RAISING THE CLIMATE POLICY AMBITION OF THE EUROPEAN UNION

Reforming the EU Emissions Trading System

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Reforming the EU Emissions Trading System

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Foreword

As you are reading these lines, greenhouse gases that were stored there for centuries are escaping from permafrost soils in Canada and Russia. In China and Germany, coal-fired power plants are emitting large amounts of CO_2 into the atmosphere. In Brazil and Indonesia, chainsaws and fires are gnawing away at the rainforests, the most important allies in climate protection.

Global warming is progressing almost unchecked, its causes and consequences can be observed all over the world. The next few years will be crucial: If we don't get politics and the economy on the right track now, the climate crisis will eclipse many of the already gloomy forecasts.

In Europe, the signs are good to start the required turnaround. In December 2019, the European Commission announced the European Green Deal – a deal to transform Europe in a climate- and environment-friendly way. The goals contained in the deal point in the right direction, for example towards greenhouse gas neutrality by 2050 at the latest. The new climate contribution under the Paris Climate Agreement, Europe's NDC, is also a step forward with a 55% greenhouse gas reduction compared to 1990 by 2030. The same applies to the European climate protection law.

But now this framework needs the right content. 2021 is the decisive year for this, because now is the time for concrete legislation. It is about establishing effective instruments for climate protection. The European Emissions Trading Scheme (ETS) will play a key role in this.

First of all, the ETS needs a target that is in line with the European NDC. This study has calculated two scenarios: an increase of the ETS target to 65 and 70% respectively (compared to 2005). For this, the amount of allowances must be limited further in 2023. This is possible by raising the so-called linear reduction factor and adjusting the starting point ("rebasing").

Furthermore, the study considered a reform of the market stability reserve because without it, the ETS loses its bite. The reserve urgently needs to be designed in such a way that it will be able to respond to events such as the Covid-19 pandemic or the coal phase-out in eleven member states also in the 2020s. It must stabilise the system and make it resilient to crises. For this, it must on the one hand, continuously withdraw more allowances from the market. On the other hand, an effective cancellation mechanism is indispensable: anything that has been in the reserve for five years must automatically disappear from it and from the market.

The reform is complex; it is a matter of finding the right balance between different options for action. But it is possible and necessary so that a further CO_2 price crash is avoided, and the system can have a steering effect until 2030. And so that the gloomy forecasts remain unfulfilled.

Viviane Raddatz
Director Climate & Energy

WWF Recommendations

based on the report "Raising the Climate Policy Ambition of the European Union. Reforming the EU Emissions Trading System"

Background

The EU adopted an enhanced NDC in December 2020, increasing its climate target from 40% to a net target of 55% for 2030 (on the basis of 1990). WWF supports an increase in ambition within the current architecture of the climate legislation consisting of Climate Action Regulation, the Emissions Trading Scheme and the LULUCF (Land Use, Land Use Change and Forestry) Regulation. One of the central questions is the division of efforts between the Climate Action Regulation, which currently sets national targets to cut emissions in the transport, housing, significant parts of the industry, agriculture and waste sectors, and the Emissions Trading Scheme Directive (EU ETS), covering the industry and electricity sectors.

There is a large consensus that the new EU target means an increase of ambition in the ETS from the current 43% to at least 65% (on the basis of 2005). The second challenge regarding the ETS concerns the historical surplus of allowances that undermined the system in the past and could do again in the future, if rules of the market stability reserve are not set right. Therefore, this historical surplus must be removed permanently to ensure the 2030 target can be reached.

The report "Raising the Climate Policy Ambition of the European Union. Reforming the EU Emissions Trading System"[1] analyses the impacts of the different options for the revised ETS and market stability reserve (MSR), based around the following:

» Three emissions baseline scenarios which take into account the impact of the Covid-19 pandemic on CO_2-emissions. This is because the

1 This report analyses only the policy options related to the climate ambition of the ETS. Other important aspects, such as a carbon price floor, carbon leakage protection, moving away from free allowances to 100% allowance auctioning, innovation and modernization funds, as well as the use of ETS revenues, are not part of the analysis. For more information on WWF asks on these points see WWF answer to the public consultation of the European Commission on the EU ETS (February 2020).

economic slowdown brought about by the pandemic could give rise to a potential new surplus of allowances coming onto the system in the 2020s.

» An ETS target of 65% lower emissions and 70% lower emissions by 2030 (compared to 2005 levels): the linear reduction factor is adjusted to achieve these targets and three scenarios of cap rebasing are included: (150, 250, and 350 million allowances). Rebasing is necessary to reset the starting point of the cap to verified emissions level, correcting the inflated starting point used until now.

» The report looks at how the market stability reserve could be reformed in order to remove the historical surplus of allowances, as well as a potential new surplus.

Key recommendations for an effective reform of the ETS based on the report

Any policy options need to be checked against Covid-adjusted emissions baselines

Recommendation 1 To maintain the ETS as a useful instrument for achieving additional emission reductions, any policy option must consider real baseline emission trends including the effects of the Covid-19 pandemic.

The emissions baseline used in the European Commission's impact assessment – which contained the scenarios the Commission used to determine its proposed new EU 2030 target (September 2020) – does not consider the effects of the Covid-19 pandemic. However, the pandemic will have a considerable impact on EU emissions and the effectiveness of the ETS system, at least in the next two–three years (or even longer). The downward trend of the economy means a downward trend in CO_2 emissions, so lots of allowances will remain unused. Coupled with the announcement of a coal phase-out in eleven EU Member States, this could result in a significant surplus of allowances coming onto the system, which will in turn impact the carbon price. The impacts of the pandemic on emissions would come on top of the historical surplus of emissions allowances.

The report analyses three emissions baseline scenarios which take into account the impact of the Covid-19 pandemic on CO_2-emissions. It shows that current rules of the market stability reserve (MSR) cannot adequately address the scale of surplus emissions. In this context, effective policy options to reform the ETS and the MSR must factor in the impacts of the pandemic and the downward CO_2 emissions trend.

Adjustment of the cap and rebasing should take place in 2023

Recommendation 2

The number of allowances handed out over the whole 2021–2030 trading period must be a decisive point when discussing the parameters of the reform, as it determines the amount of emissions actually released into the atmosphere. The study shows clearly that the earlier the cap decrease and rebasing take place, the higher the emissions reductions. WWF recommends adjusting both parameters in 2023 – this earlier rebasing also has the advantage of lowering the necessary linear reduction factor. This should help the political acceptance of the reform.

To make the ETS system run effectively and in line with the increased EU target, key features need to be adapted. First, the EU ETS cap (defining the maximum amount of tonnes of CO_2 that can be emitted each year) needs to decrease by a higher linear reduction factor (LRF) than the current one (2.2% per year). The LRF is calculated so that the reduction target is reached in 2030. Second, the starting point of emissions reductions needs to be brought in line with actual emission levels – known as 'rebasing'.

The report analyses a combination of changes to the cap (through the LRF) with a rebasing of 150, 250, and 350 million allowances by 2023 or 2026.

The report shows three important points:

1. The clear correlation between both instruments: **the higher the cap rebasing, the lower the LRF needs to be.** This means that a higher rebasing can help political acceptance of the ETS reform since it decreases the need to adopt a high LRF.

Adjustments of the Linear Reduction Factor for different rebasing options and the adjustment years 2023 and 2026 (Source: Öko-Institut)

LRF adjustment and rebasing in ...	2023				2026			
Rebasing	**0**	**150**	**250**	**350**	**0**	**150**	**250**	**350**
LRF for cap ETS target –65%	5.15%	4.19%	3.55%	2.91%	6.92%	5.39%	4.36%	3.34%
LRF for cap ETS target –70%	5.81%	4.85%	4.21%	3.57%	7.98%	6.44%	5.42%	4.40%

2. Second, rebasing and especially the timing of rebasing have a **significant impact on the cumulative volume of new emission allowances** brought onto the market from 2021 to 2030. This means that the higher the rebasing, the lower the potentially cumulative volume of emissions in the atmosphere in this period. This is an important indicator to assess the overall impact of the ETS on the climate.

3. Lastly, the results of the analysis show that in most cases, including a less than 70% target, **a combination of an adjusted cap and rebasing will not be enough to achieve the end target level in 2030 because of the historical surplus.** In many of the scenarios, the surplus inflates allowances available to the market at the baseline emission level in 2030. This means that even an ambitious reform including LRF and rebasing could be nullified if the historical surplus is not removed.

MSR reform is key to removing the historical surplus and increasing the overall resilience of the system

Recommendation 3

An ambitious MSR reform is necessary to remove the historical surplus and to achieve the 2030 target level below a 65% and a 70% ETS target. There are different combinations possible, but a combination including higher intake rates, lower trigger values and the permanent cancellation of allowances will be necessary for the MSR to fulfil its mission of improving the system's resilience to major shocks.

The surplus of allowances risks undermining the orderly functioning of the carbon market in the short term. In the longer term, it could affect the ability of the ETS to meet more demanding emission reduction targets cost-effectively. A market stability reserve (MSR) was put in place during the last reform of the EU ETS (2018) and started operating in January 2019. The MSR has been designed to both address the surplus of allowances and strengthen the system's resilience to major shocks by adjusting the supply of allowances to be auctioned.

Key elements of the functioning of the MSR are:

- the intake rate – meaning the proportion of excess allowances to be removed from the market – and the trigger values – meaning the amount of allowances on the market that will be removed or put back onto the market. Each year, if the total number of allowances in circulation (TNAC) is greater than 833 million, 24% (intake rate) of the TNAC will be placed in the reserve. From 2024 onwards, this share is set to decrease to 12%. If, on the contrary, TNAC is lower than 400 million, then 200 million allowances will be released from the MSR (100 million from 2024 onwards).

- limiting the number of allowances that can be held within the reserve to the amount that is auctioned yearly (and cancellation of all allowances that exceed these levels).

Due to historical flaws in the system, including the massive import of international credits and over-allocation of allowances, the system runs with the legacy of a huge oversupply of allowances. **The current rules will not be sufficient to remove the historical surplus by 2030.**

The study combines the three emissions baseline scenarios with different cap and rebasing options and a reform of the market stability reserve (looking at different intakes rates, trigger values and cancellation options).

Since there is a high uncertainty related to the effect of the Covid pandemic on emissions baselines, the study concludes a combination of policy options is reliable only if the 2030 target level is met in all three Covid-adjusted emissions baseline scenarios. This means that the combination of policy options must also be able to remove the historical surplus. The following conclusions can be drawn:

- Regarding the intake rates: it is clear that returning to the intake rate of 12% (which is foreseen from 2024) is not a credible option. **The intake rate must be kept at 24% or higher after 2023.** However, even a change in the intake rates to 24% or 36% alone is not sufficient to make the system resilient.

- Regarding the trigger values: it is clear that **the trigger values must be adjusted, at least to the LRF or at best be phased out by 2030.**

- On top of these, a cancellation of allowances in the MSR will be necessary, and **we recommend the automatic cancellation of the allowances five years after transfer to the MSR (5-year vintages)** in addition to the one-off cancellation of 500 million allowances in 2025. This is because it is more effective to remove the surplus on a continuous basis and ensure price stabilisation.

Setting a carbon price floor

Recommendation 4

An additional element of the reform – even though not analysed in this report – must be the introduction of a carbon price floor. If this is not possible at the EU-level the carbon price floor should be adopted at regional level.

The introduction of a carbon price floor has the following advantages:

- Safety net – As the report shows, the upcoming reform of the ETS and the MSR will include quite complex combinations of policy options. In this regard, a carbon price floor can ensure that a new carbon price crash is avoided in the 2020s.

- Investment and planning security – European climate policy lost a decade due to the lack of a carbon price until 2017. The ETS reform led to higher CO_2 prices for the last two years, but price volatility remains. About 80% of power sector emissions are caused by the combustion of lignite and hard coal. A predictable carbon price is necessary to strengthen investment security in climate-friendly forms of generation.

WWF Policy Recommendation for a 70% ETS Target

Among all the options considered in the study, WWF recommends the adoption of a **70% target for the ETS** and a combination of the following policy options to choose from:

- **A change in the linear reduction factor (LRF) and rebasing in 2023:**
  - An increase in the linear reduction factor to 3.57%,
  - A rebasing of 350m EUAs.

- **A reform of the MSR combining:**
  - 24% intake rate,
  - Thresholds decreasing to zero in 2030,
  - Automatic cancellation of allowances after 5 years in the MSR.

- **Setting a carbon price floor, at least regionally.**

Additional reform elements not included in this report

In order to strengthen the current carbon pricing framework, avoid stranded assets and guarantee an EU ETS that is fit for purpose (meaning one that delivers its share of emission reductions by 2030 and the full decarbonization of the sectors covered in the long term) the reform must also include the following key principles that WWF is calling for:

1. Apply the polluter-pays-principle and move away from free allowances to 100% allowance auctioning.
2. Immediately end free allowances if a Carbon Border Adjustment Mechanism (CBAM) is implemented.
3. No extending of the existing EU ETS to road transport and buildings.
4. Spend 100% of EU ETS revenues on climate action in line with the 2030 and 2050 climate targets and deliver a socially just transition.
5. Exclude fossil-fuel based projects from the Modernisation Fund.

Vorwort

Während Sie diese Zeilen lesen, entweichen aus den tauenden Permafrostböden Kanadas und Russlands jahrhundertelang gespeicherte Treibhausgase. Kohlekraftwerke, ob in China oder Deutschland, stoßen große Mengen CO_2 in die Atmosphäre aus. In Brasilien und Indonesien fressen sich Kettensägen und Brände in die Regenwälder, die wichtigsten Verbündeten beim Klimaschutz.

Nahezu ungebremst schreitet die Erderhitzung voran. Ihre Ursachen und Folgen können wir überall auf der Welt beobachten. Auf die nächsten Jahre wird es nun ankommen. Wenn wir Politik und Wirtschaft jetzt nicht in die richtigen Bahnen lenken, wird die Klimakrise viele der ohnehin schon düsteren Prognosen noch in den Schatten stellen.

In Europa stehen die Zeichen gut, die nötige Wende einzuleiten. Im Dezember 2019 hat die Europäische Kommission den European Green Deal angekündigt – eine Vereinbarung für den Umbau Europas nach klima- und umweltgerechten Maßgaben. Die enthaltenen Ziele weisen in die richtige Richtung, etwa hin zur Treibhausgasneutralität spätestens bis 2050. Auch der neue Klimabeitrag im Rahmen des Pariser Klimaschutzabkommens, Europas NDC (Nationally Determined Contributions), ist mit 55 % Treibhausgasminderung gegenüber 1990 bis 2030 ein Schritt nach vorn. Genau wie das europäische Klimaschutzgesetz.

Jetzt braucht dieser Rahmen aber den nötigen Inhalt. 2021 ist dafür das entscheidende Jahr. Denn nun geht es um die konkrete Gesetzgebung und die Etablierung wirksamer Instrumente für den Klimaschutz. Dem europäischen Emissionshandel (ETS) wird dabei eine tragende Rolle zuteil.

Zunächst braucht der ETS ein Ziel, das mit den europäischen NDC konform ist. Die vorliegende Studie hat zwei Szenarien berechnet: eine Verschärfung des ETS-Ziels auf 65 und auf 70 % (gegenüber 2005). Dafür muss im Jahr 2023 die Menge an Zertifikaten weiter beschränkt werden. Das ist möglich, indem der sogenannte lineare Reduktionsfaktor angehoben und der Startpunkt angepasst wird („Rebasing“).

Darüber hinaus hat die Studie eine Reform der Marktstabilitätsreserve (MSR) betrachtet, denn ohne eine solche Reform verliert der ETS seine Zähne. Die Reserve muss dringend so ausgestaltet werden, dass sie auch in den 2020ern auf Ereignisse wie die Covid-19-Pandemie oder den Kohleausstieg in elf Mitgliedsstaaten reagieren kann. Sie muss das System stabilisieren und gegen Krisen resilient machen. Dafür muss sie einerseits sowohl mehr als auch kontinuierlich Zertifikate aus dem Markt entnehmen. Andererseits ist ein effektiver Löschungsmechanismus nötig: Was fünf Jahre in der Reserve lag, muss automatisch aus ihr und vom Markt verschwinden.

Die Reform ist komplex. Es geht um das richtige Miteinander und Austarieren verschiedener Handlungsoptionen. Aber sie ist möglich und notwendig, damit ein weiterer CO_2-Preisabsturz vermieden wird und das System eine Lenkungswirkung bis 2030 entfaltet. So bleiben die düsteren Prognosen unerfüllt.

Viviane Raddatz
Leiterin Klimaschutz und Energiepolitik

WWF-Forderungen

auf Basis der Studie „Raising the Climate Policy Ambition of the European Union. Reforming the EU Emissions Trading System“

Hintergrund

Die EU hat im Dezember 2020 ein neues Ziel für ihren Beitrag zum Pariser Abkommen verabschiedet und ihr bisheriges Klimaziel von 40 % auf ein Nettoziel von 55 % für 2030 (auf Basis von 1990) hochgesetzt. Der WWF unterstützt diese Ambitionserhöhung innerhalb der aktuellen Zielarchitektur, die aus der Climate Action (oder Effort Sharing) Regulation, dem Emissionshandelssystem und der LULUCF-Verordnung (Landnutzung, Landnutzungsänderung und Forstwirtschaft) besteht. Eine der zentralen Fragen ist die Aufteilung der Bemühungen zwischen der Climate Action Regulation, die derzeit nationale Ziele zur Minderung der Emissionen in den Sektoren Verkehr, Wohnen, in erheblichen Teilen der Industrie sowie in den Bereichen Landwirtschaft und Abfall festlegt, und der Richtlinie zum Emissionshandelssystem (EU ETS), die die Sektoren Industrie und Stromerzeugung abdeckt.

Es besteht Konsens darüber, dass das neue EU-Ziel auf mehr Reduktion im Emissionshandel hinausläuft – von derzeit 43 auf mindestens 65 % (unter dem Basisniveau von 2005) bis 2030. Darüber hinaus besteht die Herausforderung für das EU ETS darin, den historischen Überschuss an Zertifikaten abzubauen, der die Wirksamkeit des ETS in der Vergangenheit untergraben hat. Er wird dies auch weiterhin tun, wenn die Regeln der Marktstabilitätsreserve nicht nachgeschärft werden. Dieser historische Überschuss muss daher dauerhaft beseitigt werden, um sicherzustellen, dass das Ziel für 2030 erreicht werden kann.

Die Studie „Raising the Climate Policy Ambition of the European Union. Reforming the EU Emissions Trading System“ [2] analysiert die Auswir-

2 In dieser Studie werden nur die Reformoptionen analysiert, die sich auf die Minderungsvorgaben des ETS beziehen. Andere wichtige Aspekte wie ein Mindestpreis, Carbon Leakage, die Abkehr von kostenlosen Zertifikaten hin zu einer 100%igen Versteigerung von Zertifikaten, Innovations- und Modernisierungsfonds sowie die Verwendung der ETS-Einnahmen sind nicht Teil der Analyse. Weitere Informationen zu den WWF-Forderungen zu diesen Punkten finden Sie in der Antwort des WWF auf die öffentliche Konsultation der Europäischen Kommission zum EU ETS (Februar 2020).

kungen der verschiedenen Optionen auf das überarbeitete ETS und die Marktstabilitätsreserve (MSR), basierend auf den folgenden Eckpunkten:

- Drei Referenz-Emissionstrends („Baseline“), die die Auswirkungen der Covid-19-Pandemie auf die CO_2-Emissionen berücksichtigen. Hintergrund ist, dass die durch die Pandemie verursachte wirtschaftliche Abschwächung zu einem neuen Überschuss an Zertifikaten führen könnte, die in den 2020er-Jahren in das System gelangen.

- Je ein ETS-Ziel mit 65 und 70 % niedrigeren Emissionen bis 2030 (unter dem Basisniveau von 2005). Der lineare Reduktionsfaktor wird hierbei angepasst, um diese Ziele zu erreichen. Zudem werden drei Szenarien einer einmaligen Reduzierung des Caps (Rebasing) einbezogen (150, 250 und 350 Millionen Zertifikate). Die einmalige Reduzierung des Caps ist notwendig, um seinen Startpunkt auf das tatsächliche Emissionsniveau zurückzusetzen und den bisher verwendeten überhöhten Startpunkt zu korrigieren.

- Die Studie untersucht, wie die Marktstabilitätsreserve reformiert werden könnte, um den historischen Überschuss an Zertifikaten sowie einen möglichen neuen Überschuss zu beseitigen.

Wichtige Empfehlungen zur wirksamen Reform des ETS auf Grundlage der Studie

Alle Reformoptionen müssen anhand von Covid-angepassten Baselines überprüft werden

Empfehlung 1 Damit das ETS als Minderungsinstrument erhalten bleibt, muss jede Reformoption die realen Emissionstrends berücksichtigen, einschließlich der Auswirkungen der Covid-19-Pandemie.

In der Emissions-Baseline im Impact Assessment der Europäischen Kommission, in der jene Szenarien enthalten sind, die die Kommission zur Festlegung ihres vorgeschlagenen neuen EU-Ziels für 2030 (September 2020) verwendete, bleiben die Auswirkungen der Covid-19-Pandemie unberücksichtigt. Die Pandemie wird jedoch die EU-Emissionen und die Wirksamkeit des EU ETS erheblich beeinflussen, zumindest in den nächsten zwei bis drei Jahren (oder sogar länger). Mit dem Abwärts-

trend der Wirtschaft sinken auch die CO_2-Emissionen, sodass viele Zertifikate ungenutzt bleiben werden. Auf diese Weise könnte ein erheblicher Überschuss an Zertifikaten in das System gelangen, zumal elf EU-Mitgliedsstaaten ihren Kohleausstieg angekündigt haben. Kurzum: Die pandemiebedingten Überschüsse könnten den historischen Überschuss an Zertifikaten noch größer machen.

Die Studie analysiert drei Baselines, die die Auswirkungen der Covid-19-Pandemie auf die CO_2-Emissionen berücksichtigen. Sie zeigt, dass die derzeitigen Regeln der Marktstabilitätsreserve dem Ausmaß der überschüssigen Emissionen nicht gewachsen sind. Dies ist jedoch unerlässlich für wirksame ETS- und MSR-Reformoptionen, die die Auswirkungen der Pandemie und den Abwärtstrend der CO_2-Emissionen einbeziehen müssen.

Anpassung des Caps und Rebasing soll 2023 erfolgen

Empfehlung 2

Die Anzahl der ausgegebenen Zertifikate über die gesamte Handelsperiode 2021–2030 ist entscheidend bei der Diskussion um die Parameter der Reform. Denn sie bestimmt die Menge der tatsächlich in die Atmosphäre freigesetzten Emissionen. Die Studie zeigt, dass die Emissionen in dem Maße sinken, je früher Cap und Rebasing abgesenkt werden. Der WWF empfiehlt deshalb die Anpassung beider Parameter im Jahr 2023. Dieses frühere Rebasing hätte zudem den Vorteil, dass dafür ein geringerer linearer Reduktionsfaktor nötig wäre. Dies käme der politischen Akzeptanz der Reform zugute.

Damit das Emissionshandelssystem im Einklang mit dem erhöhten EU-Klimaschutzziel funktioniert, muss an wichtigen Stellschrauben gedreht werden. Sinken muss einerseits das EU-ETS-Cap (dieses definiert die maximale Menge an Tonnen CO_2, die jedes Jahr emittiert werden darf). Dabei hilft ein höherer linearer Reduktionsfaktor (Linear Reduction Factor – LRF), der aktuell bei 2,2 % pro Jahr liegt. Der LRF wird so berechnet, dass das Reduktionsziel im Jahr 2030 erreicht wird. Zum anderen muss der Start von Emissionsminderungen mit dem tatsächlichen Emissionsniveau synchronisiert werden. Das gelingt mit einem einmalig reduzierten Cap – bekannt als „Rebasing“.

Die Studie analysiert eine Kombination von Cap-Anpassungen (durch den LRF) mit einem Rebasing von 150, 250 und 350 Millionen Zertifikaten in den Jahren 2023 und 2026.

Die Studie verweist auf drei wichtige Punkte:

1. Die deutliche Korrelation zwischen beiden Instrumenten. **Je höher das Rebasing, desto niedriger muss der LRF sein.** Das bedeutet, dass ein höheres Rebasing zur politischen Akzeptanz der ETS-Reform beitrüge, da es die Notwendigkeit verringert, einen hohen LRF zu beschließen.

