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# Towards a more just allocation of the Just Transition Fund

An analysis of the allocation criteria of the funds among Member States



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## An analysis of the allocation criteria of the funds among Member States

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## Executive Summary

Based on the methodology described in Annex I of the Regulation for the Just Transition Fund, a simulation tool was developed and used to estimate the allocation of the Just Transition Fund among Member States in EU-27. Using the same data as those used by the European Commission, the tool was validated through comparison of its results with those of the first proposal by the European Commission. It was subsequently employed to predict the allocation of funds in the more recent, amended proposal by the European Commission, as well as to comparatively evaluate the quantitative effects of five key amendments that have already been tabled by MEPs in the various Committees of the European Parliament.

The results of the analysis show that:

1. The increase in the size of the Just Transition Fund does not remedy the **injustice in the allocation of funds** caused by the poor selection of criteria, which reward climate laggards and fail to channel the funds to the more ambitious Member States facing urgent transition needs.
2. **Increasing the weight of the criterion on the employment in mining** leaves the share that Poland receives intact, but further increases the support towards the five Member States which have not yet committed to a specific date for phasing out coal and lignite (RO, CZ, BG, SI, HR), thus deteriorating the fairness of the allocation.
3. **Augmenting the scope of the employment in mining criterion** to also include employees in coal and lignite plants in addition to miners, renders the allocation more just as it increases the total amount Member States with ambitious coal phase out commitments receive.
4. **Increasing the correction factor for the GNI per capita** shifts funds from the economically stronger Member States such as Germany (-€626,8 million) and the Netherlands (-€178,6 million) towards the economically weaker Member States, such as Romania (+€263,7 million), Bulgaria (+€183,1 million) and Czechia (+€99,1 million).
5. The inclusion of a **new unemployment criterion for coal regions** leaves Poland and the six Member States for which the minimum aid intensity correction is activated (BE, DK, FR, LU, AT, SE), unaffected. However, it increases the shares of Greece, Spain and Croatia, which have the highest unemployment rates in their coal and lignite regions, whereas Germany, Czechia and Romania receive less compared to the EC's amended proposal.
6. The inclusion of a **new criterion on the transition speed** renders the allocation of funds more just, since it increases the total amount the 13 most ambitious Member States receive by €1,4 billion, while it reduces the amount dedicated to the seven more unambitious Member States by €1,1 billion. Since Greece, Portugal and Slovakia have the highest transition speeds, they benefit the most from the introduction of this new criterion. The same is also true for Hungary, Bulgaria and Slovenia. On the other hand, Germany, Romania and Czechia stand to lose the most due to their unambitious coal phase out commitments.

The analysis results show that a more just allocation of the Just Transition Fund among Member States, which prioritizes regions with more significant or more urgent transition needs, is perfectly possible. This shift can be achieved in a variety of ways especially if several amendments among those tabled so far are combined.

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## Introduction

On January 14, 2020, the European Commission (EC) presented its proposal for a Regulation for the Just Transition Fund (JTF)<sup>1</sup>. The total size of the fund was €7,5 billion originating from the next Multiannual Financial Framework (MFF) for the 2021-2027 period. The EC proposal contained also the allocation of the JTF among the 27 Member States, which was obtained through the application of five criteria followed by the application of two corrections, one for the GNI per capita and the other aiming at maintaining a certain minimum aid intensity for each Member State.

However, the allocation of the JTF resulted in offering the bulk of the funds to Member States which had either not promised to comply with the 2050 climate neutrality objective as expressed in the European Green Deal or had not committed to phase out the most polluting fuels, such as coal and lignite, by 2030, or both, leaving Member States with ambitious coal phase out goals, with the remains.

Clearly the source of this injustice was the selection of the specific criteria which did not take into account the urgency or the magnitude of the transition challenge that the 96 coal regions across the EU-27 are already or will be facing soon, due to the irreversible, accelerated collapse of coal production in the EU<sup>2</sup>.

On May 27 2020, the European Commission announced a strong €750 billion recovery package to help the Member States address the economic consequences of the unprecedented COVID-19 crisis<sup>3</sup>. Recognizing the need for further boosting the regions in transition to cope with the crisis, the European Commission allocated €30 billion of the recovery package to the Just Transition Fund and further increased the contribution of the MFF to the JTF by €2,5 billion. As a result, the JTF is now comprised of “fresh money” in the total amount of €40 billion without any leveraging.

