

*Annex 2*

The EU Emissions Trading (RiR 2013:19)



## Annex 2, The EU Emissions Trading System

The EU Emissions Trading System (ETS) is a policy instrument for reducing greenhouse gas emissions. The ETS is the first major trading system for greenhouse gases in the world. It was started in January 2005. The ETS is one of the cornerstones of the EU climate and energy targets “20-20-20”. The purpose is cost-effective and economically efficient reduction of greenhouse gas emissions. The system builds on the principle of an emissions cap and trading in emission allowances. The emissions cap is the total amount of emissions allowed under the system as a whole and for all installations that emit greenhouse gases. This means that the system is to ensure that emissions do not exceed the emissions cap. However, the emissions cap can increase in that enterprises can buy emission credits through climate measures abroad (Clean Development Mechanism, CDM, and Joint Implementation, JI), thus increasing the actual number of emission allowances in the trading system up to a certain limit in excess of the emissions cap.<sup>1</sup>

The ETS has up to now covered three periods. The first was a trial period covering 2005–2007. The second trading period covered 2008–2012. The third trading period will cover 2013–2020.

### *Allocation principles for the second trading period*

Every EU member state has been allocated emission allowances for the first commitment period 2008–2012 under the Kyoto Protocol in accordance with a special Effort Sharing decision. Thereafter some of a member state’s emission allowances have been set aside for the EU Emissions Trading System. Installations covered by the trading system must have a licence for emitting greenhouse gases. In addition they must report emissions and submit emission allowances to the respective member state’s supervisory authority. One emission allowance allows the installation to emit one tonne of carbon dioxide equivalents in one year. If the installation has a deficit of emission allowances in relation to its emissions it can buy more in the market or reduce its emissions. If the installation has a surplus of emission allowances, it can sell them or save them for another year.<sup>2</sup> The system covers emissions of greenhouse gases from installations such as

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<sup>1</sup> The absolute ceiling is regulated in the coming RICE Regulation (Regulation on International Credit Entitlements). RICE specifies the extent to which emission credits can be used in EU ETS to 2020. RICE will replace all previous rules for the use of credits in the EU ETS. The Swedish Environmental Protection Agency will calculate what RICE entails in practice for each installation in Sweden. See email from the Swedish Energy Agency, 7 October 2013.

<sup>2</sup> See Government Bill 2008/09:162 p. 77 f.



power plants, combustion plants, oil refineries, iron and steel works and factories that manufacture cement, glass, ceramics, pulp, paper and cardboard. As of 2012 the ETS also covers some air traffic.

The emissions cap in the trading system was equivalent to the total emissions in the member states' allocation plans. At least 90 per cent of emission allowances were allocated free of charge.<sup>3</sup> The remaining allowances could be sold, for example by the respective member states auctioning them.

#### *Allocation principles for the third trading period*

As of 2013 the ETS will be extended to cover more sectors, including the chemicals industry and companies producing ammonia and aluminium as well as other gases. A joint emissions ceiling applies for the third trading period to the entire EU. About half the emission allowances in the third trading period will be allocated by auction. Industry and the heating sector receive free emission allowances.<sup>4</sup> The principle of free allocation is based primarily on predetermined product benchmarks. The product benchmarks were constructed on the basis of the average emissions of 10 per cent of the most efficient installations in each sector in the EU. Sectors regarded as exposed to carbon leakage, where the trading system is deemed to entail a risk of activities and emissions being moved to countries with lower requirements, are given free allocation of up to 100 per cent of the benchmark in question. The five per cent of installations that perform better than the current benchmark have more emission allowances than their emissions correspond to. Sectors that are not deemed to be exposed to carbon leakage are allocated 80 per cent of the 2013 benchmark, with a subsequent annual scale-down to 30 per cent of the benchmark in 2020. Electricity production does not receive free allocation. If there is no product benchmark, free allocation is based on emission allowances based on a heat benchmark, fuel benchmark or process emission benchmark, which are determined at EU level.<sup>5</sup>

The Swedish Environmental Protection Agency's preliminary free allocation for 2013 exceeds the expected emission levels for Swedish installations by the equivalent of about 10 million emission allowances. The Commission has approved the total allocation which (before deduction for a sector-wide correction factor determined by the Commission) is to amount to 30.2 million

<sup>3</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Directive 96/61/EC, EUT L 275 25.10.2003. At least 95 per cent of emission allowances were allocated free of charge in the first trading period 2005-2007.

