

Summary

CO₂ emission trading in 2020; Significance for Dutch greenhouse horticulture

In 2008, a new proposal for a European directive for trading in CO₂ emission rights was published. The European Commission wants to reduce CO₂ emission rights by 20% in 2020. Furthermore, in 2020 the EC wants to introduce auctioning of CO₂ emission rights as far as possible. However, industrial sectors which are exposed to strong competition from countries with no stringent climate policy will receive free emission rights in the future too. This should prevent the competitive position of these sectors coming under pressure and companies transferring their business to countries with no stringent climate policy, thus moving rather than reducing CO₂ emissions. This phenomenon is known as carbon leak. The EU feels there is a real risk of carbon leak if the costs of the directive determine 5% of the added value of a sector and the sum of imports and exports with non-EU countries amounts to 10% of the supply on the European market.

This report studies the impact of the new European directive for CO₂ emission trading on Dutch glasshouse horticulture. It explores the consequences for the competitive position and production of glasshouse horticulture and the carbon leak. The directive only relates to a limited number of glasshouse horticulture holdings. The other smaller companies continue to be subject to sectoral climate policy. In the analysis, we assume that the sectoral climate policy for Dutch glasshouse horticulture follows the European directive. In the calculations in this report, we assume that in the future smaller glasshouse horticulture holdings will pay the same price for CO₂ as the big glasshouse horticulture holdings and will need to buy proportionally just as many emission rights as the bigger glasshouse horticulture holdings.

CE Delft (2008) recently determined the effects of the new directive on Dutch industry. When determining the effect on competitive position, CE Delft investigated the effect of the measure on the costs, assuming that the sector continues to use the same amount of energy. Subsequently, CE estimated in relation to the demand whether the sector - in view of the international competition - could pass on the rise in costs to the customers.

CE Delft considered two policy variants. In variant 1, the number of emission rights in the EU is reduced by 20% and all emission rights are auctioned. In variant 2, the emission rights are only auctioned for the production of electricity and for all other purposes the emission rights are distributed free (grandfathering). Both variants were calculated for glasshouse horticulture. A price of €20 per tonne CO₂ was hereby assumed. Furthermore, the reduction potential in the sector was calculated. The calculations were based on data over 2005. All this was according to the scenarios and variants calculated by CE Delft.

The CPB recently charted the effects of the new directive on the production of European industry. At a price of €25 per tonne CO₂, European production in the ETS sectors declines by 4.5% in the chemical industry and by 5-6% in the metal industry. The method and parameter values used by the CBS correspond with the ones we used for glasshouse horticulture.

The report presents the following findings:

- Dutch glasshouse horticulture only faces a limited rise in costs if the emission rights are partly allocated free and partly auctioned in 2020. In that case, the costs increase by 0.8% for a CO₂ price of €20 per tonne.
- The cost increase is considerably higher if all emission rights are auctioned. In that case, the costs rise by 2.6% for a CO₂ price of €20 per tonne.
- The cost increase in glasshouse horticulture is higher than in Dutch industry, but considerably lower than in the cement, iron, steel, aluminium and artificial fertiliser sectors.
- Dutch glasshouse horticulture is exposed to competition from non-EU countries. Imports of cut flowers and pot plants from non-EU countries are particularly big. This means that Dutch glasshouse horticulture can only pass on cost increases to customers to a limited extent.

To supplement the CE Delft approach, production effects were determined for glasshouse horticulture. The following conclusions were subsequently drawn.

- Changes in the price of energy and CO₂ not only affect the competitive relationship of Dutch glasshouse horticulture with respect to countries outside Europe, but also with respect to the southern member countries. The CO₂ emission per unit product in the Netherlands is 9-17 larger than in Spain.
- The European Union establishes at NACE 3 and NACE 4 level for the EU whether a sector fulfils the criteria for the risk of a carbon leak and whether it is eligible for free emission rights. This report does not investigate this here, but explores how Dutch glasshouse horticulture scores on both criteria. In the case of auctioning alone and a price of €20 per tonne CO₂, the di-

rective involves costs amounting to 5% of the added value in Dutch glasshouse horticulture. For glasshouse horticulture, the sum of the import from and the export to countries outside the EU is more than 10% of the supply on the European market. This applies in particular to cut flowers, peppers and pot plants.

