

PRACE NAUKOWE

Uniwersytetu Ekonomicznego we Wrocławiu

RESEARCH PAPERS

of Wrocław University of Economics

Nr 351

Finance and Accounting – Theory and Practice

edited by
Jacek Adamek
Magdalena Swacha-Lech



Publishing House of Wrocław University of Economics
Wrocław 2014

Copy-editing: Elżbieta Macauley, Tim Macauley

Layout: Barbara Łopusiewicz

Proof-reading: Barbara Cibis

Typesetting: Beata Mazur

Cover design: Beata Dębska

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Lower Silesian Digital Library www.dbc.wroc.pl,
The Central European Journal of Social Sciences and Humanities <http://cejsh.icm.edu.pl>
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Wrocław 2014

ISSN 1899-3192

ISBN 978-83-7695-406-6

The original version: printed

Printing:

EXPOL, P. Rybiński, J. Dąbek, sp.j.

ul. Brzeska 4, 87-800 Włocławek

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Grażyna Borys

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ADVANTAGES AND DISADVANTAGES OF THE BENCHMARKS USED IN THE EU EMISSIONS TRADING SYSTEM DURING THE THIRD TRADING PERIOD OF THE EU ETS

Summary: The article presents the results of an analysis of the advantages and disadvantages of the mechanism for the allocation of free tradable allowances for greenhouse gas emission from stationary installations during the third trading period of the EU ETS. Although, as of 2013, the role of this mechanism in the allocation of emission allowances within the Community has been decreasing, it remains crucial from an economic point of view. The basic method of allocation has increasingly been the sale of allowances by auction. The institutional arrangement adopted by the European Parliament and the Council and currently in force is a mechanism for the allocation of free allowances for greenhouse gas emissions based on benchmarks that vary depending on whether they are the result of temporary exemptions or derogations from the harmonized EU legal framework for emissions trading.

Keywords: emission allowances, free allocation of allowances, benchmarking.

DOI: 10.15611/pn.2014.351.11

1. Introduction

January 1, 2013 marked the beginning of the third trading period of the EU system of emissions trading, the European Union's Emission Trading System (EU ETS). The system's legal and institutional basis is 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 Council Directive 96/61/EC [OJ L 275 of 25.10.2003], as well as Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community [OJ L 140 of 05.06.2009]. The 2009 Directive introduced some fundamental changes in the functioning of the EU ETS, the most radical of which relate to the method of allowance assignment and the method of allocating free allowances for greenhouse gases (GHG) emissions. The

main objective of the article is to assess the new mechanism for allocating free allowances for GHG emissions on the basis of benchmarking. The accomplishment of this objective requires the presentation of the current goals of EU climate policy and the basic premise of the EU ETS for the 3rd period, the identification of the conditions and scope of temporary exemptions and derogations from the auctioning of emission allowances and an explanation of the mechanism for the free allocation of allowances on the basis of benchmarks resulting from such temporary exemptions and derogations.

The basic methods of achieving these objectives include a critical analysis of the institutional solutions, an overview of the subject literature and the publicly available expert opinions, as well as deduction.

2. Goals of the EU climate policy and the EU ETS premise for 2013-2020

In accordance with the commitment made by the European Council in March 2007, the objective of EU climate policy is to reduce the total GHG emissions by at least 20%, in other words, to below the 1990 level by 2020. The accomplishment of this long-term objective necessitated the basing the operation of the EU ETS on the following three premise for the 2013-2020 period:

1) by 2020 the number of emission allowances allocated to installations should be reduced by 21% below the 2005 level of emissions; by 2020 the number of emission allowances allocated to installations should be reduced to a level which is 21% below that of emissions in 2005;

2) the Community system of emissions trading should be operated in the most cost-effective manner possible;

3) the Community system of emissions trading should be better harmonized [Peeters, Weishaar 2009, p. 95].

In accordance with the first premise, the absolute number of allowances allocated for 2013 for GHG emissions from stationary installations across the EU is 2,039,152,882 [Commission Decision 2010/634/EU of 22 October 2010 adjusting the Union-wide quantity of allowances ...]. At the same time, a time schedule for reducing emissions was adopted, in line with which, the figure for emissions is to be linearly decreased by the coefficient of 1.74% on an annual basis.