<sup>4</sup> Electricity production is not entitled to free allocation.

<sup>5</sup> See description in: Swedish Environmental Protection Agency: Handel med utsläppsrätter (Emissions trading), version no 1, 15 February 2013.

emission allowances.<sup>6</sup> The sectors favoured most in Sweden, since they have lower emissions than the EU benchmarks, are the pulp and paper industry and the district heating sector:<sup>7</sup>

- District heating installations' allocation is based on the heat benchmark, which is determined on the basis of burning a natural gas furnace with a 90 per cent efficiency rate. A large proportion of the fuel in Swedish district heating installations is biomass, whose emissions are counted at zero. Pure biomass installations are not to be covered by the emissions trading system under EU rules. However, Sweden has used the possibility of including small district heating installations (connected to district heating networks of at least 20 MW) in the trading system. According to the Government and the Swedish Environmental Protection Agency the consequence of this is that all Swedish district heating installations – including pure biomass installations – that are connected to a district heating network of at least 20 MW are covered by the trading system regardless of the fuel used. Pure biomass installations that are not connected for delivery to district heating networks are, however, not included in the trading system from 2013.<sup>8</sup>
- Integrated pulp and paper mills are favoured in that the product benchmarks for different types of paper have been determined on the basis of the 10 per cent best “separate” mills. The integrated mills may use the product benchmarks for the separate mills. The integrated mills are more effective than the separate mills; hence the integrated mills perform better than the product benchmarks and thus receive entirely free allocation of emission allowances. Integrated mills are found almost only in Sweden and Finland. In addition the pulp and paper industry uses a lot of biofuel, which means a further increased difference between allocation of emission allowances and emissions. The pulp and paper industry has a preliminary allocation in 2013 of about 4.6 million emission allowances while the industry emissions in 2012 were 0.9 million tonnes.

The member states must auction all emission allowances not allocated free.<sup>9</sup> The member states may not use any other methods for allocation for the emission allowances that must be auctioned and they may not withhold or annul these emission allowances instead of auctioning them.<sup>10</sup>

The total volume of emission allowances in the trading system is decreased annually during the period 2013–2020 by a linear factor of 1.74 per cent, compared with the average annual quantity

<sup>6</sup> Telephone call with the Swedish Environmental Protection Agency on 2 May 2013 and the Swedish Environmental Protection Agency's website, 11 September 2013.

<sup>7</sup> Email from the Swedish Environmental Protection Agency, 20 May, 2013 and 31 May 2013.

<sup>8</sup> Swedish Environmental Protection Agency, Emissions trading, version 1 15 February 2013, *The interpretation of the Swedish Environmental Protection Agency and the Government of why pure biofuel facilities can be included in the trading system*. This interpretation has been approved by the European Commission.

<sup>9</sup> Art. 10.1 Directive 2003/87/EC.

<sup>10</sup> Preamble 2 Commission Regulation (EU) No 1031/2010 of 12 November 2010 on the timing, administration and other aspects of auctioning of greenhouse gas emission allowances pursuant to Directive 2003/87/EC of the European Parliament and of the Council establishing a scheme for greenhouse gas emission allowances trading within the Community. See also Govt. Bill 2009/10:28, p. 39.