- Dutch glasshouse horticulture fulfils both criteria used by the EU to establish whether there is a risk of a carbon leak, but it is still debateable whether this also applies at NACE 3 or NACE 4 level for the entire European Union. The NACE categorises sectors based on products (e.g. cut flowers) but not production process (e.g. production under glass). At NACE 4 level, fruit vegetables fall into the group vegetables, melons, carrots and cabbage crops (A0113); cut flowers into the group other seasonal crops (A0119); and pot plants into the group propagating material (A0130). So it is still debateable whether the cultivation of fruit vegetables, cut flowers and pot plants at European level fulfils the criteria and then in particular the criterion of 5% of the added value. For example, fruit vegetables at NACE 4 level are not considered separately and are grouped together with other vegetables. This means that Dutch tomato cultivation falls into the same NACE 4 category as Dutch cabbage and Spanish tomatoes and Spanish cabbage. The CO₂ costs for Dutch cabbage and Spanish tomatoes and Spanish cabbage are expected to be lower than those of Dutch tomatoes (5%).
- A shift of production to southern Europe and developing countries could benefit global CO₂ emissions because CO₂ emissions per unit product are currently lower in southern Europe and the Third World than in northern Europe. All scenarios are subject to the shift of production within Europe from North to South. There is a limited shift of production to countries outside the EU, in particular among cut flowers. Most of the costs will be borne by the northern European consumer who pays those higher prices and consumes less. On this point, the shift of production to southern Europe increases the efficiency of production, the European division of labour, because production shifts to a region which uses less energy. However, in an integral approach, other environmental effects such as the use of water and pesticides should be considered. The use of pesticides and water, among others, is 10 to 15 times more in southern European countries (Van der Velden et al., 2004).

If it is assumed that the climate policy for Dutch glasshouse horticulture follows the EU ETS directive and the CO₂ price and the auction percentages are similar, then the directive has the following consequences:

- Depending on the price of CO₂ and the sensitivity of import demand to price changes, production in the Netherlands will decline by 4.8% to 8.9%, based on 100% auction. Production declines by 8.9%; in the worst case scenario, all emission rights will be auctioned and imports will be very sensitive to price changes;
- The impact of the directive on production in glasshouse horticulture is considerably more dramatic than on industry. The price increases may be more limited but, in contrast with industry, glasshouse horticulture faces a deterioration of its competitive position within the EU. Dutch production declines by 5-9% at a CO₂ price of €20 per tonne. European and Dutch production in the ETS sectors decline by 4.5% and the chemical and metal industries by 5-6%;
- If glasshouse horticulture is required to pay for all emission rights in 2020, then - at a price of CO₂ of €20 per tonne - this will lead to a 420-760 ha reduction in glasshouse horticulture, with 3,100-5,600 job cuts and a €130-€220 million loss of added value. These losses will rise proportionately if the price of CO₂ emission increases further.

In view of these results, the following conclusions and recommendations for the developing CO₂ settlement system are drawn.

- The auctioning of all emission rights in glasshouse horticulture will have a dramatic impact on the competitive position of Dutch glasshouse horticulture. Policy alternatives which do not involve the auction of all emission rights are preferable from this perspective. An example of such an alternative is the financial settlement of CO₂ emission credits or debits.
- In the framework of the development of a CO₂ settlement system for Dutch glasshouse horticulture, the possibility of linking up with the EU ETS is being discussed. The Dutch government is negotiating with the European Commission to link the CO₂ settlement system via a separate construction with the EU ETS. The Dutch government would like this link to be achieved in 2013 (ministry of Housing, Spatial Planning and the Environment, *Schoon en zuinig* [Clean and efficient], p. 38). In this respect, it should be investigated how the Dutch wish to relate to the EU ETS directive.
- The report explores whether the sector will receive the right to trade emission rights with the EU ETS. If there is no link, the sector may neither buy

nor sell emission rights. In the case of a bilateral link, the sector may buy and sell rights.

- In the short term, a link between the CO₂ settlement system for Dutch glasshouse horticulture and the EU ETS will ensure that the sector will buy a major part of the emission rights. The current energy-saving options present few possibilities to achieve cost savings. The present options have largely already been implemented. These increase slightly with a rising price of CO₂.
- This does not detract from the fact that a bilateral link is desirable from a long term perspective. If the sector can earn money with the development of the climate neutral greenhouse on the ETS market, for example, this will be an incentive to innovate.
- If no link is created, the price of CO₂ in the sector will soar, unless there is a high emission ceiling in the sector.
- Application of the general energy tax tariff instead of the horticultural tariff has more or less the same effects as auctioning all emission rights. However, we do expect that the implicit price of CO₂ is higher: €25 versus €20 per tonne.
- A reduction in labour costs to be paid from the auction revenue will ease the pain.