The increase in the size of the JTF was an almost unanimous request from all Committees of the European Parliament involved with the file and was duly welcomed by almost all MEPs working on the file. However, the EC's new proposal left the original five allocation criteria untouched despite protests by many Member States for lack of fairness, as well as several relevant amendments on the criteria that had already been tabled as part of the process in the European Parliament. Consequently, the relative shares of the 27 Member States were left practically unchanged compared to the original proposal; therefore, the associated injustices remained intact.

Meanwhile the Croatian Presidency secured a partial mandate of the Council on the Just Transition Fund file, which, however, does not include agreement on the allocation criteria in

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<sup>1</sup> European Commission, 14.1.2020. Press Release. “Financing the green transition: The European Green Deal Investment Plan and Just Transition Mechanism”; European Commission 14.1.2020. Proposal for a Regulation of the European Parliament and of the Council establishing the Just Transition Fund COM(2020) 22 final, <https://bit.ly/2CN47wl>

<sup>2</sup> Agora Energiewende and Sandbag. February 2020. “The European Power Sector in 2019” <https://bit.ly/3eLiiAm>

<sup>3</sup> European Commission, 27.5.2020. Press Release. “Europe's moment: Repair and prepare for the next generation”. <https://bit.ly/3dPUu1u>

Annex I. Therefore, any changes in the criteria will be examined by the Council during the German Presidency. The political process in the European Parliament is escalating with the vote in the leading REGI Committee, which will be followed by a vote in the Plenary sometime in the fall, when the trilogue negotiations between the Council, the European Parliament and the European Commission will also commence.

Therefore, in order to inform the debate on the upcoming negotiations on the Just Transition Fund Regulation, it is both meaningful and timely to analyze the effect of various amendments in the allocation criteria which have already been proposed in the Committees of the European Parliament.

To perform the analysis a simulation tool was developed and was validated through its comparison with the allocation of funds presented in detail by the European Commission in its original proposal as presented in the section that immediately follows. The simulation tool was then used to predict the allocation of the JTF based on the increased €40 billion (in 2018 prices) budget recently announced by the Commission, and to comparatively evaluate the effect of key amendments in the allocation criteria that have already been tabled in the various Committees of the European Parliament. The results are presented in the following sections. Main findings are summarized and conclusions are presented in the final section of the report.

## The first proposal by the European Commission

The European Commission originally proposed the five following criteria for the allocation of the Just Transition Fund among the 27 Member States:

1. Greenhouse gas emissions of industrial facilities in regions where the carbon intensity of those emissions exceeds the EU average (weighting 49%).
2. The level of employment in the mining of coal and lignite (weighting 25%).
3. The level of employment in industry in the regions referred to under point 1 (weighting 25%).
4. The production of peat (weighting 0,95%).
5. The production of oil shale (weighting 0,05%).

According to the methodology presented by the European Commission in Annex I of the proposed Regulation, the allocations of the €7,5 billion original budget, resulting from the application of the five criteria are subsequently adjusted to ensure that no Member State receives an amount exceeding €2 billion. The amounts exceeding €2 billion per Member State are redistributed proportionally to the allocations of all other Member States.

The resulting Member State shares are then corrected negatively or positively by a coefficient of 1,5 times of the difference by which that Member State's GNI per capita (measured in purchasing power parities) for the period 2015-2017 exceed or fall below the average GNI per capita of the EU-27 Member States (average expressed as 100%). This correction does not apply to Member States for which the allocation has been capped in accordance with the previous step.

Finally, the resulting allocations are adjusted once again to ensure that the final allocation from the JTF leads to a per capita aid intensity (measured on the basis of the entire population of the Member State) of at least €6 over the entire period. The amounts to ensure the minimum aid intensity are then deducted proportionally from the allocations of all the other Member States, except those for which the allocation has been capped in the previous step.

Using the same data as the European Commission<sup>4</sup> and applying the aforementioned methodology, the shares of each Member State were computed and compared with the EC's corresponding results. As Table 1 shows, the differences are very small and can be attributed to rounding errors; thus, validating the model.

