ICTSD
International Centre for Trade and Sustainable Development

ERCST
European Roundtable on Climate Change and Sustainable Transition

CEEP
Central Europe Energy Partners

Funding Mechanisms in the fourth phase of the EU ETS

exploring what is known and identifying issues for clarification and discussion.

Table of Contents

Introduction 1

Solidarity Provision 3

Article 10c Derogation 6

Modernisation Fund 13

Innovation fund 20

Cross-cutting issues for discussion and clarification 24

Annex I: division of allowances in Phase 4 26

Annex II: overview of flexibility to move allowances 27

Funding Mechanisms in the fourth phase of the EU ETS: exploring what is known and identifying issues for clarification and discussion

Andrei Marcu, Maciej Jakubik, Jean-Yves Caneill, Wijnand Stoefs, Domien Vangenechten and Michal Dlugosz[1]

Introduction

The revision for the fourth phase of the EU Emission Trading System (ETS), covering the period 2021 - 2030, introduced a number of important changes concerning the 'funding mechanisms' in the system. Firstly, the existing mechanisms – the Solidarity Provision and the option for transitional free allocation for the modernisation of the energy sector as captured in Article 10c ["Article 10c Derogation"] – were prolonged and updated. Secondly, new mechanisms – the Modernisation Fund and the Innovation Fund – were introduced.

The use of the term 'funding mechanisms' might be confusing, as only two out of the four mechanisms mentioned are actual funds. Indeed, while Article 10c Derogation does not consist of an external fund, it does have the purpose to fund investments aimed at modernising the energy sector in certain low-income Member States.

Similarly, the Solidarity Provision does not involve any external funding, but represents a redistribution system of allowances towards low-income Member States for "the purposes of solidarity growth and interconnections within the Union", without the requirement to be used towards funding specific projects or investments.

In short, while it is recognised that treating these four mechanisms together under the generic term 'funding mechanisms' might not be technically correct, it does provide for simplification as all of these mechanisms provide some source of funding for a certain purpose.

Moreover, the fact that three of these mechanisms, the Modernisation Fund, the Solidarity Provision and Article 10c Derogation are designed to feed into each other (see annex II), justifies treating them together.

The first objective of this paper is to lay out the components and provide an understanding of the functioning of these different funding mechanisms embedded within the EU ETS, and explore how they are articulated to one another. For each of the mechanisms, this paper will discuss, to the extent that it is currently known, the purpose of the mechanism, outline how it is expected to function, discuss the eligibility criteria, and estimate how many allowances or how much money the mechanisms contain.

It is important to highlight here that when estimating the amount of allowances a funding mechanism represents, any impacts from the functioning of the Market Stability Reserve [MSR] have not been included. While it is known that the Innovation Fund and

[1] Andrei Marcu is the Director of ERCST and a Senior Fellow at ICTSD, Maciej Jakubik is Director of CEEP, Jean-Yves Caneill is a Senior Advisor to ERCST, Wijnand Stoefs is a Researcher at ERCST, Michal Dlugosz is aa Climate and Policy Analyst at CEEP and Domien Vangenechten is a Junior Researcher at ERCST.

Modernisation Fund are not impacted by the functioning of the MSR, there are a number of uncertainties related to the impact of the MSR that should be highlighted:

- The possible impact of the MSR on the amount of allowances available for Article 10c Derogation is not entirely clear in the Directive, however it is assumed that the MSR does not influence the 'reference amount' for calculating the amount of allowances available for Article 10c Derogation (also see page 23).
- The MSR does influence the Solidarity Provision after 2026. In turn, the direct link between the MSR and the Solidarity Provision can *indirectly* influence the amount of allowances available for Article 10c Derogation and the Modernisation Fund due to the option to move allowances between the mechanisms (see Annex II). However, calculating how large this effect of the MSR might be ex-ante is very complex. Although the current parameters for the intake of the MSR are known, the amount that this intake represent is ultimately a function of the surplus of allowances, which is influenced by the demand of allowances. A number of factors (e.g. GDP growth) have a strong influence on demand. On top of that, there are two reviews of the MSR scheduled during Phase 4 (in 2021 and 2026), which might change the current parameters.

In conclusion, given these uncertainties, possible effects of the MSR are not taken into account for the calculations in this paper.

The second objective of this paper is to identify issues that need to be further understood and clarified in terms of the operationalisation of the four funding mechanisms. While the reviewed Directive sets out the main criteria for the establishment of the different mechanisms, many issues remain to be resolved in the implementation phase. The issues that this paper will raise and discuss by no means represent an exhaustive list. They are some of the key issues, raised in discussions with stakeholders, that are meant to foster debate and discussion.

The European Commission is currently working on the implementation requirements, with the proposal of the delegated act of the Innovation Fund expected by the end of this year, and the implementing act of the Modernisation Fund expected in the first half of 2019. Moreover, some important decisions have to be made by eligible Member States in 2019 with regard to their use of the different funding mechanisms.

The current early phase of the implementation process provides the opportunity to take stock on what is already known about the functioning of these four funding mechanisms based on the revised EU ETS Directive, and to identify and debate key questions and issues that will have to be answered in the coming year.

Solidarity Provision

What is the Solidarity Provision and how will it work?

For "the purposes of solidarity, growth and interconnections within the Union", 10% of the total quantity of allowances to be auctioned from 2021 onwards are distributed among eligible Member States (to be auctioned by them).

In the EU ETS, the total quantity of allowances to be auctioned, shall be distributed among the Member States as follows:

I. 90% of the total quantity of allowances to be auctioned is distributed among Member States according to their share of verified emissions under the EU ETS (for the year 2005 or the average of years 2005-2007, whichever is highest). [2]

II. The remaining 10% of the total quantity of allowances to be auctioned is distributed among eligible Member States, which increases their quantity of allowances to be auctioned by a certain percentage. [3]

Eligibility

Member States whose gross domestic product (GDP) per capita at market prices did not exceed 90% of the Union average in 2013 will benefit from the Solidarity Provision. Their respective amounts of allowances to be auctioned will be increased by the percentages mentioned in Annex IIa of the Directive.

How many allowances does the Solidarity Provision represent?

As mentioned before, 10% of the allowances meant to be auctioned are used to increase the amount of allowances that the eligible 16 Member States can auction. Given that the amount of allowances to be auctioned over Phase 4, without taking into account the functioning of the MSR or the use of the free allocation buffer to avoid the application of the cross-sectoral correction factor (CSCF), amounts to roughly 8.13 billion allowances, the Solidarity Provision is expected to redistribute roughly 813 million allowances among the eligible Member States. [4]

In Table 1 the amount of allowances each eligible Member State receives pursuant the Solidarity Provision is estimated. To calculate the share of allowances to be auctioned by each Member State over Phase 4, the verified emissions under the EU ETS for 2005 or the average of the period from 2005 to 2007 are used, as stipulated in Article 10(2)(a) of the Directive. Using these calculations and the percentages from Annex IIa of the Directive, which can be found in column 2, the amount of allowances each eligible Member State receives thanks to the Solidarity Provision can be estimated (see column 3).