for the period 2008–2012. The linear factor of 1.75 per cent also applies after 2020, unless otherwise decided in the EU Directive that governs the trading system. The current linear factor leads to a reduction in the ceiling of the trading system of just over 70 per cent by 2050. The Commission stresses that this is not compatible with the EU's agreed target of a reduction of 80–95 per cent by 2050.<sup>11</sup> The reduction in emission allowances through the linear factor is applied to the emission allowances that are auctioned, not to those allocated free (this is corrected through the overall correction factor). On the other hand, the linear reduction factor is applied to the cogeneration installations' allocation for the heat they produce.<sup>12</sup>

#### *National discretion in the EU Emissions Trading System and Sweden's use of it*

The Government has used Sweden's national discretion in relation to the EU Emissions Trading System in different ways. The Government's focus in relation to the EU Emissions Trading System is that emissions from installations in the system should not be covered by further Swedish policy instruments for carbon emissions. One example is that carbon tax has been abolished for Swedish industrial and cogeneration installations in the trading system.<sup>13</sup>

According to the Government the Directive that regulates the EU Emissions Trading System provides very little margin for alternative solutions.<sup>14</sup> But the Swedish National Audit Office has shown that the member states have national discretion to introduce national rules on a number of issues. This applies for example to the possibility to determine what the proceeds from companies' sale of emission allowances should be used for, which was shown in the audit by the Swedish National Audit Office together with six other supreme audit institutions of the implementation and management of the EU Emissions Trading System.<sup>15</sup> Sweden has not availed itself of this possibility. In the period 2008–2012 the member states could auction up to 10 per cent of emission allowances. Sweden did not use this opportunity either.<sup>16</sup>

However, the Government has used some parts of Sweden's national discretion in relation to the EU Emissions Trading System, mainly for the 2013–2020 period:

- The Government introduced Swedish rules on reduced allocation when production and capacity is reduced during the 2013–2020 trading period.

<sup>11</sup> European Commission, Report from the Commission to the Council and the European Parliament, *The state of the European carbon market in 2012*, COM(2012) 652 final p 7.

<sup>12</sup> Email from the Swedish Environmental Protection Agency, 31 May 2013.

<sup>13</sup> Email from the Ministry of the Environment, 26 June 2013 and Govt. Bill 2008/09:162.

<sup>14</sup> Govt. Bill 2009/10:28, p. 39.

<sup>15</sup> Swedish National Audit Office 2012:27. The audit showed for example that Latvia and Lithuania have introduced rules for companies stipulating that their revenue from sales of emission allowances are to be used for investments in emission reduction technology.

<sup>16</sup> Swedish National Audit Office RiR 2012:1 and RiR 2012:27.

- The member states can also include more activities and gases in the trading system. For example, the Government has decided that even small Swedish installations connected to district heating networks of at least 20 MW are to be included in the trading system.<sup>17</sup>

Questions of emissions and uptake of greenhouse gases from forest and land use lies within Sweden's national discretion.<sup>18</sup>

In the sections below the Swedish National Audit Office describes in more detail Sweden's discretion in relation to the EU Emissions Trading System and Sweden's use of this national discretion. The description is based on the second and third trading periods.

#### *Trading period 2008–2012*

- For the 2008–2012 trading period at least 90 per cent of emission allowances should be allocated free.<sup>19</sup> The remaining allowances could be sold, for example by the respective member states auctioning them. In the EU six member states have decided to auction emission allowances.<sup>20</sup> Sweden decided to allocate all emission allowances free during the period 2008–2012<sup>21</sup>, with the exception of remaining emission allowances in Sweden's new entrants' reserve.<sup>22</sup>
- According to the Ministry of the Environment Sweden has consistently promoted auctioning as a method of distribution in the negotiations on the trading system, but the Government considered that the advantages of partial Swedish auctioning were negligible.<sup>23</sup>
- In the trading system there was a pool of emission allowances that were reserved for additional or extended activities during the second trading period (2008–2012), called the new entrants' reserve. After the second trading period was over, at the beginning of 2013 the Government noted that about 1.5 million emission allowances remained in the reserve, which is at the disposal of the Government. The Government therefore instructed the Swedish Energy Agency to sell these emission allowances by 30 April 2013.<sup>24</sup> According to EU Regulations institutions and airline operators are entitled to have remaining emission allowances from the 2008–2012 trading period converted to emission

<sup>17</sup> See section "Allocation principles for the third trading period" above.