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<sup>4</sup> European Commission, 15.1.2020 "Allocation method for the Just Transition Fund", <https://bit.ly/3igm2M6>

**Table 1:** Allocation of the Just Transition Fund based on the European Commission's original proposal as predicted by the model (second column) and the European Commission (third column)

<b>Member State</b>	<b>Model Results (million €)</b>	<b>European Commission (million €)</b>
BE	68,4	68,4
BG	457,2	458,2
CZ	579,7	580,8
DK	34,7	34,7
DE	889,5	876,6
EE	124,6	125,2
IE	29,3	29,9
EL	293,2	293,6
ES	307,7	307,4
FR	401,5	401,6
HR	65,8	65,8
IT	361,6	364,3
CY	35,7	35,8
LV	67,7	67,8
LT	96,2	96,7
LU	3,6	3,6
HU	91,5	92,4
MT	8,2	8,2
NL	219,0	220,5
AT	52,9	52,9
PL	2.000,0	2.000,0
PT	79,0	79,2
RO	755,2	757,1
SI	91,3	91,5
SK	162,4	162,4
FI	163,4	164,8
SE	60,7	60,7
<b>Total</b>	<b>7.500,0</b>	<b>7.500,0</b>

Based on the use of coal and coal phase out commitments, one can identify three categories in which the EU-27 Member States can be separated:

- **Category I:** Member States which had no coal or lignite in their electricity mix when the EC proposal for the JTF Regulation was presented (MT, CY, EE, LV, LT, LU, BE).
- **Category II:** Member States which have committed to phase out coal and lignite from their electricity mix by 2030 at the latest (DK, IE, EL, ES, FR, IT, HU, NL, AT, PT, SK, FI, SE)
- **Category III:** Member States which had not made any commitments to phase out coal and lignite (BG, RO, CZ, SI, HR, PL) or the phase out date is beyond 2030 (DE).



Simple addition of the results presented in Table I, shows that almost two thirds of the JTF (€4,84 billion) were offered to the seven Member States of Category III which have either not committed to phase out coal or have set a phase out date beyond 2030. Only 30% of the fund (€2,26 billion) was allocated to the 13 Member States of Category II that have made bold commitments to phase out coal and lignite before 2030, whereas the remaining €404 million were allocated to those Member States of Category I that have no coal or lignite in their electricity mix.

## The amended proposal by the European Commission

The amended proposal for the Just Transition Fund Regulation<sup>5</sup> was unveiled on May 27, 2020. Compared to the first proposal, the European Commission made the following three changes:

1. Increased the size of the JTF from €7,5 billion to €40 billion in 2018 prices.
2. Set the maximum amount that a Member State could receive to €8 billion from €2 billion in the original proposal. Despite the quadrupling of the absolute value of the maximum amount, the corresponding maximum share of the JTF decreased from 26,67% in the original proposal to 20% in the amended proposal.
3. Increased the minimum aid intensity from €6 to €32 per capita, by the exact same factor (5,33) as the increase in the overall size of the JTF.

Table 2 shows the allocation of funds among the Member States, and the corresponding shares as predicted by the model after the application of the abovementioned changes. For comparison purposes, Table 2 also shows the corresponding shares from the original proposal.

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<sup>5</sup> European Commission. 27.5.2020. Amended proposal for a Regulation of the European Parliament and of the council establishing the Just Transition Fund COM2020 460 (final), <https://bit.ly/3ibiRkd>

**Table 2:** Allocation of the Just Transition Fund based on the European Commission's amended proposal as predicted by the model (2<sup>nd</sup> column), with the corresponding shares (3<sup>rd</sup> column) and a comparison with the shares of the original proposal (4<sup>th</sup> column).

Member State	Final amounts (million euro)	Share (amended)	Share (original)
BE	364,8	0,9%	0,9%
BG	2.688,6	6,7%	6,1%
CZ	3.408,5	8,5%	7,7%
DK	185,0	0,5%	0,5%
DE	5.230,1	13,1%	11,9%
EE	732,8	1,8%	1,7%
IE	172,5	0,4%	0,4%
EL	1.723,9	4,3%	3,9%
ES	1.809,2	4,5%	4,1%
FR	2.140,9	5,4%	5,4%
HR	387,0	1,0%	0,9%
IT	2.126,5	5,3%	4,8%
CY	209,8	0,5%	0,5%
LV	397,9	1,0%	0,9%
LT	565,9	1,4%	1,3%
LU	19,3	0,0%	0,0%
HU	538,2	1,3%	1,2%
MT	48,1	0,1%	0,1%
NL	1.287,9	3,2%	2,9%
AT	282,2	0,7%	0,7%
PL	8.000,0	20,0%	26,7%
PT	464,3	1,2%	1,1%
RO	4.440,4	11,1%	10,1%
SI	537,0	1,3%	1,2%
SK	954,8	2,4%	2,2%
FI	960,6	2,4%	2,2%
SE	323,8	0,8%	0,8%
<b>Total</b>	40.000,0	100,0%	100,0%