Columns 4 and 5 show the value these allowances are expected to have over Phase 4, using a limited price range: a price of €20/EUA, which is the current spot price, and a price of €35/EUA, which is the highest price level expected over Phase 4 according to selected

---

[2] For Member States that did not participate in the EU ETS in 2005, their share shall be calculated based on their verified emissions under the EU ETS in 2007.

[3] If necessary, these percentages shall be adapted in a proportional manner to ensure that the distribution is 10%

[4] See Annex I

forecasts.[5] The total value of the amount of allowances from the Solidarity Provision is estimated to be around €16.26 billion and €24.39 billion respectively for both price levels.

Table 1. Solidarity Provision calculations

Member State	*Percentage increase of allowances to be auctioned (Annex IIa of the Directive)*	*Estimated amount of additional allowances over Phase 4 (in millions)*	*Estimated value over Phase 4 (in millions - €20/EUA)*	*Estimated value over Phase 4 (in millions - €35/EUA)*
Bulgaria	53%	69.93	1398.61	2097.92
Croatia	26%	11.90	237.94	356.91
Cyprus	20%	3.53	70.65	105.97
Czech Republic	31%	88.36	1767.11	2650.66
Estonia	42%	18.88	377.69	566.53
Greece	17%	40.83	816.53	1224.80
Hungary	28%	24.78	495.61	743.42
Latvia	56%	5.43	108.68	163.01
Lithuania	46%	10.23	204.59	306.89
Malta	23%	1.55	30.90	46.35
Poland	39%	272.46	5449.25	8173.88
Portugal	16%	19.63	392.52	588.79
Romania	53%	124.24	2484.81	3727.22
Slovakia	41%	34.84	696.73	1045.1
Slovenia	20%	6.09	121.88	182.83
Spain	13%	80.39	1607.74	2411.61
TOTAL		***813.06***	***16261.25***	***24391.87***

Flexibility – option to move allowances[6]

Member States have the option to move their allowances from the Solidarity Provision to Article 10c Derogation and to the Modernisation Fund. However, there are some constraints to this flexibility:

- A Member State may only move allowances from the Solidarity Provision to Article 10c Derogation if it also moves allowances from the Solidarity Provision to the Modernisation Fund.
- The amount of allowances moved from the Solidarity Provision to Article 10c Derogation cannot be higher than the amount of allowances moved from the Solidarity Provision to the Modernisation Fund. [7]

[5] A. Marcu et al. (2018). 2018 State of the EU ETS Report.

[6] Also see Annex II for an overview of the flexibility

[7] Although this limit is not mentioned in the Directive, it has been referred to during various events under Chatham House rules in recent months. Thus, this provision is included as a constraint to the flexibility.

- The amount of allowances going to Article 10c Derogation can only increase the amount of allowances used in Article 10c Derogation to a maximum of 60% of the total amount of allowances to be auctioned by each Member State. [8] [9]

Timeline for implementation

No implementing or delegated act is required to operationalise the Solidarity Provision. However, by 30 September 2019, Member States have to notify the Commission on how they intend to use the flexibility mechanism. That is, they have to notify the Commission about the respective amount of allowances they want use for a) the Solidarity Provision, b) Article 10c Derogation and c) the Modernisation Fund.

[8] It is important to note that this reference amount for Article 10c Derogation, the 'total amount of allowances to be auctioned' refers only to the 90% of the allowances to be auctioned and distributed among the Member States, it thus excludes the additional allowances a Member State might receive pursuant the Solidarity Provision.

[9] This will be explained more in detail in the chapter on Article 10c Derogation.

Article 10c Derogation

What is Article 10c derogation and how will it work?

By way of derogation from the rules of harmonised free allocation, eligible Member States may give transitional free allocation to installations for electricity generation for the purpose of 'modernisation, diversification and sustainable transformation of the energy sector.' This derogation shall end on 31 December 2030.

The allowances used for the purpose of Article 10c Derogation will be deducted from the respective Member State's quantity of allowances to be auctioned, spread out in equal annual volumes, meaning that Article 10c Derogation does not consist of any external or additional funds.

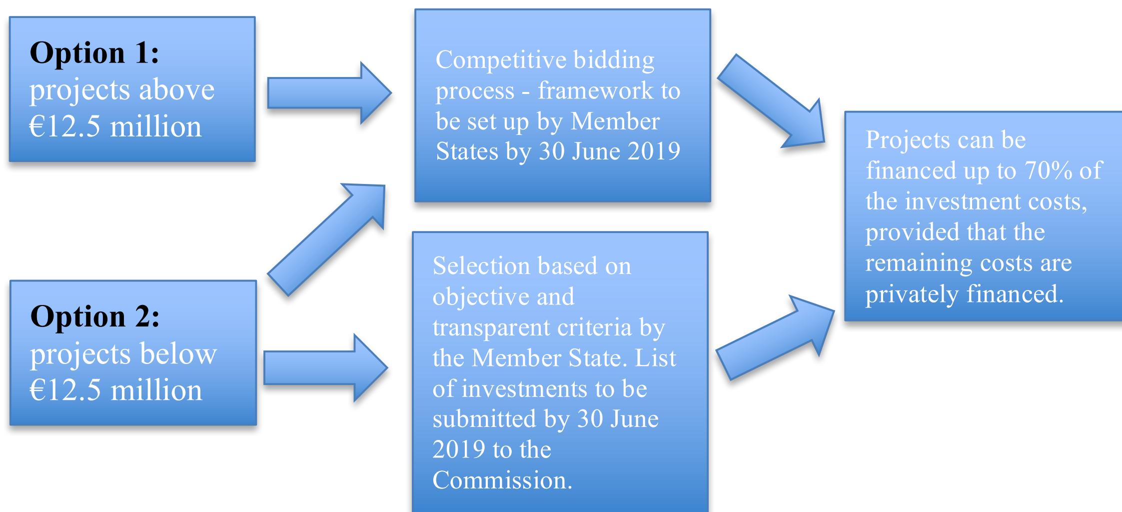
Member States will allocate allowances in line with the number of rounds included in the competitive bidding process to be determined by the Member State concerned. Member States are entitled to support a certain category of projects in line with the framework criteria set out in the EU ETS directive, depending on the CAPEX threshold.

The value of intended investments has to be at least as high as the market value of the free allocation, yet only up to 70% of the investment costs may be supported using the transitional free allocation, provided that the remaining costs are privately financed.

There are two types of investments for which the selection procedure can be different:

- For projects of **over €12.5 million**, Member States have to organise a competitive bidding process.
- For **smaller projects (below €12.5 million)**, Member States may select projects based on 'objective and transparent criteria', when not selected through the competitive bidding process.

Figure 1. Overview of two investment options under Article 10c Derogation



In case a selected investment is cancelled or did not reach the intended goals, earmarked allowances may be used through a single additional round of the competitive bidding process in the following year.

