending unification of the two existing EU emissions trading systems suppliers of fossil fuels should be integrated into the ETS2 for housing and transport. All other agricultural emissions should be integrated into the ETS 1 for industry, power generation, aviation and shipping.
- All EU farms will face identical GHG-prices for emissions from fossil fuels and mineral fertilizers.
- Non-livestock farms and small livestock farms without peat soils will face no or very limited administrative burdens.
- Large live-stock farms must prepare and submit detailed accounts on their GHG-emissions. They must buy and surrender ETS-allowances equalling reported emissions.

Problem & context:

EU emissions from primary agriculture comprise around 12 % of total EU GHG emissions - including emissions from drained organic soils, of which a large majority is an integral part agricultural land and production. Most agricultural products are standard commodities facing stiff price competition. Yet, there are no joint sectoral EU regulations of these emissions in the EU, and they have only been regulated by national reduction obligations under the Effort Sharing and LUUCF Regulations. But Member States have only adopted very few national climate regulations for emissions from the sector – reportedly, most have even exempted the sector from the EU minimum tax on oil.

Member States normally justify this referring to risk of carbon leakage in the very competitive markets for agricultural products. Consequently, non-CO2 emissions from enteric fermentation, manure management and nitrous oxide formation from nitrogen applied to soils have remained almost stable since 2005, whereas emissions from peat soils kept declining – often due to depletion of carbon stocks in these soils.[i]

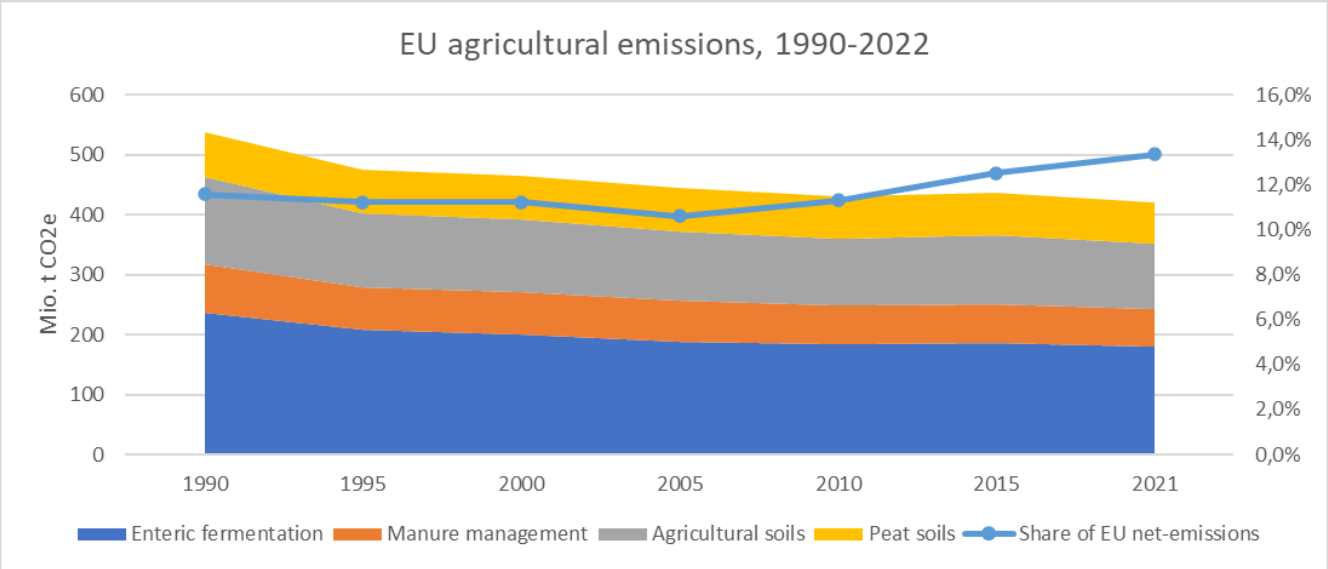
The situation is illustrated by figure 1.

Extending emissions trading to agricultural emissions in the EU

Green Transition Denmark (GTD) thinks the stagnation in agricultural GHG-emissions is unsustainable – all sectors must reduce emissions significantly, if the EU net-zero target for 2050 shall stand any chance of being met. There are significant cheap reduction potentials in agriculture – in particular non-CO2 emissions and CO2 from peat soils - which remain unused due to the lack of economic incentives and other regulation. [iv] [v] [vi] [vii]

Clearly, there is a convincing case for common EU regulation of agricultural GHG-emissions: National regulations of such competitive sectors will remain timid and sub-optimal in the context of Internal Market bans on national trade barriers, which previously were used to shield domestic industries subject to strict domestic environmental regulation. This insight has been the key reason for the establishment of common EU environmental regulation since adoption of the Internal Market. Everything considered, GTD think extension of ambitious emissions trading to the sector will be the most effective and cost-efficient way to implement the Polluter Pays Principle – and to reduce agricultural GHG-emissions.