By comparing the shares of the Member States which correspond to the amended and original proposals, it is evident that the shares of all Member States besides that of Poland, which again reaches the cap proposed, increased. This is a consequence of the fact that in the amended proposal the maximum share that a Member State could receive decreased from 26,67% to 20%. Since Poland is the only Member State receiving the maximum amount in both cases, the decrease in its share is proportionally distributed among the other 26 Member States.

However, this shift of 6,67% of the JTF from Poland to other Member States hardly changes the overall picture of the JTF. The seven Category III Member States which have either not committed to phase out coal or have set an unambitious phase out date beyond 2030 still receive by far the largest share of the JTF with 61,7% (€24,7 billion), while the 13 Category II Member States committed to early coal exits receive only 32% (€13 billion).

Therefore, the injustice in the allocation of the JTF is retained also in the amended proposal, a result which is attributed to the fact that both the five allocation criteria as well as the GNI correction factor remained identical as in the Commission's original proposal.

## Key amendments

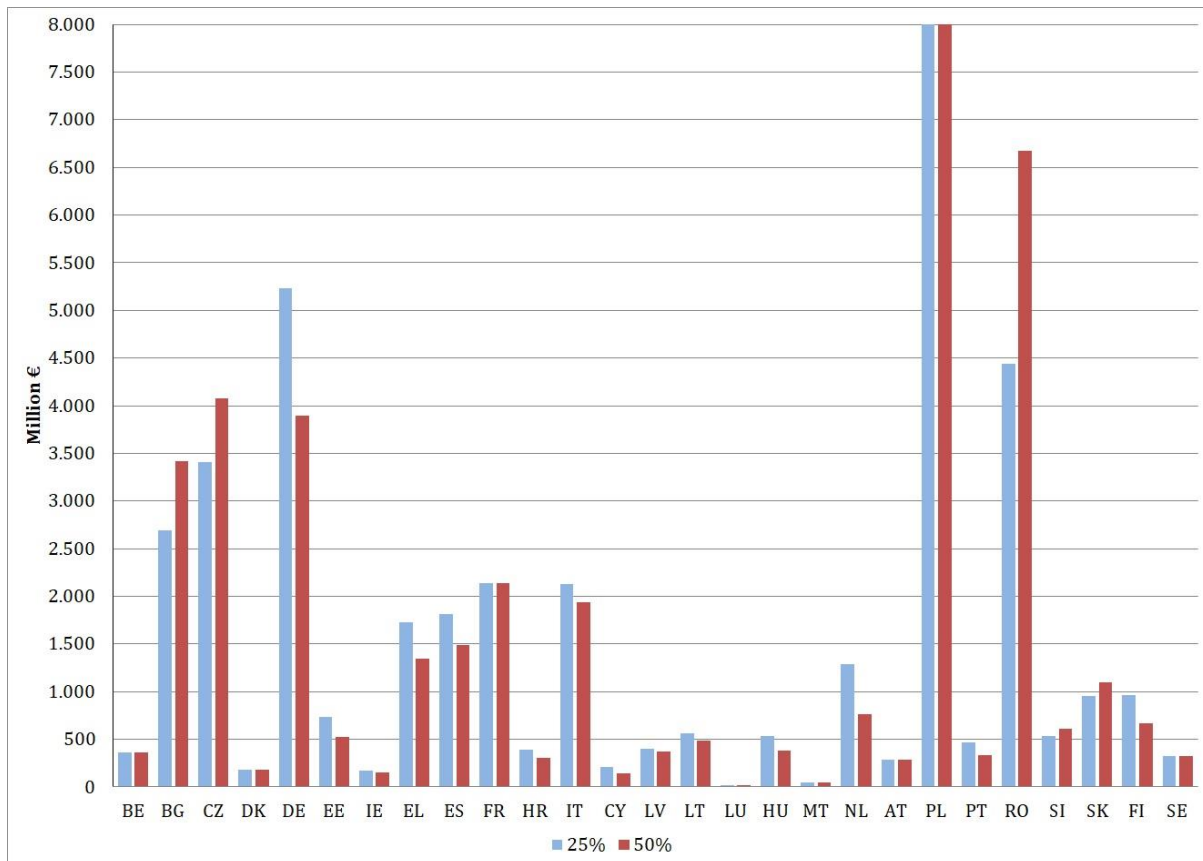
Several amendments on the allocation criteria were tabled in the Committees of the European Parliament. Particular emphasis by many MEPs from most political groups was placed on increasing the support towards coal regions. The rationale behind these amendments was that coal and lignite regions will be the frontrunners of the transition towards climate neutrality and that these regions are facing the biggest challenges. Some of the tabled amendments suggest changing the weights of certain criteria, others modifying them, while others recommend adding new criteria. In the following sub-sections we will study the effect of some key amendments on the allocation of funds among Member States, in comparison with the corresponding allocation of the European Commission's amended proposal, presented above.