Eligibility

Member States with 2013 GDP per capita levels at market prices below 60% of the Union average have the option to make use of Article 10c Derogation. Within these Member States, energy generators can apply for free allocation of allowances to support eligible projects under the following conditions set out in the EU ETS Directive:

a) For the bigger projects (> €12.5 million), there are requirements outlined in the Directive for the competitive bidding process which has to be set up by the concerned Member State. It shall:

- comply with the principles of transparency, non-discrimination, equal treatment and sound financial management;
- ensure that only projects which contribute to the diversification of their energy mix and sources of supply, the necessary restructuring, environmental upgrading and retrofitting of the infrastructure, clean technologies, such as renewable energy technologies, or modernisation of the energy production sector, such as efficient and sustainable district heating, and of the transmission and distribution sector, are eligible to bid;
- define clear, objective, transparent and non-discriminatory selection criteria for the *ranking* of projects, in order to make sure that only projects are selected which:
    - ensure a net positive gain in terms of emission reduction and realise a pre-determined significant level of CO2 reductions;
    - are additional, clearly respond to replacement and modernisation needs and do not supply a market-driven increase in energy demand;
    - offer best value for money, and;
    - do not contribute to or improve the financial viability of high emission-intensive electricity generation or increase dependency on emission-intensive fossil fuels.

b) Smaller projects (< €12.5 million) may also be selected through the competitive bidding process. However, this is not a requirement. When the investments are not selected through the competitive bidding process, the Member State can make a selection based on unspecified 'objective and transparent criteria'. However, the results of this selection process shall be made available for public comment. [10]

The Directive also establishes a 'phase-out obligation' for all investments. Where an investment leads to additional electricity generation capacity, the operator concerned has to demonstrate that a corresponding amount of electricity-generation capacity with higher emission intensity has been decommissioned by it or another associated operator by the start-up of the additional capacity.

How many allowances does Article 10c Derogation represent?

In the 'base scenario', the total amount of free allocation given under Article 10c Derogation by a Member State shall be no more than 40% of the total amount of allowances to be

---

[10] Moreover, the Directive also stipulates that multiple investments carried out within the same installation have to be assessed as a whole when determining their value.

auctioned by each Member State.[11] However, this maximum of 40% can be increased to a maximum of 60% by moving allowances from the Solidarity Provision to Article 10c Derogation ('maximum scenario').

In Table 2 the maximum amount of allowances that may be given by eligible Member States as transitional free allocation in the base scenario is estimated, amounting to roughly 660 million allowances over Phase 4. To put this number in perspective, this is compared with the projected emissions of the power sector in the eligible countries between 2021 and 2030 (see column 2). 12 In the base scenario, the transitional free allocation could cover up to 23.75% of the projected power emissions in the eligible Member States. For some Member States, Croatia, Hungary and Slovakia, the transitional free allocation could potentially cover more than half of the projected emissions in the power sector in the base scenario.

Table 2. Amount of Article 10c Derogation allowances available in Phase 4 compared to the projected emissions of the power sector

Country	***Amount of projected emissions in power sector 2021-2030 (mton CO2)***	***Base Scenario* (40%) - millions of allowances over Phase 4***	***% free allocation compared to projected emissions***	***Maximum Scenario* (max 60%) – millions of allowances over Phase 4***	***% free allocation compared to projected emissions***
Bulgaria	204.67	52.89	25.84	79.34	38.76
Croatia	33.11	18.34	55.41	24.3	73.41
Czech Republic	524.58	114.26	21.78	158.53	30.22
Estonia	99.41	18.02	18.13	27.04	27.20
Hungary	65.71	35.48	53.99	47.9	72.89
Latvia	15.45	3.89	25.17	5.83	37.76
Lithuania	24.36	8.91	36.59	13.37	54.89
Poland	1546.96	280.06	18.10	416.58	26.93
Romania	201.90	93.97	46.54	140.96	69.82
Slovakia	62.32	34.06	54.65	51.09	81.98
TOTAL	***2778.47***	***659.89***	***23.75***	***964.94***	***34.73***

** Potential banking of unallocated allowances from Phase 3 is not included in these estimations*

[11] Again, this 'total amount of allowances to be auctioned' refers only to the 90% of the allowances to be auctioned and distributed among the Member States, it thus excludes the additional allowances a Member State might receive pursuant the Solidarity Provision.

[12] European Commission. (2016). EU Reference Scenario 2016: Energy, transport and GHG emissions Trends to 2050.

Flexibility – option to move allowances[13]

As mentioned before, Member States have the option to move their allowances from the Solidarity Provision to Article 10c Derogation and use these allowances to increase the limit of 40% to 60%. However, it is also allowed to move allowances from Article 10c Derogation to the Modernisation Fund. There are again some constraints to the use of this flexibility:

- A Member State may only move allowances from the Solidarity Provision to Article 10c Derogation if it also moves allowances from the Solidarity Provision to the Modernisation Fund.
- The amount of allowances moved from the Solidarity Provision to Article 10c Derogation cannot be higher than the amount of allowances moved from the Solidarity Provision to the Modernisation Fund. [14]
- The amount of allowances going to Article 10c Derogation can only increase the amount of allowanced used in Article 10c Derogation to a maximum of 60% of the total amount of allowances to be auctioned by each Member State. [15]

In column 5 of
Table 2, the result of all Member States making full use of the flexibility described above is estimated ('maximum scenario'). Keeping in mind the limits, Member States can move up to half of the allowances they receive from the Solidarity Provision to Article 10c Derogation, as long as they do not surpass the 60% limit.[16] This maximum use of the flexibility could potentially increase the amount of transitional free allocation to 965 million allowances over Phase 4, which is estimated to cover 34.73% of the projected emissions of the power sector in the eligible Member States, as can be seen in column 6 of
Table 2.

Extra: Unused allowances from Phase 3 Article 10c Derogation

The option to use transitional free allocation for the modernisation of the energy sector was already possible for certain low-income Member States during Phase 3. Member States that made use of the derogation during Phase 3 might have leftover allowances by the end of this Phase.

For these unallocated allowances, the concerned Member State has a number of options for what to do with them, as stated in Article 10c(5) of the Directive:

- the Member State can decide to auction all unallocated allowances in 2020;
- the Member State can bank all unallocated allowances to Phase 4 and use them for Article 10c Derogation. These unallocated allowances will have to be distributed to

[13] Also see Annex II for an overview of the flexibility

[14] Although this limit is not mentioned in the Directive, it has been mentioned during various events under Chatham House rules in recent months. Thus, this provision is included as a limit to the flexibility.

[15] It is important to note that this reference amount for Article 10c Derogation, the 'total amount of allowances to be auctioned' refers only to the 90% of the allowances to be auctioned and distributed among the Member States, it thus excludes the additional allowances a Member State might receive pursuant the Solidarity Provision.

[16] In theory, only Bulgaria, the Czech Republic, Latvia, Lithuania, Romania and Slovakia would surpass the 60% limit if they would use up to half of their allowances from the Solidarity Provision.

investments through the competitive bidding process and will be taken into account towards the 60% limit explained earlier;

- the Member State can split up the unallocated allowances between auctioning in 2020 and banking to Phase 4 for the use of Article 10c Derogation, any split is possible.