Figure 1: EU agricultural emissions 1990-2021



Note: "Peat soil" emissions are net of removals in mineral soils
Source: EEA Greenhouse gas data viewer.

The figure does not contain emissions from fossil energy use in agriculture, as precise figures are hard to find. EU statistics indicate these emissions could amount to additional 50 Mio. t CO2e in 2021, or 64% of EU fossil fuel use recorded for agriculture, forestry and fisheries combined. Moreover, Member State projections for 2030 expect no reductions in agricultural emissions from present levels and the sector could provide up to half of EU emissions by 2040, if the present EU climate regulation remains unchanged.[iiiii]

Hence, GTD welcomes the recent report from the European Scientific Advisory Board on Climate Change recommending the establishment of some form of emissions pricing in the agricultural sector.[viii] We further welcome the Communication on EU 2040 GHG-target with text indicating that climate mitigation incentives shall be established for the food sector.[ix] Yet, the Commission seems to have a clear preference for so-called Down Stream emissions trading – which is one of 5 different emissions trading models discussed in a recent report commissioned by the Commission and led

by Trinomics.[x] GTD fear this model for emissions trading will be ineffective in providing incentives for farmers to reduce emissions. This paper first presents the Trinomics report and problems in basing an ETS for livestock emissions on the downstream model. Later it sets out an alternative model for emissions trading, which will be more effective and entail feasible administrative burdens for both farmers, food industry and authorities.

Trinomics report on possible emissions trading models for agriculture

The report from Trinomics presented 5 different models for emission trading systems (ETS) in agriculture.

- Three so-called On-Farm emissions trading models:
    - On-Farm ETS for all GHG-emissions
    - On-Farm ETS for livestock emissions only
    - On-Farm ETS for peatlands only

- An Up-stream ETS focusing on methane emissions from enteric fermentation (feed production and importation) and nitrous oxide emissions from use of fertilizers.

- A downstream ETS focusing on emissions from enteric fermentation and manure.

The On-Farm ETS models in principle place the obligation to surrender allowances for GHG emitted on individual farms based on detailed GHG accounts.

The Up-stream ETS place the obligation to surrender allowances for GHG emitted on suppliers of feed and fertilizers.

The Down-stream ETS place the obligation to surrender allowances for GHG emitted on farms on industries processing produce from farms (e.g. abattoirs and dairies).

The Trinomics report clearly concluded that the administrative burdens in relation to On-Farm ETS models would be too burdensome for farmers – assuming that individual farms will have to prepare detailed GHG-accounts. Instead, the study recommended the so-called up- and downstream ETS-systems and/or combinations thereof as being equally effective as On-farm ETS-systems and have less administrative burdens (See summary table of the study in annex 1).

The Communication on EU climate targets for 2040 wording on future regulation of agriculture clearly indicates preference for the Downstream ETS model. Yet, GTD find better solutions are possible:

GTD has a clear preference for the On-farm ETS model for livestock emissions – while recognizing challenges for small farms.

GTD's preference is based on the following main reasons:

- Livestock emissions from enteric fermentation and manure management in primary agriculture have the largest and cheapest reduction potentials due to historic absence of any regulation or reduction incentives.[xi]

- Effective pricing of emissions must be based on accurate emission estimates. Direct GHG-measurements of livestock GHG-emissions incur prohibitive costs. Hence, they must be estimated by multiplying activity-specific emission factors by activity levels. Farmers have the most accurate information of activity levels and possible mitigation measures, which may affect activity-specific emission factors. Hence, farmers are best placed to prepare draft GHG-accounts for livestock emissions.

- Yet, to avoid emissions being understated draft GHG-accounts prepared by farmers must be verified by an independent party.

- GTD recognize the risk of high administrative complexity and costs of detailed GHG-accounts and verification – not least for small livestock farmers. But there are obvious ways to minimize both complexity and costs of an On-Farms ETS for most livestock emissions. Livestock farms with small emissions may be handled in a separate scheme.