### Employment in mining of coal and lignite

The European Commission proposed a weight of 25% for the level of employment in mining of coal and lignite. However, several amendments were submitted suggesting a weight of up to 50% to shift more funds towards the coal and lignite mining regions of EU-27, which are facing significant challenges<sup>6</sup>. To assess the effect of such an amendment, the additional weight of 25% for the second criterion on employment in mining was removed from the 49% weight of the first criterion on greenhouse gas emissions from industrial processes of high carbon intensity, which became 24%.

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<sup>6</sup> Amendment 49, <https://bit.ly/2NJSQz8> Amendment 33, <https://bit.ly/31Bg82B>; Amendment 825, <https://bit.ly/2BRTXKE>



**Figure 1:** *Effect of increasing the weight of the second criterion on employment in mining. Blue: European Commission's amended proposal with 25% weight. Red: Increased weight 50%.*

As figure 1 shows, although Poland has the largest share of employees in the coal and lignite mining among all EU Member States, its share is not affected by the doubling of the weight in the corresponding criterion, essentially because the €8 billion cap prevent any further increase. On the contrary, Romania's share increases from €4,44 to €6,67 billion because according to the employment data (Eurostat Labor Force Survey) used by the European Commission, Romania has the second largest number of employees in the mining industry and its share is smaller than the maximum allowable of €8 billion. Significant increases are also observed for Bulgaria, Czechia, Slovakia and Slovenia, while the most significant drops in absolute terms are observed for Germany, the Netherlands, Greece and Spain. Moreover, besides Poland receiving the maximum possible support, six other Member States remain unaffected (BE, DK, FR, LU, AT, SE). These are among the economically stronger Member States for which the minimum aid intensity correction becomes activated.