It is currently unclear how many allowances will remain unused over Phase 3. Most recent data from the European Commission shows that in the first four years of Phase 3, 106.8 million allowances requested by Member States for Article 10c Derogation were not allocated. As Table 3 shows, 90.5 million allowances remain unused, while 16.3 were auctioned afterwards. Looking at the individual Member States, Poland has the large majority of unused allowances, while the amount is neglectable for many other Member States.

Table 3. Auctioned and unused allowances from 10c (2013-2016)

Member State	*Number of unused Article 10c allowances auctioned (in millions)*	*Number of remaining unused Article 10c allowances (in millions)*
Bulgaria	6.9	0.0
Cyprus	0.0	0.0
Czech Republic	0.1	0.2
Estonia	0.2	0.3
Hungary	0.0	0.9
Lithuania	0.3	0.6
Poland	0.0	82.8
Romania	8.8	6.6
TOTAL	***16.3***	***90.5***

Source: European Commission. (2017). Report on the functioning of the European carbon market

Timeline of implementation

As for the Solidarity Provision, no implementing or delegated act is required to operationalise Article 10c Derogation. Any Member State that intends to make use of Article 10c Derogation has to publish a detailed national framework setting out the competitive bidding process, including the number of rounds and selection criteria, by 30 June 2019. By, the same deadline, Member States also have to publish a list of smaller investments and submit it to the Commission.

By 30 September 2019, Member States also have to inform the Commission what they intend to do with the unallocated Phase 3 allowances from Article 10c Derogation. As mentioned earlier, by the same date, Member States also have to notify the Commission

about the respective amount of allowances they want use for a) the Solidarity Provision, b) Article 10c Derogation and c) the Modernisation Fund.

Issues for discussion and clarification

A first important issue that has to be raised is how the use of Article 10c Derogation will affect the division between free allocation and auctioning of allowances, and how this will affect the market. Article 10(1) of the Directive states that from 2021 onwards, the share of allowances to be auctioned shall be 57%. This, without taking into account the functioning of the MSR, translates into about 8.13 billion allowances over Phase 4. [17] It is estimated that the maximum amount of free allocation under Article 10c Derogation could amount up to 965 million allowances (see Table 3). If fully used, this could decrease the amount of allowances to be auctioned by almost 12%. This would mean that the amount of allowances allocated for free would be larger than the amount of allowances auctioned over Phase 4.

It is important to ask the question whether or not this is a 'material number', and how this will influence market behaviour. One could argue that the transitional free allocation beneficiaries receive will replace their need to buy an equivalent amount of allowances on the market, thus the supply/demand balance should in theory be maintained. Whether beneficiaries decide to surrender the allowances they receive for compliance or sell them on the secondary market (and when they do it) will also have an impact.

Moreover, since the transitional free allocation is meant to support the modernisation, diversification and sustainable transformation of the energy sector, a large amount of these allowances can be expected to end up in the power sector. The expectation of receiving free allocation will undoubtedly influence the hedging behaviour of power sector companies. Therefore, it will be vital to understand the current hedging profile of the power sector in eligible Member States, how the use of Article 10c Derogation could influence that profile, and how in turn the change in behaviour of the power sector will affect the market.

Of course, a lot will depend on the actual use of Article 10c Derogation in Phase 4. Looking at the most recent data available for Phase 3 might give some indication as to what could be expected for Phase 4. Out of the ten eligible Member States in Phase 4, eight made use of Article 10c Derogation during Phase 3[18], and requested between 2013-2016 about 78% of the maximum quantity of allowances possible. [19]

A second important question to be raised and worth investigating is what the framework for the competitive bidding processes in the Member States will look like, as the design will most likely affect the extend of use of Article 10c Derogation. What type of requirements will Member States adopt for investments to be eligible?

A third issue for discussion relates to the possible implications of different options for Member States to use the unallocated allowances from Article 10c Derogation from Phase 3. For example, if Member States decide to auction all (or a large part) of the unallocated allowances in 2020, how will this affect the market?

Another question that needs clarification is whether unallocated allowances that are banked from Phase 3 to Phase 4 could be used for the Modernisation Fund or not. Although

[17] See Annex I

[18] Out of these ten, Latvia did not make use of Article 10c Derogation during Phase 3, while Slovakia and Croatia were not eligible based on the criteria for Phase 3.

[19] EEA. (2017). Trends and projections in the EU ETS in 2017.

it seems to be the intention that all allowances from Article 10c Derogation can be moved to the Modernisation Fund[20], the Phase 3 allowances might be considered to have a 'special' status. [21]

Lastly, what will happen to unused allowances after Phase 4 has ended?

- Will Member States again have the choice to bank them to the next Phase (if Article 10c Derogation is again continued) or auction them?
- Will they be cancelled or put into the MSR?

[20] See for example recital 17 of Directive 2018/410.
[21] Which they already have, since they can only be used for the competitive bidding process if banked to Phase 4.

Modernisation Fund

What is the Modernisation Fund and how will it work?

The Modernisation Fund is a new fund introduced in the revised Directive meant to support investments proposed by the eligible Member States, 'including the financing of small-scale investment projects, to modernise energy systems and improve energy efficiency'.

The Modernisation Fund shall operate under the responsibility of the beneficiary Member State. It can be used to finance individual subsidies, newly developed subsidy schemes or co-finance existing subsidy schemes.

The European Investment Bank (EIB) will be given an important role, as it shall ensure that the allowances are auctioned, shall be responsible for managing the revenues, and shall provide input to the selection process as stipulated below.

In order to use the Modernisation Fund for financing investments, the Member State has to propose investments to the EIB and to the 'investment committee'. This investment committee consists of 15 members: the ten beneficiary Member States, the European Commission, the EIB and three representatives of other Member States. It shall be chaired by the representative of the European Commission.