Anpassung des linearen Reduktionsfaktors für verschiedene Rebasing-Optionen in den Jahren 2023 und 2026 (Quelle: Öko-Institut)

LRF-Anpassung und Rebasing im Jahr ...	2023				2026			
Rebasing	**0**	**150**	**250**	**350**	**0**	**150**	**250**	**350**
LRF für ETS-Ziel – 65 %	5,15 %	4,19 %	3,55 %	2,91 %	6,92 %	5,39 %	4,36 %	3,34 %
LRF für ETS-Ziel – 70 %	5,81 %	4,85 %	4,21 %	3,57 %	7,98 %	6,44 %	5,42 %	4,40 %

2. Das Rebasing und insbesondere der Zeitpunkt des Rebasings haben **einen erheblichen Einfluss auf die kumulierte Menge neuer Emissionszertifikate**, die von 2021 bis 2030 auf den Markt gebracht werden. Das heißt: Je höher das Rebasing ist, desto weniger Gesamtemissionsmengen geraten in diesem Zeitraum in die Atmosphäre. Dies ist ein wichtiger Indikator zur Beurteilung der Gesamtwirkung des ETS auf das Klima.

3. Schließlich zeigen die Ergebnisse der Analyse, dass in den meisten Fällen, selbst bei einem 70 %-ETS-Ziel, **eine Kombination aus angepasstem Cap und Rebasing wegen des historischen Überschusses an Zertifikaten nicht ausreichen wird, um das Zielniveau im Jahr 2030 zu erreichen**. In vielen Szenarien erhöht der Überschuss die Menge an Zertifikaten, die dem Markt bis zum Jahr 2030 zur Verfügung stehen, sodass das Emissionsniveau im Jahr 2030 der Baseline entspricht (und nicht dem angestrebten Zielniveau). Dies bedeutet, dass selbst eine im Hinblick auf LRF und Rebasing ambitionierte Reform zunichtegemacht werden könnte, wenn der historische Überschuss nicht beseitigt wird.

Die Reform der MSR ist der Schlüssel zur Beseitigung des historischen Zertifikate-Überschusses und zur Erhöhung der allgemeinen Resilienz des Systems.

Empfehlung 3

Eine ambitionierte MSR-Reform ist notwendig zur Beseitigung des historischen Überschusses und zum Erreichen des 2030-Ziels. Damit das gelingt, ist der Einsatz verschiedener Kombinationen denkbar. Notwendig ist aber ein Ansatz, der höhere Aufnahmeraten, niedrigere Schwellenwerte und die dauerhafte Löschung von Zertifikaten verbindet. So kann die MSR ihre Aufgabe erfüllen, die Resilienz des Systems gegenüber größeren Schocks zu verstärken.

Kurzfristig könnte der Überschuss an Zertifikaten die Wirksamkeit des Emissionshandels untergraben. Längerfristig könnte er die Fähigkeit des ETS beeinträchtigen, Emissionsminderungsziele kosteneffizient zu erfüllen. Bei der letzten Reform des EU ETS (2018) wurde eine Marktstabilitätsreserve eingerichtet, die im Januar 2019 gestartet ist. Die MSR wurde entwickelt, um sowohl dem Überschuss an Zertifikaten zu begegnen als auch die Resilienz des Systems gegenüber größeren Schocks zu stärken, indem man das Angebot an Zertifikaten anpasst.

Schlüsselelemente für das Funktionieren der MSR sind:

- Die Aufnahmerate und die Schwellenwerte. Die Aufnahmerate definiert jenen Anteil überschüssiger Zertifikate, die vom Markt genommen werden sollen. Die Schwellenwerte beziehen sich auf die Menge von Zertifikaten auf dem Markt, ab deren Überschreitung Zertifikate entfernt oder ab deren Unterschreitung diese wieder eingeführt werden. Jedes Jahr, wenn die Gesamtzahl der im Umlauf befindlichen Zertifikate (TNAC) 833 Millionen übersteigt, werden 24 % (Aufnahmerate) des TNAC in die Reserve gestellt. Ab dem Jahr 2024 soll dieser Anteil auf 12 % sinken. Liegt der TNAC dagegen unter 400 Millionen, werden 200 Millionen Zertifikate aus der MSR freigegeben (100 Millionen Zertifikate ab 2024).

- Die Begrenzung jener Menge von Zertifikaten, die innerhalb der Reserve gehalten werden können, auf eine solche Menge, die jährlich versteigert wird (und Löschung aller Zertifikate, die diesen Wert überschreiten).

Aufgrund historischer Fehler des Systems, einschließlich des massiven Imports internationaler CO_2-Zertifikate und der Überzuteilung von Zertifikaten, leidet das System unter einem enormen Überschuss an Zertifikaten. **Die aktuellen Regeln reichen nicht aus, um den historischen Überschuss bis 2030 zu beseitigen.**

Die Studie kombiniert die drei Emissions-Referenzszenarien (Baselines) mit verschiedenen Cap- und Rebasing-Optionen und einer Reform der Marktstabilitätsreserve (unter Berücksichtigung verschiedener Aufnahmeraten, Schwellenwerte und Löschoptionen).

Wie sich die Covid-Pandemie auf die Emissionen auswirken wird, ist noch ungewiss. Die Studie hält die Reformoptionen nur dann für zuverlässig, wenn das Zielniveau für 2030 in den drei Covid-angepassten Baselines erreicht wird. Das setzt voraus, dass die Reformoptionen in der Lage sind, den historischen Überschuss zu beseitigen. Folgende Empfehlungen leiten sich daraus ab:

- Aufnahmerate: Es ist klar, dass eine Rückkehr zur Aufnahmerate von 12 % (die ab 2024 vorgesehen ist) keine glaubwürdige Option ist. **Die Aufnahmerate muss nach 2023 bei 24 % oder höher gehalten werden.** Aber auch eine veränderte Aufnahmerate von 24 oder 36 % allein reicht nicht aus, um das System widerstandsfähig zu machen.

- Schwellenwerte: **Die Schwellenwerte müssen mindestens an den LRF angepasst oder bestenfalls bis 2030 auf null gesetzt werden.**

- Darüber hinaus wird eine Löschung von Zertifikaten in der MSR notwendig sein. **Wir empfehlen die automatische Löschung der Zertifikate fünf Jahre nach Übertragung in die MSR (5-Jahres-Vintages)** gegenüber der einmaligen Löschung von 500 Millionen Zertifikaten im Jahr 2025. Es ist wirksamer, den Überschuss kontinuierlich zu entfernen, um die Preisstabilisierung zu gewährleisten.

Festlegung eines Mindestpreises

Empfehlung 4 Ein zusätzliches Element der Reform – obwohl in dieser Studie nicht analysiert – muss die Einführung eines Mindestpreises sein. Wenn dies auf EU-Ebene nicht gelingt, sollte der Mindestpreis auf europäisch-regionaler Ebene beschlossen werden.

Die Einführung eines Mindestpreises hat folgende Vorteile:

» Sicherheitsnetz: Wie die Studie zeigt, wird die anstehende Reform des ETS und der MSR recht komplexe Kombinationen von Politikoptionen beinhalten. Ein Mindestpreis könnte einen erneuten CO_2-Preissturz in den 2020er-Jahren vermeiden.

» Investitions- und Planungssicherheit: Die europäische Klimapolitik hat in Ermangelung eines wirksamen CO_2-Preises bis 2017 ein Jahrzehnt verloren. Die letzte ETS-Reform führte in den vergangenen zwei Jahren zu höheren CO_2-Preisen; allerdings bleibt die Preisvolatilität bestehen. Etwa 80 % der Emissionen des Stromsektors werden durch die Verbrennung von Braun- und Steinkohle verursacht. Ein berechenbarer CO_2-Preis ist notwendig, um die Investitionssicherheit in Bezug auf klimafreundliche Erzeugungsformen zu stärken.

WWF-Empfehlungen für ein 70 %-ETS-Ziel

Von allen in der Studie betrachteten Optionen empfiehlt der WWF die Verabschiedung eines **70 %-ETS-Ziels** und die Kombination der folgenden politischen Optionen:

» **Eine Änderung des LRF und ein Rebasing im Jahr 2023 durch:**
- Erhöhung des linearen Reduktionsfaktors auf 3,57 %
- Rebasing von 350 Millionen Zertifikaten

» **Eine Reform der MSR mit folgenden Optionen:**
- 24 %-Aufnahmerate
- Schwellenwerte, die im Jahr 2030 auf null sinken
- Automatische Löschung von Zertifikaten nach fünf Jahren in der MSR

» **Festlegung eines CO_2-Mindestpreises, zumindest auf europäisch-regionaler Ebene**

Zusätzliche Reformelemente, die dieser Bericht nicht enthält

Um das derzeitige Rahmenwerk zur CO_2-Bepreisung zu stärken, „stranded assets“ zu vermeiden und ein EU ETS zu garantieren, das dafür geeignet ist, seinen Anteil an den Emissionsminderungen bis 2030 beizutragen und die vollständige Dekarbonisierung der erfassten Sektoren auf lange Sicht zu gewährleisten, fordert der WWF folgende Reformelemente:

1. Anwendung des Verursacherprinzips und Abkehr von kostenlosen Zertifikaten hin zu einer hundertprozentigen Versteigerung der Zertifikate.

2. Sofortiger Stopp kostenloser Zertifikate, wenn ein Carbon Border Adjustment Mechanism (CBAM) eingeführt wird.

3. Keine Ausweitung des bestehenden EU ETS auf Straßenverkehr und Gebäude.

4. Zweckbindung von 100 % der Einnahmen aus der Versteigerung für Klimaschutzmaßnahmen im Einklang mit den Klimazielen für 2030 und 2050 und für einen sozial gerechten Übergang.

5. Ausschluss von Projekten aus dem Modernisierungsfonds, die auf fossilen Brennstoffen basieren.

Summary

The adjustment of the European Union Emissions Trading System (EU ETS) plays a key role with regard to the new climate policy ambition of the European Union. First, this instrument regulates approx. 40% of the total greenhouse gas emissions of the EU-27 and second, according to the most recent analyses, the EU ETS will have to bring about the greater part of the emission reductions by 2030. The upcoming reform of the EU ETS needs to be analysed on three different levels. First, the cap of the ETS needs to be adapted to the new emission reduction targets of the Nationally Determined Contribution (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2020, either by adjusting the Linear Reduction Factor (LRF), which represents a continuous contraction of the cap, or with a one-off reduction of the cap (rebasing) or a combination of both options. Second, the rules for the Market Stability Reserve (MSR) need to be adjusted to avoid a situation whereby emissions in 2030 exceed the target levels due to the historical surplus in the system which might increase further due to the effects of the Covid-19 pandemic. Third, the robustness of cap adjustment and MSR reform need to be tested against the uncertainties of baseline emission trends, i.e. taking into account the consequences of the Covid-19 pandemic.

Two different emission reduction targets for the EU ETS (65% and 70% below the base level of 2005) were analysed, combining changes of the LRF and different rebasing options at different starting points in the 2023–2026 period. The earlier the reform takes place (e.g. in 2023) and the more significant the rebasing is, the more consistent the cap reform is with a view to cumulative emissions, a gradual contraction of the cap after the reform and the necessary adjustments of the MSR. Each rebasing by 100 million allowances (EUA) in 2023 will reduce the necessary LRF adjustment by approx. 0.6 percentage points. Adjustments in 2026 would increase this level to approx. 1 percentage point. An early adjustment of the LRF for a 65% or 70% emission reduction target for the EU ETS (compared to 2005 base levels) would lead to a zero-emission target for the EU ETS in the second half of the 2040s.

However, the reform of the EU ETS cap will not be sufficient to meet the 2030 emission reduction targets for the stationary installations regulated by the EU ETS, due to the significant amount of surplus allowances which will be available to the market under the current rules of the MSR. The robustness of the different reform options, including different cap reform options and a broad range of MSR rules, was tested in more than 1,300 model runs against three different baseline trends, reflecting different trajectories of post-Covid-19 recovery emission pathways.

The results of the modelling exercise show the following key issues for the MSR reform: Higher intake rates after 2023 (24% or more) and a significant decrease of the intake and release thresholds for the MSR (adjusted at least to the contraction of the cap) are key pillars of a consistent and robust MSR reform. The robustness of achieving the emission reduction target levels could be significantly increased by the introduction of an additional automatic cancellation mechanism in the MSR, which would cancel allowances in the MSR five years after they have been transferred to it. If policy makers want to avoid a complex reform of the MSR, a rather unconventional reform option would be to align the cap to a level 70% below the 2005 base level in order to fulfil a 65% emission reduction by 2030.

Zusammenfassung

Für die neuen klimapolitischen Ambitionen der Europäischen Union kommt der Anpassung des Emissionshandelssystems der Europäischen Union (European Union Emissions Trading System – EU ETS) eine Schlüsselrolle zu. Denn dieses Instrument reguliert einerseits mit ca. 40 % der gesamten Treibhausgasemissionen der EU-27 einen großen Teil der Emissionen, andererseits müssen die dem EU ETS unterliegenden Anlagen nach neuesten Analysen den größten Teil der gesamten Emissionsreduktionen bis 2030 erbringen.

Die anstehende Reform des EU ETS muss auf drei verschiedenen Ebenen analysiert werden. Erstens muss die Obergrenze des EU ETS an die neuen Emissionsminderungsziele der im Dezember 2020 bei der Klimarahmenkonvention der Vereinten Nationen (United Nations Framework Convention on Climate Change – UNFCCC) eingereichten Verpflichtungen (Nationally Determined Contributions – NDC) angepasst werden, entweder durch eine Anpassung des linearen Reduktionsfaktors (Linear Reduction Factor –LRF), der eine kontinuierliche Verringerung der Emissionsobergrenze (Cap) bewirkt, durch eine einmalige Reduzierung des Caps (Rebasing) oder eine Kombination beider Optionen. Zweitens müssen die Regeln für die Marktstabilitätsreserve (MSR) angepasst werden, um eine Situation zu vermeiden, in der die Emissionen im Jahr 2030 die Zielwerte aufgrund des historischen Überschusses an CO_2-Zertifikaten im System überschreiten, der auch durch die Auswirkungen der Covid-19-Pandemie weiter ansteigen könnte. Drittens muss die Robustheit der Cap-Anpassung und der MSR-Reform gegenüber den Unsicherheiten der Referenz-(Baseline-)Emissionstrends geprüft werden, d. h. auch unter Berücksichtigung der Folgen der Covid-19-Pandemie.

Es werden zwei verschiedene Emissionsreduktionsziele für das EU ETS (65 und 70 % unter dem Basisniveau von 2005) analysiert, wobei die Änderungen des LRF und verschiedene Rebasing-Optionen für verschiedene Startpunkte im Zeitraum 2023–2026 kombiniert werden. Je früher die Reform stattfindet (z. B. 2023) und je signifikanter das Rebasing ist, desto konsistenter ist die Cap-Reform mit Blick auf die kumulierten Emissionen, die möglichst stetige Rückführung des Caps nach der Reform und die notwendigen Anpassungen der MSR. Jedes Rebasing um 100 Millionen Zertifikate (EUA) im Jahr 2023 reduziert die notwendige Anpassung der LRF um ca. 0,6 Prozentpunkte. Anpassungen im Jahr 2026 würden diesen Wert auf ca. einen Prozentpunkt erhöhen. Eine

frühzeitige Anpassung des LRF zum Emissionsminderungsziel von 65 oder 70 % für das EU ETS (im Vergleich zu den Basiswerten von 2005) könnte in der zweiten Hälfte der 2040er Jahre das Ziel von Netto-Null-Emissionen für das EU ETS ermöglichen.

Die Anpassung des Caps für das EU ETS wird jedoch nicht ausreichen, um die Emissionsminderungsziele für 2030 für die vom EU ETS regulierten stationären Anlagen zu erreichen, da dem Markt unter den derzeitigen Regeln der MSR eine beträchtliche Menge des bisher entstandenen Überschusses an Zertifikaten zur Verfügung stehen wird. Die Robustheit der verschiedenen Reformoptionen, einschließlich verschiedener Optionen für die Obergrenze und einer breiten Palette von MSR-Regeln, wurde in mehr als 1.300 Modellläufen unter Berücksichtigung von drei verschiedenen Baseline-Emissionstrends getestet, die verschiedene Emissionstrajektorien für die Erholungsprozesse nach der Covid-19-Pandemie abbilden.

Die Ergebnisse der Modellierung zeigen eine Reihe von Kernpunkten für die MSR-Reform: Höhere Aufnahmeraten für die MSR nach 2023 (24 % oder mehr) und eine deutliche Absenkung der Abschöpfungs- und Freigabeschwellen für die MSR (mindestens angepasst an die Absenkung des Caps) sind zentrale Pfeiler einer konsistenten und robusten MSR-Reform. Die Robustheit erreichter Emissionsminderungsziele könnte durch die Einführung eines zusätzlichen automatischen Löschungsmechanismus in der MSR deutlich erhöht werden, mit dem Zertifikate in der MSR fünf Jahre nach ihrer Überführung in die MSR gelöscht werden. Wenn die politischen Entscheidungsträger eine komplexe Reform der MSR vermeiden wollen, käme eine eher unkonventionelle Reformoption in Frage, mit der die Cap-Obergrenze an einem 70 %-Emissionsminderungsziel (unter dem Basisniveau von 2005) ausgerichtet würde, womit inklusive der Wechselwirkungen mit der MSR eine Emissionsreduktion von effektiv 65 % bis 2030 erreicht werden könnte.

1. Introduction

In the Nationally Determined Contribution (NDC) submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in December 2020, the European Union (EU) committed under international law to reduce greenhouse gas emissions of the 27 Member States (EU-27) by 55% for the period of 1990 to 2030 (CEC 2020b). Within the framework of the European Green Deal (EC 2019), the European Union has set itself the goal of becoming climate-neutral by 2050 and has also notified this under the UNFCCC (CEC 2020a). For the implementation of this overarching emission reduction commitment in the EU's climate protection architecture, the adjustment of the European Union Emissions Trading System (EU ETS) plays a key role for two reasons. Firstly, this instrument regulates approx. 40% of the total greenhouse gas emissions of the EU-27 and, secondly, according to the most recent analyses, the EU ETS will have to bring about the greater part of the emission reductions by 2030 (EC 2020a).

Launched in 2005, the EU ETS has been confronted with a multitude of challenges in recent years and has been adjusted several times to the changing macroeconomic and regulatory environment and some implementation failures. In particular, the recent changes made with the structural reform of the EU ETS have significantly strengthened the role of the EU ETS as an effective emission reduction mechanism at least for the power sector in many EU member states. However, with these structural reforms, the EU ETS has also become significantly more complex as a whole range of interactions come into play for the various provisions. The experiences of recent years and the reform process of the EU ETS have also shown that the effectiveness of the individual mechanisms and their interactions depend to a large extent on the respective macroeconomic, regulatory and energy market environment. In particular, the emissions trend caused by factors other than the EU ETS (baseline emissions trend) plays a central role here. The objective of the present study is to identify robust reform options from the broad range of possible reform options and their combinations, taking into account different baseline emission trends. The main objective is to determine as reliably as possible whether the emission reduction target for 2030 can be achieved, taking into account the corresponding uncertainties.

The remainder of this study is organized as follows. **Chapter 2** discusses the range of baseline emission trends. These can differ considerably, especially with regard to the Covid-19 pandemic and the corresponding recovery processes for social and economic life, and are a central uncertainty with regard to the impact of the different reform options. **Chapter 3** performs an analysis of possible options for adjusting the cap of the EU ETS in the context of the new emission reduction target of 55% for the total greenhouse gas emissions of the EU-27 and develops a set of 12 different storylines. On this basis, **chapter 4** examines the changes to the Market Stability Reserve (MSR) that are possible or necessary in addition to the cap adjustment and classifies them with regard to the interactions with the cap adjustments. In an evaluation of the more than 1,300 variants, robust reform options for the cap and the MSR are derived and documented in **chapter 5**. All results of the model analyses are documented in the annex.

Finally, it should be noted that further reforms of the EU ETS, – e.g. with regard to the introduction of a floor price or the modernisation of carbon leakage protection mechanisms – are not further investigated in this study, but nevertheless remain on the reform agenda.

2. Baselines

A key determinant of the necessary reforms of the EU ETS in the context of the European Green Deal is the pathway of baseline emissions. The analyses presented here are based on the European Commission's 2020 baseline projection (BSL 2000); this projection was used in the Impact Assessment for the new EU-27 emission reduction targets for 2030 and 2050 (EC 2020b, p. 37). It includes the policies and measures adopted in the context of the previous climate and energy policy goals. Compared to the 1990 baseline level, a reduction in total greenhouse gas emissions (including LULUCF) of almost 47% is achieved in 2030, the share of renewable energies in gross final energy demand reaches 32% and primary energy savings amount to 34%.

In the EU ETS, this results in an allowance price of 32 €/EUA in 2030. For the stationary installations regulated by the EU ETS, the 2020 baseline corresponds to an emission level of 933 Mt CO_2e for 2030.

Figure 2-1: Historical emissions and different baseline trends for stationary EU ETS installations in the EU-27, 2005–2030 (Source: Öko-Institut)

With the new climate targets of the European Union, it becomes necessary to adjust the cap for the EU ETS. However, additional emission reductions through the EU ETS are not only determined by the changes in the cap of the system, but also by the macroeconomic environment. Particularly with a view to the Covid-19 pandemic and its short- and medium-term consequences for economic activities and emissions, the situation may arise in which the incentives for emission reductions from the EU ETS drop sharply, thus significantly limiting the relevance of the EU ETS.

Since the EC's Baseline 2020 does not (yet) reflect the effects of the Covid-19 pandemic, three different baseline scenarios were derived for this purpose:

- In the V-Recovery scenario, it is assumed that after a sharp drop in GHG emissions regulated by the EU ETS in 2020 (–25%), societal and economic life fully returns to the pre-crisis situation within a period of 2 years and emissions develop along the BSL 2020 path again from 2022 onwards. In 2030, the emission level is thus 933 Mt CO_2e, and the cumulative emissions amount to 11.4 Mt CO_2e for the period of 2021–2030.

- For the U-Recovery scenario, a development is assumed whereby the post-crisis social and economic recovery occurs more slowly and there are some long-lasting structural changes in consumption patterns as well as accelerated structural adjustments in different segments of the national economy. The recovery trend ends at about 40% of the crisis effect and follows a linear path to the target level of 933 Mt CO_2e in 2030. For the 2021–2030 period, this results in cumulative emissions of about 10.5 Mt CO_2e, this level is about 8% lower than for the V-Recovery scenario.

- The L-Recovery scenario assumes long-lasting structural effects, which, after a short recovery phase, lead in the following years to a downward emissions development that is lower than but parallel to the BSL 2020 path. In 2030, emissions amount to 752 Mt CO_2e. This level, which is about 19% below the comparative levels of the other two scenarios, results in cumulative emissions of about 9.8 billion t CO_2e for the 2021–2030 period. Compared to the V-Recovery scenario, this corresponds to a decrease by 14%.

With these scenarios, trajectories are mapped that lead to emission reductions of 55% (V- and U-Recovery) or 64% (L-Recovery) compared to the emission levels of 2005, and thus to a reasonable range of conceivable developments today. The different scenarios also represent an appropriate range for the cumulative emissions in the period 2021–2030, which are important with regard to the EU ETS market and the climate impact overall.

Furthermore, the corridor of the three scenarios also shows an interesting range for the (linear) projection beyond 2030. Under the V- and U-Recovery (or the underlying BSL 2020), a (net) zero emission for the greenhouse gas emissions from stationary installations regulated by the EU ETS is achieved in about 2048. Under the L-Recovery, (net) zero emissions occur in 2045. Nevertheless, it should also be noted that, in view of historical developments, phases with emission reductions that clearly exceed the linear trend can also be observed.

3. Adjusting the cap of the EU ETS

The actual cap of the EU ETS and the determinants of this cap were derived in the context of the previous EU climate protection targets (–40% for the 1990–2030 period). For the commitments made with the new NDC of the EU-27, the cap of the EU ETS will have to be significantly adjusted in view of the prominent role of emissions from stationary installations regulated by the EU ETS.

For the modelling exercises of this study, two different variants were assumed for the cap with a view to 2030:

- a cap of 723 million allowances in 2030, which corresponds to a reduction of 65% compared to the baseline emission level of 2005;
- a cap of 620 million allowances in 2030; for the 2005–2030 period, this corresponds to an emission reduction of 70%.

This range also roughly corresponds to the corridor considered in the impact assessment for the new EU-27 climate targets (EC 2020b, p. 48).