GTD is sceptic on making a Downstream ETS for livestock emission the backbone of a future agri-ETS

For GTD direct price incentives to farmers are essential, as their management decisions are decisive for most of the GHG-emissions in agriculture. The Trinomics report agrees in principle but provides few details on how a Downstream ETS will ensure this in a cost-effective way. On the contrary, it provides many facts indicating a downstream ETS could struggle to provide effective reduction incentives directly for single farms:

- The Trinomics study has identified no less than 2600 meat processors with more than 50 employees as well as 900 processors in the dairy industry. Yet the report fails to explain how so many operators can ensure uniform incentive schemes for farmers across the EU. At the same time the report clearly indicates the potential high costs of setting up many different incentive schemes – not least for small downstream industries.

- The study ignores that farmers and downstream industries share a concurrent interest in understating emissions and costs to purchase allowances. With that follows a risk of competition

between downstream operators to provide the least restrictive control regime – to the extent private operators have legal access to control GHG accounts of private farms. In turn this necessitates intensive (and costly) public control of a Downstream ETS.

- The Trinomics report ignores the bureaucratic complexity of the only working downstream system cited in the report – the scheme run by the large dairy cooperative ARLA. In this scheme farmers must undertake comprehensive registration and IT-based reporting of their emissions to ensure that ARLA can reward low-emission farmers with higher prices than high-emission farmers.

- The study is silent on how to share legal obligations for livestock emissions and mitigation measures on single farms in case they deliver inputs to more than one downstream process industry.

- The study has no discussion of how to deal with emissions from farms only selling piglets and calves to other farmers without involving any downstream industries.

- The Trinomics report also seems too optimistic on the possibilities for down-stream processors to change their product portfolio or reformulate their products: Processing and marketing of low emission chickens is a totally different industry than beef and pork.

- Yet, GTD agrees with Trinomics in rejecting direct ETS obligations on entities further up the value chain such as supermarket-chains and international food brands like Nestlé. Such entities would struggle even more than immediate down-stream processors to collect accurate data on livestock emissions and incentivize farmers to reduce emissions. However, such entities have a key role in promoting low-carbon food via science-based reduction targets for scope 3 emissions. This will be much enabled by better GHG-emissions data supplied via an ETS.

In conclusion GTD fears these complexities and costs in a downstream ETS will tempt downstream processors to simply pass on ETS costs to consumers, while doing little to reduce emissions on farms. This will be ineffective climate policy. An independent Danish expert committee on GHG taxation has found that emission-taxes placed directly on farmers will provide 14 times higher GHG savings than similar GHG taxes placed on consumption of food.[xii] Yet, as explained below downstream industries could possibly take responsibility for livestock emissions from farms deemed too small to participate in an On Farm ETS.

GTD's combi model for including agriculture in ETS

Below a new model is presented combining key elements and insights from the Trinomics report. The ambition of the new model is to extend effective carbon pricing to a maximum of EU agri-GHGs, while also minimizing administrative burdens and complexities. The model that GTD proposes combines six main elements:

- Integration into existing emission trading schemes
    - Agricultural use of *fossil fuels* should be included in the new ETS 2 for heating and transportation.
    - *Non-CO2 emissions from agriculture* should become a new subsector in the ETS 1 along with air-transport and shipping.
    - *Peat soils:* Owners of non-rewetted peat soils must pay for a minimum emission of 10 t CO2e per year.

- Full auctioning is best to ensure full pass-on of carbon prices in agricultural products and low administrative complexity. Revenues could be used to support investments in mitigation and development of new low carbon food plus fast-track recognition of new mitigation measures.

- Up-stream ETS for emissions from *fossil fuels and mineral fertilizers*. Suppliers of fossil fuels and mineral fertilizers must buy and surrender allowances equaling emissions related to end-use and pass on costs to end-users. Fossil fuels shall be part of ETS2 along with other fossil fuels for land-based transport. Mineral fertilizers are best handled as part of the ETS1 for stationary installations, aviation and maritime transport.

- On-Farm ETS for *livestock emissions at large farms* capable of handling individual farm GHG-accounts and mitigation activities. Livestock emissions cover the following GHG-reporting categories: *Enteric fermentation, manure management at farms and manure applied to fields.* Individual farms pay for allowances matching their emissions.