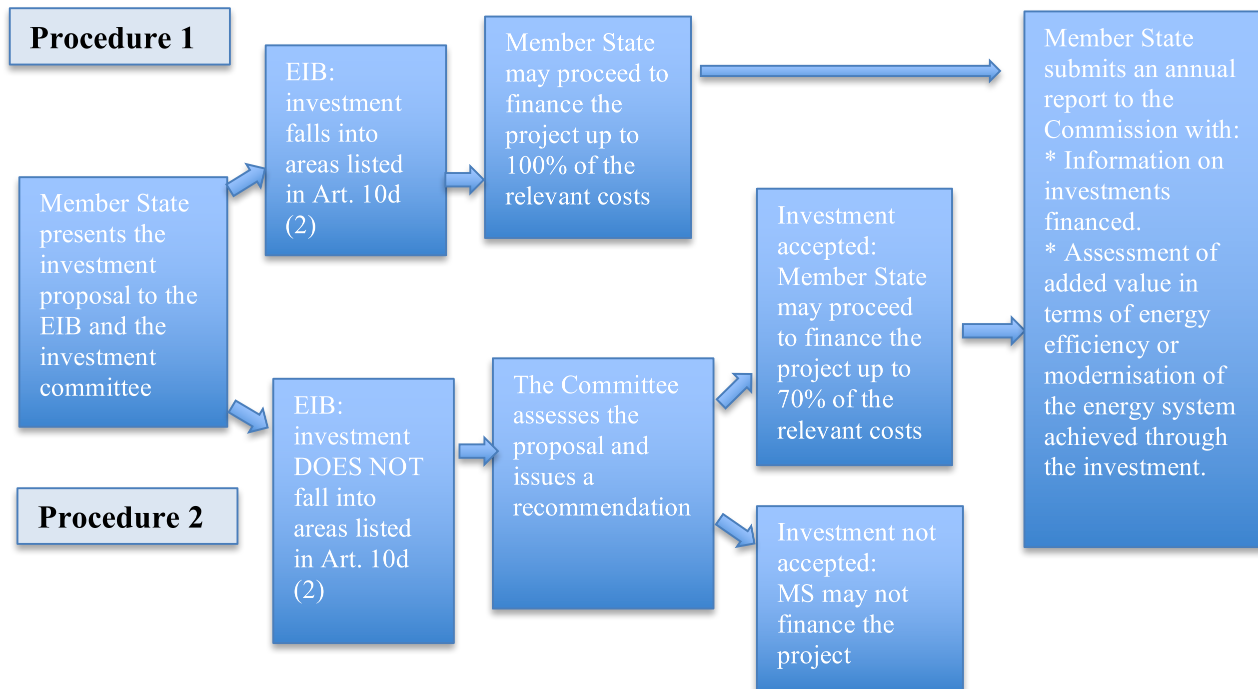
Once a Member State has proposed an investment to the EIB and the investment committee, several outcomes are possible:

- **Procedure 1:** If the EIB decides that an investment falls into areas listed in paragraph 2 of Article 10d ('Area 1' – priority projects), the Member State concerned may proceed with financing the investment, following a disbursement decision from the Commission. The project may be financed up to 100% of the relevant investments costs, using that Member State's share of the Modernisation Fund.[22]
- **Procedure 2**: If the EIB decides that an investment does not fall within the areas listed in paragraph 2 of Article 10d, but meets certain requirements ('Area 2' – non-priority projects), the investment committee assesses the technical and financial viability of the project, including the emission reduction it achieves. Based on this assessment, a positive recommendation has to be adopted by the investment committee before a Member State may proceed with financing the investment.
    - If the recommendation by the committee accepts the investment, the Member State may finance the investment from its share, but only up to 70% of the relevant costs, provided that the remaining costs are financed by private entities.[23] The investment committee makes decisions by simple majority or, if the EIB does not endorse financing an investment, by 2/3rd majority, counted without the representatives of the EIB and the concerned Member State.
    - If the recommendation by the committee does not accept the investment, the Member State may not finance the investment.

These two procedures are depicted in Figure 2 below.

[22] At least 70% of the Modernisation Fund should be used to finance these types of projects.
[23] Maximum 30% of the Modernisation Fund can be used to finance these types of projects.

Figure 2. Two procedures for investments under the Modernisation Fund



After a decision by the EIB or the investment committee has been made, the Commission will adopt a disbursement decision, after which the EIB shall pass on the revenues of the monetised allowances to the concerned Member State, which can in turn finance the investment. Member States can only assign funds to a project after they have been monetised.

Each year, Member States have to submit a report to the Commission on investments financed by the Modernisation Fund, including an assessment of the added value achieved through the investment.

Eligibility

Member States with 2013 GDP per capita levels at market prices below 60% of the Union average will be able to make use of the Modernisation Fund to support investments in the modernisation of energy systems and improving energy efficiency in their country.

Investments proposed by the Member States are considered to be eligible for financing up to 100% of the relevant investment costs if the EIB decides it falls within the criteria set out in the Directive[24] ('Area 1').

If the EIB decides that the investment is not a priority project, but the proposed investment meets the general requirements set out by the Directive[25] ('Area 2'), it is up to the investment committee to decide whether or not the proposed investment may be financed up to 70% of the relevant investment costs.

[24] Article 10d(2)
[25] Article 10d(1)

- **Area 1:** investments in renewables, energy efficiency (excluding solid fossil fuels), energy storage and networks, interconnections between Member States, just transition, and energy efficiency in transport, buildings, agriculture or waste. (At least 70% of the Modernisation Fund should be used to finance Area 1 projects).
- **AREA 2:** investments that are consistent with the EU 2030 climate and energy policy framework and the long-term objectives as expressed in the Paris Agreement. No support can be given to energy generation facilities that use solid fossil fuels, except for district heating in Romania and Bulgaria[26], under the condition that investments used under Article 10c Derogation by these countries do not involve solid fuels. (Maximum 30% of the Modernisation Fund can be used to finance Area 2 projects).

How many allowances does the Modernisation Fund represent?

The Modernisation Fund will be made up of two percent of the total quantity of allowances available during Phase 4, which shall be monetised between 2021 and 2030. Each of the eligible Member States has a fixed share of the Modernisation Fund which it can use to finance investments, as stipulated in Annex IIb of the Directive (see column 2 of Table 4).

The size of the Fund can be increased by a maximum of 0.5% of the total number of allowances, if the free allocation buffer (3% of the total quantity of allowances over Phase 4) is not (fully) used to avoid the application of the CSCF is not fully used.

Table 4 shows the number of allowances the Modernisation Fund contains in total and for each eligible Member State, both for the 'base scenario' of 2% and the 'maximum scenario' if the Modernisation Fund is increased by 0.5% of the total number of allowances. The Modernisation Fund would contain 315.6 million allowances in the base scenario, and 394.5 million in the maximum scenario.

Estimating the value of these allowances, again for prices of €20/EUA and €35/EUA, indicates that a value between €6.3 billion and €11 billion can be expected for the entire Fund over Phase 4 in the base scenario.

[26] the Directive makes reference to those Member States with a GDP per capita at market prices below 30% of the Union average in 2013, which are only Romania and Bulgaria.

Table 4. estimated amount and value of allowances under the modernisation fund (no use of flexibility)

Country	*Percentage of Modernisation Fund (Annex IIb of the Directive)*	*Base Scenario (2%) – millions of allowances over Phase 4*	*Estimated value over Phase 4 (in millions – 20€/EUA)*	*Estimated value over Phase 4 (in millions – 35€/EUA)*	*Maximum Scenario (2.5%) – millions of allowances over Phase 4*	*Estimated value over Phase 4 (in millions – 20€/EUA)*	*Estimated value over Phase 4 (in millions – 35€/EUA)*
Bulgaria	5,84 %	18.43	368.62	645.09	23.04	460.78	645.09
Croatia	3,14 %	9.91	198.20	346.85	12.39	247.75	346.85
Czech Republic	15,59 %	49.20	984.04	1722.08	61.50	1230.05	1722.08
Estonia	2,78 %	8.77	175.47	307.08	10.97	219.34	307.08
Hungary	7,12 %	22.47	449.42	786.48	28.09	561.77	786.48
Latvia	1,44 %	4.54	90.89	159.06	5.68	113.62	159.06
Lithuania	2,57 %	8.11	162.22	283.88	10.14	202.77	283.88
Poland	43,41 %	137.00	2740.05	4795.08	171.25	3425.06	4795.08
Romania	11,98 %	37.81	756.18	1323.31	47.26	945.22	1323.31
Slovakia	6,13 %	19.35	386.93	677.12	24.18	483.66	677.12
TOTAL	***100%***	***315.60***	***6312.02***	***11046.03***	***394.50***	***7890.02***	***11046.03***

Flexibility – option to move allowances[27]

Member States have the option to move allowances to the Modernisation Fund, either from the Solidarity Provision or from Article 10c Derogation. However, moving allowances from the Modernisation Fund to either the Solidarity Provision or Article 10c Derogation is not allowed.