Four parameters are relevant to the technical implementation of the cap in the current architecture of the EU ETS:

- a change in the Linear Reduction Factor (LRF), which describes the annual reduction in the cap based on a starting level (currently this is the average quantity of allowances issued for 2008–2012). Until 2020, the LRF was 1.74% per year; for 2021 onwards, it was increased to 2.2%.
- In principle, the cap can be adjusted by rebasing, i.e. lowering the level at which the LRF is applied. The magnitude of this reduction can be based on different perspectives:
  - If the cap is to be lowered by the difference between allocation and real emissions in the 2008–2012 period, which was marked by the financial and economic crisis, it results in an adjustment of approx. 150 million allowances.

- If the cap is to be adjusted by the difference between emissions and cap before the start of the Covid-19 pandemic, it results in a reduction of about 250 million allowances (EC 2020a, p. 100).

- Taking into account the effects of the Covid-19 pandemic, a rebasing of 350 million allowances can be assumed in a rough estimate.

» For the development of the cap, the year in which the change in the LRF takes effect is also of considerable importance. Two options were considered here:

- an adjustment of the cap in an accelerated legislative process so that the LRF adjustment can take effect in 2023;

- a corresponding adjustment from 2026 onwards.

» Less relevant for the cap in 2030, but substantially important to the total number of allowances brought to the market in the 2021–2030 period, is the timing of the rebasing. Here, too, two variants were analysed in more detail, which for the sake of clarity correspond to the dates of the LRF adjustment:

- a rebasing in 2023 so that the level of new allowances brought to the market is uniformly corrected by the above-mentioned values from 2023 onwards;

- a corresponding rebasing in 2026.

Figure 3-1 and **Table 3-1** show the interactions between the different options for LRF adjustments or rebasing approaches in the context of different cap targets:

» In the context of an overall 65% reduction target for the EU ETS, the following general patterns emerge:

- A rebasing of 100 million allowances in 2023 and each further increase of about 100 million allowances reduce the LRF needed to reach the target of 723 million allowances in 2030 by about 0.6 percentage points. Without rebasing, the adjusted LRF is 5.15% per year from 2023 onwards.

- A rebasing of 100 million allowances in 2026 and each further increase of about 100 million allowances decrease the LRF required

to reach the target of 723 million allowances in 2030 (which is also adjusted in 2026) by about 1 percentage point. Without rebasing, the adjusted LRF is 6.92% per year from 2026 onwards.

» Given an overall emission reduction target of 70% for the EU ETS, the following correlations result:

- A rebasing of 100 million allowances in 2023 and each further increase of about 100 million allowances decrease the LRF needed to reach the target of 620 million allowances in 2030 by about 0.6 percentage points. Without rebasing, the adjusted LRF is 5.81% per year from 2023 onwards.

- A rebasing of 100 million allowances in 2026 and each further increase of about 100 million allowances also reduce the LRF needed to reach the target of 620 million allowances in 2030 (which is also adjusted in 2026) by about 1 percentage point. Without rebasing, the LRF needed from 2026 onwards is 7.98% per year.

Figure 3-1: Adjustments for the Linear Reduction Factor depending on different rebasing options and adjustment years (Source: Öko-Institut)

Table 3-1: Adjustments for the Linear Reduction Factor for different rebasing options and the adjustment years 2023 and 2026 (Source: Öko-Institut)

LRF adjustment and rebasing in ...	2023				2026			
Rebasing	**0**	**150**	**250**	**350**	**0**	**150**	**250**	**350**
LRF for cap ETS target –65%	5.15%	4.19%	3.55%	2.91%	6.92%	5.39%	4.36%	3.34%
LRF for cap ETS target –70%	5.81%	4.85%	4.21%	3.57%	7.98%	6.44%	5.42%	4.40%

Rebasing and its timing have a significant impact on the total number of new emission allowances brought onto the market from 2021 to 2030 (without taking into account the Market Stability Reserve of the EU ETS at this point):

» In the context of a 65% target for the EU ETS:

- in case of a rebasing in 2023, the number of new allowances brought to the market in the 2021–2030 period reaches a maximum of 11.7 billion; a rebasing of 100 million allowances reduces this value by 3% in each case;

- in case of a rebasing in 2026, the number of new allowances brought to the market in the 2021–2030 period reaches a maximum of 12.4 billion (i.e. approx. 6% above the total for rebasing in 2023); rebasing by 100 million allowances reduces this value by 1.7 percentage points in each case.

» In the context of a 70% target for the EU ETS:

- in case of a rebasing in 2023, the number of new allowances brought to the market in the 2021–2030 period reaches a maximum of 11.2 billion; a rebasing of 100 million allowances reduces this value by 3.1% in each case;

- in case of a rebasing in 2026, the number of new allowances brought to the market in the 2021–2030 period reaches a maximum of 12.1 billion (i.e. about 7.5% above the total for the rebasing in 2023); a rebasing by 100 million allowances reduces this value by 1.8% in each case.

A comparison with the different scenarios of the emission development leads to the following results **(Table 3-2)**:

- For the year 2030, the cap in the context of an overall 65% target for the EU ETS is clearly below the expected baseline emission level for the V-Recovery and U-Recovery scenarios. For the L-Recovery scenario, the expected emission level is relatively close to the level of the cap. However, with a view to the remaining surplus of allowances and the current MSR rules, emissions would be pushed below the baseline level only for the V-Recovery scenario in 2030.

- The cap variants in the context of a 70% target for the EU ETS are below all baseline emission scenarios.

- With a view to the cumulative emissions and the total number of maximum allowances issued, the maximum number of additional allowances made available in the context of a 65% target clearly exceeds the emissions in many cases. The only exceptions here are the cap variants with rebasing in 2023 in connection with a V-Recovery and the rebasing variants of 250 and 350 million allowances in 2023 in the context of a U-Recovery. Among the rebasing options for 2026, only the cap with a rebasing of 350 million allowances is below the baseline emission level of the V-Recovery scenario.

- A similar situation arises for the cap in the context of a 70% target. For the V-Recovery scenario, the cumulative emissions of the 2021–2030 period are above the number of new allowances only for the cap variants with rebasing in 2023. For the U-Recovery scenario, the cumulative emissions are above the maximum number of additional allowances made available in the 2021–2030 period only for the cap variants with rebasing of 350 million allowances in 2023.

Table 3-2: Emissions and cap adjustment options for different EU ETS targets (under current MSR rules), 2021–2030 (Source: Öko-Institut)

LRF adjustment and rebasing in ...	2023				2026			
Rebasing by ... MEUA	**0**	**150**	**250**	**350**	**0**	**150**	**250**	**350**
Year 2030								
Cap ETS target –65%	723				723			
Cap ETS target –70%	620				620			
Emissions V-style recovery*	933			865**	933			
Emissions U-style recovery*	933				933			
Emissions L-style recovery*	752				752			
Period 2021–2030								
Cap ETS target –65%	11,704	11,179	10,829	10,479	12,396	12,096	11,896	11,696
Cap ETS target –70%	11,240	10,715	10,365	10,015	12,087	11,787	11,587	11,387
Emissions V-style recovery	11,416	11,416	11,416	11,175	11,416	11,416	11,416	11,416
Emissions U-style recovery	10,548	10,548	10,548	10,548	10,548	10,548	10,548	10,548
Emissions L-style recovery	9,794	9,794	9,794	9,794	9,794	9,794	9,794	9,794

Notes:

Emissions below –65% cap

Emissions below –70% cap

* under current MSR rules.

** MSR would reduce emissions below baseline

The caps indicated above always refer to the maximum quantity of new allowances issued in the period 2021 to 2030. This can be reduced by various provisions for the Market Stability Reserve. Allowances held in the MSR can also be released to the market again under certain circumstances. The potential use of the surplus of allowances remaining in the market is highly relevant to achieving the emission targets under the EU ETS.

If the role of the EU ETS as a relevant mechanism for achieving additional emission reductions shall be safeguarded, the analysis of the need for reform must focus not only on the cap, but also on different baseline emission trends, with special consideration of the effects of the Covid-19 pandemic. The level of surplus allowances available to the market and thus the future design of the MSR play a crucial role in this context. Therefore, a robust assessment of the cap adjustment cannot be made without examining the effects of the MSR on the number of allowances available on the market and evaluating these effects under different baseline emission trends.

4. Reforming the Market Stability Reserve

4.1 Emission trends under the existing MSR provisions

The Market Stability Reserve (MSR) of the EU ETS is, to date, the central mechanism for addressing the challenge of surplus allowances in the system (which come about for various reasons, e.g. use of CDM/JI credits, economic and financial crisis, etc.). The introduction of the MSR was decided in October 2015 and revised in 2018 to make its design more stringent. It became operational in January 2019. The basic mechanisms of the MSR are as follows:

- If the surplus of allowances in the market (Total Number of Allowances in Circulation – TNAC) exceeds a specific threshold, a certain share of this surplus is transferred to the MSR (intake rate) and the number is deducted from the planned auctions. Technically, this threshold is established indirectly, in that the minimum quantity of allowances to be transferred to the MSR is specified. This minimum quantity and the intake rate are used to calculate the threshold for the surplus, above which allowances are absorbed from the market via the MSR. In the original version of the MSR rules, the minimum quantity was 100 million allowances and the intake rate was 12%, so that the MSR intake mechanism would apply when a surplus of 833 million allowances is reached (100/0.12=833). With the change in the MSR rules, both values were doubled for a limited period (until 2023), resulting in the same threshold (200/0.24=833).

- If the surplus of allowances in the market falls below a specific level, a certain amount of allowances is made available to the market again each year by expanding the corresponding auctions. The threshold for the release of allowances from the MSR is currently a TNAC of 400 million allowances; if the surplus falls below 400 million allowances, 100 million allowances from the MSR are released for additional auctions each year.

» The MSR has a cancellation mechanism[3] which ensures that from 2023 the number of allowances held in the MSR is limited to the level of the previous year's allowance auctions. Hence, the amount of allowances exceeding this auctioning level is cancelled.

The general concept of the MSR is based on the assumption that there is a demand for emission allowances by (financial) market participants who provide hedging products primarily for the electricity market. Because of these market players, the regulations of the MSR were set at a demand volume of 400 to 833 million allowances. However, this assumption can also be disputed. It is based on the core belief that an emissions trading system can only operate sufficiently well if the number of allowances available to the market significantly exceeds the amount of allowances needed for compliance if there is significant demand for hedging products in the sectors regulated by the ETS, i.e. the power sector. In other words: a significant surplus of allowances would be needed for a well-functioning market. The first question here is whether the providers of hedging products, for their part, can also hedge in alternative ways than by purchasing emission allowances. It should also be noted that in the course of an ever greater emission reduction in the electricity sector and the gradual decrease of base-load and medium-load electricity generation, the (hypothetical) demand for emission allowances in the context of hedging transactions would also fall significantly over time.

Figure 4-1 and **Figure 4-2** show the development of emissions and allocation (in the upper part of the graph) and the allowances available to the market, those held in the MSR and the allowances cancellations in the MSR (in the lower part of the graph). The V-Recovery and L-Recovery scenarios are used and it is assumed that the LRF is adjusted in 2023 (without rebasing)[4]:

3 The legal text of the MSR decision does not use the term "cancellation" as it is used for other provisions in the EU ETS directive. In this paper, the term "cancellation" is, however, used synonymously with provisions such as 'shall no longer be valid' in the MSR decision.

4 The key results of the scenarios described are summarised in the appendix in **Table A-1** and **Table A-2**. The linear reduction factor from 2023 onwards is 5.15% (see **Table 3-1**).

Figure 4-1: Emissions, market supply, surplus allowances available and not available to the market and allowances cancelled for a –65% cap (LRF adjustment in 2023 without rebasing) **and the V-Recovery scenario under the current MSR rules** (Source: Öko-Institut)

Figure 4-2: Emissions, market supply, surplus allowances available and not available to the market and allowances cancelled for a –65% cap (LRF adjustment in 2023 without rebasing) **and the L-Recovery scenario under the current MSR rules** (Source: Öko-Institut)

- In the V-Recovery scenario, the surplus in the market is slowly reduced via the MSR, and from 2023 there is a large-scale cancellation of allowances in the MSR. In total, about 3.6 billion allowances will be cancelled in the MSR by 2030. The surplus allowances created in the past and still available to the market is sufficient to allow for emissions at the baseline emission level (933 Mt CO_2e) in 2030. The emissions target of 723 Mt CO_2e will be missed by more than 200 Mt CO_2e, irrespective of the cap adjustment.

- In the L-Recovery scenario, the surplus in the market decreases only slowly, despite the effectiveness of the MSR. In 2024, there is a large deletion of allowances in the MSR, but the surpluses held in the MSR significantly accumulate again from 2024. In the MSR, 4.2 billion allowances are cancelled. The emission target of 725 Mt CO_2e is already roughly met in the baseline trend; the EU ETS does not make a significant additional contribution to emission reductions here.

Even for the intermediate scenario U-Recovery, the surplus of emission allowances available in the market would lead to a significant deviation from the emission target for 2030 (by more than 200 Mt CO_2e). If the cap were not adjusted via the LRF until 2026 (without rebasing), a significantly larger surplus of allowances would remain available on the market, even if the quantity of allowances invalidated in the MSR increases.

In the context of an overall emission reduction target of –70% for the EU ETS, these results would not change structurally despite the significantly more restrictive caps[5]:

- In the V-Recovery scenario, an adjustment of the LRF in 2023 would result in slight emission reductions (approx. 70 Mt CO_2e) compared to the baseline, but the emission target of 620 Mt CO_2e would be missed by 240 Mt CO_2e, even if 3.4 billion allowances were invalidated in the MSR. A later adjustment of the LRF (in 2026) would increase the number of allowances cancelled in the MSR, but the emissions target would be missed by an even greater margin (i.e. by more than 300 Mt CO_2e).

- In the U-Recovery scenario, the surplus of allowances available to the market would be sufficient to keep emissions development at the

5 The key results of the scenarios described are summarised in the appendix in **Table A-1** and **Table A-2**.

baseline level in the case of an LRF adjustment in 2023; the target of 620 Mt CO_2e would thus be missed by more than 300 Mt CO_2e, and the number of allowances invalidated in the MSR would amount to more than 4 billion. Adjusting the LRF only in 2026 would increase the number of allowances cancelled to almost 4.4 billion, but the emissions target for 2030 would still be missed by more than 300 Mt CO_2e.

» In the L-Recovery scenario with an adjustment of the LRF in 2023, no additional emission reductions would be stimulated compared to the baseline, so that the emission target of 620 Mt CO_2e would be missed by more than 130 Mt CO_2e. In the MSR, 4.2 billion allowances would be invalidated. In the context of an LRF adjustment in 2026, the gap to meeting the target would not change; a total of 4.5 million allowances would be cancelled here.

Even if, in the context of the –65% or –70% target, the LRF was adjusted and rebasing introduced, the effects change only gradually.

Against this background, it becomes clear that only the adjustment of the factors determining the cap in the course of a reform of the EU ETS will not be sufficient to achieve the emission targets for 2030. A reform of the MSR and its parameters should thus become an important element of the upcoming changes.

4.2 Emission trends under revised MSR provisions

A reform of the MSR can start with the existing provisions, but also introduce new elements. The following starting points are analysed in the modelling exercise presented here:

- a change in the intake rates for the MSR;
- a change in the thresholds for the MSR, which is now also being discussed independently of the intake rates; and
- a change in the cancellation provisions in the MSR.

The fundamental re-design of the MSR, e.g. to price-based triggers for the MSR, is not considered in this analysis.

Among the broad range of conceivable reform options for the MSR, the following parameters are examined:

- Intake rates for the MSR:
  - Return to the intake rate of 12% from 2024 (current rules);
  - Continuation of the intake rate of 24%;
  - Increase the intake rate to 36% from 2024;

- Trigger values for the MSR:
  - Continuation of the existing thresholds (current rules);
  - Adjustment of the existing thresholds for intake and release in proportion to the linear reduction factor;
  - Adjustment of the existing thresholds for intake and release on a linear path to zero by 2030;

- Additional cancellation of allowances in the MSR:
  - Automatic cancellation of the allowances 5 years after transfer to the MSR (5-year vintages);
  - One-off cancellation of 500 million allowances in 2025.

The combination of these different reform options, especially with the different options for cap adjustment or taking into account the different baseline emission scenarios, results in an extremely high number of options with very complex and partly counterintuitive interactions.

Against the background of the challenge of being able to identify the robust reform options or the corresponding packages among the many options, the following methodological approach was chosen:

» Öko-Institut's MSRCalc-dyn model was used to calculate all possible combinations of the cap and MSR reforms. The MSRCalc-dyn model maps the full range of MSR options and determines the interactions between the number of emission allowances available on the market and the emission trajectories. A total of 1,300 variants were thus analysed.

» Since the central uncertainty for the MSR reform lies in the underlying baseline emission trends, those combinations were identified from the totality of the case-specific calculations in which all three variants of the baseline emission scenarios achieve the respective emission target. The combination is considered a robust reform option only if the emission targets are achieved under all three baseline scenarios[6].

» In addition to determining the emission levels for 2030, the cumulative emissions for the 2021–2030 period and the allowances cancelled in this period are assessed (cf. **Table A-1** in the Annex).

Overview of policy options for an ETS target of 65%

Table 4-1 shows an overview of the corresponding results for the EU ETS emission reduction target of 65% (compared to 2005):

» If only the actual MSR mechanisms are changed, compliance with the 65% target of the ETS in 2030 will only be achieved in a few variants:

- If the cap is already adjusted in 2023, only a rebasing of 250 million allowances and a corresponding LRF adjustment, as well as an increase in the intake rate to 36% and a reduction in the MSR thresholds to zero by 2030 will result in achieving the 65% reduction target of the ETS.

- In the case of a later adjustment of the cap in 2026 and a rebasing of 150 million allowances, compliance with the 65% reduction target of the ETS can be achieved in two ways: on the one hand, by increasing the intake rate to 36% and adjusting the thresholds in proportion to the cap; and, on the other hand, by a rebasing of 150 and 250 million allowances in conjunction with an increase in the intake rate to 36% and an adjustment of the MSR thresholds with a target level of zero in 2030.

6 To account for modelling inaccuracies, the emission target was assumed to be met if this value was achieved with a tolerance of +10%.

» A more robust situation results from combining the MSR parameters above with cancellation of the allowances five years after their transfer to the MSR.

- With a cap adjustment in 2023 and a rebasing of 350 million allowances, the emission targets are achieved if the intake rate is increased to 36% and all other MSR parameters remain unchanged.

- If the intake rate is left at 24% and the MSR thresholds are adjusted in line with the cap development and a rebasing of at least 250 million allowances is implemented by 2023, the emission targets will be met. With a higher intake rate of 36%, the emission targets are met for all rebasing options analysed. A stronger decrease of the MSR thresholds results in a comparable pattern of compliance with the targets.

- If the cap is not adjusted until 2026, the emission targets can only be met if a rebasing of at least 150 million allowances occurs and the intake rate is increased to 36%.

» An additional one-off cancellation of 500 million allowances in 2025 leads to only very minor changes compared to the option without additional cancellations.

» If an automatic cancellation of allowances 5 years after transfer to the MSR is combined with a one-off cancellation of 500 million allowances in 2025, there are no significant changes compared to the variant without one-off cancellation in 2025.

In addition to the achievement of the 2030 emissions target (relevant with regards to the EU commitments under the Paris Agreement), the level of cumulative emissions in the 2021–2030 period is also relevant in assessing the EU contribution to global warming. In the context of the complex interactions between cap, MSR and emissions, only very small differences result for the cap adjustments in 2023 or 2026, assuming the same MSR parameters and emission reduction targets.

Given the low baseline emissions in the L-Recovery scenario, the 65% reduction target of the ETS is met under this scenario for all options of the MSR reform. Under the two other baseline scenarios, achievement of the ETS 65% target requires far-reaching changes in the MSR parameters.

Table 4-1: Effects of different MSR provisions in the framework of an EU ETS emission reduction target of 65% compared to 2005 (Source: Öko-Institut)

MSR intake rate		Adjustment of MSR thresholds			Automatic MSR cancellation		LRF adjustment and rebasing in …							
							2023				2026			
							Rebasing							
Current rules	from 2023	Current rules	Decrease by LRF	Phase-out by	Vintage	One-off in 2025	0	150	250	350	0	150	250	350
x	–	x	–	–	–	–	1	1	1	1	1	1	1	1
–	24%	x	–	–	–	–	1	1	1	1	1	1	1	1
–	36%	x	–	–	–	–	1	1	1	2	1	1	1	1
x	–	–	x	–	–	–	1	1	1	1	1	1	1	1
–	24%	–	x	–	–	–	2	1	2	1	1	1	2	2
–	36%	–	x	–	–	–	2	1	1	1	2	2	3	2
x	–	–	–	2030	–	–	1	1	1	2	1	1	1	1
–	24%	–	–	2030	–	–	2	1	3	1	1	1	2	2
–	36%	–	–	2030	–	–	2	2	2	2	2	3	3	2
x	–	x	–	–	5a	–	1	1	1	2	1	1	1	1
–	24%	x	–	–	5a	–	1	1	2	2	1	1	1	1
–	36%	x	–	–	5a	–	1	2	2	3	1	1	2	2
x	–	–	x	–	5a	–	1	1	2	2	1	1	1	1
–	24%	–	x	–	5a	–	2	2	3	3	1	1	2	2
–	36%	–	x	–	5a	–	3	3	3	3	2	3	3	3
x	–	–	–	2030	5a	–	1	1	2	2	1	1	1	1
–	24%	–	–	2030	5a	–	2	2	3	3	1	1	2	2
–	36%	–	–	2030	5a	–	3	3	3	3	2	3	3	3
x	–	x	–	–	–	500m	1	1	1	2	1	1	1	1
–	24%	x	–	–	–	500m	1	1	2	2	1	1	1	1
–	36%	x	–	–	–	500m	1	1	2	2	1	1	1	1
x	–	–	x	–	–	500m	1	1	1	2	1	1	1	1
–	24%	–	x	–	–	500m	2	1	2	2	1	1	2	2
–	36%	–	x	–	–	500m	2	1	1	1	2	2	3	2
x	–	–	–	2030	–	500m	1	1	1	2	1	1	1	1
–	24%	–	–	2030	–	500m	2	1	3	2	1	1	2	2
–	36%	–	–	2030	–	500m	2	2	2	3	2	3	3	2
x	–	x	–	–	5a	500m	1	1	1	2	1	1	1	1
–	24%	x	–	–	5a	500m	1	1	2	2	1	1	1	1
–	36%	x	–	–	5a	500m	1	2	2	3	1	1	2	2
x	–	–	x	–	5a	500m	1	1	2	2	1	1	1	1
–	24%	–	x	–	5a	500m	2	2	3	3	1	1	2	2
–	36%	–	x	–	5a	500m	3	3	3	3	2	3	3	3
x	–	–	–	2030	5a	500m	1	1	2	2	1	1	1	1
–	24%	–	–	2030	5a	500m	2	2	3	3	1	1	2	2
–	36%	–	–	2030	5a	500m	3	3	3	3	2	3	3	3

Note: The number and colour indicate for how many of the baseline emission variants the emission target can be met with a +10% tolerance

Overview of policy options for an ETS target of 70%

Against the background of an emission reduction target of 70% for the EU ETS (compared to 2005), however, the patterns are clearly different **(Table 4-2)**[7]:

» For almost none of the reform options examined is it possible to achieve the 70% reduction target of the ETS without additional cancellation provisions. The only exception is the combination of a 36% intake rate, adjustment of the MSR thresholds proportional to the cap, and an adjustment of the cap in 2026 with a rebasing of 350 million allowances.

» If the emission allowances are cancelled in the MSR five years after the transfer to the MSR, the 70% reduction target of the ETS will only be met if

- the intake rate is increased to 36%, the MSR thresholds are reduced in proportion to the cap and the cap is adjusted in 2026 (or earlier) and occurs in connection with a rebasing of 350 million allowances;
- the intake rate remains at 24%, the MSR thresholds are reduced linearly to zero by 2030 and the cap is adjusted in 2023 and occurs in connection with a rebasing of 350 million allowances;
- the intake rate is increased to 36%, the MSR thresholds are reduced linearly to zero by 2030 and the cap adjustment is made in 2023 and occurs in conjunction with a rebasing of at least 150 million allowances;
- the intake rate is increased to 36%, the MSR thresholds are reduced linearly to zero by 2030 and the cap is not adjusted until 2026 and occurs in connection with a rebasing of 350 million allowances.