It was decided that the cost-effectiveness of the Community's emissions trading scheme will be ensured by:

- extending its scope through the inclusion of new sectors and gases to boost the CO₂ price signal range in order to trigger the necessary investment, as well as by offering new opportunities for reducing emissions, which should lead to the downgrading of the total cost of emissions reduction and increase the system's efficiency;

- introducing sale by auction as the basic method for allocating emission allowances. This should eliminate windfall profits and provide the economies with a higher-than-average rate of development and the new installations with an even playing field in competing with the extant ones.

The principle of the stronger harmonization of the European emissions trading scheme was adopted to make better use of its advantages, to avoid the distortions of the intra-Community market and to facilitate its linking with other systems of emissions trading, both national and international [Baran, Janik, Ryszko 2011, p. 240]. The harmonization covered the principles for the monitoring, verification and reporting of emissions [Commission Decision 2007/589/EC of 18 July 2007, establishing guidelines for the monitoring ...], the rules on new installations, the rules for allocating emission allowances, the free allocation rules and the terms of allowances auctioning.

3. Rationale and scope of temporary exemptions and derogations from the principle of GHG emission auctioning

As noted previously, the basic principle for the allocation of GHG emission allowances during the 3rd trading period of the EU ETS has become their sale by auction. With effect from 2013, full auctioning has become the rule for the energy sector. Directive 2009/29/EC, however, has created some opportunities for free allocation:

- for the purposes of modernizing electricity generation, by way of derogation from Article 10(a)(1-5), and
- to electricity generators, by way of a temporary derogation, for district heating and cooling and for heating and cooling produced through high-efficiency cogeneration.

By way of derogation, EU member states may temporarily allocate free allowances to electricity generation installations that existed before 31 December 2008 or to electricity generation installations for which the investment process had been physically initiated by that same day, provided that any one of the following conditions applies:

a) in 2007 the national electricity network was not directly or indirectly connected to the network interconnection system operated by the Union for the Co-ordination of Transmission of Electricity (UCTE),

b) in 2007 the national electricity network was directly or indirectly connected to the network operated by UCTE only through a single line with a capacity of less than 400 MW, or

c) in 2006 more than 30% of electricity was produced from a single fossil fuel and the GDP per capita at market prices did not exceed 50% of the average GDP per capita at market prices in the Community.

It should be emphasized that the free allowances allocated reduce the number of allowances that the member state would otherwise sell at auction. In 2013 the total number of allowances allocated temporarily may not exceed 70% of the verified 2005-2007 annual average emissions from electricity generators for the amount corresponding to the final gross national consumption of a member state; thereafter it will be gradually reduced until the total elimination of free allocation in 2020 (Figure 1).

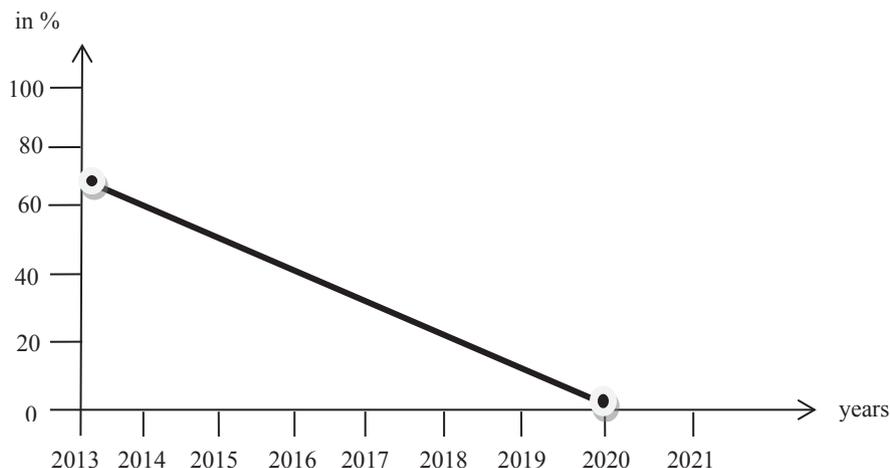


Figure 1. Free allocations of GHG emission allowances in different sectors

Source: own study based on [Krótkookresowe skutki ... 2012, p. 14].

For other sectors and for heating and cooling, the transition to full auctioning will be implemented gradually until 2027. The basic premise of this approach is to protect the competitiveness of the Community's industry. A derogation from this solution is a system of free allocation of allowances to sectors exposed to carbon leakage.