There are no limits to the quantity of allowances that can go from either the Solidarity Mechanism or Article 10c Derogation to the Modernisation Fund. In theory, all allowances can be pooled in the Modernisation Fund.

The quantity of allowances moved from the Solidarity Provision to the Modernisation Fund needs to be bigger than the quantity moved from the Solidarity Provision to 10c. This implies that a transfer is not necessarily triggered from the Solidarity Provision to Article 10c, when there is a transfer from the Solidarity Provision to the Modernisation Fund.

Table 5 shows the amount of allowances the Modernisation Fund could have if all Member States would use the maximum flexibility possible combined with the 'maximum scenario' described earlier. Comparing with Table 4 above, it can be seen that using the maximum amount of flexibility would increase the size of the Modernisation Fund more than fourfold, from 394.5 million allowances to 1.716 billion allowances.

Estimating the value of the Modernisation Fund, again for prices of €20/EUA and €35/EUA, indicates that a value between €34.33 billion and €60 billion for the Fund as a whole could be expected over Phase 4.

[27] Also see Annex II for an overview of the flexibility

Table 5. Estimated amount and value of allowances under the Modernisation Fund using the flexibility mechanism (Maximum Scenario)

Country	*Amount of Article 10c allowances – Base Scenario (in millions)*	*Amount of Solidarity flexibility allowances (in millions)*	*Maximum Scenario (2.5%) + maximum flexibility used (in millions of allowances)*	*Estimated value over Phase 4 (in millions – 20€/EUA)*	*Estimated value over Phase 4 (in millions – 35€/EUA)*
Bulgaria	52.89	70.08	146.01	2920.23	5110.41
Czech Republic	114.26	88.55	264.31	5286.21	9250.86
Estonia	18.02	18.93	47.91	958.25	1676.94
Croatia	18.34	11.92	42.65	853.00	1492.75
Latvia	3.89	5.45	15.02	300.33	525.58
Lithuania	8.91	10.25	29.30	586.01	1025.52
Hungary	35.48	24.83	88.40	1768.06	3094.11
Poland	280.06	273.06	724.37	14487.37	25352.90
Romania	93.97	124.51	265.74	5314.85	9300.98
Slovakia	34.06	34.91	93.16	1863.11	3260.44
Total	***659.88***	***662.49***	***1716.87***	***34337.43***	***60090.50***

Timeline of implementation

The Directive gives the European Commission the mandate to adopt implementing act(s) establishing the rules and effectively operationalising the Modernisation Fund. Although a definitive timeline is not yet known, these implementing act(s) are expected to be adopted before the end of 2020. The auctioning regulation will be amended by the end of 2019 to lay out the auction rules for the allowances in the Modernisation Fund.

By 31 December 2024, the Commission is also expected to review the conditions for 'Area 1' investments[28], and propose updates if necessary.

As mentioned earlier, by 30 September 2019, Member States will have to notify the Commission about the respective amount of allowances they want use for a) the Solidarity Provision, b) Article 10c Derogation and c) the Modernisation Fund.

Issues for discussion and clarification

One of the main issues for discussion regarding the Modernisation Fund relates to how it will be organised. Provisions included in the Directive are not well defined, and a number of elements and rules remain to be decided and operationalised by the Commission in its implementing act(s), or by the Member States, as the Modernisation Fund will operate under their responsibility.

Which issues will be decided in the implementing act, and which are left to the discretion of the Member States and decided at national level, is not clear at this point. However, it is

[28] As referred to in Article 10d(2) of the Directive

clear that Member States will be the driving force for the Modernisation Fund. The scope of the implementing act will most likely be limited to elements such as:

- Provisions on how and when allowances are to be monetised;
- establishing a decision-making framework for the Investment Committee;
- provisions to ensure transparency, including reporting requirements for Member States.

A first important issue is how the monetisation of allowances will take place in practice. It is known that the EIB will be responsible for the monetisation process and the management of the Fund, however, it is not clear what the exact mandate of the EIB will be regarding the monetisation process. While the Directive stipulates that the allowances shall be auctioned in accordance with Article 10(4), including the use of the common auction platform, some questions can be raised:

- Will the EIB have to use predictable schedules for monetisation?
- Will the monetisation of allowances happen in pre-determined tranches over Phase 4?

In case no predictable y schedule or pre-determined tranches are adopted, the EIB would in theory have the opportunity to 'play the market' based on the market price.

These are issues that will have to be clarified, as they will affect the functioning of the market as well as the amount of money ultimately available in the Modernisation Fund. [29]

A second issue regarding the organisation of the Modernisation Fund relates to how Member States will initially select investments to propose to the EIB and the Investment Committee. The Directive tells us that Member States can present potential investments to the EIB and the investment committee, but does not speak about any conditions. Will certain additional criteria be adopted on how Member States should initially select these investments (e.g. procedural or material requirements set out in the implementing act)?

With regard to the mandate of the EIB, it is known that it has the power to decide whether or not the proposed investment falls within 'Area 1' or not. However, the criteria outlined in the Directive are quite vague - will there be additional criteria adopted for the EIB to judge against? Moreover, will the EIB receive other decision powers, other than included in the Directive?

Contrary to Article 10c Derogation, there is no requirement to 'rank' investment proposals based on certain criteria. This raises the question whether the Modernisation Fund will operate via a 'first come first serve' basis, or will certain requirements for the ranking of investment proposals be adopted?

Thirdly, once an investment has been approved, will certain additional criteria apply? For example, will there be a maximum level of support possible with respect to the CAPEX and OPEX relation for eligible projects?

[29] of course, other 'unknown' elements play an important role here, such as price levels, the use of the flexibility mechanism to move allowances between the funding mechanisms, and whether or not the Modernisation Fund is increased when the free allocation buffer is not completely used to avoid the application of the CSCF

Fourthly, will there be certain constraints on the investment schedule adopted in the implementing act for investments in general, or adopted by the EIB or investment committee for specific investments? Potential constraints could include:

- that only result-based finance is allowed;
- that the funding of investments can only happen up-front or ex-post;
- that it has to be a one-time funding, or be spread out over time.

A last question to be raised is what will happen to leftover funds in the Modernisation Fund after Phase 4 has ended? As it is not known whether the Modernisation Fund will still operate after Phase 4, what is to be done with the leftover funds should be clarified.

Innovation fund

What is the Innovation Fund and how will it work?