» With a one-off cancellation of an additional 500 million allowances in the MSR, the emission targets for 2030 will only be met if

- the intake rate remains at least at 24%, the MSR thresholds are reduced linearly to zero by 2030 and the cap is adjusted in 2023 and occurs in connection with a rebasing of 350 million allowances;
- the intake rate is increased to 36%, the MSR thresholds are adjusted proportionally to the cap, and the cap is adjusted in 2026 with a rebasing of 350 million allowances.

7 For a full list of results, see **Table A-2** in the annex.

Table 4-2: Effects of different MSR provisions in the framework of an EU ETS emission reduction target of 70% compared to 2005 (Source: Öko-Institut)

MSR intake rate		Adjustment of MSR thresholds			Automatic MSR cancellation		LRF adjustment and rebasing in …							
							2023				2026			
							Rebasing							
Current rules	from 2023	Current rules	Decrease by LRF	Phase-out by	Vintage	One-off in 2025	0	150	250	350	0	150	250	350
x	–	x	–	–	–	–	–	–	–	–	–	–	–	–
–	24%	x	–	–	–	–	-	–	–	–	–	–	–	–
–	36%	x	–	–	–	–	–	–	1	1	–	–	–	–
x	–	–	x	–	–	–	–	–	–	1	–	–	–	–
–	24%	–	x	–	–	–	–	1	–	–	–	1	1	1
–	36%	–	x	–	–	–	–	–	–	–	2	2	2	3
x	–	–	–	2030	–	–	–	1	1	1	–	–	–	–
–	24%	–	–	2030	–	–	–	2	–	2	–	1	1	1
–	36%	–	–	2030	–	–	1	1	1	2	2	2	2	2
x	–	x	–	–	5a	–	–	1	1	1	–	–	–	–
–	24%	x	–	–	5a	–	1	1	1	2	–	–	1	1
–	36%	x	–	–	5a	–	1	1	2	2	–	2	2	2
x	–	–	x	–	5a	–	–	1	1	2	–	–	–	–
–	24%	–	x	–	5a	–	1	2	2	2	–	1	1	2
–	36%	–	x	–	5a	–	2	2	2	3	2	2	2	3
x	–	–	–	2030	5a	–	–	1	1	2	–	–	–	–
–	24%	–	–	2030	5a	–	1	2	2	3	–	1	1	2
–	36%	–	–	2030	5a	–	2	3	3	3	2	2	2	3
x	–	x	–	–	–	500 m	–	–	1	1	–	–	–	–
–	24%	x	–	–	–	500 m	–	1	1	2	–	–	–	–
–	36%	x	–	–	–	500 m	–	1	1	1	–	–	–	–
x	–	–	x	–	–	500 m	–	–	–	2	–	–	–	–
–	24%	–	x	–	–	500 m	–	1	–	1	–	1	1	1
–	36%	–	x	–	–	500 m	–	–	–	–	2	2	2	3
x	–	–	–	2030	–	500 m	–	1	1	2	–	–	–	–
–	24%	–	–	2030	–	500 m	–	2	1	3	–	1	1	1
–	36%	–	–	2030	–	500 m	1	1	2	3	2	2	2	2
x	–	x	–	–	5a	500 m	–	1	1	1	–	–	–	–
–	24%	x	–	–	5a	500 m	1	1	1	2	–	–	1	1
–	36%	x	–	–	5a	500 m	1	1	2	2	–	2	2	2
x	–	–	x	–	5a	500 m	–	1	1	2	–	–	–	–
–	24%	–	x	–	5a	500 m	1	2	2	2	–	1	1	2
–	36%	–	x	–	5a	500 m	2	2	2	3	2	2	2	3
x	–	–	–	2030	5a	500 m	–	1	1	2	–	–	–	–
–	24%	–	–	2030	5a	500 m	1	2	2	3	–	1	1	2
–	36%	–	–	2030	5a	500 m	2	3	3	3	2	2	2	3

Note: The number and colour indicate for how many of the baseline emission variants the emission target can be met with a +10% tolerance

» The combination of a cancellation of allowances in the MSR after five years with a one-off cancellation of an additional 500 million allowances does not lead to significantly improved results with regard to achieving the 70% reduction target by 2030.

Further adjustments to the MSR will also be necessary under the L-Recovery baseline emission scenario in order to meet the 70% reduction target.

Overview of policy options for an ETS target of 65% with a cap set at 70%

A rather unconventional option for meeting the 65% reduction target by 2030 would be to adjust the cap of the EU ETS for stationary installations based on a reduction target of 70%. Although this results in a formally more demanding cap, it reduces the need to change too many parameters with regard to the MSR and reduces overall complexity.

The **Table 4-3** provides an integrated overview of the modelling results for this reform option:

» For a cap adjustment from 2023 onwards, the results can be assessed as follows:

- In almost all cases of a cap adjustment implemented with a rebasing of at least 250 million allowances, significantly smaller changes would have to be made to the parameters of the MSR than in the other variants.
- If the MSR thresholds are adjusted at least proportionally to the cap and the intake rate remains at least at 24%, the 65% emission reduction target would be achieved even with a cap adjustment without rebasing.
- The introduction of additional cancellation mechanisms would also not be necessary to achieve the emission targets if the triggers for the MSR were adjusted at least proportionally to the cap development and the intake rate was at least 24%.

» A slightly different situation arises for the variants with a cap adjustment only in 2026:

- Provided that a rebasing of at least 250 million allowances takes place and the intake rate remains at least at 24%, the emission target would be reached even without changes to the MSR thresholds.

Table 4-3: Effects of different MSR provisions in order to meet a 65% ETS emission reduction target compared to 2005 with a cap 70% below the 2005 emission levels

(Source: Öko-Institut)

MSR intake rate		Adjustment of MSR thresholds			Automatic MSR cancellation		LRF adjustment and rebasing in …							
							2023				2026			
							Rebasing							
Current rules	from 2023	Current rules	Decrease by LRF	Phase-out by	Vintage	One-off in 2025	0	150	250	350	0	150	250	350
x	–	x	–	–	–	–	1	2	2	2	1	1	1	1
–	24%	x	–	–	–	–	2	2	2	3	1	1	3	2
–	36%	x	–	–	–	–	1	3	3	3	1	2	3	3
x	–	–	x	–	–	–	2	2	3	3	1	1	1	2
–	24%	–	x	–	–	–	3	3	3	3	2	2	3	3
–	36%	–	x	–	–	–	3	3	3	3	3	3	3	3
x	–	–	–	2030	–	–	2	2	3	3	1	1	1	2
–	24%	–	–	2030	–	–	3	3	3	3	2	2	3	3
–	36%	–	–	2030	–	–	3	3	3	3	3	3	3	3
x	–	x	–	–	5a	–	1	2	2	3	1	1	1	1
–	24%	x	–	–	5a	–	2	3	3	3	1	2	3	2
–	36%	x	–	–	5a	–	3	3	3	3	1	3	3	3
x	–	–	x	–	5a	–	2	2	3	3	1	1	1	2
–	24%	–	x	–	5a	–	3	3	3	3	2	2	3	3
–	36%	–	x	–	5a	–	3	3	3	3	3	3	3	3
x	–	–	–	2030	5a	–	2	2	3	3	1	1	1	2
–	24%	–	–	2030	5a	–	3	3	3	3	2	2	3	3
–	36%	–	–	2030	5a	–	3	3	3	3	3	3	3	3
x	–	x	–	–	–	500 m	1	2	2	3	1	1	1	1
–	24%	x	–	–	–	500 m	2	2	2	3	1	1	3	2
–	36%	x	–	–	–	500 m	1	3	3	3	1	2	3	3
x	–	–	x	–	–	500 m	2	2	3	3	1	1	1	2
–	24%	–	x	–	–	500 m	3	3	3	3	2	2	3	3
–	36%	–	x	–	–	500 m	3	3	3	3	3	3	3	3
x	–	–	–	2030	–	500 m	2	2	3	3	1	1	1	2
–	24%	–	–	2030	–	500 m	3	3	3	3	2	2	3	3
–	36%	–	–	2030	–	500 m	3	3	3	3	3	3	3	3
x	–	x	–	–	5a	500 m	1	2	2	3	1	1	1	1
–	24%	x	–	–	5a	500 m	2	3	3	3	1	2	3	2
–	36%	x	–	–	5a	500 m	3	3	3	3	1	3	3	3
x	–	–	x	–	5a	500 m	2	2	3	3	1	1	1	2
–	24%	–	x	–	5a	500 m	3	3	3	3	2	2	3	3
–	36%	–	x	–	5a	500 m	3	3	3	3	3	3	3	3
x	–	–	–	2030	5a	500 m	2	2	3	3	1	1	1	2
–	24%	–	–	2030	5a	500 m	3	3	3	3	2	2	3	3
–	36%	–	–	2030	5a	500 m	3	3	3	3	3	3	3	3

Note: The number and colour indicate for how many of the baseline emission variants the emission target can be met with a +10% tolerance

- With a reduction in the MSR triggers at least proportional to the cap and an increase in the intake rates to 36%, the emission targets could be achieved even without a cap adjustment that includes rebasing.

- The introduction of additional cancellation mechanisms would also not lead to a different situation with regard to fulfilling the target to reduce emissions by at least 65% compared to the 2005 level.

Even if the cap of the EU ETS should ideally be embedded as consistently as possible in the overall architecture of European climate protection commitments, the last presented approach, with its comparatively small number of changes of the MSR mechanisms and a reduced complexity, is very pragmatic and could make an interesting reform option.

5. Conclusions

The reform of the EU ETS is a crucial element to fulfilling the European Green Deal goals and will require reforms on different levels. First, the cap of the EU ETS will have to be adjusted to the new targets for 2030 and 2050. However, in view of the large surpluses of emission allowances in the market and the huge uncertainties about the development of baseline emissions, primarily due to the Covid-19 pandemic, limiting the reform to the cap adjustment will lead neither to a robust framework for the EU ETS, nor to the achievement of the emission targets for 2030.

Thus, the cap adjustments have to be combined with a further reform of the Market Stability Reserve (MSR) of the EU ETS as a high priority. A relatively wide range of options is available for both the adjustment of the cap and the reform of the MSR and its parameters. The challenge here is, above all, to appropriately consider the interactions between the different options.

The various reform options can be clearly stratified and the complexity of the interactions thereby reduced. This robustness check is gaining considerable importance, especially with the wide-ranging uncertainties created by the Covid-19 pandemic. This check should include the following dimensions:

- All other reform options are, of course, preceded by the question of what contribution the stationary plants regulated by the EU ETS should make to achieving the overall emission reduction target of the EU-27. The range of an emission reduction of 65% to 70% for the 2005–2030 period is under discussion.

- The next step is to adjust the cap. This has two aspects: the point in time from which the cap of the EU ETS should be adjusted; and the question of whether and to what extent rebasing should take place. As far as legally and procedurally possible, the cap adjustment should take place as early as 2023; in view of the necessary changes to the MSR, a rebasing of at least 250 million allowances should be aimed for. If the resulting linear reduction factor is extended after 2030, the EU ETS will result in a zero emissions target in the second half of the 2040s.

- With regards to the MSR reform, changes are necessary to the intake rate, the trigger values for the MSR and possibly additional cancellation mechanisms. The extent of these changes depends strongly on the adjustment of the cap; the earlier the cap is adjusted and the higher the rebasing, the less serious the need for the changes of the different MSR parameters. If the cap is adjusted early and rebasing is ambitious, it will still be necessary to maintain the intake rate of 24% and to adjust the MSR triggers proportionally to the cap. If the cap adjustment occurs later or if rebasing is less ambitious, an increase in the intake rate to 36% and a linear reduction of the MSR triggers to zero by 2030 may be necessary.

- Additional cancellation provisions in the MSR can make an important contribution to achieving the emission targets. The most consistent approach here may be a vintage model in which allowances are automatically cancelled in the MSR, e.g. five years after their transfer to the MSR.

- Finally, aligning the cap to a higher emissions target could reduce the need for changes in the parameters of the MSR. A cap reform aligned with the 70% emission reduction target for the EU ETS could ensure the achievement of the 65% emission reduction target with high robustness and rather limited needs for reform of the MSR.

Figure 5-1 and **Figure 5-2** show the trends of allocations, emissions, surplus of allowances and the MSR using two ambitious and robust reform packages for the cap of the EU ETS and the MSR (and using the U-Recovery baseline scenario in both examples):

- For the first reform package (Figure 51), the reform is geared to a cap of –65% compared to 2005 levels. The adjustment of the LRF already takes place in 2023 (to 3.55%) and is combined with a rebasing of 250 million EUAs. In addition, the MSR intake rate remains at 24%, the thresholds for the MSR are decreased in future with the LRF and, in addition, the allowances in the MSR are cancelled 5 years after their transfer to the MSR.

- For the second package, the reform is oriented towards a cap of –70% compared to 2005. The adjustment of the LRF also takes place here in 2023 (to 3.57%) and is combined with a rebasing of 350 million EUAs. The MSR intake rate remains at a level of 24%, the MSR thresholds are reduced linearly to zero by 2030, and the allowances in the MSR are also cancelled 5 years after their transfer to the MSR.

» A comparison of the two packages indicates a number of very similar trends:

- the number of allowances available to auctions is significantly lower than previously planned for the years 2023 to 2027;
- the 2030 emission targets are robustly achieved;
- the cumulative emissions for the 2021–2030 period are limited to 9.8 to 10.8 Mt CO_2e (for the cap of –65%) or to 9.4 to 10.1 Mt CO_2e (for the cap of –70%), depending on the baseline scenario;
- the surplus of allowances available to the market is reduced in a relatively steady process by 2030 (with the V-Recovery scenario, already by the mid-2020s);
- with the vintage mechanism for additional automatic cancellations of allowances in the MSR, the surplus hold in the MSR will be cancelled by the mid-2020s at the latest; in total, around 4.6 billion allowances (for the cap of –65%) and around 4.4 billion allowances (for the cap of –70%) will be cancelled by 2030.

The two example scenarios highlight very clearly that the necessary reforms of the cap of the EU ETS and the Market Stability Reserve are very time-critical. Only if they are approved or become effective at an early stage can relatively steady adjustment processes take place and the EU ETS redesigned early enough to be robust enough also for emission reductions after 2030.

Finally, the modelling exercises show that the selective analysis of a few reform options for the cap and for the MSR can easily lead to less robust results in view of the different uncertainties. The analysis of the largest possible number of options and their combinations is an important pre-requisite for a sufficiently robust assessment of the upcoming reforms.

Figure 5-1: Emissions, market supply, surplus allowances available and not available to the market and allowances cancelled for a –65% cap (LRF adjustment in 2023 with rebasing of 250 million EUAs)**, a continued 24% intake rate for the MSR with thresholds decreasing by LRF and a cancellation mechanism for MSR vintages after 5 years and the U-Recovery scenario** (Source: Öko-Institut)

Figure 5-2: Emissions, market supply, surplus allowances available and not available to the market and allowances cancelled for a –70% cap (LRF adjustment in 2023 with rebasing of 350 million EUAs)**, a continued 24% intake rate for the MSR with thresholds decreasing to zero in 2030 and a cancellation mechanism for MSR vintages after 5 years and the U-Recovery scenario** (Source: Öko-Institut)

6. References

CEC – Council of the European Union (2020a). Long-term low greenhouse gas emission development strategy of the European Union and its Member States, Submission to the UNFCCC on behalf of the European Union and its Member States (Doc 6612/20). Council of the European Union. Brussels, 5 Mar 2020. Online available at https://data.consilium.europa.eu/doc/document/ST-6612-2020-INIT/en/pdf, last accessed on 17 Feb 2021.

CEC - Council of the European Union (2020b). Submission to the UNFCCC on behalf of the European Union and its Member States on the update of the nationally determined contribution of the European Union and its Member States (Doc 14222/1/20 REV1). Council of the European Union. Brussels, 18 Dec 2020. Online available at https://data.consilium.europa.eu/doc/document/ST-14222-2020-REV-1/en/pdf, last accessed on 17 Feb 2021.

EC – European Commission (2019). The European Green Deal, Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee of the Regions (COM(2019) 640 final). European Commission. Brussels, 11 Dec 2019. Online available at https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF, last accessed on 17 Feb 2021.

EC – European Commission (2020a). Impact Assessment Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people. Commission Staff Working Document (SWD(2020) 176 final Part 1/2). European Commission. Brussels, 17 Sep 2020. Online available at https://eur-lex.europa.eu/resource.html?uri=cellar:749e04bb-f8c5-11ea-991b-01aa75ed71a1.0001.02/DOC_1&format=PDF, last accessed on 17 Feb 2021.

EC – European Commission (2020b). Impact Assessment Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Stepping up Europe's 2030 climate ambition. Investing in a climate-neutral future for the benefit of our people. Commission Staff Working Document (SWD(2020) 176 final Part 2/2). European Commission. Brussels, 17 Sep 2020. Online available at https://eur-lex.europa.eu/resource.html?uri=cellar:749e04bb-f8c5-11ea-991b-01aa75ed71a1.0001.02/DOC_2&format=PDF, last accessed on 17 Feb 2021.

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Table A-1 (1/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Current rules	-	-	-	723	11,704	933	11,416	3,580
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Current rules	-	-	-	723	11,179	933	11,416	3,123
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Current rules	-	-	-	723	10,829	933	11,416	3,017
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Current rules	-	-	-	723	10,479	865	11,175	3,053
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Current rules	-	-	-	723	12,396	933	11,416	3,913
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Current rules	-	-	-	723	12,096	933	11,416	3,818
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Current rules	-	-	-	723	11,896	933	11,416	3,718
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Current rules	-	-	-	723	11,696	933	11,416	3,692
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Current rules	-	-	-	723	11,704	933	10,548	4,089
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Current rules	-	-	-	723	11,179	933	10,548	3,832
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Current rules	-	-	-	723	10,829	933	10,548	3,516
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Current rules	-	-	-	723	10,479	933	10,548	3,322
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Current rules	-	-	-	723	12,396	933	10,548	4,351
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Current rules	-	-	-	723	12,096	933	10,548	4,283
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Current rules	-	-	-	723	11,896	933	10,548	4,238
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Current rules	-	-	-	723	11,696	933	10,548	4,192
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Current rules	-	-	-	723	11,704	752	9,794	4,237
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Current rules	-	-	-	723	11,179	752	9,794	4,006
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Current rules	-	-	-	723	10,829	752	9,794	3,852
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Current rules	-	-	-	723	10,479	752	9,794	3,491
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Current rules	-	-	-	723	12,396	752	9,794	4,500
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Current rules	-	-	-	723	12,096	752	9,794	4,432
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Current rules	-	-	-	723	11,896	752	9,794	4,386
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Current rules	-	-	-	723	11,696	752	9,794	4,341
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	-	-	-	723	11,704	933	11,416	3,707
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	-	-	-	723	11,179	933	11,416	3,389
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	-	-	-	723	10,829	933	11,416	3,175
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	-	-	-	723	10,479	854	11,197	3,176
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	-	-	-	723	12,396	933	11,416	4,394
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	-	-	-	723	12,096	933	11,416	4,127
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	-	-	-	723	11,896	933	11,416	4,118
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	-	-	-	723	11,696	933	11,416	3,949
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	-	-	-	723	11,704	933	10,548	4,621
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	-	-	-	723	11,179	933	10,548	3,931
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	-	-	-	723	10,829	933	10,548	3,818
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	-	-	-	723	10,479	933	10,548	3,557
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	-	-	-	723	12,396	933	10,548	5,159
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	-	-	-	723	12,096	933	10,548	4,907
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	-	-	-	723	11,896	933	10,548	4,846
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	-	-	-	723	11,696	933	10,548	4,785
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	-	-	-	723	11,704	752	9,794	4,948
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	-	-	-	723	11,179	752	9,794	4,252
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	-	-	-	723	10,829	752	9,794	3,885
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	-	-	-	723	10,479	752	9,794	3,594
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	-	-	-	723	12,396	752	9,794	5,475
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	-	-	-	723	12,096	752	9,794	5,330
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	-	-	-	723	11,896	752	9,794	5,177
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	-	-	-	723	11,696	752	9,794	4,965
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	-	-	-	723	11,704	933	11,416	3,837
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	-	-	-	723	11,179	865	11,215	3,696
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	-	-	-	723	10,829	878	11,252	3,412
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	-	-	-	723	10,479	766	10,950	3,411
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	-	-	-	723	12,396	933	11,416	4,256
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	-	-	-	723	12,096	933	11,416	4,307
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	-	-	-	723	11,896	910	11,349	4,341
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	-	-	-	723	11,696	865	10,995	4,417
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	-	-	-	723	11,704	933	10,548	4,587
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	-	-	-	723	11,179	933	10,548	4,332
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	-	-	-	723	10,829	933	10,548	3,991
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	-	-	-	723	10,479	912	10,486	3,896
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	-	-	-	723	12,396	933	10,548	5,195
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	-	-	-	723	12,096	933	10,548	5,158
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	-	-	-	723	11,896	912	10,487	5,135
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	-	-	-	723	11,696	933	10,548	4,912
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	-	-	-	723	11,704	752	9,794	4,982
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	-	-	-	723	11,179	752	9,794	4,428
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	-	-	-	723	10,829	752	9,794	4,044
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	-	-	-	723	10,479	752	9,794	3,950
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	-	-	-	723	12,396	752	9,794	5,729
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	-	-	-	723	12,096	752	9,794	5,316
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	-	-	-	723	11,896	752	9,794	5,291
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	-	-	-	723	11,696	752	9,794	5,266
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	-	-	-	723	11,704	933	11,416	3,651
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	-	-	-	723	11,179	837	11,131	3,437
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	-	-	-	723	10,829	808	11,024	3,230
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	-	-	-	723	10,479	807	11,022	3,080
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	-	-	-	723	12,396	933	11,416	3,913
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	-	-	-	723	12,096	933	11,416	3,845
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	-	-	-	723	11,896	933	11,416	3,800
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	-	-	-	723	11,696	933	11,416	3,754
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	-	-	-	723	11,704	933	10,548	4,089
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	-	-	-	723	11,179	933	10,548	3,857
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	-	-	-	723	10,829	933	10,548	3,703
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	-	-	-	723	10,479	891	10,423	3,552
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	-	-	-	723	12,396	933	10,548	4,351
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	-	-	-	723	12,096	933	10,548	4,283
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	-	-	-	723	11,896	933	10,548	4,238
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	-	-	-	723	11,696	933	10,548	4,192