- Down-stream ETS for emissions from *livestock at farms deemed too small* to handle emissions trading. Downstream processors of meat, milk and eggs buy and surrender allowances matching emissions from non-ETS farms. Down-stream industries finance their ETS obligations by paying deliveries from non-ETS farms with price discounts as compared to prices paid to ETS obligated farms.
- Amended CAP rules and minimum allowance requirements tackle peat soil emissions. Draining of peat-soils is made uneconomic by preserving CAP-

payments to rewetted peat-soils only. Owners of non-rewetted peat soils should pay a minimum of 10 allowances per hectare within the ETS1 system.

In combination, the six elements extend ambitious price signals to all emissions from EU agriculture[1] with a minimum of administrative burdens:

- Integration into existing ETS-schemes ensures emission prices similar to other sectors, which in turn secure the cheapest mitigation effort overall.

- The Up-stream ETS for mineral fertilizers, fossil fuels and the peat soil element cover up to 40 % of EU agricultural emissions. The limited number of suppliers of fossil fuels and mineral fertilizers may be handled with very limited administrative burdens. Including agricultural fossil fuel use into the ETS2 system will simplify administrative work for oil suppliers, as this relieves them from identifying and treating supplies to farms differently from other supplies of fuels to land-based transport.

- Detailed On-Farm greenhouse gas accounts shall only be developed for large farms with significant emissions from livestock. Public authorities may provide most - if not all - of the data needed.

- Farms with no or small livestock emissions will face no or very limited administrative burdens.

The ETS system proposed above will generate accurate GHG-emissions data on most agricultural products. These data will be available for global food brands and retailers to help them inform the public about the climate impact of food products and help them fulfill their science-based scope 3 reduction targets. Such targets could possibly be made mandatory for major food distributors enhancing marketing of low carbon food.

Gradual introduction: The proposed agri-ETS system may be introduced gradually. The Up-stream elements are relatively simple to implement and should be initiated without delay. Changing the conditionalities for CAP-payments to peat-soils must become part of the next revision of the Common Agricultural Policy (CAP) planned to take effect from 2028.

The On-Farm ETS for livestock emissions requires the development of a common Monitoring, Reporting and Verification (MRV) framework, a minimum emission threshold for mandatory participation and identification of farms above this threshold, plus establishing a registry. The MRV scheme and the registry may best be tested a few years as was previously done for shipping before requiring surrendering of allowances. The proposed Down-stream element cannot work before the On-Farm ETS is ready, as obligated downstream industries depend on an operational registry. Furthermore, the Down-stream element will require development of procedures to support mitigation efforts at small farms.

Below the main elements are described in more detail.

Up-stream ETS for emissions from fossil fuels and mineral fertilizers

The Up-Stream element is the simplest part of the new Agri-ETS scheme and should have the following sub-elements:

- Fossil fuels: The present exemption from the ETS2 for *fossil fuel deliveries* to agriculture covering emissions from fossil fuel use for heating and transport has no valid climate rationale and should be removed as soon as possible.

- Mineral fertilizers: Suppliers of *mineral fertilizer* must be obliged to buy allowances reflecting emissions calculated by means of specific emission factors for fertilizers sold. This will require specific monitoring and verification procedures as is also the case in the ETS1.

It is feasible to place the obligation to buy and surrender allowances on the relative low number of EU producers and importers of mineral fertilizers - as also pointed out in the Trinomics report. Member States also use simple emission factors to calculate emissions from mineral fertilizers when reporting these emissions. Lower emission factors for new chemistries may be used if documented according to IPCC rules and adopted by means of delegated EU acts. Pricing of emissions from mineral fertilizers will also help fulfill EU targets to lower use and leaching of nitrogen.

All farms in the EU will be included in the scope of the Up-stream element and compliance must be controlled by Member States. Combined, these emissions possibly account for up to 30 % of total agricultural emissions in the EU.

On-Farm ETS for livestock emissions at large farms with more than [20] Livestock Units

Direct price signals on emissions have repeatedly been documented as the most cost-effective means to induce GHG-reduction activities by rational economic actors. Large farmers in the EU are clearly very competent market operators, and their skills should also be used to maximize mitigation for emissions not covered by the Up-Stream ETS-element:

[1] Emissions from atmospheric deposition of nitrogen are not included.

- GHG-emissions from *livestock enteric fermentation, manure management and N2O from manure applied to soils* shall be covered by On-Farm emissions trading. The historic ETS 1 for large, stationary installations should be the template – with opt-outs for small farms by means of a minimum Livestock Unit threshold.