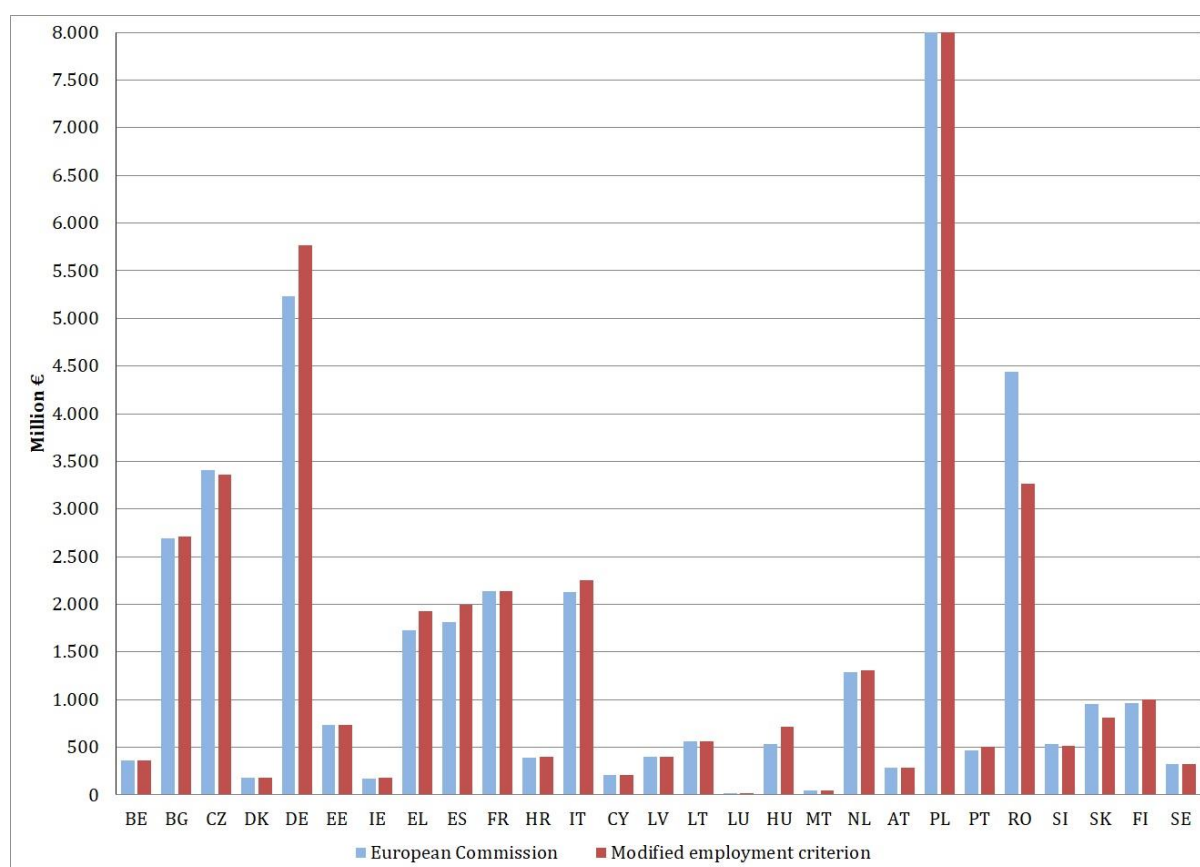
Overall, the increase in the weight of employment in mining from 25% to 50% increases the shares of the seven Category III Member States which have either not committed to phase out coal or have set an unambitious phase out date beyond 2030 to almost €27 billion (67% of JTF), while at the same time, Category II Member States committed to phasing out coal before the end of the decade receive even less than in the amended proposal by the European Commission (€11,1 vs €13 billion). If one excludes Germany, which has set a 2038 coal phase out date, and considers only the six Member States without any coal phase out commitments at all, then the increase in the weight of the second criterion raises their share from €19,46 billion in the amended proposal by the European Commission to €23,1 billion.

The results suggests that increasing the weight of the employment in mining criterion further reduces financial support for the Member States which are facing the most urgent transition challenges. Therefore, it cannot be considered as a step in the right direction.

## Employment in mining and energy use of coal and lignite

Besides changing the weight of the employment in the coal and lignite mining criterion, an amendment was submitted recommending the broadening of its scope, to include also the employees in the coal and lignite plants in addition to the miners<sup>7</sup>. This effectively augments the number of regions for which this criterion refers to from the 31 regions where coal or lignite is being mined to the 96 regions where coal or lignite may also be burned.

To study the quantitative effects of this criterion, the data on employment in mining used by the European Commission were substituted by the total number of workers in mining and coal and lignite plants for each Member States. The latter data set was obtained from the recent, detailed study by the Joint Research Center on the coal regions in EU-27<sup>8</sup>. Leaving all else as in the European Commission's amended proposal, the results of the abovementioned modification of the second criterion are shown in figure 2.



**Figure 2:** Effect of modifying the second criterion to include workers both in mining and energy use of coal and lignite. Blue: European Commission's amended proposal including only employment in mining. Red: Augmenting the criterion to include also workers in coal and lignite plants (data from JRC, 2018).

<sup>7</sup> Amendment 821, <https://bit.ly/2BRTXKF>

<sup>8</sup> JRC, 2018. "EU coal regions: opportunities and challenges ahead" <https://bit.ly/34BGSzv>