The Innovation Fund is aimed to support innovation in low-carbon technologies and processes. Projects in all Member States will be eligible for support. Money from the Innovation Fund will cover up to 60% of the relevant costs of selected projects, out of which up to 40% need not be dependent on verified avoidance of greenhouse gas emissions, provided that pre-determined milestones are attained. No single project can receive more than 15% of allowances available in the Innovation Fund.

Solely based on the Directive, little is known about the functioning of the Innovation Fund. It is known that the Innovation Fund will build on the existing NER300 programme, keeping the lessons learned in mind. It intends to improve on the existing programme by:

- Reducing the amount of 'red tape';
- increasing flexibility, e.g. by expanding the technology coverage and by allowing financing both capital and operational expenditures;
- increasing focus on the scalability and commercialisation potential of technologies.

Another key element of the Innovation Fund is that it will have a 'streamlined governance' system that it will operate under a single implementing body. Project proposals will be able to be submitted directly to that single governance body at EU level with no intermediary role for the Member States (contrary to the Modernisation Fund).

The Commission is expected to adopt a delegated act that will set out the detailed selection procedure and criteria. However, there is still no indication who will be responsible for selecting projects, or what the detailed requirements will be that potential projects have to fulfil in order to receive funding from the Innovation Fund.

Similar to the Modernisation Fund, support for the projects will be given via the Member States. Projects can be co-financed by the Member State concerned, as well as by 'other instruments'.

Eligibility:

Projects from all Member States, including small-scale projects, will be eligible. The Directive mentions that these projects will have to be in "geographically balanced locations", which may indicate that some form of predetermined redistribution between Member States might be included in the delegated act.

The Directive lists some type of projects that are envisaged to be supported by the Innovation Fund:

- Low carbon technologies and processes in sectors covered by the ETS;
- environmentally safe carbon capture and utilisation ('CCU') that contributes substantially to mitigating climate change;
- products substituting carbon intensive products of sectors covered by the ETS;
- environmentally safe capture and geological storage ('CCS') of CO2;
- and innovative renewable energy and energy storage technologies.

Projects will be selected based on “objective and transparent criteria” and will have to contribute significantly to achieving emission reductions “well below the benchmarks”. They will have to have “potential for widespread application or to significantly lower the costs of transitioning towards a low-carbon economy in the sectors concerned”. CCU projects will have to deliver a net reduction in emissions and ensure avoidance or permanent storage of CO2.

Moreover, the Innovation Fund is meant to support technologies that are not yet commercially available, yet are mature enough to be ready for demonstration at a pre-commercial scale.

How many allowances does the Innovation Fund represent?

The size of the Innovation Fund will be at least 450 million allowances, consisting of:

- 325 million allowances from the free allocation pool,
- 75 million allowances from the auctioning pool,
- 50 million unallocated allowances from the MSR.

Additional allowances may come from:

- Unspent funds from NER300.
- An increase of the Innovation Fund by up to 50 million allowances from the free allocation buffer, if the full free allocation buffer for avoiding the CSCF is not (entirely) used.

Allowances will be monetised, and modalities of monetisation will be determined by the delegated act. Based on prices of €20/EUA and €35/EUA, the minimum size of the Innovation Fund can be expected to have a value between €9 billion and €15.75 billion over Phase 4.

Timeline of implementation

As mentioned earlier, the Directive gives the Commission the mandate to adopt delegated act(s) to operationalise the Innovation Fund. A public consultation on the establishment of the Innovation Fund has been held in the first quarter of this year. Moreover, an expert group has been created to assist the Commission with the development of the Innovation Fund, which had its first meeting in June 2018.

The Commission is expected to present its proposal of the delegated act by the end of this year. The first round for support from the Innovation Fund is aimed to be held in 2020. The auctioning regulation will be amended by the end of 2 019 to lay out the auction rules for the allowances in the Innovation Fund.

Issues for discussion and clarification

Similar as to the Modernisation Fund, the main issues for discussion regarding the Innovation Fund relate to how it will be organised. The provisions included in the Directive are limited in detail, meaning that a lot of elements and rules remain to be decided and operationalised by the Commission in its delegated act(s).

Firstly, while some types of technologies aimed at being financed by the Innovation Fund are listed in the Directive, this does not represent an exhaustive list. What technologies will be eligible? Will there be certain criteria adopted, or will an (exhaustive) list of eligible technologies be adopted?

Secondly, on what basis will decisions be made regarding the eligibility of projects, and who will make them? The Directive states that projects shall be selected "on the basis of objective and transparent criteria", but what will these criteria look like? Moreover, it is stated that Member States shall give support, but will they also have a vote in the decision-making process?

Thirdly, how will the available funds be distributed, both among countries, and projects? Since the Directive talks about using the Innovation Fund "in geographically balanced locations within the territory of the Union", will certain quotas be adopted for Member States or regions?

Similar as to the Modernisation Fund, there is no requirement to 'rank' investment proposals based on certain criteria. This again raises the question whether the Fund will operate via a 'first come first serve' basis, or whether certain requirements for ranking of investment proposals will be adopted?

Fourthly, what will the monetisation process of allowances look like? While it has become clear that the auctioning process is intended to be spread out over phase four, the details are currently unknown. Contrary to the Modernisation Fund, it is not known who will be in charge of monetising the allowances, and no reference to Article 10(4) has been made in the Directive. Thus, some additional questions can be raised:

- Will there be a mandate to maximise profit?
- Will a minimum value of allowances have to be guaranteed?
- Will predictable schedules for monetising the allowances have to be used?
- Will the monetisation of allowances happen in pre-determined tranches over Phase 4?
- Could allowances be monetised on the secondary market?

These issues will have to be clarified, as they will affect the functioning of the market as well as the amount of money ultimately available to the Innovation Fund. [30]

Will there be certain constraints on the investment schedule adopted? Potential constraints could include:

- that only result-based finance is allowed;
- that the funding of investments can only happen up-front or ex-post;
- that it has to be a one-time funding, or be spread out over time.

Moreover, since the Innovation Fund will allow for both capital and operational expenditures to be financed it is important to clarify the possible distribution of funds

[30] of course, other 'unknown' elements play an important role here, such as price levels, whether or not the Innovation Fund is increased when the free allocation buffer is not completely used to avoid the application of the CSCF, and how many allowances will be left over from NER 300

between these two types of expenditures. (e.g. will there be a fixed distribution? Will the distribution be decided case by case? Will there be no distribution requirements?

Lastly, what will happen to leftover allowances or funds in the Innovation Fund after Phase 4 has ended?

- Will they be banked to the next Phase/cancelled/put into the MSR/auctioned?
- What will happen to allowances that have already been monetised but remain unused?

Cross-cutting issues for discussion and clarification

One of the most important issues for discussion and clarification is on the basis of what information Member States are supposed to decide by 30 September 2019 the respective amount of allowances they intend to use for a) the Solidarity Provision, b) Article 10c Derogation and c) the Modernisation Fund over Phase 4.

Effectively, Member States will have to decide ex-ante the exact amount of allowances they want to use for each funding mechanism. However, a number of factors, which are not yet clear or cannot be calculated ex-ante, will influence the available amount of allowances to be used in the three funding mechanisms:

- The impact of the MSR on the amount of allowances available for the various funding mechanisms.
- How the free allocation buffer, put in place to avoid the application of the CSCF, will be used.