- Detailed GHG-accounts must be established for livestock emissions on large, obligated farms. Preparatory projects in Denmark[xiii] [xiv] points at simple ways to minimize administrative complexity of Monitoring, Reporting and Verification (MRV) for farms. User friendly IT-platforms for MRV may be established with prefilling of emissions factors and publicly available data on number of livestock units, manure management systems and proxy emission factors for different activities. It may become even simpler: A Danish report on GHG-taxation of agriculture expect that public authorities largely will be able to prepare GHG-accounts for Danish farms based on existing databases for agriculture.[xv]

- The on-Farm GHG accounts must allow farms to report documented mitigation efforts – e.g. the use of low methane-feed, methane inhibitors in manure, cooling and/or instant removal of slurry from animal housing, bio-gasification of manure a.o. A fast-track common EU mechanism to document and approve new mitigation measures should be established.

- Farms must pay for allowances equaling their calculated emissions. In Denmark this may be handled by tax authorities based on GHG-accounts prepared by a designated authority. In Member States with less developed farm-databases farms may initially have to prepare GHG accounts themselves. They may be assisted by authorities prefilling parts of GHG accounts from national databases. Furthermore, existing cooperatives or market intermediaries may assist in buying allowances as already practiced for small emitters in the ETS1.

- A minimum threshold for ETS obligated farms of [20] Livestock Units/year from livestock is *tentatively* suggested, as this metric is well known in EU environmental legislation. But the feasibility of this or other metrics must be further analyzed. If farms with 20+ Livestock Units were included, the vast majority of animals would be covered by the scheme (92% of cows, and 97% of pigs), while many of the smaller farms would not be obligated to participate (62% of cattle farms and 88% of pig farms would be exempt). Member States should be allowed to choose a lower or no minimum threshold, as some Member States will be able to prepare detailed GHG-accounts for even small farms relieving them of administrative burdens. Small farms below the threshold may opt to participate in the On Farm ETS.

- To avoid cheating, farm GHG-accounts must be verified in case the farms are responsible for providing data relevant for GHG-emissions. But this can be simplified in comparison with the present rather complex scheme for ETS1, which spans a large variety of installations. Agricultural emissions stem from relatively few standard processes with moderate variations in emissions: Instead of verifying each single farm GHG-accounts individually by hiring accredited verifiers, an IT-based verification system run by a public authority could potentially identify out-layers. Such farms should be subject to individual control by an accredited verifier. The verifier should only be paid by the farm if accounts are incorrect beyond pre-defined margins.

- Verification must be enhanced by Down-stream industries recording and reporting deliveries of animals, milk and eggs from On-Farm ETS farms to the registry established for agricultural emissions.

- The emission sources covered - livestock enteric fermentation, manure management and N2O from manure applied to soils - constitute up to 60% of EU agri-GHG. Yet, GTD has not been able to estimate the fraction of emissions from farms with more than 20 Livestock units.

A new Agri-ETS may be implemented rather swiftly, if the Livestock unit metric can be used. If a GHG-metric proves necessary implementation will take longer due to the lack of good statistics on on-farms GHG-emissions. Likewise, a uniform on-farm MRV system for the whole of the EU must be developed. Yet, this may build on existing schemes described in the Trinomics report and preparatory efforts undertaken in Denmark.[xvi] [xvii]

Down-stream ETS for emissions from livestock at small, non-ETS farms:

On-Farm ETS systems is clearly too complex for many small farms in the EU – as described in detail in the Trinomics report. Yet, exempting small farms with livestock emissions entirely from emissions trading will both leave important reduction potentials unused and provide an incentive down-scale or subdivide production to evade being regulated by emissions trading. Such farms may be included by means of a Down-stream ETS system.

In a Downstream ETS the obligation to buy and surrender allowances for emissions is placed on processing industries sourcing animal produce directly from farms. Yet, operating an On-Farm ETS alongside a Downside ETS creates some challenges:

The On-Farm ETS for livestock will no doubt raise costs on obligated farms and hence prices on deliveries from

these farms to Down-stream industries. This could create significant windfall profits for non-ETS farms if they were to receive the same prices as On-Farm obligated farms on deliveries to Down-stream processing industries. Such extra profits could become a significant incentive to evade becoming part of the On-Farm ETS – e.g. by means of legally subdividing large farms into smaller units below the minimum threshold. Secondly, Down-stream industries will face extra costs to buy allowances to cover emissions from non-obligated farms. If forced to pay identical prices on deliveries from ETS-obligated and non-obligated farms many down-stream process-industries could try to avoid deliveries from non-obligated farms.