Table A-1 (cont. 2/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	-	-	-	723	11,704	752	9,794	4,237
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	-	-	-	723	11,179	752	9,794	4,006
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	-	-	-	723	10,829	752	9,794	3,852
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	-	-	-	723	10,479	752	9,794	3,697
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	-	-	-	723	12,396	752	9,794	4,500
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	-	-	-	723	12,096	752	9,794	4,432
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	-	-	-	723	11,896	752	9,794	4,386
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	-	-	-	723	11,696	752	9,794	4,341
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	-	-	-	723	11,704	761	10,903	4,131
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	-	-	-	723	11,179	809	11,125	3,541
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	-	-	-	723	10,829	808	10,904	3,449
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	-	-	-	723	10,479	807	10,447	3,435
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	-	-	-	723	12,396	933	11,416	4,522
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	-	-	-	723	12,096	869	11,224	4,396
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	-	-	-	723	11,896	752	10,874	4,364
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	-	-	-	723	11,696	743	10,934	4,241
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	-	-	-	723	11,704	933	10,548	4,717
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	-	-	-	723	11,179	867	10,352	4,373
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	-	-	-	723	10,829	723	9,919	4,217
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	-	-	-	723	10,479	807	9,968	3,839
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	-	-	-	723	12,396	933	10,548	5,211
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	-	-	-	723	12,096	933	10,548	5,067
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	-	-	-	723	11,896	933	10,548	4,946
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	-	-	-	723	11,696	898	10,444	4,877
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	-	-	-	723	11,704	752	9,794	5,007
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	-	-	-	723	11,179	752	9,794	4,616
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	-	-	-	723	10,829	752	9,794	4,355
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	-	-	-	723	10,479	752	9,794	4,023
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	-	-	-	723	12,396	752	9,794	5,475
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	-	-	-	723	12,096	752	9,794	5,330
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	-	-	-	723	11,896	752	9,794	5,234
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	-	-	-	723	11,696	752	9,794	5,138
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	-	-	-	723	11,704	810	11,272	4,052
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	-	-	-	723	11,179	809	11,176	3,697
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	-	-	-	723	10,829	808	10,600	3,670
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	-	-	-	723	10,479	807	10,493	3,605
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	-	-	-	723	12,396	768	10,921	4,898
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	-	-	-	723	12,096	810	11,057	4,531
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	-	-	-	723	11,896	785	10,735	4,547
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	-	-	-	723	11,696	785	10,607	4,590
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	-	-	-	723	11,704	723	9,919	5,153
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	-	-	-	723	11,179	809	10,109	4,514
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	-	-	-	723	10,829	808	10,331	4,164
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	-	-	-	723	10,479	807	9,896	4,053
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	-	-	-	723	12,396	897	10,441	5,622
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	-	-	-	723	12,096	768	10,055	5,516
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	-	-	-	723	11,896	723	10,311	5,251
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	-	-	-	723	11,696	808	10,051	5,271
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	-	-	-	723	11,704	752	9,794	5,324
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	-	-	-	723	11,179	752	9,794	4,781
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	-	-	-	723	10,829	752	9,794	4,393
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	-	-	-	723	10,479	752	9,794	4,091
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	-	-	-	723	12,396	752	9,794	5,972
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	-	-	-	723	12,096	752	9,794	5,760
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	-	-	-	723	11,896	752	9,794	5,589
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	-	-	-	723	11,696	752	9,794	5,395
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	-	-	-	723	11,704	933	11,416	3,651
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	-	-	-	723	11,179	826	11,096	3,452
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	-	-	-	723	10,829	847	10,890	3,351
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	-	-	-	723	10,479	760	10,981	3,080
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	-	-	-	723	12,396	933	11,416	3,913
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	-	-	-	723	12,096	933	11,416	3,845
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	-	-	-	723	11,896	933	11,416	3,800
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	-	-	-	723	11,696	933	11,416	3,754
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	-	-	-	723	11,704	933	10,548	4,089
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	-	-	-	723	11,179	933	10,548	3,857
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	-	-	-	723	10,829	933	10,548	3,703
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	-	-	-	723	10,479	891	10,423	3,562
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	-	-	-	723	12,396	933	10,548	4,351
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	-	-	-	723	12,096	933	10,548	4,283
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	-	-	-	723	11,896	933	10,548	4,238
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	-	-	-	723	11,696	933	10,548	4,192
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	-	-	-	723	11,704	752	9,794	4,237
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	-	-	-	723	11,179	752	9,794	4,006
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	-	-	-	723	10,829	752	9,794	3,852
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	-	-	-	723	10,479	752	9,794	3,697
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	-	-	-	723	12,396	752	9,794	4,500
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	-	-	-	723	12,096	752	9,794	4,432
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	-	-	-	723	11,896	752	9,794	4,386
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	-	-	-	723	11,696	752	9,794	4,341
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	-	-	-	723	11,704	743	10,847	4,167
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	-	-	-	723	11,179	854	10,794	3,863
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	-	-	-	723	10,829	755	10,634	3,709
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	-	-	-	723	10,479	865	10,512	3,575
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	-	-	-	723	12,396	933	11,416	4,522
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	-	-	-	723	12,096	869	11,224	4,416
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	-	-	-	723	11,896	732	10,814	4,402
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	-	-	-	723	11,696	723	10,914	4,293

Table A-1 (cont. 3/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	-	-	-	723	11,704	933	10,548	4,743
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	-	-	-	723	11,179	839	10,268	4,408
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	-	-	-	723	10,829	723	9,919	4,217
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	-	-	-	723	10,479	865	10,026	3,998
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	-	-	-	723	12,396	933	10,548	5,211
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	-	-	-	723	12,096	933	10,548	5,067
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	-	-	-	723	11,896	933	10,548	4,971
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	-	-	-	723	11,696	898	10,444	4,895
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	-	-	-	723	11,704	752	9,794	5,007
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	-	-	-	723	11,179	752	9,794	4,616
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	-	-	-	723	10,829	752	9,794	4,355
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	-	-	-	723	10,479	752	9,794	4,095
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	-	-	-	723	12,396	752	9,794	5,475
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	-	-	-	723	12,096	752	9,794	5,330
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	-	-	-	723	11,896	752	9,794	5,234
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	-	-	-	723	11,696	752	9,794	5,138
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	-	-	-	723	11,704	836	10,832	4,431
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	-	-	-	723	11,179	748	11,069	3,803
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	-	-	-	723	10,829	865	10,661	3,775
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	-	-	-	723	10,479	865	10,606	3,605
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	-	-	-	723	12,396	738	10,832	4,957
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	-	-	-	723	12,096	795	10,937	4,754
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	-	-	-	723	11,896	793	10,743	4,713
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	-	-	-	723	11,696	865	10,718	4,673
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	-	-	-	723	11,704	723	9,919	5,190
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	-	-	-	723	11,179	811	10,031	4,728
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	-	-	-	723	10,829	765	10,149	4,274
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	-	-	-	723	10,479	765	9,850	4,178
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	-	-	-	723	12,396	897	10,441	5,650
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	-	-	-	723	12,096	735	9,955	5,578
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	-	-	-	723	11,896	723	10,311	5,289
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	-	-	-	723	11,696	784	9,906	5,381
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	-	-	-	723	11,704	752	9,794	5,361
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	-	-	-	723	11,179	752	9,794	4,875
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	-	-	-	723	10,829	752	9,794	4,551
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	-	-	-	723	10,479	752	9,794	4,091
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	-	-	-	723	12,396	752	9,794	5,972
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	-	-	-	723	12,096	752	9,794	5,760
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	-	-	-	723	11,896	752	9,794	5,619
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	-	-	-	723	11,696	752	9,794	5,478
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Current rules	5	-	-	723	11,704	933	11,416	3,972
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Current rules	5	-	-	723	11,179	933	11,416	3,571
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Current rules	5	-	-	723	10,829	847	11,159	3,443
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Current rules	5	-	-	723	10,479	765	10,803	3,433
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Current rules	5	-	-	723	12,396	933	11,416	4,331
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Current rules	5	-	-	723	12,096	933	11,416	4,225
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Current rules	5	-	-	723	11,896	933	11,416	4,088
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Current rules	5	-	-	723	11,696	933	11,416	4,062
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Current rules	5	-	-	723	11,704	933	10,548	4,483
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Current rules	5	-	-	723	11,179	933	10,548	4,231
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Current rules	5	-	-	723	10,829	933	10,548	3,920
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Current rules	5	-	-	723	10,479	933	10,548	3,749
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Current rules	5	-	-	723	12,396	933	10,548	4,746
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Current rules	5	-	-	723	12,096	933	10,548	4,667
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Current rules	5	-	-	723	11,896	933	10,548	4,615
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Current rules	5	-	-	723	11,696	933	10,548	4,562
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Current rules	5	-	-	723	11,704	752	9,794	4,626
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Current rules	5	-	-	723	11,179	752	9,794	4,399
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Current rules	5	-	-	723	10,829	752	9,794	4,247
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Current rules	5	-	-	723	10,479	752	9,794	3,886
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Current rules	5	-	-	723	12,396	752	9,794	4,862
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Current rules	5	-	-	723	12,096	752	9,794	4,809
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Current rules	5	-	-	723	11,896	752	9,794	4,757
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Current rules	5	-	-	723	11,696	752	9,794	4,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	5	-	-	723	11,704	933	11,416	4,135
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	5	-	-	723	11,179	811	11,052	3,829
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	5	-	-	723	10,829	765	11,067	3,586
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	5	-	-	723	10,479	765	10,729	3,568
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	5	-	-	723	12,396	933	11,416	4,734
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	5	-	-	723	12,096	933	11,416	4,496
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	5	-	-	723	11,896	881	11,262	4,479
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	5	-	-	723	11,696	892	11,293	4,266
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	5	-	-	723	11,704	933	10,548	4,940
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	5	-	-	723	11,179	933	10,548	4,301
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	5	-	-	723	10,829	933	10,548	4,197
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	5	-	-	723	10,479	883	10,400	3,926
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	5	-	-	723	12,396	933	10,548	5,510
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	5	-	-	723	12,096	933	10,548	5,193
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	5	-	-	723	11,896	933	10,548	5,142
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	5	-	-	723	11,696	933	10,548	5,090
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	5	-	-	723	11,704	752	9,794	5,304
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	5	-	-	723	11,179	752	9,794	4,590
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	5	-	-	723	10,829	752	9,794	4,248
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	5	-	-	723	10,479	752	9,794	3,952
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	5	-	-	723	12,396	752	9,794	5,814
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	5	-	-	723	12,096	752	9,794	5,667
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	5	-	-	723	11,896	752	9,794	5,511
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	5	-	-	723	11,696	752	9,794	5,235

Table A-1 (cont. 4/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	5	-	-	723	11,704	933	11,416	4,204
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	5	-	-	723	11,179	765	10,949	3,975
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	5	-	-	723	10,829	765	10,943	3,728
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	5	-	-	723	10,479	765	10,649	3,707
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	5	-	-	723	12,396	933	11,416	4,647
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	5	-	-	723	12,096	933	11,416	4,608
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	5	-	-	723	11,896	765	11,083	4,651
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	5	-	-	723	11,696	765	10,795	4,675
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	5	-	-	723	11,704	933	10,548	4,897
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	5	-	-	723	11,179	836	10,259	4,673
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	5	-	-	723	10,829	876	10,377	4,283
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	5	-	-	723	10,479	765	10,221	4,097
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	5	-	-	723	12,396	933	10,548	5,486
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	5	-	-	723	12,096	933	10,548	5,443
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	5	-	-	723	11,896	812	10,187	5,423
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	5	-	-	723	11,696	933	10,548	5,087
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	5	-	-	723	11,704	752	9,794	5,287
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	5	-	-	723	11,179	752	9,794	4,745
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	5	-	-	723	10,829	752	9,794	4,322
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	5	-	-	723	10,479	752	9,794	4,135
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	5	-	-	723	12,396	752	9,794	5,969
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	5	-	-	723	12,096	752	9,794	5,567
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	5	-	-	723	11,896	752	9,794	5,538
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	5	-	-	723	11,696	752	9,794	5,509
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	5	-	-	723	11,704	933	11,416	4,069
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	5	-	-	723	11,179	837	11,131	3,860
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	5	-	-	723	10,829	765	10,982	3,672
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	5	-	-	723	10,479	765	10,935	3,513
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	5	-	-	723	12,396	933	11,416	4,331
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	5	-	-	723	12,096	933	11,416	4,253
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	5	-	-	723	11,896	933	11,416	4,200
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	5	-	-	723	11,696	933	11,416	4,148
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	5	-	-	723	11,704	933	10,548	4,483
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	5	-	-	723	11,179	933	10,548	4,256
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	5	-	-	723	10,829	933	10,548	4,105
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	5	-	-	723	10,479	891	10,423	3,957
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	5	-	-	723	12,396	933	10,548	4,746
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	5	-	-	723	12,096	933	10,548	4,667
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	5	-	-	723	11,896	933	10,548	4,615
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	5	-	-	723	11,696	933	10,548	4,562
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	5	-	-	723	11,704	752	9,794	4,626
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	5	-	-	723	11,179	752	9,794	4,399
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	5	-	-	723	10,829	752	9,794	4,247
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	5	-	-	723	10,479	752	9,794	4,096
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	5	-	-	723	12,396	752	9,794	4,862
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	5	-	-	723	12,096	752	9,794	4,809
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	5	-	-	723	11,896	752	9,794	4,757
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	5	-	-	723	11,696	752	9,794	4,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	5	-	-	723	11,704	761	10,903	4,537
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	5	-	-	723	11,179	765	10,938	3,984
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	5	-	-	723	10,829	765	10,814	3,892
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	5	-	-	723	10,479	765	10,360	3,861
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	5	-	-	723	12,396	933	11,416	4,912
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	5	-	-	723	12,096	869	11,224	4,782
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	5	-	-	723	11,896	752	10,874	4,748
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	5	-	-	723	11,696	723	10,914	4,599
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	5	-	-	723	11,704	933	10,548	5,085
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	5	-	-	723	11,179	867	10,352	4,755
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	5	-	-	723	10,829	723	9,919	4,609
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	5	-	-	723	10,479	765	9,926	4,224
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	5	-	-	723	12,396	933	10,548	5,562
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	5	-	-	723	12,096	933	10,548	5,415
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	5	-	-	723	11,896	933	10,548	5,292
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	5	-	-	723	11,696	898	10,444	5,220
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	5	-	-	723	11,704	752	9,794	5,362
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	5	-	-	723	11,179	752	9,794	4,987
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	5	-	-	723	10,829	752	9,794	4,736
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	5	-	-	723	10,479	752	9,794	4,388
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	5	-	-	723	12,396	752	9,794	5,814
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	5	-	-	723	12,096	752	9,794	5,667
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	5	-	-	723	11,896	752	9,794	5,568
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	5	-	-	723	11,696	752	9,794	5,470
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	5	-	-	723	11,704	765	11,174	4,459
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	5	-	-	723	11,179	765	11,084	4,023
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	5	-	-	723	10,829	765	10,511	4,034
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	5	-	-	723	10,479	765	10,354	3,924
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	5	-	-	723	12,396	768	10,921	5,288
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	5	-	-	723	12,096	765	11,013	4,893
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	5	-	-	723	11,896	723	10,673	4,892
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	5	-	-	723	11,696	723	10,544	4,916
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	5	-	-	723	11,704	723	9,919	5,528
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	5	-	-	723	11,179	765	10,066	4,878
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	5	-	-	723	10,829	765	10,242	4,525
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	5	-	-	723	10,479	765	9,809	4,414
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	5	-	-	723	12,396	897	10,441	5,968
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	5	-	-	723	12,096	768	10,055	5,866
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	5	-	-	723	11,896	723	10,311	5,588
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	5	-	-	723	11,696	765	10,008	5,588

Table A-1 (cont. 5/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	5	-	-	723	11,704	752	9,794	5,685
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	5	-	-	723	11,179	752	9,794	5,127
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	5	-	-	723	10,829	752	9,794	4,763
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	5	-	-	723	10,479	752	9,794	4,447
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	5	-	-	723	12,396	752	9,794	6,302
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	5	-	-	723	12,096	752	9,794	6,096
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	5	-	-	723	11,896	752	9,794	5,929
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	5	-	-	723	11,696	752	9,794	5,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	5	-	-	723	11,704	933	11,416	4,069
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	5	-	-	723	11,179	826	11,096	3,875
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	5	-	-	723	10,829	747	10,790	3,774
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	5	-	-	723	10,479	765	10,887	3,516
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	5	-	-	723	12,396	933	11,416	4,331
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	5	-	-	723	12,096	933	11,416	4,253
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	5	-	-	723	11,896	933	11,416	4,200
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	5	-	-	723	11,696	933	11,416	4,148
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	5	-	-	723	11,704	933	10,548	4,483
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	5	-	-	723	11,179	933	10,548	4,256
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	5	-	-	723	10,829	933	10,548	4,105
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	5	-	-	723	10,479	891	10,423	3,966
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	5	-	-	723	12,396	933	10,548	4,746
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	5	-	-	723	12,096	933	10,548	4,667
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	5	-	-	723	11,896	933	10,548	4,615
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	5	-	-	723	11,696	933	10,548	4,562
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	5	-	-	723	11,704	752	9,794	4,626
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	5	-	-	723	11,179	752	9,794	4,399
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	5	-	-	723	10,829	752	9,794	4,247
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	5	-	-	723	10,479	752	9,794	4,096
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	5	-	-	723	12,396	752	9,794	4,862
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	5	-	-	723	12,096	752	9,794	4,809
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	5	-	-	723	11,896	752	9,794	4,757
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	5	-	-	723	11,696	752	9,794	4,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	5	-	-	723	11,704	743	10,847	4,573
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	5	-	-	723	11,179	754	10,694	4,277
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	5	-	-	723	10,829	765	10,543	4,133
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	5	-	-	723	10,479	765	10,410	3,979
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	5	-	-	723	12,396	933	11,416	4,912
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	5	-	-	723	12,096	869	11,224	4,803
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	5	-	-	723	11,896	732	10,814	4,785
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	5	-	-	723	11,696	723	10,914	4,672
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	5	-	-	723	11,704	933	10,548	5,111
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	5	-	-	723	11,179	839	10,268	4,790
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	5	-	-	723	10,829	723	9,919	4,609
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	5	-	-	723	10,479	765	9,926	4,395
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	5	-	-	723	12,396	933	10,548	5,562
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	5	-	-	723	12,096	933	10,548	5,415
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	5	-	-	723	11,896	933	10,548	5,317
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	5	-	-	723	11,696	898	10,444	5,239
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	5	-	-	723	11,704	752	9,794	5,362
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	5	-	-	723	11,179	752	9,794	4,987
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	5	-	-	723	10,829	752	9,794	4,736
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	5	-	-	723	10,479	752	9,794	4,486
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	5	-	-	723	12,396	752	9,794	5,814
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	5	-	-	723	12,096	752	9,794	5,667
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	5	-	-	723	11,896	752	9,794	5,568
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	5	-	-	723	11,696	752	9,794	5,470
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	5	-	-	723	11,704	736	10,732	4,843
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	5	-	-	723	11,179	765	10,986	4,140
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	5	-	-	723	10,829	765	10,561	4,199
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	5	-	-	723	10,479	765	10,406	3,960
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	5	-	-	723	12,396	738	10,832	5,347
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	5	-	-	723	12,096	723	10,865	5,144
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	5	-	-	723	11,896	723	10,673	5,103
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	5	-	-	723	11,696	723	10,544	5,062
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	5	-	-	723	11,704	723	9,919	5,564
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	5	-	-	723	11,179	723	9,943	5,117
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	5	-	-	723	10,829	731	10,049	4,675
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	5	-	-	723	10,479	765	9,750	4,600
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	5	-	-	723	12,396	897	10,441	5,996
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	5	-	-	723	12,096	735	9,955	5,928
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	5	-	-	723	11,896	723	10,311	5,644
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	5	-	-	723	11,696	723	9,844	5,730
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	5	-	-	723	11,704	752	9,794	5,722
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	5	-	-	723	11,179	752	9,794	5,257
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	5	-	-	723	10,829	752	9,794	4,947
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	5	-	-	723	10,479	752	9,794	4,540
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	5	-	-	723	12,396	752	9,794	6,302
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	5	-	-	723	12,096	752	9,794	6,096
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	5	-	-	723	11,896	752	9,794	5,958
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	5	-	-	723	11,696	752	9,794	5,821
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Current rules	-	−500	2025	723	11,704	933	11,416	3,580
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Current rules	-	−500	2025	723	11,179	933	11,416	3,493
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Current rules	-	−500	2025	723	10,829	847	11,159	3,443
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Current rules	-	−500	2025	723	10,479	765	10,803	3,433
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Current rules	-	−500	2025	723	12,396	933	11,416	3,913
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Current rules	-	−500	2025	723	12,096	933	11,416	3,818
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Current rules	-	−500	2025	723	11,896	933	11,416	3,718
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Current rules	-	−500	2025	723	11,696	933	11,416	3,692

Table A-1 (cont. 6/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Current rules	-	−500	2025	723	11,704	933	10,548	4,089
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Current rules	-	−500	2025	723	11,179	933	10,548	3,832
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Current rules	-	−500	2025	723	10,829	933	10,548	3,571
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Current rules	-	−500	2025	723	10,479	933	10,548	3,555
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Current rules	-	−500	2025	723	12,396	933	10,548	4,351
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Current rules	-	−500	2025	723	12,096	933	10,548	4,283
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Current rules	-	−500	2025	723	11,896	933	10,548	4,238
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Current rules	-	−500	2025	723	11,696	933	10,548	4,192
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Current rules	-	−500	2025	723	11,704	752	9,794	4,237
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Current rules	-	−500	2025	723	11,179	752	9,794	4,006
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Current rules	-	−500	2025	723	10,829	752	9,794	3,852
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Current rules	-	−500	2025	723	10,479	752	9,794	3,564
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Current rules	-	−500	2025	723	12,396	752	9,794	4,500
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Current rules	-	−500	2025	723	12,096	752	9,794	4,432
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Current rules	-	−500	2025	723	11,896	752	9,794	4,386
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Current rules	-	−500	2025	723	11,696	752	9,794	4,341
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	-	−500	2025	723	11,704	933	11,416	3,707
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	-	−500	2025	723	11,179	933	11,416	3,658
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	-	−500	2025	723	10,829	765	11,067	3,586
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	-	−500	2025	723	10,479	765	10,729	3,568
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	-	−500	2025	723	12,396	933	11,416	4,394
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	-	−500	2025	723	12,096	933	11,416	4,127
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	-	−500	2025	723	11,896	933	11,416	4,118
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	-	−500	2025	723	11,696	933	11,416	3,949
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	-	−500	2025	723	11,704	933	10,548	4,621
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	-	−500	2025	723	11,179	933	10,548	3,931
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	-	−500	2025	723	10,829	933	10,548	3,818
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	-	−500	2025	723	10,479	933	10,548	3,762
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	-	−500	2025	723	12,396	933	10,548	5,159
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	-	−500	2025	723	12,096	933	10,548	4,907
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	-	−500	2025	723	11,896	933	10,548	4,846
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	-	−500	2025	723	11,696	933	10,548	4,785
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	-	−500	2025	723	11,704	752	9,794	4,948
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	-	−500	2025	723	11,179	752	9,794	4,252
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	-	−500	2025	723	10,829	752	9,794	3,885
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	-	−500	2025	723	10,479	752	9,794	3,779
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	-	−500	2025	723	12,396	752	9,794	5,475
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	-	−500	2025	723	12,096	752	9,794	5,330
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	-	−500	2025	723	11,896	752	9,794	5,177
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	-	−500	2025	723	11,696	752	9,794	4,965
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	-	−500	2025	723	11,704	933	11,416	3,837
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	-	−500	2025	723	11,179	850	11,168	3,790
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	-	−500	2025	723	10,829	765	11,006	3,707
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	-	−500	2025	723	10,479	765	10,649	3,707
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	-	−500	2025	723	12,396	933	11,416	4,256
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	-	−500	2025	723	12,096	933	11,416	4,307
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	-	−500	2025	723	11,896	910	11,349	4,341
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	-	−500	2025	723	11,696	865	10,995	4,417
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	-	−500	2025	723	11,704	933	10,548	4,587
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	-	−500	2025	723	11,179	933	10,548	4,332
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	-	−500	2025	723	10,829	933	10,548	3,991
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	-	−500	2025	723	10,479	843	10,280	3,966
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	-	−500	2025	723	12,396	933	10,548	5,195
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	-	−500	2025	723	12,096	933	10,548	5,158
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	-	−500	2025	723	11,896	912	10,487	5,135
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	-	−500	2025	723	11,696	933	10,548	4,912
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	-	−500	2025	723	11,704	752	9,794	4,982
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	-	−500	2025	723	11,179	752	9,794	4,428
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	-	−500	2025	723	10,829	752	9,794	4,044
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	-	−500	2025	723	10,479	752	9,794	3,989
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	-	−500	2025	723	12,396	752	9,794	5,729
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	-	−500	2025	723	12,096	752	9,794	5,316
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	-	−500	2025	723	11,896	752	9,794	5,291
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	-	−500	2025	723	11,696	752	9,794	5,266
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	-	−500	2025	723	11,704	933	11,416	3,651
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	-	−500	2025	723	11,179	837	11,131	3,493
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	-	−500	2025	723	10,829	808	11,024	3,476
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	-	−500	2025	723	10,479	765	10,940	3,460
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	-	−500	2025	723	12,396	933	11,416	3,913
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	-	−500	2025	723	12,096	933	11,416	3,845
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	-	−500	2025	723	11,896	933	11,416	3,800
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	-	−500	2025	723	11,696	933	11,416	3,754
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	-	−500	2025	723	11,704	933	10,548	4,089
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	-	−500	2025	723	11,179	933	10,548	3,857
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	-	−500	2025	723	10,829	933	10,548	3,703
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	-	−500	2025	723	10,479	891	10,423	3,555
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	-	−500	2025	723	12,396	933	10,548	4,351
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	-	−500	2025	723	12,096	933	10,548	4,283
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	-	−500	2025	723	11,896	933	10,548	4,238
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	-	−500	2025	723	11,696	933	10,548	4,192
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	-	−500	2025	723	11,704	752	9,794	4,237
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	-	−500	2025	723	11,179	752	9,794	4,006
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	-	−500	2025	723	10,829	752	9,794	3,852
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	-	−500	2025	723	10,479	752	9,794	3,697
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	-	−500	2025	723	12,396	752	9,794	4,500
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	-	−500	2025	723	12,096	752	9,794	4,432
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	-	−500	2025	723	11,896	752	9,794	4,386
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	-	−500	2025	723	11,696	752	9,794	4,341