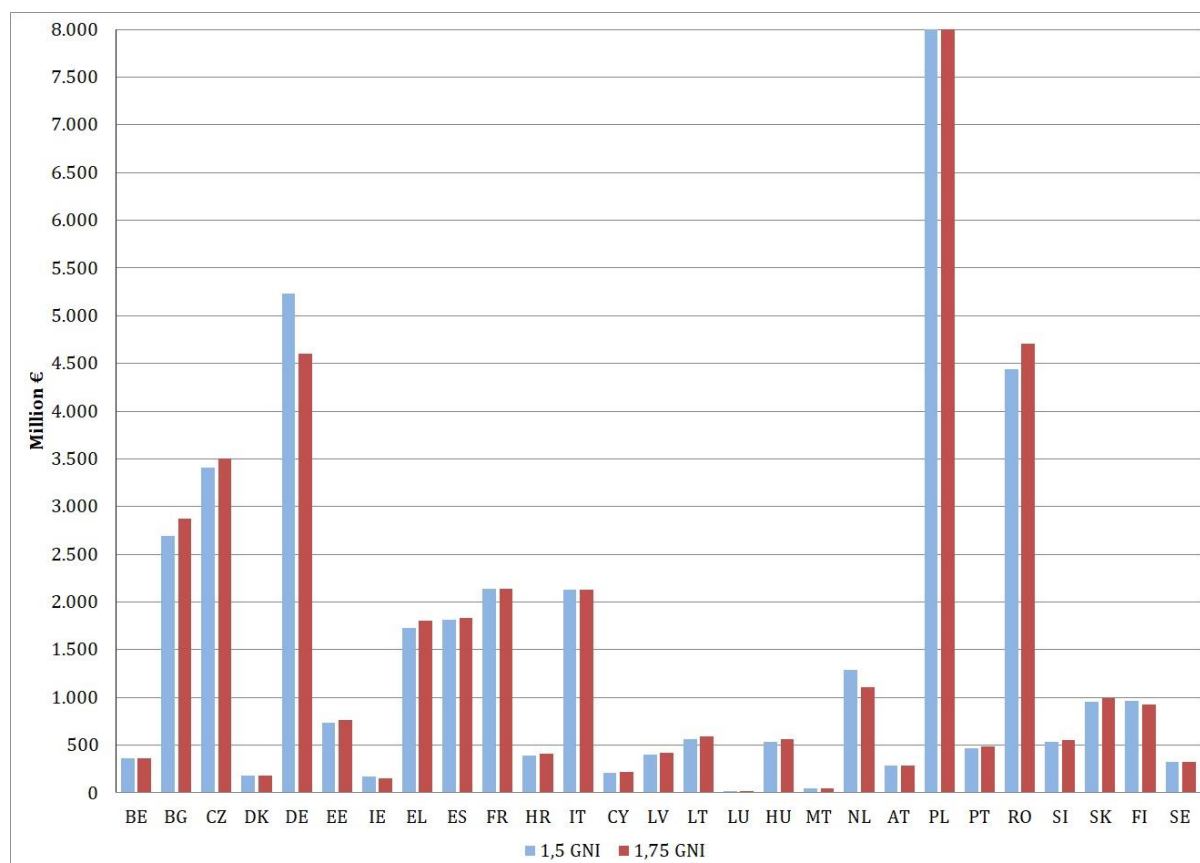
As in the previous amendment, the shares of Poland and the six Member States for which the minimum aid intensity correction becomes activated, remain unaffected by this amendment. Germany benefits the most from this change (+€ 539,8 million) while Romania experiences the most significant reduction (-€ 1,17 billion), showing the sensitivity of the corresponding shares on the source of the employment data.

Notice also that the broadening of the scope of the second criterion marginally increases the share of the 13 Member States with ambitious coal phase out plans (Category II) from €13 billion to €13,6 billion compared to the EC's amended proposal. The cumulative change is equally small for the less ambitious seven Category III Member States (from €24,7 to €24 billion). Therefore, although marginal, this change is in the right direction in terms of shifting more funds towards Member States which will undergo an early coal exit process.



## The GNI correction factor

In an effort to shift the financial support from the economically stronger to the economically weaker Member States, several MEPs proposed an increase in the GNI correction factor from 1,5 to 1,75<sup>9</sup>. This correction is implemented after the application of the five criteria and the initial capping. The effects of increasing the correction factor are shown in figure 3.



**Figure 3:** Effect of raising the GNI correction factor from 1,5 to 1,75. Blue: European Commission's amended proposal with a GNI correction factor of 1,5. Red: GNI correction factor of 1,75.

Similar to the previous two cases, the shares of Poland and the six Member States for which the minimum aid intensity correction becomes activated, remain identical as in the EC's amended proposal. There is, however, a decrease of funds for some of the economically stronger Member States such as Germany (-€626,8 million) and the Netherlands (-€178,6 million), which are proportionally distributed to some of the economically weaker Member States, such as Romania (+€263,7 million), Bulgaria (+€183,1 million) and Czechia (+€99,1 million) compared to the amended proposal by the European Commission.