To avoid such unintended side-effects down-stream industries should be allowed to pay lower prices to non-ETS farms than those paid to ETS-farms on condition of full transparency. This may seem controversial considering the recent farmer protests in Europe focusing on low sales-prices and high prices on farm input. But downstream industries will have no other way to finance ETS-costs. Most down-stream food-processors have relatively low margins, so they cannot absorb such ETS cost. Secondly, it will barely be possible for downstream industries to demand higher sales prices for products originating from non-obligated farms as compared to prices from obligated farms. Furthermore, a pure Downstream ETS would also have to use price-differentiation (or subsidies) to reward mitigation measures undertaken by farmers supplying inputs for the processing industry. The climate mitigation scheme run by the large dairy-cooperative Arla and cited in the Trinomics report already use such price differentiation. Dairies have historically administered similar price-differentiation schemes in relation to the EU milk quota scheme.

Down-stream industries will need two administrative tools to implement the price-differentiation:

- A public list with benchmark GHG-emissions from different types of farm deliveries – e.g. kg. CO2 per pig at different weight classes, kg CO2e per kg milk etc.

- A register for On-Farm ETS obligated farms allowing easy identification of deliveries.

The list of benchmark GHG-emissions from farm deliveries allow Down-stream industries to calculate costs to buy allowances per input sourced from non-obligated farms - and hence possible price discounts for non-obligated farms. Downstream industries should be free to establish their own pricing policies, provided there is clear transparency on discounts for non-obligated farms.

The register of ETS farms will allow down-stream industries to keep track of deliveries from ETS-participants and non-participants.

Down-stream industries must report inputs received from ETS-farms to ease verification of the farm GHG accounts. This will ensure that ETS obligated farms are held accountable for emissions representative for their sales. Without such preventive measures ETS obligated farms may accept buying and re-selling produce from non-ETS farms to circumvent price discounts for non-obligated deliveries. Ideally, small non-obligated farms should be able to negotiate lower price-discounts with downstream processors, if they can document mitigation activities.

The Trinomics report discuss a mechanism called "certified-on-farm voluntary credits". However, such credit schemes must be set up and controlled, which may involve significant costs relative to reductions realized. In any case the scheme will need to be supervised by public authorities, as farmers and downstream industries will have a concurrent interest in overstating mitigation effects to minimize allowance costs.

As described above Member States should be able to extend On-Farm ETS to all livestock farms, whereby they avoid the hassle of setting up and administering a Down-stream ETS system.

Peat soils

Peat soils emit more than 10 % of EU agricultural emissions despite a decline since 1990. However, a significant part of the decline may come from carbon pools being exhausted by draining rather than mitigation activities. Exhausted peat soils are no longer covered by reporting obligations, when they fall below the minimum carbon thresholds used in GHG reporting - although peat soils with a Soil Organic Carbon (SOC) content below the commonly used minimum threshold of 12 % SOC still have emissions on the same level as soils above 12 % SOC.[xviii] [xix] [xx]

The EU already has a well-known policy instrument at hand: EU direct payments to farmers under the Common Agricultural Policy (CAP). Until 2023 direct payments to peat-soils were conditional on these soils being well-drained – which both incentivized draining of new peat soils and kept them highly emitting.[xxi] From 2023 rewetted peat-soils may retain direct payments, but only if part of a public climate protection project.

From 2028 the CAP should stop providing incentives to promote and maintain peat soil emissions: In future, direct payments for peat-soils shall only be allowed if they have been rewetted. Yet, some flexibility may be allowed: Rewetting of some peat-soils may also flood significant areas of non-peat soils. For such soils farmers should be able to retain draining of their peat-soil area, while accepting loss of direct payments and a yearly payment of 10 ETS-allowances/Ha.
The rationale for a yearly payment for 10 allowances per Ha of peat soils is the following:

- It will be too costly to estimate and control exact emissions per Ha. Hence, it makes sense to use

a minimum emission threshold, which all European peat soils emit per year. A cost equaling 10 ETS1 allowances per Ha is deemed sufficient to make cultivation of such soils uneconomic in most cases.