<sup>18</sup> Email from the Ministry of the Environment, 30 September 2013.

<sup>19</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Directive 96/61/EC, EUT L 275 25.10.2003. 10. At least 95 per cent of emission allowances were allocated free of charge in the first trading period 2005–2007.

<sup>20</sup> Swedish National Audit Office RiR 2012:1 p. 38.

<sup>21</sup> Ibid.

<sup>22</sup> Email from the Ministry of the Environment, 30 September 2013.

<sup>23</sup> Email from the Ministry of the Environment, 26 June 2013.

<sup>24</sup> Government decision of 21 February 2013, M2013/651/K1.



allowances in the 2013–2020 trading period, but member states do not have this option.<sup>25</sup> There are no mandatory EU regulations stipulating that member states must sell emission allowances in their new entrants' reserves in the 2008–2012 trading period. The Government could have frozen emission allowances in Sweden's reserve,<sup>26</sup> to prevent their use in the trading system.

- The member states can regulate the uses that companies' revenue from sales of emission allowances can be put to. The Swedish National Audit Office audit, together with six other supreme audit institutions, of the European Emissions Trading System during the 2008–2012 trading period showed that the participating countries, Latvia and Lithuania, had introduced requirements that some companies<sup>27</sup> must use revenue from sales of emission allowances to invest in emission reduction.<sup>28</sup> EU legislation does not regulate this question. Sweden has not made use of this opportunity.
- Member states are able themselves to introduce more institutions and more greenhouse gases into the trading system, provided the Commission and the member states give their approval.<sup>29</sup> Sweden has availed itself of this as follows:
  - The Government has decided to include combustion plants with a capacity below the EU threshold of 20 megawatts, if they are connected to a district heating network with a total effect of 20 megawatt (cf. Govt. Bill 2003/04:31).<sup>30</sup>
  - In 2006 the Government extended the definition of combustion plant (which meant that more than another 10 installations were included in the trading system).<sup>31</sup>

#### *Trading period 2013–2020*

- Member states are able to introduce more institutions and more greenhouse gases into the trading system, provided the Commission gives its approval.<sup>32</sup>
- As of 2013 pure biofuel installations are not covered by the trading system, under the EU regulations. However, the Government decided that all Swedish installations connected for delivery to district heating networks of at least 20 MW are to be included in the trading system (see section above). The Government and the Swedish Environmental Protection Agency have interpreted the consequence of this to mean that all Swedish district heating installations – including pure biomass installations – that are connected to

<sup>25</sup> Email from the Ministry of the Environment, 3 October 2013.

<sup>26</sup> Email from the Ministry of the Environment, 8 October 2013.

<sup>27</sup> Private companies in Lithuania and public sector companies in both countries.

<sup>28</sup> Swedish National Audit Office RiR 2012:27 p. 29. The governments of both countries can, however, not guarantee adequate control on the matter.

<sup>29</sup> Art. 24 of the Directive 2003/87/EC of the European Parliament and the Council.

<sup>30</sup> Govt. Bill 2009/10:28 p. 28 and Section 14 of the Emissions Trading Ordinance (2004:1205) in its wording in accordance with the Swedish Code of Statutes SFS 2006:645.

<sup>31</sup> Section 14, first paragraph of the Emissions Trading Ordinance (2004:1205) compared with its wording in accordance with the Swedish Code of Statutes SFS 2006:645. See also Govt. Bill 2005/06:184 p 85.

<sup>32</sup> Art. 24 of the Directive 2003/87/EC of the European Parliament and the Council.



a district heating network of at least 20 MW are covered by the trading system regardless of the fuel used. Pure biomass installations that are not connected for delivery to district heating networks are, however, not included in the trading system from 2013.<sup>33</sup> This means, with the Government's and the Swedish Environmental Protection Agency's interpretation approved by the European Commission, that Swedish biofuelled district heating plants receive a large allocation of free emission allowances. When the plants use biofuel they do not report any emissions from this use and thus do not need the emission allowances allocated.