Table A-1 (cont. 7/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	-	−500	2025	723	11,704	761	10,903	4,131
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	-	−500	2025	723	11,179	809	11,125	3,658
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	-	−500	2025	723	10,829	808	10,904	3,649
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	-	−500	2025	723	10,479	770	10,410	3,633
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	-	−500	2025	723	12,396	933	11,416	4,522
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	-	−500	2025	723	12,096	869	11,224	4,396
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	-	−500	2025	723	11,896	752	10,874	4,364
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	-	−500	2025	723	11,696	743	10,934	4,241
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	-	−500	2025	723	11,704	933	10,548	4,717
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	-	−500	2025	723	11,179	867	10,352	4,373
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	-	−500	2025	723	10,829	723	9,919	4,217
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	-	−500	2025	723	10,479	807	9,968	3,839
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	-	−500	2025	723	12,396	933	10,548	5,211
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	-	−500	2025	723	12,096	933	10,548	5,067
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	-	−500	2025	723	11,896	933	10,548	4,946
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	-	−500	2025	723	11,696	898	10,444	4,877
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	-	−500	2025	723	11,704	752	9,794	5,007
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	-	−500	2025	723	11,179	752	9,794	4,616
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	-	−500	2025	723	10,829	752	9,794	4,355
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	-	−500	2025	723	10,479	752	9,794	4,023
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	-	−500	2025	723	12,396	752	9,794	5,475
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	-	−500	2025	723	12,096	752	9,794	5,330
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	-	−500	2025	723	11,896	752	9,794	5,234
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	-	−500	2025	723	11,696	752	9,794	5,138
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	-	−500	2025	723	11,704	810	11,272	4,052
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	-	−500	2025	723	11,179	809	11,176	3,791
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	-	−500	2025	723	10,829	808	10,600	3,813
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	-	−500	2025	723	10,479	807	10,442	3,807
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	-	−500	2025	723	12,396	768	10,921	4,898
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	-	−500	2025	723	12,096	810	11,057	4,531
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	-	−500	2025	723	11,896	785	10,735	4,547
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	-	−500	2025	723	11,696	785	10,607	4,590
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	-	−500	2025	723	11,704	723	9,919	5,153
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	-	−500	2025	723	11,179	809	10,109	4,514
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	-	−500	2025	723	10,829	808	10,331	4,164
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	-	−500	2025	723	10,479	807	9,896	4,053
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	-	−500	2025	723	12,396	897	10,441	5,622
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	-	−500	2025	723	12,096	768	10,055	5,516
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	-	−500	2025	723	11,896	723	10,311	5,251
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	-	−500	2025	723	11,696	808	10,051	5,271
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	-	−500	2025	723	11,704	752	9,794	5,324
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	-	−500	2025	723	11,179	752	9,794	4,781
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	-	−500	2025	723	10,829	752	9,794	4,393
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	-	−500	2025	723	10,479	752	9,794	4,091
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	-	−500	2025	723	12,396	752	9,794	5,972
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	-	−500	2025	723	12,096	752	9,794	5,760
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	-	−500	2025	723	11,896	752	9,794	5,589
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	-	−500	2025	723	11,696	752	9,794	5,395
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	-	−500	2025	723	11,704	933	11,416	3,651
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	-	−500	2025	723	11,179	826	11,096	3,493
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	-	−500	2025	723	10,829	847	10,890	3,476
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	-	−500	2025	723	10,479	765	10,940	3,460
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	-	−500	2025	723	12,396	933	11,416	3,913
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	-	−500	2025	723	12,096	933	11,416	3,845
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	-	−500	2025	723	11,896	933	11,416	3,800
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	-	−500	2025	723	11,696	933	11,416	3,754
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	-	−500	2025	723	11,704	933	10,548	4,089
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	-	−500	2025	723	11,179	933	10,548	3,857
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	-	−500	2025	723	10,829	933	10,548	3,703
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	-	−500	2025	723	10,479	891	10,423	3,562
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	-	−500	2025	723	12,396	933	10,548	4,351
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	-	−500	2025	723	12,096	933	10,548	4,283
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	-	−500	2025	723	11,896	933	10,548	4,238
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	-	−500	2025	723	11,696	933	10,548	4,192
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	-	−500	2025	723	11,704	752	9,794	4,237
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	-	−500	2025	723	11,179	752	9,794	4,006
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	-	−500	2025	723	10,829	752	9,794	3,852
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	-	−500	2025	723	10,479	752	9,794	3,697
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	-	−500	2025	723	12,396	752	9,794	4,500
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	-	−500	2025	723	12,096	752	9,794	4,432
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	-	−500	2025	723	11,896	752	9,794	4,386
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	-	−500	2025	723	11,696	752	9,794	4,341
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	11,704	743	10,847	4,167
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	11,179	854	10,794	3,863
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	10,829	755	10,634	3,709
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	10,479	765	10,410	3,633
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	12,396	933	11,416	4,522
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	12,096	869	11,224	4,416
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	11,896	732	10,814	4,402
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	11,696	723	10,914	4,293
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	11,704	933	10,548	4,743
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	11,179	839	10,268	4,408
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	10,829	723	9,919	4,217
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	10,479	865	10,026	3,998
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	12,396	933	10,548	5,211
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	12,096	933	10,548	5,067
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	11,896	933	10,548	4,971
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	11,696	898	10,444	4,895

Table A-1 (cont. 8/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	11,704	752	9,794	5,007
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	11,179	752	9,794	4,616
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	10,829	752	9,794	4,355
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	-	−500	2025	723	10,479	752	9,794	4,095
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	12,396	752	9,794	5,475
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	12,096	752	9,794	5,330
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	11,896	752	9,794	5,234
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	-	−500	2025	723	11,696	752	9,794	5,138
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	11,704	836	10,832	4,431
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	11,179	748	11,069	3,803
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	10,829	860	10,655	3,813
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	10,479	765	10,443	3,807
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	12,396	738	10,832	4,957
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	12,096	795	10,937	4,754
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	11,896	793	10,743	4,713
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	11,696	865	10,718	4,673
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	11,704	723	9,919	5,190
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	11,179	811	10,031	4,728
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	10,829	765	10,149	4,274
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	10,479	765	9,850	4,178
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	12,396	897	10,441	5,650
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	12,096	735	9,955	5,578
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	11,896	723	10,311	5,289
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	11,696	784	9,906	5,381
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	11,704	752	9,794	5,361
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	11,179	752	9,794	4,875
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	10,829	752	9,794	4,551
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	-	−500	2025	723	10,479	752	9,794	4,091
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	12,396	752	9,794	5,972
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	12,096	752	9,794	5,760
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	11,896	752	9,794	5,619
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	-	−500	2025	723	11,696	752	9,794	5,478
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Current rules	5	−500	2025	723	11,704	933	11,416	3,972
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Current rules	5	−500	2025	723	11,179	933	11,416	3,571
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Current rules	5	−500	2025	723	10,829	847	11,159	3,443
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Current rules	5	−500	2025	723	10,479	765	10,803	3,433
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Current rules	5	−500	2025	723	12,396	933	11,416	4,331
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Current rules	5	−500	2025	723	12,096	933	11,416	4,225
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Current rules	5	−500	2025	723	11,896	933	11,416	4,088
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Current rules	5	−500	2025	723	11,696	933	11,416	4,062
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Current rules	5	−500	2025	723	11,704	933	10,548	4,483
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Current rules	5	−500	2025	723	11,179	933	10,548	4,231
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Current rules	5	−500	2025	723	10,829	933	10,548	3,920
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Current rules	5	−500	2025	723	10,479	933	10,548	3,749
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Current rules	5	−500	2025	723	12,396	933	10,548	4,746
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Current rules	5	−500	2025	723	12,096	933	10,548	4,667
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Current rules	5	−500	2025	723	11,896	933	10,548	4,615
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Current rules	5	−500	2025	723	11,696	933	10,548	4,562
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Current rules	5	−500	2025	723	11,704	752	9,794	4,626
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Current rules	5	−500	2025	723	11,179	752	9,794	4,399
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Current rules	5	−500	2025	723	10,829	752	9,794	4,247
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Current rules	5	−500	2025	723	10,479	752	9,794	3,886
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Current rules	5	−500	2025	723	12,396	752	9,794	4,862
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Current rules	5	−500	2025	723	12,096	752	9,794	4,809
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Current rules	5	−500	2025	723	11,896	752	9,794	4,757
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Current rules	5	−500	2025	723	11,696	752	9,794	4,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	5	−500	2025	723	11,704	933	11,416	4,135
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	5	−500	2025	723	11,179	811	11,052	3,829
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	5	−500	2025	723	10,829	765	11,067	3,586
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	5	−500	2025	723	10,479	765	10,729	3,568
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	5	−500	2025	723	12,396	933	11,416	4,734
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	5	−500	2025	723	12,096	933	11,416	4,496
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	5	−500	2025	723	11,896	881	11,262	4,479
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	5	−500	2025	723	11,696	892	11,293	4,266
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	5	−500	2025	723	11,704	933	10,548	4,940
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	5	−500	2025	723	11,179	933	10,548	4,301
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	5	−500	2025	723	10,829	933	10,548	4,197
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	5	−500	2025	723	10,479	883	10,400	3,926
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	5	−500	2025	723	12,396	933	10,548	5,510
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	5	−500	2025	723	12,096	933	10,548	5,193
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	5	−500	2025	723	11,896	933	10,548	5,142
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	5	−500	2025	723	11,696	933	10,548	5,090
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	Constant 24%	5	−500	2025	723	11,704	752	9,794	5,304
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	Constant 24%	5	−500	2025	723	11,179	752	9,794	4,590
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	Constant 24%	5	−500	2025	723	10,829	752	9,794	4,248
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	Constant 24%	5	−500	2025	723	10,479	752	9,794	3,952
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	Constant 24%	5	−500	2025	723	12,396	752	9,794	5,814
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	Constant 24%	5	−500	2025	723	12,096	752	9,794	5,667
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	Constant 24%	5	−500	2025	723	11,896	752	9,794	5,511
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	Constant 24%	5	−500	2025	723	11,696	752	9,794	5,235
BSL2020 V-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	5	−500	2025	723	11,704	933	11,416	4,204
BSL2020 V-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	5	−500	2025	723	11,179	765	10,949	3,975
BSL2020 V-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	5	−500	2025	723	10,829	765	10,943	3,728
BSL2020 V-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	5	−500	2025	723	10,479	765	10,649	3,707
BSL2020 V-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	5	−500	2025	723	12,396	933	11,416	4,647
BSL2020 V-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	5	−500	2025	723	12,096	933	11,416	4,608
BSL2020 V-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	5	−500	2025	723	11,896	765	11,083	4,651
BSL2020 V-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	5	−500	2025	723	11,696	765	10,795	4,675

Table A-1 (cont. 9/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 U-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	5	−500	2025	723	11,704	933	10,548	4,897
BSL2020 U-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	5	−500	2025	723	11,179	836	10,259	4,673
BSL2020 U-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	5	−500	2025	723	10,829	876	10,377	4,283
BSL2020 U-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	5	−500	2025	723	10,479	765	10,221	4,097
BSL2020 U-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	5	−500	2025	723	12,396	933	10,548	5,486
BSL2020 U-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	5	−500	2025	723	12,096	933	10,548	5,443
BSL2020 U-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	5	−500	2025	723	11,896	812	10,187	5,423
BSL2020 U-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	5	−500	2025	723	11,696	933	10,548	5,087
BSL2020 L-Recovery	0	2023	5.15%	2023	Current rules	36% from 2023	5	−500	2025	723	11,704	752	9,794	5,287
BSL2020 L-Recovery	150	2023	4.19%	2023	Current rules	36% from 2023	5	−500	2025	723	11,179	752	9,794	4,745
BSL2020 L-Recovery	250	2023	3.55%	2023	Current rules	36% from 2023	5	−500	2025	723	10,829	752	9,794	4,322
BSL2020 L-Recovery	350	2023	2.91%	2023	Current rules	36% from 2023	5	−500	2025	723	10,479	752	9,794	4,135
BSL2020 L-Recovery	0	2026	6.92%	2026	Current rules	36% from 2023	5	−500	2025	723	12,396	752	9,794	5,969
BSL2020 L-Recovery	150	2026	5.39%	2026	Current rules	36% from 2023	5	−500	2025	723	12,096	752	9,794	5,567
BSL2020 L-Recovery	250	2026	4.36%	2026	Current rules	36% from 2023	5	−500	2025	723	11,896	752	9,794	5,538
BSL2020 L-Recovery	350	2026	3.34%	2026	Current rules	36% from 2023	5	−500	2025	723	11,696	752	9,794	5,509
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	5	−500	2025	723	11,704	933	11,416	4,069
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	5	−500	2025	723	11,179	837	11,131	3,860
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	5	−500	2025	723	10,829	765	10,982	3,672
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	5	−500	2025	723	10,479	765	10,935	3,513
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	5	−500	2025	723	12,396	933	11,416	4,331
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	5	−500	2025	723	12,096	933	11,416	4,253
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	5	−500	2025	723	11,896	933	11,416	4,200
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	5	−500	2025	723	11,696	933	11,416	4,148
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	5	−500	2025	723	11,704	933	10,548	4,483
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	5	−500	2025	723	11,179	933	10,548	4,256
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	5	−500	2025	723	10,829	933	10,548	4,105
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	5	−500	2025	723	10,479	891	10,423	3,957
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	5	−500	2025	723	12,396	933	10,548	4,746
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	5	−500	2025	723	12,096	933	10,548	4,667
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	5	−500	2025	723	11,896	933	10,548	4,615
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	5	−500	2025	723	11,696	933	10,548	4,562
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Current rules	5	−500	2025	723	11,704	752	9,794	4,626
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Current rules	5	−500	2025	723	11,179	752	9,794	4,399
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Current rules	5	−500	2025	723	10,829	752	9,794	4,247
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Current rules	5	−500	2025	723	10,479	752	9,794	4,096
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Current rules	5	−500	2025	723	12,396	752	9,794	4,862
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Current rules	5	−500	2025	723	12,096	752	9,794	4,809
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Current rules	5	−500	2025	723	11,896	752	9,794	4,757
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Current rules	5	−500	2025	723	11,696	752	9,794	4,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	5	−500	2025	723	11,704	761	10,903	4,537
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	5	−500	2025	723	11,179	765	10,938	3,984
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	5	−500	2025	723	10,829	765	10,814	3,892
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	5	−500	2025	723	10,479	765	10,360	3,861
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	5	−500	2025	723	12,396	933	11,416	4,912
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	5	−500	2025	723	12,096	869	11,224	4,782
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	5	−500	2025	723	11,896	752	10,874	4,748
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	5	−500	2025	723	11,696	723	10,914	4,599
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	5	−500	2025	723	11,704	933	10,548	5,085
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	5	−500	2025	723	11,179	867	10,352	4,755
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	5	−500	2025	723	10,829	723	9,919	4,609
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	5	−500	2025	723	10,479	765	9,926	4,224
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	5	−500	2025	723	12,396	933	10,548	5,562
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	5	−500	2025	723	12,096	933	10,548	5,415
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	5	−500	2025	723	11,896	933	10,548	5,292
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	5	−500	2025	723	11,696	898	10,444	5,220
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	Constant 24%	5	−500	2025	723	11,704	752	9,794	5,362
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	Constant 24%	5	−500	2025	723	11,179	752	9,794	4,987
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	Constant 24%	5	−500	2025	723	10,829	752	9,794	4,736
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	Constant 24%	5	−500	2025	723	10,479	752	9,794	4,388
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	Constant 24%	5	−500	2025	723	12,396	752	9,794	5,814
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	Constant 24%	5	−500	2025	723	12,096	752	9,794	5,667
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	Constant 24%	5	−500	2025	723	11,896	752	9,794	5,568
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	Constant 24%	5	−500	2025	723	11,696	752	9,794	5,470
BSL2020 V-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	5	−500	2025	723	11,704	765	11,174	4,459
BSL2020 V-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	5	−500	2025	723	11,179	765	11,084	4,023
BSL2020 V-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	5	−500	2025	723	10,829	765	10,511	4,034
BSL2020 V-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	5	−500	2025	723	10,479	765	10,354	3,924
BSL2020 V-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	5	−500	2025	723	12,396	768	10,921	5,288
BSL2020 V-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	5	−500	2025	723	12,096	765	11,013	4,893
BSL2020 V-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	5	−500	2025	723	11,896	723	10,673	4,892
BSL2020 V-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	5	−500	2025	723	11,696	723	10,544	4,916
BSL2020 U-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	5	−500	2025	723	11,704	723	9,919	5,528
BSL2020 U-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	5	−500	2025	723	11,179	765	10,066	4,878
BSL2020 U-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	5	−500	2025	723	10,829	765	10,242	4,525
BSL2020 U-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	5	−500	2025	723	10,479	765	9,809	4,414
BSL2020 U-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	5	−500	2025	723	12,396	897	10,441	5,968
BSL2020 U-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	5	−500	2025	723	12,096	768	10,055	5,866
BSL2020 U-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	5	−500	2025	723	11,896	723	10,311	5,588
BSL2020 U-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	5	−500	2025	723	11,696	765	10,008	5,588
BSL2020 L-Recovery	0	2023	5.15%	2023	Proportional cap	36% from 2023	5	−500	2025	723	11,704	752	9,794	5,685
BSL2020 L-Recovery	150	2023	4.19%	2023	Proportional cap	36% from 2023	5	−500	2025	723	11,179	752	9,794	5,127
BSL2020 L-Recovery	250	2023	3.55%	2023	Proportional cap	36% from 2023	5	−500	2025	723	10,829	752	9,794	4,763
BSL2020 L-Recovery	350	2023	2.91%	2023	Proportional cap	36% from 2023	5	−500	2025	723	10,479	752	9,794	4,447
BSL2020 L-Recovery	0	2026	6.92%	2026	Proportional cap	36% from 2023	5	−500	2025	723	12,396	752	9,794	6,302
BSL2020 L-Recovery	150	2026	5.39%	2026	Proportional cap	36% from 2023	5	−500	2025	723	12,096	752	9,794	6,096
BSL2020 L-Recovery	250	2026	4.36%	2026	Proportional cap	36% from 2023	5	−500	2025	723	11,896	752	9,794	5,929
BSL2020 L-Recovery	350	2026	3.34%	2026	Proportional cap	36% from 2023	5	−500	2025	723	11,696	752	9,794	5,704

Table A-1 (cont. 10/10): Modelling results for an EU ETS emission reduction target of 65% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	5	−500	2025	723	11,704	933	11,416	4,069
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	5	−500	2025	723	11,179	826	11,096	3,875
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	5	−500	2025	723	10,829	747	10,790	3,774
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	5	−500	2025	723	10,479	765	10,887	3,516
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	5	−500	2025	723	12,396	933	11,416	4,331
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	5	−500	2025	723	12,096	933	11,416	4,253
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	5	−500	2025	723	11,896	933	11,416	4,200
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	5	−500	2025	723	11,696	933	11,416	4,148
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	5	−500	2025	723	11,704	933	10,548	4,483
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	5	−500	2025	723	11,179	933	10,548	4,256
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	5	−500	2025	723	10,829	933	10,548	4,105
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	5	−500	2025	723	10,479	891	10,423	3,966
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	5	−500	2025	723	12,396	933	10,548	4,746
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	5	−500	2025	723	12,096	933	10,548	4,667
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	5	−500	2025	723	11,896	933	10,548	4,615
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	5	−500	2025	723	11,696	933	10,548	4,562
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Current rules	5	−500	2025	723	11,704	752	9,794	4,626
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Current rules	5	−500	2025	723	11,179	752	9,794	4,399
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Current rules	5	−500	2025	723	10,829	752	9,794	4,247
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Current rules	5	−500	2025	723	10,479	752	9,794	4,096
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Current rules	5	−500	2025	723	12,396	752	9,794	4,862
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Current rules	5	−500	2025	723	12,096	752	9,794	4,809
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Current rules	5	−500	2025	723	11,896	752	9,794	4,757
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Current rules	5	−500	2025	723	11,696	752	9,794	4,704
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	11,704	743	10,847	4,573
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	11,179	754	10,694	4,277
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	10,829	765	10,543	4,133
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	10,479	765	10,410	3,979
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	12,396	933	11,416	4,912
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	12,096	869	11,224	4,803
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	11,896	732	10,814	4,785
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	11,696	723	10,914	4,672
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	11,704	933	10,548	5,111
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	11,179	839	10,268	4,790
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	10,829	723	9,919	4,609
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	10,479	765	9,926	4,395
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	12,396	933	10,548	5,562
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	12,096	933	10,548	5,415
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	11,896	933	10,548	5,317
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	11,696	898	10,444	5,239
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	11,704	752	9,794	5,362
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	11,179	752	9,794	4,987
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	10,829	752	9,794	4,736
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	Constant 24%	5	−500	2025	723	10,479	752	9,794	4,486
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	12,396	752	9,794	5,814
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	12,096	752	9,794	5,667
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	11,896	752	9,794	5,568
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	Constant 24%	5	−500	2025	723	11,696	752	9,794	5,470
BSL2020 V-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	11,704	736	10,732	4,843
BSL2020 V-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	11,179	765	10,986	4,140
BSL2020 V-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	10,829	765	10,561	4,199
BSL2020 V-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	10,479	765	10,406	3,960
BSL2020 V-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	12,396	738	10,832	5,347
BSL2020 V-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	12,096	723	10,865	5,144
BSL2020 V-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	11,896	723	10,673	5,103
BSL2020 V-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	11,696	723	10,544	5,062
BSL2020 U-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	11,704	723	9,919	5,564
BSL2020 U-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	11,179	723	9,943	5,117
BSL2020 U-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	10,829	731	10,049	4,675
BSL2020 U-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	10,479	765	9,750	4,600
BSL2020 U-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	12,396	897	10,441	5,996
BSL2020 U-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	12,096	735	9,955	5,928
BSL2020 U-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	11,896	723	10,311	5,644
BSL2020 U-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	11,696	723	9,844	5,730
BSL2020 L-Recovery	0	2023	5.15%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	11,704	752	9,794	5,722
BSL2020 L-Recovery	150	2023	4.19%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	11,179	752	9,794	5,257
BSL2020 L-Recovery	250	2023	3.55%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	10,829	752	9,794	4,947
BSL2020 L-Recovery	350	2023	2.91%	2023	Zero by 2030	36% from 2023	5	−500	2025	723	10,479	752	9,794	4,540
BSL2020 L-Recovery	0	2026	6.92%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	12,396	752	9,794	6,302
BSL2020 L-Recovery	150	2026	5.39%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	12,096	752	9,794	6,096
BSL2020 L-Recovery	250	2026	4.36%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	11,896	752	9,794	5,958
BSL2020 L-Recovery	350	2026	3.34%	2026	Zero by 2030	36% from 2023	5	−500	2025	723	11,696	752	9,794	5,821