Estimating a minimum threshold: Apart from Poland, all Member States reporting emissions from drained peat soils use emission factors above 10 t CO2e/Ha for croplands and above 9 t CO2e for grasslands[xxii] [2]. Some Member State numbers seem on the low side. A large meta-study of peat soils emissions undertaken in Germany indicate typical emissions of around 35 t CO2e/ha for peat soils with a water table lower than 30 cm from surface. [xxiii]

Economics of peat-soil cultivation: The ETS allowance prices now fluctuates around € 80/t CO2e. This indicates a socio-economic cost to EU Member States of draining peat soils of up to € 2800/Ha a year (35 t * € 80). No peat-soils in the EU create an annual surplus from cultivation even close to € 2800/Ha. Hence, it makes good economic sense for society to rewet all but tiny fractions of EU peat-soils. A minimum payment of 10 allowances per Ha / year will entail an annual cost for farmers of € 800/Ha. This is also significantly higher than the annual surplus from cultivation from most peat soils.[xxiv] Combining a stop for direct payments to peat soils and applying a minimum GHG payment of 10 allowances per Ha of non-rewetted peat-soils will stop draining most of these soils.

This is relatively simple in administrative terms: Ensure farmers against overpayment and provide some flexibility in case rewetting of peat soils cause flooding of large areas of non-peat soils.

The proposed peat soils scheme will be less complex and cheaper than including precise emission estimates in an On Farm ETS. Only a small share of EU farms has peat soils, and they will not be able to pass on loss of income rewetted soils into product prices. Hence Member States should be allowed to use national CAP-funds and possibly additional, national funds to compensate farmers for such income losses.

ETS system for agriculture should become part of existing ETS schemes

The Trinomics study presumes that an agricultural ETS should remain separate from other EU ETS systems. However, overall costs of the EU mitigation effort will only be minimized, if all remaining emissions face the same allowance price. This is achieved by merging existing ETS-systems and integrating agriculture into the unified ETS-system. Pending unification of the two existing ETS-systems the caps of the existing ETS systems should initially be increased with present agricultural GHG, but the reduction pathways defined must still respect overall EU reduction targets.

The ETS1 cap for 2030 is just above 900 Mio. t[xxv], and adding non-CO2 from agriculture and CO2 from peat soils will potentially add an additional 400 Mio. t CO2e (= 2021 emissions from these sources). Fossil oil emissions in agriculture could add around 50 Mio. t CO2 to the ETS2 system for transport and heating starting in 2027 with a cap of around 1.3 Billion t CO2. Allowances should be allocated by means of auctioning. This will become the allocation method in ETS2. Yet, most allowances in the ETS1 were initially allocated for free. But free allowances are gradually replaced by auctioning to ensure full pass-on of allowance prices in product prices and less complex administration. This is supplemented by new ways to protect against carbon leakage. Full auctioning will soon cover fuels for heating and land-transportation, shipping, aviation, plus GHG-intensive sectors for which Carbon Border Adjustment Measures are being phased in.

The risks of carbon leakage from effective EU carbon pricing seem manageable for EU agriculture. EU already operates a system limiting low tariffs to fixed quotas of agricultural import, as described in the Trinomics report. This system must be retained or Carbon Border Adjustment Mechanisms must become part of new EU trade deals on agricultural products. The MERCOSUR agreement should be improved in this regard.

From a climate mitigations perspective there are no valid reasons to keep agricultural emissions trading separate from the existing ETS1 and ETS2 systems. The ETS 1 now harbors very disparate industries like aviation and shipping with MRV schemes widely different from the MRV-scheme established for the stationary installations in the original scope of the ETS1. **For no obvious reasons agricultural use of fossil fuels is now the only end-use of fossil fuels exempted from both ETS 1 and ETS 2.** They may easily be integrated into ETS2 along with other transport and heating fuels.

A separate agri-ETS risk becoming unambitious: The Trinomics report and the 2040 Communication indicate a separate agri-ETS cap shall reflect the rather limited technical reduction potentials identified at present for EU agriculture dominated by livestock production. But this approach ignores the potential for changing food consumption to more plant-based food – providing both climate and health benefits. Secondly, it also ignores that technological mitigation potentials are severely underdeveloped in EU agriculture due to the historic lack of incentives or regulation. Emerging food technologies like precision fermentation of milk proteins and cultured meat may reduce the GHG-footprint of milk and meat-production by orders of magnitude and need not involve GMOs. [xxvi]

[2] Poland applies very atypical and dubious emission factors of 3,7 t CO2e/Ha for peat-croplands and 0,9 t CO2e/Ha for peat-grasslands in reporting for the UNFCCC and EU.

Revenues from auctioning should be used to promote low carbon food – both by supporting mitigation investments and development of low carbon food. Secondly, fast-track recognition of new and documented mitigation measures should be supported.