Firstly, with regard to the MSR, it is known that the allowances of the Solidarity Provision will not be taken into account for determining the Member States' shares of allowances placed in the MSR before 2026. However, from 2026 onwards, a direct impact of the MSR on the amount of allowances available for the Solidarity Provision can be expected.

In turn, due to the flexibility to move allowances between the Solidarity Mechanism, Article 10c Derogation and the Modernisation Fund, the direct effect of the MSR on the Solidarity Provision will have further indirect effects on the amount of allowances available for Article 10c Derogation and the Modernisation Fund, if Member States decide to make use of this flexibility.

At this point, it is difficult to judge whether this effect will be large or not, as calculating the effects of the MSR ex-ante is very complex, as was discussed earlier (see page 1). However, it is important to highlight the uncertainty this presents in light of the decision that needs to be taken by Member States by 30 September 2019.

Moreover, the Directive is not entirely clear whether the MSR will directly influence Article 10c Derogation. While it is assumed that the MSR will not impact the amount of allowances available for Article 10c Derogation, if that assumption is incorrect, the impact of the MSR could potentially be a lot higher. [31]

Secondly, it is currently unknown whether the 3% free allocation buffer will have to be used to avoid the application of the CSCF or not. Even if this can be estimated accurately, a decision has to be made on how these allowances will be used, which will influence the amount of allowances available for the different funding mechanisms.

A second overlapping issue is whether interactions between the various funding mechanisms will be possible. Will it be possible to finance projects from more than one funding mechanism? It does appear that one project can make use of different funding mechanisms for the same project, however this would imply that different requirements

[31] Our assumption is based on the understanding that the reference amount for calculating the amount of allowances available for Article 10c Derogation, being the 'total amount of allowances to be auctioned' by a Member State, refers to the *gross* amount of allowances to be auctioned pursuant Article 10(2)a, and not to the *net* amount of allowances after taking into account the MSR functioning.

(both in terms of conditions and reporting obligations) have to be met in order to receive funding from more than one funding mechanism.

If a project receives funding from more than one mechanism, how high can the joint funding amount to? How will institutions ensure that no overfunding will take place? Moreover, some mechanisms include specific requirements regarding the share of private funding. These requirements will also have to be met when funds from different mechanisms are combined.

Annex I: division of allowances in Phase 4

Here, the division of allowances in Phase 4 is calculated, without taking into account the functioning of the MSR. Given the linear reduction curve, the total amount of available allowances during Phase 4 will amount to 15.780.048.000 allowances. It is known that from this total amount of allowances:

- 57% is to be auctioned,
- and 43% is to be allocated for free.

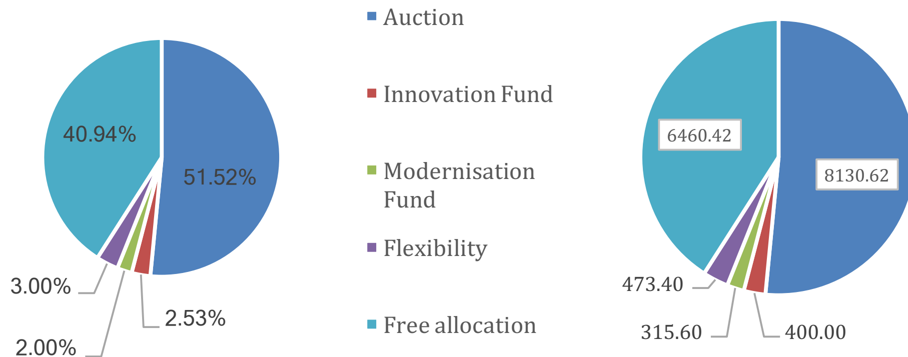
However, out of these 57% allowances to be auctioned:

- 2% is meant for the Modernisation Fund,
- and 3% is held as free allocation buffer, in order to avoid the application of the CSCF.

Moreover, 75 million allowances from the auctioning share and 375 million allowances from the free allocation share are used for the Innovation Fund.

Applying these rules to the total amount of allowances available during Phase 4, leaves us with the percentages and amounts shown in Figure 3.

Figure 3. Split of total amount allowances available during Phase 4 (left in percentages and right in millions of allowances)



Annex II: overview of flexibility to move allowances

The Directive gives the flexibility to Member States to move allowances between the various funding mechanisms (except for the Innovation Fund). Allowances can be moved in three different directions:

I. Move allowances from the Solidarity Provision to Article 10c Derogation.

- Constraints:
    - A Member State may only move allowances from the Solidarity Provision to Article 10c Derogation if it also moves allowances from the Solidarity Provision to the Modernisation Fund. The quantity of allowances moved from the Solidarity Provision to the Modernisation Fund needs to be bigger than the quantity moved from the Solidarity Provision to 10c. This implies that a transfer is not necessarily triggered from the Solidarity Provision to Article 10c, when there is a transfer from the Solidarity Provision to the Modernisation Fund.
    - This can only increase the amount of allowanced used in Article 10c Derogation to a maximum of 60% of the total amount of allowances to be auctioned by each Member State. [32]

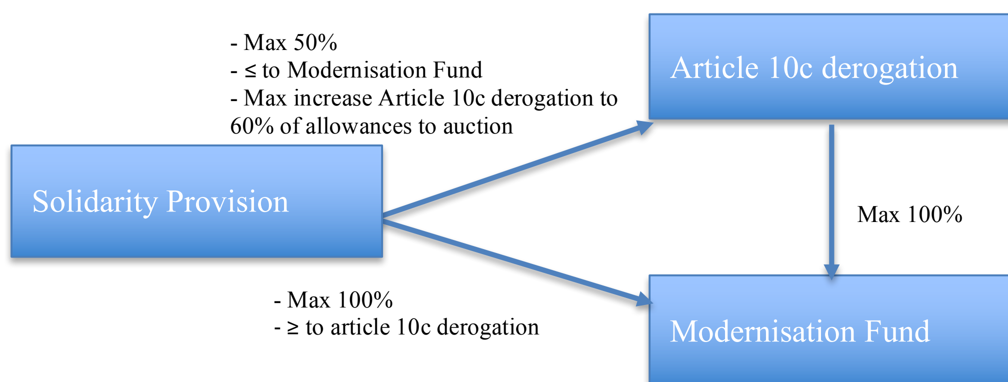
II. Move allowances from the Solidarity Provision to the Modernisation Fund.

- No constraints on the maximum amount.
- The amount of allowances going to the Modernisation Fund has to be equal to, or higher than, the amount of allowances going to Article 10c Derogation.

III. Move allowances from Article 10c Derogation to the Modernisation Fund.

- No constraints on maximum amount

Figure 4. Overview of flexibility to move allowances



[32] It is important to note that this reference amount for Article 10c Derogation, the 'total amount of allowances to be auctioned' refers only to the 90% of the allowances to be auctioned and distributed among the Member States, it thus excludes the additional allowances a Member State might receive pursuant the Solidarity Provision.