Table A-2 (1/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Current rules	-	-	-	620	11,240	860	11,200	3,442
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Current rules	-	-	-	620	10,715	762	11,094	3,114
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Current rules	-	-	-	620	10,365	762	10,997	3,031
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Current rules	-	-	-	620	10,015	727	10,844	3,067
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Current rules	-	-	-	620	12,087	933	11,416	3,899
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Current rules	-	-	-	620	11,787	933	11,416	3,776
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Current rules	-	-	-	620	11,587	933	11,416	3,750
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Current rules	-	-	-	620	11,387	893	11,299	3,607
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Current rules	-	-	-	620	11,240	933	10,548	4,019
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Current rules	-	-	-	620	10,715	933	10,548	3,751
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Current rules	-	-	-	620	10,365	805	10,165	3,526
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Current rules	-	-	-	620	10,015	811	10,182	3,251
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Current rules	-	-	-	620	12,087	933	10,548	4,366
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Current rules	-	-	-	620	11,787	933	10,548	4,298
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Current rules	-	-	-	620	11,587	933	10,548	4,253
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Current rules	-	-	-	620	11,387	933	10,548	4,180
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Current rules	-	-	-	620	11,240	752	9,794	4,194
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Current rules	-	-	-	620	10,715	752	9,794	3,930
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Current rules	-	-	-	620	10,365	752	9,794	3,726
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Current rules	-	-	-	620	10,015	752	9,794	3,379
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Current rules	-	-	-	620	12,087	752	9,794	4,515
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Current rules	-	-	-	620	11,787	752	9,794	4,447
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Current rules	-	-	-	620	11,587	752	9,794	4,401
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Current rules	-	-	-	620	11,387	752	9,794	4,356
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	-	-	-	620	11,240	796	11,006	3,703
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	-	-	-	620	10,715	762	10,938	3,400
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	-	-	-	620	10,365	762	10,875	3,192
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	-	-	-	620	10,015	731	10,702	3,202
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	-	-	-	620	12,087	933	11,416	4,168
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	-	-	-	620	11,787	858	11,192	4,160
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	-	-	-	620	11,587	762	10,990	4,169
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	-	-	-	620	11,387	762	11,007	3,979
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	-	-	-	620	11,240	897	10,441	4,367
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	-	-	-	620	10,715	874	10,371	3,927
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	-	-	-	620	10,365	824	10,221	3,623
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	-	-	-	620	10,015	762	10,286	3,568
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	-	-	-	620	12,087	933	10,548	5,159
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	-	-	-	620	11,787	933	10,548	4,925
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	-	-	-	620	11,587	795	10,135	4,902
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	-	-	-	620	11,387	832	10,246	4,831
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	-	-	-	620	11,240	752	9,794	4,735
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	-	-	-	620	10,715	752	9,794	4,223
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	-	-	-	620	10,365	752	9,794	3,882
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	-	-	-	620	10,015	752	9,794	3,606
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	-	-	-	620	12,087	752	9,794	5,460
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	-	-	-	620	11,787	752	9,794	5,262
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	-	-	-	620	11,587	752	9,794	5,045
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	-	-	-	620	11,387	752	9,794	4,983
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	-	-	-	620	11,240	816	11,065	3,840
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	-	-	-	620	10,715	762	10,953	3,651
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	-	-	-	620	10,365	662	10,876	3,427
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	-	-	-	620	10,015	662	10,224	3,475
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	-	-	-	620	12,087	901	11,322	4,279
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	-	-	-	620	11,787	801	11,022	4,331
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	-	-	-	620	11,587	762	10,999	4,383
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	-	-	-	620	11,387	762	10,439	4,492
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	-	-	-	620	11,240	916	10,499	4,565
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	-	-	-	620	10,715	794	10,132	4,087
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	-	-	-	620	10,365	734	10,253	3,993
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	-	-	-	620	10,015	742	9,895	3,934
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	-	-	-	620	12,087	933	10,548	5,218
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	-	-	-	620	11,787	782	10,096	5,199
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	-	-	-	620	11,587	762	9,923	5,218
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	-	-	-	620	11,387	782	10,096	5,136
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	-	-	-	620	11,240	752	9,794	4,661
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	-	-	-	620	10,715	752	9,794	4,406
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	-	-	-	620	10,365	752	9,794	4,047
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	-	-	-	620	10,015	752	9,794	3,953
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	-	-	-	620	12,087	752	9,794	5,733
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	-	-	-	620	11,787	752	9,794	5,339
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	-	-	-	620	11,587	752	9,794	5,314
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	-	-	-	620	11,387	752	9,794	5,289
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	-	-	-	620	11,240	763	10,907	3,660
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	-	-	-	620	10,715	701	10,578	3,494
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	-	-	-	620	10,365	700	10,406	3,397
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	-	-	-	620	10,015	699	10,179	3,259
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	-	-	-	620	12,087	933	11,416	3,928
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	-	-	-	620	11,787	933	11,416	3,860
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	-	-	-	620	11,587	933	11,416	3,815
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	-	-	-	620	11,387	777	10,950	3,817
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	-	-	-	620	11,240	933	10,548	4,045
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	-	-	-	620	10,715	933	10,548	3,814
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	-	-	-	620	10,365	715	9,894	3,727
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	-	-	-	620	10,015	669	9,866	3,577
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	-	-	-	620	12,087	933	10,548	4,366
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	-	-	-	620	11,787	933	10,548	4,298
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	-	-	-	620	11,587	933	10,548	4,253
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	-	-	-	620	11,387	933	10,548	4,207

Table A-2 (cont. 2/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	-	-	-	620	11,240	752	9,794	4,194
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	-	-	-	620	10,715	752	9,794	3,962
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	-	-	-	620	10,365	752	9,794	3,808
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	-	-	-	620	10,015	752	9,794	3,654
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	-	-	-	620	12,087	752	9,794	4,515
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	-	-	-	620	11,787	752	9,794	4,447
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	-	-	-	620	11,587	752	9,794	4,401
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	-	-	-	620	11,387	752	9,794	4,356
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	-	-	-	620	11,240	702	10,582	4,136
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	-	-	-	620	10,715	701	10,381	3,732
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	-	-	-	620	10,365	700	10,400	3,507
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	-	-	-	620	10,015	699	10,273	3,340
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	-	-	-	620	12,087	793	10,998	4,591
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	-	-	-	620	11,787	620	10,478	4,550
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	-	-	-	620	11,587	625	10,738	4,393
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	-	-	-	620	11,387	700	10,386	4,464
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	-	-	-	620	11,240	692	9,824	4,768
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	-	-	-	620	10,715	631	9,958	4,281
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	-	-	-	620	10,365	699	9,542	4,256
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	-	-	-	620	10,015	699	9,671	3,863
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	-	-	-	620	12,087	933	10,548	5,197
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	-	-	-	620	11,787	891	10,422	5,077
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	-	-	-	620	11,587	754	10,012	5,063
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	-	-	-	620	11,387	620	9,610	5,047
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	-	-	-	620	11,240	752	9,794	4,888
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	-	-	-	620	10,715	752	9,794	4,475
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	-	-	-	620	10,365	752	9,794	4,179
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	-	-	-	620	10,015	728	9,720	3,883
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	-	-	-	620	12,087	752	9,794	5,460
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	-	-	-	620	11,787	752	9,794	5,316
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	-	-	-	620	11,587	752	9,794	5,220
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	-	-	-	620	11,387	752	9,794	5,123
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	-	-	-	620	11,240	702	10,527	4,255
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	-	-	-	620	10,715	701	10,484	3,888
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	-	-	-	620	10,365	700	10,514	3,593
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	-	-	-	620	10,015	699	9,793	3,716
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	-	-	-	620	12,087	620	10,888	4,798
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	-	-	-	620	11,787	665	10,428	4,808
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	-	-	-	620	11,587	664	10,570	4,592
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	-	-	-	620	11,387	652	10,111	4,798
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	-	-	-	620	11,240	702	9,791	5,017
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	-	-	-	620	10,715	701	10,024	4,433
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	-	-	-	620	10,365	700	9,505	4,360
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	-	-	-	620	10,015	699	9,484	4,093
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	-	-	-	620	12,087	630	9,639	5,838
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	-	-	-	620	11,787	620	10,100	5,384
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	-	-	-	620	11,587	620	9,634	5,516
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	-	-	-	620	11,387	632	9,485	5,384
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	-	-	-	620	11,240	752	9,794	5,102
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	-	-	-	620	10,715	726	9,714	4,572
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	-	-	-	620	10,365	716	9,683	4,236
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	-	-	-	620	10,015	699	9,488	4,097
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	-	-	-	620	12,087	752	9,794	5,930
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	-	-	-	620	11,787	752	9,794	5,695
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	-	-	-	620	11,587	740	9,757	5,499
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	-	-	-	620	11,387	620	9,396	5,453
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	-	-	-	620	11,240	763	10,907	3,660
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	-	-	-	620	10,715	638	10,479	3,501
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	-	-	-	620	10,365	657	10,420	3,404
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	-	-	-	620	10,015	762	10,256	3,348
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	-	-	-	620	12,087	933	11,416	3,928
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	-	-	-	620	11,787	933	11,416	3,860
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	-	-	-	620	11,587	933	11,416	3,815
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	-	-	-	620	11,387	777	10,950	3,817
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	-	-	-	620	11,240	933	10,548	4,045
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	-	-	-	620	10,715	933	10,548	3,814
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	-	-	-	620	10,365	715	9,894	3,727
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	-	-	-	620	10,015	627	9,823	3,587
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	-	-	-	620	12,087	933	10,548	4,366
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	-	-	-	620	11,787	933	10,548	4,298
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	-	-	-	620	11,587	933	10,548	4,253
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	-	-	-	620	11,387	933	10,548	4,207
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	-	-	-	620	11,240	752	9,794	4,194
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	-	-	-	620	10,715	752	9,794	3,962
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	-	-	-	620	10,365	752	9,794	3,808
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	-	-	-	620	10,015	752	9,794	3,654
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	-	-	-	620	12,087	752	9,794	4,515
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	-	-	-	620	11,787	752	9,794	4,447
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	-	-	-	620	11,587	752	9,794	4,401
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	-	-	-	620	11,387	752	9,794	4,356
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	-	-	-	620	11,240	716	10,525	4,182
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,715	651	10,388	3,902
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,365	762	10,473	3,524
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,015	762	10,402	3,340
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	-	-	-	620	12,087	793	10,998	4,591
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,787	620	10,478	4,550
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,587	620	10,733	4,403
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,387	694	10,336	4,479

Table A-2 (cont. 3/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	-	-	-	620	11,240	692	9,824	4,768
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,715	620	9,947	4,339
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,365	703	9,546	4,256
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,015	662	9,566	4,026
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	-	-	-	620	12,087	933	10,548	5,197
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,787	891	10,422	5,077
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,587	754	10,012	5,063
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,387	620	9,610	5,047
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	-	-	-	620	11,240	752	9,794	4,888
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,715	752	9,794	4,497
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,365	752	9,792	4,237
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	-	-	-	620	10,015	620	9,396	4,055
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	-	-	-	620	12,087	752	9,794	5,460
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,787	752	9,794	5,316
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,587	752	9,794	5,220
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	-	-	-	620	11,387	752	9,794	5,123
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	-	-	-	620	11,240	645	10,525	4,400
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,715	762	10,553	3,888
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,365	762	10,636	3,593
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,015	762	9,921	3,832
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	-	-	-	620	12,087	620	10,888	4,859
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,787	641	10,404	4,909
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,587	680	10,586	4,657
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,387	762	10,230	4,860
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	-	-	-	620	11,240	690	9,670	5,160
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,715	762	9,910	4,548
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,365	649	9,512	4,506
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,015	645	9,544	4,093
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	-	-	-	620	12,087	630	9,639	5,838
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,787	620	10,100	5,442
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,587	664	9,678	5,536
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,387	620	9,473	5,478
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	-	-	-	620	11,240	721	9,698	5,211
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,715	620	9,396	4,811
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,365	752	9,564	4,492
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	-	-	-	620	10,015	671	9,493	4,097
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	-	-	-	620	12,087	752	9,794	5,930
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,787	752	9,794	5,718
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,587	704	9,648	5,619
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	-	-	-	620	11,387	620	9,396	5,550
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Current rules	5	-	-	620	11,240	860	11,200	3,843
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Current rules	5	-	-	620	10,715	662	10,994	3,565
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Current rules	5	-	-	620	10,365	662	10,797	3,442
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Current rules	5	-	-	620	10,015	662	10,280	3,434
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Current rules	5	-	-	620	12,087	933	11,416	4,270
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Current rules	5	-	-	620	11,787	933	11,416	4,104
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Current rules	5	-	-	620	11,587	933	11,416	4,078
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Current rules	5	-	-	620	11,387	893	11,299	3,956
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Current rules	5	-	-	620	11,240	933	10,548	4,366
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Current rules	5	-	-	620	10,715	933	10,548	4,079
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Current rules	5	-	-	620	10,365	805	10,165	3,894
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Current rules	5	-	-	620	10,015	711	9,882	3,635
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Current rules	5	-	-	620	12,087	933	10,548	4,714
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Current rules	5	-	-	620	11,787	933	10,548	4,635
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Current rules	5	-	-	620	11,587	933	10,548	4,583
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Current rules	5	-	-	620	11,387	933	10,548	4,503
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Current rules	5	-	-	620	11,240	752	9,794	4,535
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Current rules	5	-	-	620	10,715	752	9,794	4,276
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Current rules	5	-	-	620	10,365	752	9,794	4,046
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Current rules	5	-	-	620	10,015	752	9,794	3,762
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Current rules	5	-	-	620	12,087	752	9,794	4,848
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Current rules	5	-	-	620	11,787	752	9,794	4,778
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Current rules	5	-	-	620	11,587	752	9,794	4,725
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Current rules	5	-	-	620	11,387	752	9,794	4,673
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	5	-	-	620	11,240	662	10,946	4,109
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	5	-	-	620	10,715	662	10,538	3,817
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	5	-	-	620	10,365	662	10,375	3,583
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	5	-	-	620	10,015	662	10,333	3,568
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	5	-	-	620	12,087	933	11,416	4,520
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	5	-	-	620	11,787	758	10,892	4,499
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	5	-	-	620	11,587	662	10,890	4,488
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	5	-	-	620	11,387	662	10,907	4,270
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	5	-	-	620	11,240	897	10,441	4,675
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	5	-	-	620	10,715	774	10,071	4,272
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	5	-	-	620	10,365	724	9,921	3,972
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	5	-	-	620	10,015	662	9,886	3,913
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	5	-	-	620	12,087	933	10,548	5,463
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	5	-	-	620	11,787	933	10,548	5,173
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	5	-	-	620	11,587	795	10,135	5,148
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	5	-	-	620	11,387	832	10,246	5,090
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	5	-	-	620	11,240	752	9,794	4,991
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	5	-	-	620	10,715	752	9,794	4,534
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	5	-	-	620	10,365	752	9,794	4,219
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	5	-	-	620	10,015	752	9,794	3,940
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	5	-	-	620	12,087	752	9,794	5,753
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	5	-	-	620	11,787	752	9,794	5,552
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	5	-	-	620	11,587	752	9,794	5,266
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	5	-	-	620	11,387	752	9,794	5,215

Table A-2 (cont. 4/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	5	-	-	620	11,240	662	11,006	4,086
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	5	-	-	620	10,715	662	10,453	3,992
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	5	-	-	620	10,365	662	10,379	3,731
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	5	-	-	620	10,015	662	9,942	3,734
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	5	-	-	620	12,087	901	11,322	4,647
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	5	-	-	620	11,787	662	11,045	4,622
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	5	-	-	620	11,587	662	10,799	4,660
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	5	-	-	620	11,387	662	10,239	4,710
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	5	-	-	620	11,240	716	9,899	4,854
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	5	-	-	620	10,715	694	9,832	4,351
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	5	-	-	620	10,365	662	9,881	4,165
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	5	-	-	620	10,015	662	9,715	4,102
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	5	-	-	620	12,087	933	10,548	5,478
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	5	-	-	620	11,787	682	9,796	5,453
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	5	-	-	620	11,587	662	9,823	5,449
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	5	-	-	620	11,387	662	10,181	5,089
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	5	-	-	620	11,240	752	9,794	4,927
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	5	-	-	620	10,715	752	9,794	4,703
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	5	-	-	620	10,365	752	9,794	4,304
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	5	-	-	620	10,015	752	9,794	4,117
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	5	-	-	620	12,087	752	9,794	5,940
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	5	-	-	620	11,787	752	9,794	5,559
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	5	-	-	620	11,587	752	9,794	5,531
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	5	-	-	620	11,387	752	9,794	5,502
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	5	-	-	620	11,240	763	10,907	4,031
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	5	-	-	620	10,715	662	10,539	3,866
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	5	-	-	620	10,365	662	10,326	3,779
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	5	-	-	620	10,015	662	10,100	3,642
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	5	-	-	620	12,087	933	11,416	4,300
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	5	-	-	620	11,787	933	11,416	4,221
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	5	-	-	620	11,587	933	11,416	4,169
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	5	-	-	620	11,387	777	10,950	4,164
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	5	-	-	620	11,240	933	10,548	4,393
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	5	-	-	620	10,715	933	10,548	4,166
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	5	-	-	620	10,365	715	9,894	4,082
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	5	-	-	620	10,015	632	9,828	3,932
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	5	-	-	620	12,087	933	10,548	4,714
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	5	-	-	620	11,787	933	10,548	4,635
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	5	-	-	620	11,587	933	10,548	4,583
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	5	-	-	620	11,387	933	10,548	4,530
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	5	-	-	620	11,240	752	9,794	4,535
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	5	-	-	620	10,715	752	9,794	4,308
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	5	-	-	620	10,365	752	9,794	4,157
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	5	-	-	620	10,015	752	9,794	4,006
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	5	-	-	620	12,087	752	9,794	4,848
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	5	-	-	620	11,787	752	9,794	4,778
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	5	-	-	620	11,587	752	9,794	4,725
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	5	-	-	620	11,387	752	9,794	4,673
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	5	-	-	620	11,240	662	10,542	4,492
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	5	-	-	620	10,715	662	10,299	4,129
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	5	-	-	620	10,365	662	10,319	3,908
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	5	-	-	620	10,015	662	10,146	3,692
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	5	-	-	620	12,087	793	10,998	4,934
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	5	-	-	620	11,787	620	10,478	4,889
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	5	-	-	620	11,587	620	10,733	4,726
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	5	-	-	620	11,387	662	10,348	4,789
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	5	-	-	620	11,240	692	9,824	5,092
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	5	-	-	620	10,715	620	9,947	4,592
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	5	-	-	620	10,365	661	9,504	4,596
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	5	-	-	620	10,015	662	9,593	4,208
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	5	-	-	620	12,087	933	10,548	5,501
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	5	-	-	620	11,787	891	10,422	5,379
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	5	-	-	620	11,587	754	10,012	5,361
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	5	-	-	620	11,387	620	9,610	5,342
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	5	-	-	620	11,240	752	9,794	5,201
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	5	-	-	620	10,715	752	9,794	4,804
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	5	-	-	620	10,365	752	9,794	4,494
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	5	-	-	620	10,015	691	9,609	4,231
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	5	-	-	620	12,087	752	9,794	5,753
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	5	-	-	620	11,787	752	9,794	5,606
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	5	-	-	620	11,587	752	9,794	5,507
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	5	-	-	620	11,387	752	9,794	5,409
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	5	-	-	620	11,240	662	10,445	4,621
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	5	-	-	620	10,715	662	10,402	4,273
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	5	-	-	620	10,365	662	10,382	3,925
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	5	-	-	620	10,015	662	9,666	4,068
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	5	-	-	620	12,087	620	10,888	5,109
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	5	-	-	620	11,787	625	10,388	5,106
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	5	-	-	620	11,587	620	10,527	4,905
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	5	-	-	620	11,387	620	10,079	5,102
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	5	-	-	620	11,240	662	9,751	5,308
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	5	-	-	620	10,715	662	9,942	4,798
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	5	-	-	620	10,365	662	9,425	4,693
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	5	-	-	620	10,015	662	9,406	4,420
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	5	-	-	620	12,087	630	9,639	6,136
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	5	-	-	620	11,787	620	10,100	5,659
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	5	-	-	620	11,587	620	9,634	5,813
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	5	-	-	620	11,387	620	9,473	5,645

Table A-2 (cont. 5/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	5	-	-	620	11,240	752	9,794	5,389
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	5	-	-	620	10,715	726	9,714	4,895
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	5	-	-	620	10,365	716	9,683	4,554
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	5	-	-	620	10,015	662	9,410	4,425
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	5	-	-	620	12,087	752	9,794	6,214
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	5	-	-	620	11,787	752	9,794	5,985
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	5	-	-	620	11,587	740	9,757	5,754
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	5	-	-	620	11,387	620	9,396	5,712
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	5	-	-	620	11,240	763	10,907	4,031
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	5	-	-	620	10,715	638	10,479	3,872
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	5	-	-	620	10,365	662	10,326	3,779
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	5	-	-	620	10,015	662	10,105	3,720
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	5	-	-	620	12,087	933	11,416	4,300
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	5	-	-	620	11,787	933	11,416	4,221
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	5	-	-	620	11,587	933	11,416	4,169
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	5	-	-	620	11,387	777	10,950	4,164
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	5	-	-	620	11,240	933	10,548	4,393
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	5	-	-	620	10,715	933	10,548	4,166
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	5	-	-	620	10,365	715	9,894	4,082
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	5	-	-	620	10,015	627	9,823	3,942
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	5	-	-	620	12,087	933	10,548	4,714
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	5	-	-	620	11,787	933	10,548	4,635
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	5	-	-	620	11,587	933	10,548	4,583
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	5	-	-	620	11,387	933	10,548	4,530
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	5	-	-	620	11,240	752	9,794	4,535
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	5	-	-	620	10,715	752	9,794	4,308
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	5	-	-	620	10,365	752	9,794	4,157
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	5	-	-	620	10,015	752	9,794	4,006
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	5	-	-	620	12,087	752	9,794	4,848
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	5	-	-	620	11,787	752	9,794	4,778
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	5	-	-	620	11,587	752	9,794	4,725
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	5	-	-	620	11,387	752	9,794	4,673
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	5	-	-	620	11,240	620	10,430	4,537
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,715	662	10,299	4,271
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,365	662	10,373	3,914
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,015	662	10,194	3,734
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	5	-	-	620	12,087	793	10,998	4,934
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,787	620	10,478	4,889
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,587	620	10,733	4,737
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,387	620	10,263	4,805
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	5	-	-	620	11,240	692	9,824	5,092
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,715	620	9,947	4,675
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,365	620	9,463	4,596
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,015	654	9,466	4,379
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	5	-	-	620	12,087	933	10,548	5,501
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,787	891	10,422	5,379
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,587	754	10,012	5,361
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,387	620	9,610	5,342
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	5	-	-	620	11,240	752	9,794	5,201
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,715	752	9,794	4,825
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,365	752	9,792	4,575
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	5	-	-	620	10,015	620	9,396	4,403
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	5	-	-	620	12,087	752	9,794	5,753
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,787	752	9,794	5,606
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,587	752	9,794	5,507
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	5	-	-	620	11,387	752	9,794	5,409
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	5	-	-	620	11,240	662	10,445	4,768
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,715	662	10,453	4,273
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,365	662	10,436	3,877
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,015	662	9,721	4,220
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	5	-	-	620	12,087	620	10,888	5,201
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,787	620	10,383	5,245
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,587	620	10,527	5,003
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,387	620	10,079	5,189
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	5	-	-	620	11,240	620	9,600	5,484
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,715	620	9,718	4,916
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,365	662	9,425	4,865
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,015	662	9,461	4,477
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	5	-	-	620	12,087	630	9,639	6,136
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,787	620	10,100	5,745
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,587	620	9,634	5,833
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,387	620	9,473	5,775
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	5	-	-	620	11,240	721	9,698	5,532
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,715	620	9,396	5,152
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,365	662	9,474	4,844
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	5	-	-	620	10,015	662	9,410	4,503
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	5	-	-	620	12,087	752	9,794	6,214
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,787	752	9,794	6,008
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,587	704	9,648	5,912
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	5	-	-	620	11,387	620	9,396	5,846
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Current rules	-	−500	2025	620	11,240	860	11,200	3,489
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Current rules	-	−500	2025	620	10,715	737	11,069	3,490
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Current rules	-	−500	2025	620	10,365	662	10,797	3,442
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Current rules	-	−500	2025	620	10,015	662	10,280	3,434
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Current rules	-	−500	2025	620	12,087	933	11,416	3,899
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Current rules	-	−500	2025	620	11,787	933	11,416	3,776
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Current rules	-	−500	2025	620	11,587	933	11,416	3,750
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Current rules	-	−500	2025	620	11,387	893	11,299	3,607