Section 24 of the preamble to Directive 2009/29/EC defines carbon leakage as an increase in greenhouse gas emissions in third countries where industry would not be subject to carbon constraints comparable to those applied in the EU. In general, there are two types of carbon leakage costs incurred by industrial sector installations:

- direct cost, associated with an increase in production costs due to the high cost of buying allowances to cover emissions from the production process,
- indirect cost, associated with increased production costs owing to the higher costs of electricity used in the production process [Pyka et al. 2009, p. 4].

The free allocation system is a remedy intended solely to cover the direct effects of carbon leakage. Every year during the 2013-2020 period, installations in the sectors exposed to a significant risk of carbon leakage will be entitled to 100% of

free emission allowances (see Figure 1). The preliminary condition for qualifying as a sector exposed to carbon leakage is the meeting the two cumulative quantitative criteria, namely:

- the cost criterion, where the ratio of the sum of the direct and indirect production costs arising from the implementation of the EU ETS Directive to the gross value added must be at least 5%,
- the trading intensity criterion, where the ratio of the total value of imports and exports outside the EU, which is to say, to and from third countries, to the total size of the EU market; in other words, the total value of intra-Community trade and imports must be above 10%.

Qualification is also available to the sectors which meet only one of the above quantitative criteria, but only if the ratio attained is at least 30% for the cost criterion or above 30% for the trade intensity criterion. In addition, the application of the quantitative criteria for the qualification of the sectors exposed to carbon leakage may be followed by the EC's reviewing the qualifying sectors' list, this time using the qualitative criteria, that is to say, the potential for reducing both emissions and energy consumption as well as the current and projected market situation and margins achieved, as the determiners of any transfer of production. In addition, when determining a list of qualifying sectors, the emission reduction commitments undertaken in the parallel industrial sectors of third countries should be taken into account. At the request of the Commission or a member state, each year there is the possibility of amending the list of qualifying sectors on the basis of the quantitative criteria.

4. Description of the mechanism for the allocation of free GHG emission allowances on the basis of benchmarks during the third trading period of the EU ETS

The methods used for the transitional free allocation of GHG emission allowances during the third trading period of the EU ETS vary depending on whether the allocation of such allowances is carried out under Article 10(a) or 10(c) of Directive 2009/29/EC. The allocation of free allowances under Article 10(a) is generally performed on the basis of benchmarks; in other words, the EU-wide emission rates established *ex ante*. The only exception is the process emissions from the installations [Commission Decision 2011/278/EU of 27 April 2011 determining transitional Union-wide rules...].

Owing to its strong impact on reducing emissions and increasing savings arising from energy efficiency improvements in each of the production processes, the leading benchmark is the emission rate for products as determined for individual sectors and sub-sectors covered by the ETS. Only where the emissions qualifying for free allowance allocation would occur, while the emission rate for the products

would be impossible to determine, should these allowances be allocated on the basis of one of the two backup methods, namely:

- an emission benchmark based on heat, applicable for heat-consuming processes,
- an emission benchmark based on fuel, applicable for non-measurable heat.

Basically, a single emission benchmark was determined for each product. Where one product is a direct substitute for another, both were covered by the same emission benchmark. No differentiation was made for the geographic location or for the technology, raw material or fuel used, in order not to interfere with the comparative advantage related to carbon efficiency across the EU economy and with a view to strengthening the harmonization of the transitional free allocation of emission allowances.

The emission benchmarks covered all the direct emissions associated with production, including the emissions associated with the production of measurable heat used in production, regardless of whether such measurable heat was produced on-site or by another installation. When determining the emission benchmark values, the emissions associated with electricity generation and measurable heat export were disregarded; the omission including emissions avoided through alternative heat or electricity generation by means of exothermic processes or through electricity generation without direct emissions. Where subtracting the emissions associated with measurable heat export would not be possible, that heat should not qualify for the free allocation of emission allowances. In order to ensure that emission benchmarks lead to GHG reduction, with due regard to the fact that, for certain production processes in which direct emissions qualifying for free allocation and indirect emissions from electricity generation not qualifying for free allocation are interchangeable to some extent, total emissions, including those associated with electricity generation, are taken into account when determining the benchmarks; the intention here being to ensure a level playing field for fuel and electricity-intensive installations. For allocation purposes, it was necessary to take into account only the percentage of direct emissions in the total in order to avoid a situation in which allowances are allocated for emissions associated with the electricity.