- It is assumed that about half the emission allowances in the third trading period will be allocated by auction. The industrial and heating sectors are allocated emission allowances free, even if the share of free emission allowances decreases over time.<sup>34</sup> The principle of free allocation is based on benchmarks that have been determined by the Commission.
- The auctioning procedure is governed by detailed binding EU regulations. However, the member states must decide on how national revenue from auctioning emission allowances is to be used. Under EU rules at least 50 per cent of revenue or an equivalent amount should be used for climate measures.<sup>35</sup> The auction revenues accruing to Sweden are not earmarked; instead they go directly to the central government budget.<sup>36</sup> In addition, the Swedish treasury receives larger revenues, since Sweden has negotiated an increase in the Swedish allocation of auctioned emission allowances of a further 10 per cent.<sup>37</sup>
- The EU rules give member states national discretion to compensate certain industrial sectors for the impact of emission allowances on the price of electricity. The Government has as yet not taken a position on/used national discretion.<sup>38</sup>
- Even for the 2013–2020 trading period it is possible for member states to regulate how companies are to use revenues from their sales of emission allowances.<sup>39</sup> Sweden has not done this.

<sup>33</sup> Swedish Environmental Protection Agency, Emissions trading, version 1, 15 February 2013, *The interpretation of the Swedish Environmental Protection Agency and the Government of why pure biofuel facilities can be included in the trading system*. This interpretation has benefited the Swedish district heating sector, since the Swedish district heating installations are mainly fuelled with biofuel, the emissions of which are not to be reported in emissions statistics. As regards free allocation of emission allowances, however, this is based on a heat benchmark corresponding to burning a natural gas furnace with a 90 per cent efficiency rate. The district heating sector is not subject to carbon leakage and thus does not receive full allocation under the heat benchmark but instead 80 per cent for 2013. Up to 2020 the allocation is reduced to 30 per cent of the benchmark. The Swedish district heating sector is favoured nevertheless since emissions from biofuels are not to be counted in the emissions statistics, which means that the sector's free allocation of emission allowances exceeds the emissions. Email from the Swedish Environmental Protection Agency, 17 May 2013. In section 4.3.1 the Swedish National Audit Office describes the extent of free allocation to Swedish installations, including district heating.

<sup>34</sup> Electricity production is not entitled to free allocation.

<sup>35</sup> Article 10.3, Directive 2003/87/EC of the European Parliament and the Council.

<sup>36</sup> The revenues are included in the central government budget under "other income headings", see Swedish National Audit Office RIR 2012:1, file annex 36. The Riksdag Committee on Finance has stated that since EU rules on auctions will be directly binding for Sweden there is no other reason to issue any notification on how the revenue from auctions is to be used see Committee Report 2011/12:FiU47 p. 12.

<sup>37</sup> Article 10.2.b) of Directive 2003/87/EC of the European Parliament and the Council, compared with annex 2a.

<sup>38</sup> Swedish Environmental Protection Agency, report 6525, Appendix 7, p. 26.

<sup>39</sup> This follows from this not being regulated by the EU. Email from officials at DG Climate Action 10 June 2013.