Table A-2 (cont. 6/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Current rules	-	−500	2025	620	11,240	933	10,548	4,019
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Current rules	-	−500	2025	620	10,715	933	10,548	3,751
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Current rules	-	−500	2025	620	10,365	805	10,165	3,568
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Current rules	-	−500	2025	620	10,015	794	10,132	3,551
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Current rules	-	−500	2025	620	12,087	933	10,548	4,366
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Current rules	-	−500	2025	620	11,787	933	10,548	4,298
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Current rules	-	−500	2025	620	11,587	933	10,548	4,253
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Current rules	-	−500	2025	620	11,387	933	10,548	4,180
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Current rules	-	−500	2025	620	11,240	752	9,794	4,194
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Current rules	-	−500	2025	620	10,715	752	9,794	3,930
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Current rules	-	−500	2025	620	10,365	752	9,794	3,726
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Current rules	-	−500	2025	620	10,015	752	9,794	3,561
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Current rules	-	−500	2025	620	12,087	752	9,794	4,515
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Current rules	-	−500	2025	620	11,787	752	9,794	4,447
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Current rules	-	−500	2025	620	11,587	752	9,794	4,401
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Current rules	-	−500	2025	620	11,387	752	9,794	4,356
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	-	−500	2025	620	11,240	796	11,006	3,703
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	-	−500	2025	620	10,715	662	10,688	3,667
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	-	−500	2025	620	10,365	662	10,375	3,583
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	-	−500	2025	620	10,015	662	10,333	3,568
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	-	−500	2025	620	12,087	933	11,416	4,168
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	-	−500	2025	620	11,787	858	11,192	4,160
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	-	−500	2025	620	11,587	762	10,990	4,169
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	-	−500	2025	620	11,387	762	11,007	3,979
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	-	−500	2025	620	11,240	897	10,441	4,367
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	-	−500	2025	620	10,715	874	10,371	3,927
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	-	−500	2025	620	10,365	824	10,221	3,790
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	-	−500	2025	620	10,015	662	10,058	3,756
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	-	−500	2025	620	12,087	933	10,548	5,159
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	-	−500	2025	620	11,787	933	10,548	4,925
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	-	−500	2025	620	11,587	795	10,135	4,902
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	-	−500	2025	620	11,387	832	10,246	4,831
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	-	−500	2025	620	11,240	752	9,794	4,735
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	-	−500	2025	620	10,715	752	9,794	4,223
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	-	−500	2025	620	10,365	752	9,794	3,882
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	-	−500	2025	620	10,015	752	9,794	3,773
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	-	−500	2025	620	12,087	752	9,794	5,460
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	-	−500	2025	620	11,787	752	9,794	5,262
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	-	−500	2025	620	11,587	752	9,794	5,045
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	-	−500	2025	620	11,387	752	9,794	4,983
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	-	−500	2025	620	11,240	816	11,065	3,840
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	-	−500	2025	620	10,715	664	10,729	3,805
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	-	−500	2025	620	10,365	662	10,393	3,723
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	-	−500	2025	620	10,015	662	9,942	3,734
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	-	−500	2025	620	12,087	901	11,322	4,279
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	-	−500	2025	620	11,787	801	11,022	4,331
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	-	−500	2025	620	11,587	762	10,999	4,383
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	-	−500	2025	620	11,387	762	10,439	4,492
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	-	−500	2025	620	11,240	916	10,499	4,565
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	-	−500	2025	620	10,715	794	10,132	4,087
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	-	−500	2025	620	10,365	734	10,253	3,993
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	-	−500	2025	620	10,015	685	9,838	3,968
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	-	−500	2025	620	12,087	933	10,548	5,218
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	-	−500	2025	620	11,787	782	10,096	5,199
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	-	−500	2025	620	11,587	762	9,923	5,218
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	-	−500	2025	620	11,387	782	10,096	5,136
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	-	−500	2025	620	11,240	752	9,794	4,661
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	-	−500	2025	620	10,715	752	9,794	4,406
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	-	−500	2025	620	10,365	752	9,794	4,047
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	-	−500	2025	620	10,015	752	9,794	3,979
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	-	−500	2025	620	12,087	752	9,794	5,733
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	-	−500	2025	620	11,787	752	9,794	5,339
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	-	−500	2025	620	11,587	752	9,794	5,314
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	-	−500	2025	620	11,387	752	9,794	5,289
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	-	−500	2025	620	11,240	763	10,907	3,660
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	-	−500	2025	620	10,715	701	10,578	3,494
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	-	−500	2025	620	10,365	700	10,406	3,475
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	-	−500	2025	620	10,015	662	10,105	3,466
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	-	−500	2025	620	12,087	933	11,416	3,928
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	-	−500	2025	620	11,787	933	11,416	3,860
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	-	−500	2025	620	11,587	933	11,416	3,815
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	-	−500	2025	620	11,387	777	10,950	3,817
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	-	−500	2025	620	11,240	933	10,548	4,045
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	-	−500	2025	620	10,715	933	10,548	3,814
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	-	−500	2025	620	10,365	715	9,894	3,727
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	-	−500	2025	620	10,015	669	9,866	3,577
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	-	−500	2025	620	12,087	933	10,548	4,366
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	-	−500	2025	620	11,787	933	10,548	4,298
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	-	−500	2025	620	11,587	933	10,548	4,253
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	-	−500	2025	620	11,387	933	10,548	4,207
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	-	−500	2025	620	11,240	752	9,794	4,194
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	-	−500	2025	620	10,715	752	9,794	3,962
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	-	−500	2025	620	10,365	752	9,794	3,808
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	-	−500	2025	620	10,015	752	9,794	3,654
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	-	−500	2025	620	12,087	752	9,794	4,515
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	-	−500	2025	620	11,787	752	9,794	4,447
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	-	−500	2025	620	11,587	752	9,794	4,401
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	-	−500	2025	620	11,387	752	9,794	4,356

Table A-2 (cont. 7/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	-	−500	2025	620	11,240	702	10,582	4,136
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,715	701	10,381	3,732
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,365	691	10,390	3,655
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,015	669	10,194	3,630
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	-	−500	2025	620	12,087	793	10,998	4,591
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,787	620	10,478	4,550
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,587	625	10,738	4,393
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,387	700	10,386	4,464
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	-	−500	2025	620	11,240	692	9,824	4,768
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,715	631	9,958	4,281
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,365	699	9,542	4,256
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,015	699	9,671	3,863
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	-	−500	2025	620	12,087	933	10,548	5,197
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,787	891	10,422	5,077
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,587	754	10,012	5,063
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,387	620	9,610	5,047
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	-	−500	2025	620	11,240	752	9,794	4,888
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,715	752	9,794	4,475
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,365	752	9,794	4,179
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	-	−500	2025	620	10,015	728	9,720	3,883
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	-	−500	2025	620	12,087	752	9,794	5,460
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,787	752	9,794	5,316
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,587	752	9,794	5,220
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	-	−500	2025	620	11,387	752	9,794	5,123
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	-	−500	2025	620	11,240	702	10,527	4,255
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,715	701	10,484	3,888
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,365	700	10,467	3,802
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,015	699	9,744	3,844
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	-	−500	2025	620	12,087	620	10,888	4,798
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,787	665	10,428	4,808
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,587	664	10,570	4,592
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,387	652	10,111	4,798
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	-	−500	2025	620	11,240	702	9,791	5,017
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,715	701	10,024	4,433
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,365	700	9,505	4,360
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,015	699	9,484	4,093
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	-	−500	2025	620	12,087	630	9,639	5,838
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,787	620	10,100	5,384
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,587	620	9,634	5,516
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,387	632	9,485	5,384
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	-	−500	2025	620	11,240	752	9,794	5,102
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,715	726	9,714	4,572
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,365	716	9,683	4,236
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	-	−500	2025	620	10,015	699	9,488	4,097
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	-	−500	2025	620	12,087	752	9,794	5,930
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,787	752	9,794	5,695
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,587	740	9,757	5,499
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	-	−500	2025	620	11,387	620	9,396	5,453
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	-	−500	2025	620	11,240	763	10,907	3,660
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,715	638	10,479	3,501
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,365	657	10,420	3,475
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,015	662	10,105	3,466
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	-	−500	2025	620	12,087	933	11,416	3,928
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,787	933	11,416	3,860
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,587	933	11,416	3,815
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,387	777	10,950	3,817
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	-	−500	2025	620	11,240	933	10,548	4,045
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,715	933	10,548	3,814
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,365	715	9,894	3,727
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,015	627	9,823	3,587
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	-	−500	2025	620	12,087	933	10,548	4,366
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,787	933	10,548	4,298
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,587	933	10,548	4,253
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,387	933	10,548	4,207
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	-	−500	2025	620	11,240	752	9,794	4,194
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,715	752	9,794	3,962
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,365	752	9,794	3,808
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	-	−500	2025	620	10,015	752	9,794	3,654
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	-	−500	2025	620	12,087	752	9,794	4,515
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,787	752	9,794	4,447
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,587	752	9,794	4,401
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	-	−500	2025	620	11,387	752	9,794	4,356
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	11,240	716	10,525	4,182
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,715	651	10,388	3,902
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,365	680	10,390	3,655
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,015	662	10,194	3,630
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	12,087	793	10,998	4,591
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,787	620	10,478	4,550
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,587	620	10,733	4,403
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,387	694	10,336	4,479
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	11,240	692	9,824	4,768
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,715	620	9,947	4,339
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,365	703	9,546	4,256
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,015	662	9,566	4,026
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	12,087	933	10,548	5,197
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,787	891	10,422	5,077
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,587	754	10,012	5,063
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,387	620	9,610	5,047

Table A-2 (cont. 8/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	11,240	752	9,794	4,888
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,715	752	9,794	4,497
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,365	752	9,792	4,237
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	-	−500	2025	620	10,015	620	9,396	4,055
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	12,087	752	9,794	5,460
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,787	752	9,794	5,316
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,587	752	9,794	5,220
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	-	−500	2025	620	11,387	752	9,794	5,123
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	11,240	645	10,525	4,400
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,715	762	10,553	3,888
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,365	649	10,492	3,802
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,015	662	9,750	3,871
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	12,087	620	10,888	4,859
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,787	641	10,404	4,909
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,587	680	10,586	4,657
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,387	762	10,230	4,860
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	11,240	690	9,670	5,160
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,715	762	9,910	4,548
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,365	649	9,512	4,506
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,015	645	9,544	4,093
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	12,087	630	9,639	5,838
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,787	620	10,100	5,442
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,587	664	9,678	5,536
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,387	620	9,473	5,478
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	11,240	721	9,698	5,211
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,715	620	9,396	4,811
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,365	752	9,564	4,492
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	-	−500	2025	620	10,015	671	9,493	4,097
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	12,087	752	9,794	5,930
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,787	752	9,794	5,718
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,587	704	9,648	5,619
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	-	−500	2025	620	11,387	620	9,396	5,550
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Current rules	5	−500	2025	620	11,240	860	11,200	3,843
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Current rules	5	−500	2025	620	10,715	662	10,994	3,565
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Current rules	5	−500	2025	620	10,365	662	10,797	3,442
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Current rules	5	−500	2025	620	10,015	662	10,280	3,434
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Current rules	5	−500	2025	620	12,087	933	11,416	4,270
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Current rules	5	−500	2025	620	11,787	933	11,416	4,104
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Current rules	5	−500	2025	620	11,587	933	11,416	4,078
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Current rules	5	−500	2025	620	11,387	893	11,299	3,956
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Current rules	5	−500	2025	620	11,240	933	10,548	4,366
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Current rules	5	−500	2025	620	10,715	933	10,548	4,079
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Current rules	5	−500	2025	620	10,365	805	10,165	3,894
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Current rules	5	−500	2025	620	10,015	711	9,882	3,635
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Current rules	5	−500	2025	620	12,087	933	10,548	4,714
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Current rules	5	−500	2025	620	11,787	933	10,548	4,635
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Current rules	5	−500	2025	620	11,587	933	10,548	4,583
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Current rules	5	−500	2025	620	11,387	933	10,548	4,503
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Current rules	5	−500	2025	620	11,240	752	9,794	4,535
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Current rules	5	−500	2025	620	10,715	752	9,794	4,276
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Current rules	5	−500	2025	620	10,365	752	9,794	4,046
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Current rules	5	−500	2025	620	10,015	752	9,794	3,762
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Current rules	5	−500	2025	620	12,087	752	9,794	4,848
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Current rules	5	−500	2025	620	11,787	752	9,794	4,778
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Current rules	5	−500	2025	620	11,587	752	9,794	4,725
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Current rules	5	−500	2025	620	11,387	752	9,794	4,673
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	5	−500	2025	620	11,240	662	10,946	4,109
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	5	−500	2025	620	10,715	662	10,538	3,817
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	5	−500	2025	620	10,365	662	10,375	3,583
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	5	−500	2025	620	10,015	662	10,333	3,568
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	5	−500	2025	620	12,087	933	11,416	4,520
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	5	−500	2025	620	11,787	758	10,892	4,499
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	5	−500	2025	620	11,587	662	10,890	4,488
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	5	−500	2025	620	11,387	662	10,907	4,270
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	5	−500	2025	620	11,240	897	10,441	4,675
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	5	−500	2025	620	10,715	774	10,071	4,272
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	5	−500	2025	620	10,365	724	9,921	3,972
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	5	−500	2025	620	10,015	662	9,886	3,913
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	5	−500	2025	620	12,087	933	10,548	5,463
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	5	−500	2025	620	11,787	933	10,548	5,173
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	5	−500	2025	620	11,587	795	10,135	5,148
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	5	−500	2025	620	11,387	832	10,246	5,090
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	Constant 24%	5	−500	2025	620	11,240	752	9,794	4,991
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	Constant 24%	5	−500	2025	620	10,715	752	9,794	4,534
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	Constant 24%	5	−500	2025	620	10,365	752	9,794	4,219
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	Constant 24%	5	−500	2025	620	10,015	752	9,794	3,940
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	Constant 24%	5	−500	2025	620	12,087	752	9,794	5,753
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	Constant 24%	5	−500	2025	620	11,787	752	9,794	5,552
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	Constant 24%	5	−500	2025	620	11,587	752	9,794	5,266
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	Constant 24%	5	−500	2025	620	11,387	752	9,794	5,215
BSL2020 V-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	5	−500	2025	620	11,240	662	11,006	4,086
BSL2020 V-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	5	−500	2025	620	10,715	662	10,453	3,992
BSL2020 V-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	5	−500	2025	620	10,365	662	10,379	3,731
BSL2020 V-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	5	−500	2025	620	10,015	662	9,942	3,734
BSL2020 V-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	5	−500	2025	620	12,087	901	11,322	4,647
BSL2020 V-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	5	−500	2025	620	11,787	662	11,045	4,622
BSL2020 V-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	5	−500	2025	620	11,587	662	10,799	4,660
BSL2020 V-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	5	−500	2025	620	11,387	662	10,239	4,710

Table A-2 (cont. 9/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 U-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	5	−500	2025	620	11,240	716	9,899	4,854
BSL2020 U-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	5	−500	2025	620	10,715	694	9,832	4,351
BSL2020 U-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	5	−500	2025	620	10,365	662	9,881	4,165
BSL2020 U-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	5	−500	2025	620	10,015	662	9,715	4,102
BSL2020 U-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	5	−500	2025	620	12,087	933	10,548	5,478
BSL2020 U-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	5	−500	2025	620	11,787	682	9,796	5,453
BSL2020 U-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	5	−500	2025	620	11,587	662	9,823	5,449
BSL2020 U-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	5	−500	2025	620	11,387	662	10,181	5,089
BSL2020 L-Recovery	0	2023	5.81%	2023	Current rules	36% from 2023	5	−500	2025	620	11,240	752	9,794	4,927
BSL2020 L-Recovery	150	2023	4.85%	2023	Current rules	36% from 2023	5	−500	2025	620	10,715	752	9,794	4,703
BSL2020 L-Recovery	250	2023	4.21%	2023	Current rules	36% from 2023	5	−500	2025	620	10,365	752	9,794	4,304
BSL2020 L-Recovery	350	2023	3.57%	2023	Current rules	36% from 2023	5	−500	2025	620	10,015	752	9,794	4,117
BSL2020 L-Recovery	0	2026	7.98%	2026	Current rules	36% from 2023	5	−500	2025	620	12,087	752	9,794	5,940
BSL2020 L-Recovery	150	2026	6.44%	2026	Current rules	36% from 2023	5	−500	2025	620	11,787	752	9,794	5,559
BSL2020 L-Recovery	250	2026	5.42%	2026	Current rules	36% from 2023	5	−500	2025	620	11,587	752	9,794	5,531
BSL2020 L-Recovery	350	2026	4.40%	2026	Current rules	36% from 2023	5	−500	2025	620	11,387	752	9,794	5,502
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	5	−500	2025	620	11,240	763	10,907	4,031
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	5	−500	2025	620	10,715	662	10,539	3,866
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	5	−500	2025	620	10,365	662	10,326	3,779
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	5	−500	2025	620	10,015	662	10,100	3,642
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	5	−500	2025	620	12,087	933	11,416	4,300
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	5	−500	2025	620	11,787	933	11,416	4,221
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	5	−500	2025	620	11,587	933	11,416	4,169
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	5	−500	2025	620	11,387	777	10,950	4,164
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	5	−500	2025	620	11,240	933	10,548	4,393
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	5	−500	2025	620	10,715	933	10,548	4,166
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	5	−500	2025	620	10,365	715	9,894	4,082
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	5	−500	2025	620	10,015	632	9,828	3,932
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	5	−500	2025	620	12,087	933	10,548	4,714
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	5	−500	2025	620	11,787	933	10,548	4,635
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	5	−500	2025	620	11,587	933	10,548	4,583
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	5	−500	2025	620	11,387	933	10,548	4,530
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Current rules	5	−500	2025	620	11,240	752	9,794	4,535
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Current rules	5	−500	2025	620	10,715	752	9,794	4,308
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Current rules	5	−500	2025	620	10,365	752	9,794	4,157
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Current rules	5	−500	2025	620	10,015	752	9,794	4,006
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Current rules	5	−500	2025	620	12,087	752	9,794	4,848
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Current rules	5	−500	2025	620	11,787	752	9,794	4,778
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Current rules	5	−500	2025	620	11,587	752	9,794	4,725
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Current rules	5	−500	2025	620	11,387	752	9,794	4,673
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	5	−500	2025	620	11,240	662	10,542	4,492
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,715	662	10,299	4,129
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,365	662	10,319	3,908
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,015	662	10,146	3,692
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	5	−500	2025	620	12,087	793	10,998	4,934
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,787	620	10,478	4,889
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,587	620	10,733	4,726
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,387	662	10,348	4,789
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	5	−500	2025	620	11,240	692	9,824	5,092
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,715	620	9,947	4,592
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,365	661	9,504	4,596
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,015	662	9,593	4,208
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	5	−500	2025	620	12,087	933	10,548	5,501
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,787	891	10,422	5,379
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,587	754	10,012	5,361
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,387	620	9,610	5,342
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	Constant 24%	5	−500	2025	620	11,240	752	9,794	5,201
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,715	752	9,794	4,804
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,365	752	9,794	4,494
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	Constant 24%	5	−500	2025	620	10,015	691	9,609	4,231
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	Constant 24%	5	−500	2025	620	12,087	752	9,794	5,753
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,787	752	9,794	5,606
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,587	752	9,794	5,507
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	Constant 24%	5	−500	2025	620	11,387	752	9,794	5,409
BSL2020 V-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	5	−500	2025	620	11,240	662	10,445	4,621
BSL2020 V-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,715	662	10,402	4,273
BSL2020 V-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,365	662	10,382	3,925
BSL2020 V-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,015	662	9,666	4,068
BSL2020 V-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	5	−500	2025	620	12,087	620	10,888	5,109
BSL2020 V-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,787	625	10,388	5,106
BSL2020 V-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,587	620	10,527	4,905
BSL2020 V-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,387	620	10,079	5,102
BSL2020 U-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	5	−500	2025	620	11,240	662	9,751	5,308
BSL2020 U-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,715	662	9,942	4,798
BSL2020 U-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,365	662	9,425	4,693
BSL2020 U-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,015	662	9,406	4,420
BSL2020 U-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	5	−500	2025	620	12,087	630	9,639	6,136
BSL2020 U-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,787	620	10,100	5,659
BSL2020 U-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,587	620	9,634	5,813
BSL2020 U-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,387	620	9,473	5,645
BSL2020 L-Recovery	0	2023	5.81%	2023	Proportional cap	36% from 2023	5	−500	2025	620	11,240	752	9,794	5,389
BSL2020 L-Recovery	150	2023	4.85%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,715	726	9,714	4,895
BSL2020 L-Recovery	250	2023	4.21%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,365	716	9,683	4,554
BSL2020 L-Recovery	350	2023	3.57%	2023	Proportional cap	36% from 2023	5	−500	2025	620	10,015	662	9,410	4,425
BSL2020 L-Recovery	0	2026	7.98%	2026	Proportional cap	36% from 2023	5	−500	2025	620	12,087	752	9,794	6,214
BSL2020 L-Recovery	150	2026	6.44%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,787	752	9,794	5,985
BSL2020 L-Recovery	250	2026	5.42%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,587	740	9,757	5,754
BSL2020 L-Recovery	350	2026	4.40%	2026	Proportional cap	36% from 2023	5	−500	2025	620	11,387	620	9,396	5,712

Table A-2 (cont. 10/10): Modelling results for an EU ETS emission reduction target of 70% and different cap and MSR reform options, 2021–2030 (Source: Öko-Institut)

Baseline	Rebasing		LRF adjustment		MSR		Automatic MSR cancellation			Cap		Emissions		Cancellation
		in		from	thresholds	intake rate	vintage	one-off	in	2030	2021–2030	2030	2021–2030	2021–2030
							years			Mt CO_2e		million EUA		
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	5	−500	2025	620	11,240	763	10,907	4,031
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,715	638	10,479	3,872
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,365	662	10,326	3,779
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,015	662	10,105	3,720
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	5	−500	2025	620	12,087	933	11,416	4,300
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,787	933	11,416	4,221
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,587	933	11,416	4,169
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,387	777	10,950	4,164
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	5	−500	2025	620	11,240	933	10,548	4,393
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,715	933	10,548	4,166
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,365	715	9,894	4,082
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,015	627	9,823	3,942
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	5	−500	2025	620	12,087	933	10,548	4,714
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,787	933	10,548	4,635
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,587	933	10,548	4,583
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,387	933	10,548	4,530
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Current rules	5	−500	2025	620	11,240	752	9,794	4,535
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,715	752	9,794	4,308
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,365	752	9,794	4,157
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Current rules	5	−500	2025	620	10,015	752	9,794	4,006
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Current rules	5	−500	2025	620	12,087	752	9,794	4,848
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,787	752	9,794	4,778
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,587	752	9,794	4,725
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Current rules	5	−500	2025	620	11,387	752	9,794	4,673
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	11,240	620	10,430	4,537
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,715	662	10,299	4,271
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,365	662	10,373	3,914
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,015	662	10,194	3,734
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	12,087	793	10,998	4,934
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,787	620	10,478	4,889
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,587	620	10,733	4,737
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,387	620	10,263	4,805
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	11,240	692	9,824	5,092
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,715	620	9,947	4,675
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,365	620	9,463	4,596
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,015	654	9,466	4,379
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	12,087	933	10,548	5,501
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,787	891	10,422	5,379
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,587	754	10,012	5,361
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,387	620	9,610	5,342
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	11,240	752	9,794	5,201
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,715	752	9,794	4,825
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,365	752	9,792	4,575
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	Constant 24%	5	−500	2025	620	10,015	620	9,396	4,403
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	12,087	752	9,794	5,753
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,787	752	9,794	5,606
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,587	752	9,794	5,507
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	Constant 24%	5	−500	2025	620	11,387	752	9,794	5,409
BSL2020 V-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	11,240	662	10,445	4,768
BSL2020 V-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,715	662	10,453	4,273
BSL2020 V-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,365	662	10,436	3,877
BSL2020 V-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,015	662	9,721	4,220
BSL2020 V-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	12,087	620	10,888	5,201
BSL2020 V-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,787	620	10,383	5,245
BSL2020 V-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,587	620	10,527	5,003
BSL2020 V-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,387	620	10,079	5,189
BSL2020 U-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	11,240	620	9,600	5,484
BSL2020 U-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,715	620	9,718	4,916
BSL2020 U-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,365	662	9,425	4,865
BSL2020 U-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,015	662	9,461	4,477
BSL2020 U-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	12,087	630	9,639	6,136
BSL2020 U-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,787	620	10,100	5,745
BSL2020 U-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,587	620	9,634	5,833
BSL2020 U-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,387	620	9,473	5,775
BSL2020 L-Recovery	0	2023	5.81%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	11,240	721	9,698	5,532
BSL2020 L-Recovery	150	2023	4.85%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,715	620	9,396	5,152
BSL2020 L-Recovery	250	2023	4.21%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,365	662	9,474	4,844
BSL2020 L-Recovery	350	2023	3.57%	2023	Zero by 2030	36% from 2023	5	−500	2025	620	10,015	662	9,410	4,503
BSL2020 L-Recovery	0	2026	7.98%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	12,087	752	9,794	6,214
BSL2020 L-Recovery	150	2026	6.44%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,787	752	9,794	6,008
BSL2020 L-Recovery	250	2026	5.42%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,587	704	9,648	5,912
BSL2020 L-Recovery	350	2026	4.40%	2026	Zero by 2030	36% from 2023	5	−500	2025	620	11,387	620	9,396	5,846

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