The starting point in defining the rules governing the setting of *ex-ante* benchmarks for individual sectors or sub-sectors has been the average performance of the installations constituting the top 10% in terms of efficiency in a given sector or sub-sector in the Community during 2007-2008. The Commission held consultations with stakeholders, including the interested sectors and sub-sectors. For this purpose, the rules on the monitoring, reporting and verification of greenhouse gas emissions associated with production have been harmonized to facilitate the *ex-ante* establishment of benchmarks.

The data used to determine benchmark values were collected from a wide range of sources in order to encompass the largest possible number of installations producing the product in question during 2007 and 2008. The survey only included single-product installations. In the absence or unavailability of data, emission

benchmarks were developed using the information on the current emission and consumption levels and on the most efficient technologies, such information being derived from reference documents on best available technologies (BREFs) prepared in accordance with Directive 2008/1/EC of the European Parliament and of the Council of 15 January 2008 concerning integrated pollution prevention and control [OJ L 24 of 29.1.2008]. These benchmarks were calculated on the basis of the principles of transparency and simplicity using the reference efficiency of a generally available fuel, namely gas, which may be considered the second best fuel in terms of energy efficiency.

With the free allocation of greenhouse gas emissions under Article 10(c) of Directive 2003/87/EC, member states could decide independently on the allocation methodology used [Commission Communication of 29 March 2011 on guidance on the methodology ...], provided that they applied the same method consistently to all the installations for which there are data on verified emissions in 2005-2007. The European Union, however, has recommended a methodology based on benchmarks, that is, efficiency indicators expressed in tons of CO₂ per every megawatt-hour of electricity generated. Member states may apply an EU-wide benchmark or any specific index which reflects the share of fuels used to generate electricity in a given member state. Such an index should take into account the carbon efficiency of the various technologies used to generate electricity. It should be based on objective data, verified in an independent manner and with a high degree of accuracy.

5. Assessment of the benchmark-based mechanism for the allocation of free GHG emission allowances

As the foregoing deliberations have demonstrated, benchmarks have become the main instrument for carrying out the allocation of free GHG emission allowances during the third trading period of the EU ETS. It should be noted that the use of benchmarking was an evolutionary development of the mechanism for the allocation of free emission allowances. The allocation of these allowances during the first two trading periods was based on the national allocation plans (NAPs). In developing their NAP, the member states were obliged to take into account the eleven criteria listed in Annex III to Directive 2003/87/EC. The application of these criteria was partly mandatory and partly optional. In line with Criterion 7, the national plans could accommodate the prior reduction measures and contain information on the method of their accommodation. The reference systems, that is to say, the benchmarking determined on the basis of reference documents on best available technologies, could be used by member states in developing their national plans and could include provisions for an early response. Although the application of Criterion 7 was optional, the Commission required each country to provide information on matters contained therein, even if it had not applied this criterion.

The concept of benchmarking comes from the English language; a benchmark is a reference value. Benchmarking can therefore be defined as a comparison with the best, catching up with them, focusing on the best product, technology, solution and so forth [Parker 2009, p. 16]. In the EU ETS, the emission rate has become the benchmark. The operator of any installation with an emission rate close to or exceeding the reference level receives what might be termed a bonus for early action; they have earned special treatment by achieving the relatively lowest emission rates. The question is whether the benchmarks used as an instrument for the allocation of free GHG emission allowances under the EU ETS are good benchmarks. What are their advantages and, possibly, their disadvantages?

The period which has elapsed since benchmarks were first implemented in the emissions trading practice is a short one and has thus not allowed any empirical studies to verify their role in ensuring the effectiveness of climate policy or test their advantages and disadvantages. Given the importance of this issue, however, we should attempt to use the deduction method in order to identify the components which make a benchmark good enough to be used in the EU ETS. We should also remember that benchmarking has a special place in the science of finance [Borowski 2011, p. 13] and is widely applied in financial management, both public and private.