Furthermore, the Trinomics report indicates a separate and lax cap for agriculture risk becoming even less ambitious due to generous access to dubious credits from non-permanent and reversible, natural carbon storage projects. This will lead to low allowance prices, very limited mitigation- and innovation efforts - plus few price inducements for consumers to opt for less GHG-intensive food. High residual emissions from agriculture by 2040 and 2050 in turn dictates a necessity for high and costly negative emissions to meet the EU Net-zero target for 2050. Keeping agricultural emissions in a separate ETS suggests a clear risk that the economic burden of producing permanent negative emissions will be dumped on other parts of the economy.

This risk is evident in the Impact Assessment for the Communications on the 2040 climate target and Industrial Carbon Management, in which emissions from the agricultural sector are estimated to remain 70 % of residual EU GHG-emissions by 2050.[xxvii] Agricultural emissions are expected to reduce by a mere third by 2050 compared to 2015 whereas all other sectors decarbonize almost fully. The modelling work behind these estimates reflects the lack of technical innovation and changing demand patterns caused by the historic absence of climate regulation of the sector. A separate ETS for agriculture risks preserving these most unfortunate trends.

No linking with a reward system for most natural carbon removals

GTD remains sceptic against including most natural carbon removals in any ETS system to offset GHG-emissions with long atmospheric lifetimes. The skepticism is based on numerous factors:

- Natural carbon stores are all non-permanent and reversible. Forests can burn in a few days or be felled in weeks. Most carbon stored in agricultural soils may also diminish quickly – say if grassland are tilled. In contrast, increasing natural carbon storage have long timescales - hence lost carbon stores cannot be replenished swiftly.

- Increments or declines in carbon stores are costly to measure with precision, which fits badly with their non-permanence. Authorities and buyers must know if carbon credits issued are indeed backed by physical carbon stores.

- Proving additionality of natural carbon increments compared to business-as-usual has proven hard. The legacy of LULUCF-regulation under the Kyoto Protocol and in the EU as regards forest management reference levels has amply demonstrated the difficulties of agreeing on honest baselines against which additionality may be measured.

- The European Scientific Advisory Board on Climate Change recently cited estimates that up to 250 Mio. t CO2 of the net-sink in EU forests may be the result of higher CO2 content in the atmosphere (CO2-fertilization) and higher temperatures due to climate change. [xxviii] The Impact Assessment for the recent 2040 Communication also cites significant extra carbon sequestration caused by CO2-fertilization.[xxix] It would be absurd to allow forest growth induced by climate change and its main driver to offset agricultural GHG emissions, which would allow them to remain high.

- Planned use of natural carbon storage to balance other GHG emissions on an extensive scale could create significant risks of non-compliance with climate targets: The recently adopted LULUCF Regulation has set a minimum target of 310 Mio. t CO2e EU net-sink by 2030, which is an integral part of meeting the EU 55 % reduction target by 2030. Yet, the latest EU net-sink reported for 2021 has diminished from around 275 Mio. t 2016-18 to around 230 Mio. t CO2e – mainly due to decreasing removals in EU forests. According to a recent assessment there seems little hope that the 310 Mio. t net-sink target can be achieved without significant reductions in wood harvests for end-uses with short lifetimes – like wood-energy use and packaging.[xxx]

Based on these considerations GTD is against including natural carbon removals in any ETS-system for agricultural emissions. However, increasing natural carbon removals can play an important role in preventing climate change. Afforestation and carbon removals on agricultural soils may be enhanced by other policy instruments, e.g. regulations and subsidies via the EU Common Agricultural Policy. Less animal husbandry will reduce the need for feed production and free up land for afforestation and carbon friendly land-management methods.

Green Transition Denmark

Green Transition Denmark is an independent environmental organization that works to promote a green and sustainable transformation of society. We do this by creating and disseminating knowledge about green solutions and by influencing politicians, companies and citizens to make green choices.

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Annex

Trinomic study summary table:

Table 22 Comparison on five policy options based on assessment criteria

Criteria	Indicator	On-farm ETS (all-GHG)	On-farm ETS (livestock)	On-farm ETS (peatlands)	Upstream ETS	Downstream ETS
Effectiveness	Incentivise actors along the value chain to mitigate agricultural emissions					
	Biodiversity risks and co-benefits					
	Impacts on consumer budgets and welfare					
	Distributional impacts on Member States					
	Distributional issues between small and large farms					
	Speed/ease of implementation					
	Stakeholder acceptance					

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Efficiency	Impacts on sectoral competitiveness and trade balance					
	Risk of carbon leakage					
	Administrative burden and costs					
Relevance	Incentivise polluters to change practices and innovate					
Coherence	Coherence with other EU policies					
Added value	EU added value					

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