- All free allocation in this trading period is preliminary for the installations concerned until it is confirmed each year that the level of output has not fallen below 50 per cent of the base year level or that capacity has not been reduced by more than 10 per cent.<sup>40</sup> As of 2013 Sweden has introduced rules in accordance with the European Commission's decision on reduced allocation of free emission allowances when capacity is reduced substantially.<sup>41</sup>
- Some member states have implemented or are considering implementing national measures, such as taxation, for carbon-intensive fuels in sectors covered by the trading system.<sup>42</sup>
  - On 1 April 2013 the UK introduced a carbon floor price for fossil fuels delivered to electricity generating installations. The floor price was introduced as a complement to the previously introduced energy tax.<sup>43</sup> The main reason for introducing the floor price is the low price of emission allowances in the EU Emissions Trading System.
  - The floor price for 2013–2014 is about GBP 5 per tonne of carbon dioxide equivalents.
  - The objective of the floor price is, along with the price of emission allowances, that electricity producers are to pay a total carbon dioxide levy of GBP 15.70 per tonne in 2013, which is to rise in a straight line to GBP 30 per tonne in 2020 and GBP 70 per tonne in 2030.
- Sweden abolished carbon tax for industrial installations within the EU emissions trading system in 2011. Carbon tax was reduced for cogeneration installations. At the same time Sweden introduced an energy tax in accordance with the Energy Tax Directive minimum level (proportional to energy content) for industry, heat production and heat production in cogeneration installations.<sup>44</sup>

### *The Commission's proposed structural changes to the trading system*

In a report in 2012 the European Commission took the initiative to make structural changes in the EU Emissions Trading System to deal with the growing structural imbalance between supply and demand for emission allowances in the trading system. The Commission identified a number of possible alternatives for structural changes:<sup>45</sup>

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<sup>40</sup> Ibid.

<sup>41</sup> Art. 21–24 Decision of the European Commission 2011/278/EU and Section 32, k–s of the Emissions Trading Ordinance (2004:1205).

<sup>42</sup> European Commission, Green Paper *A 2030 framework for climate and energy policies*, COM (2013) 169 final, p. 4.

<sup>43</sup> In 2001 the UK introduced an energy tax on electricity, gas and solid fossil fuels (such as coal), the Climate change levy (CCL). Before introduction of the floor price, energy used to produce electricity was not taxed under the CCL.

<sup>44</sup> See Swedish National Audit Office RiR 2012:1 p. 108.

<sup>45</sup> European Commission, Report from the Commission to the Council and the European Parliament, *The state of the European carbon market in 2012*, COM(2012) 652 final p 6 f.



1. Increase in EU's targets for emission reductions by 2020, from 20 per cent to 30 per cent.
2. Permanent withdrawal of a number of emission allowances in the 2013–2020 trading period.
3. Earlier revision of the annual linear reduction factor for reducing total volume of emission allowances.
4. Extension of the trading system to other sectors.
5. Restriction of supply of international emission credits.
6. Use of discretionary price-based mechanisms, such as a price floor for the carbon dioxide price or a price control reserve.

As a short-term measure the Commission has proposed a postponement of the auction of 900 million emission allowances from 2013–2015 to 2019–2020. Negotiations on the proposal are currently in progress within the EU.<sup>46</sup>

In its report the Commission also discussed various advantages and disadvantages of the different alternatives for structural changes to the trading system. One example is the use of discretionary price mechanisms such as price floors or price control reserves. The Commission maintained that the trading system is constructed as a quantity-based instrument, in which a predetermined quantity of emission allowances is issued that determines the environmental outcome. A price floor or a price control reserve with an explicit objective for the carbon dioxide price would, according to the Commission, change the nature of the current trading system as a quantity-based market instrument. According to the Commission the following further issues arise concerning the use of such mechanisms:<sup>47</sup>

- If such a measure would not lead to cancellation of allowances which were withdrawn from the auctioning process because prices were too low, then it would not achieve any additional environmental benefit which is determined by the cap.
- If the floor price or minimum price for the reserve were set too high, it would in fact just fix the carbon price in the same way as a carbon tax, for example, and result in higher costs for achieving the emissions target.
- A carbon price floor or minimum price for the reserve would, however, provide more certainty for investors and suppliers of low-carbon technologies. In the case of technological breakthroughs, which substantially lower abatement costs, this could lead to potentially imposing excessive cost on ETS participants and society for emission reduction.

<sup>46</sup> European Commission website, 9 October 2013.

<sup>47</sup> European Commission, COM(2012) 652 final, p. 6 f.