It seems that the main advantages of the EU-wide benchmarks used for the allocation of free GHG emission allowances under Article 10(a) of Directive 2003/87/EC may be said to include:

- Their clear and transparent design, as it was based on the definitions and classifications of products fully agreed with the stakeholders beforehand.
- Their understandable and verifiable nature, as they were determined on the basis of data recorded at all the installations covered by the ETS. Besides this, the EU legislator has harmonized the rules on the monitoring, reporting and verification of GHG emissions related to production [Commission Decision 2007/589/EC...].
- Their stability, as they have been established for the trading period 2013-2020.
- Their independent definition, in the sense that the data necessary for this purpose were collected from the relevant European industry associations, member states and installation operators in a manner based on well-defined rules and/or guidelines. The Commission, assisted by consultants, carried out a detailed verification of the data collected according to the guidelines. The data have been also additionally verified by independent verifiers.
- Their *ex ante* determination, which meant clear rules on the access to free allowances throughout the Community.
- Their determination, as a rule, on the basis of data relating to the technologies used; the supporting, complementary data were derived from a subject literature survey.
- Their adequacy for the purposes of emissions trading, which should, with due regard to cost efficiency, lead to the accomplishment of the Community's international commitments for reducing GHG emissions. The benchmarks do

not define emission limits, but focus on the ultimate objective, namely, the reduction of emissions from installations. They thus offer complete freedom in selecting the methods by which this objective will be achieved in the absence of access barriers to the most efficient technologies in the common market.

- Their avoidance of competition distortion, which means that they do not discriminate by the geographical location of the installation or by any technologies, raw materials or fuels used by the operator, while implementing the universally accepted principle of environmental policy, which is to say, the 'polluter pays' principle as widely as possible at the same time.

Some authors claim that a disadvantage of EU-wide benchmarks is that they place a premium on the operators' early action for low-carbon production, offering something by way of being a bonus to low-carbon installations. This may lower the financial capacity of the sectors located in countries with a relatively lower level of technological development, which are therefore compelled to participate on a large scale in the auctioning system. It should be noted, however, that emissions trading, inclusive of the mechanism for the free allocation of emissions, is only a component of the Community and national packages of measures aimed at protecting the climate. Member states may take regulatory and supportive measures aimed at achieving the common reduction goal, using a varied and wide range of instruments under the EU legislation.

The intensity of this quality manifestation is not the same for efficiency benchmarks used only optionally and on an individual basis by individual member states for the allocation of free emission allowances under Article 10(c) of Directive 2003/87/EC. The leeway is set off by the decrease in their capacity for achieving the reduction targets effectively.

6. Conclusions

The analysis of the mechanism for the allocation of free allowances for GHG emissions from installations during the third trading period of the EU ETS shows that its quality has been significantly improved. The main source of this improvement is the introduction of benchmarks, which is to say, emission rates and, to a much lesser extent, carbon efficiency. With the former, the improvement was mandatory, with the latter being optional; however, in both cases it occurred in a harmonized way. By their very nature, benchmarks focus on outcomes, putting no restraints on the methods of reaching them. Thanks to their application, the emissions trading system within the Community is likely to become more cost effective and more economically efficient while, at the same time, strengthening its ability to achieve the long-term environmental objective, which is to meet the international reduction commitments of the EU as adopted in the Kyoto Protocol. This chance is increased by the design advantages of the benchmarks used in the EU ETS.

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WADY I ZALETY BENCHMARKÓW WYKORZYSTYWANYCH W UNIJNYM SYSTEMIE HANDLU EMISJAMI W TRZECIM OKRESIE ROZLICZENIOWYM EU ETS

Streszczenie: Przedmiotem opracowania jest analiza zalet i wad mechanizmu alokacji bezpłatnych uprawnień zbywalnych do emisji gazów cieplarnianych z instalacji stacjonarnych w trzecim okresie rozliczeniowym EU ETS. Wprawdzie mechanizm ten ma, począwszy od 2013 r., malejącą rolę w przydziale uprawnień do emisji we Wspólnocie, ale jest ona wciąż niezwykle istotna z ekonomicznego punktu widzenia. Podstawową zasadą przydziału uprawnień staje się stopniowo ich sprzedaż na aukcji. Istotą przyjętych przez Parlament Europejski i Radę i obowiązujących obecnie rozwiązań instytucjonalnych jest oparcie mechanizmu alokacji bezpłatnych uprawnień do emisji gazów cieplarnianych na benchmarkach zróżnicowanych w zależności od tego, czy są one wynikiem czasowych odstępstw czy też derogacji od zharmonizowanych, unijnych ram prawnych handlu emisjami.

Słowa kluczowe: uprawnienia do emisji, bezpłatna alokacja uprawnień, benchmarking.