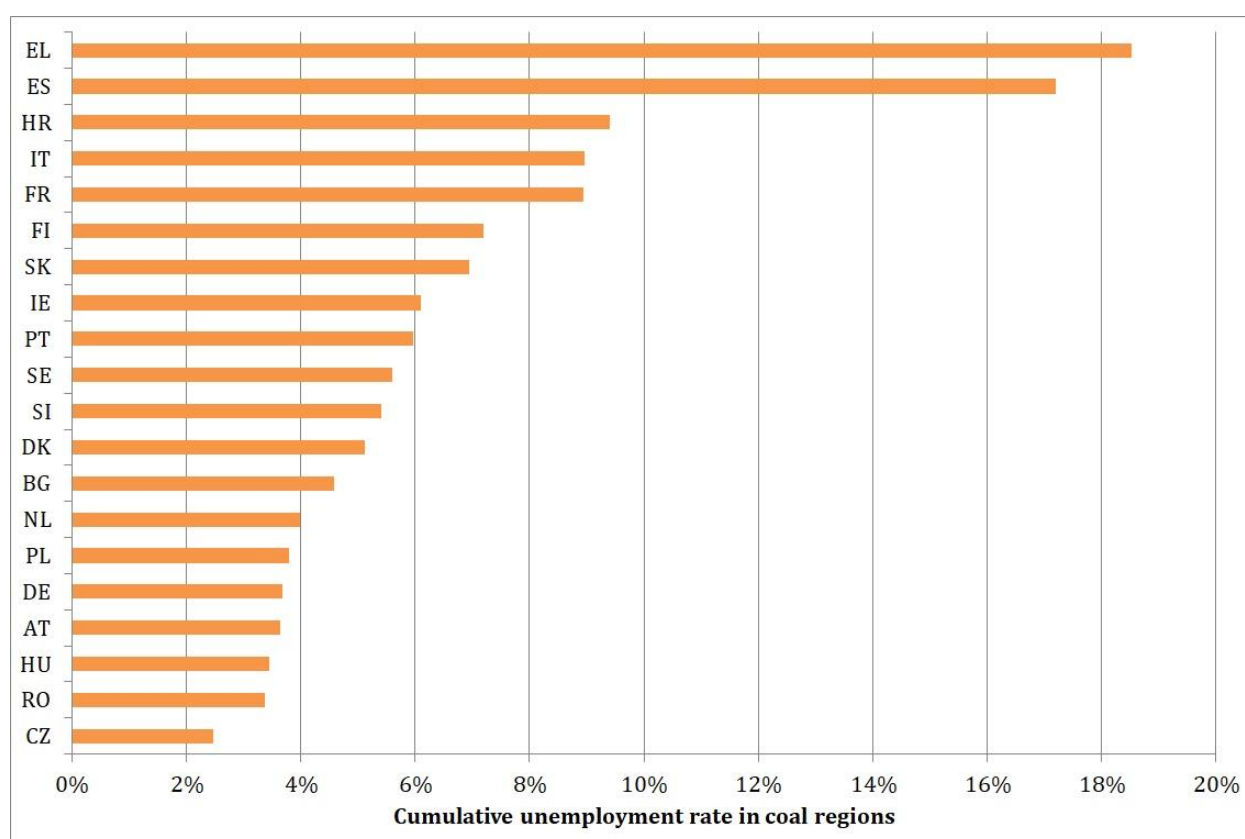
Overall, this amendment is neutral with respect to the cumulative level of support to the Category II and III Member States since the corresponding total amounts remain essentially as in the EC's amended proposal (€12,9 billion and €24,6 billion, respectively).

<sup>9</sup> Amendment 859, <https://bit.ly/2BRTXKF>

## Unemployment rate in coal regions

To better capture the magnitude of the transition challenge, several MEPs introduced in their amendments the parameter of unemployment. Many of the proposed amendments treated unemployment horizontally referring to the entire Member State without focusing on specific regions undergoing transition. However, one amendment avoided such generalizations and linked the unemployment rate specifically to the 96 coal regions in EU-27<sup>10</sup>.

To study the quantitative effects of this amendment, the latest available unemployment rates for each of the 96 coal regions, as well as the corresponding active population were first obtained from Eurostat<sup>11,12</sup>. By summing the data for all coal regions in each Member State, a cumulative unemployment rate for the Member State's coal regions was computed and the results are shown in figure 4.



**Figure 4:** Cumulative unemployment rate for the coal regions in each of the 20 Member States where coal or lignite participates in the electricity mix. Data from Eurostat.

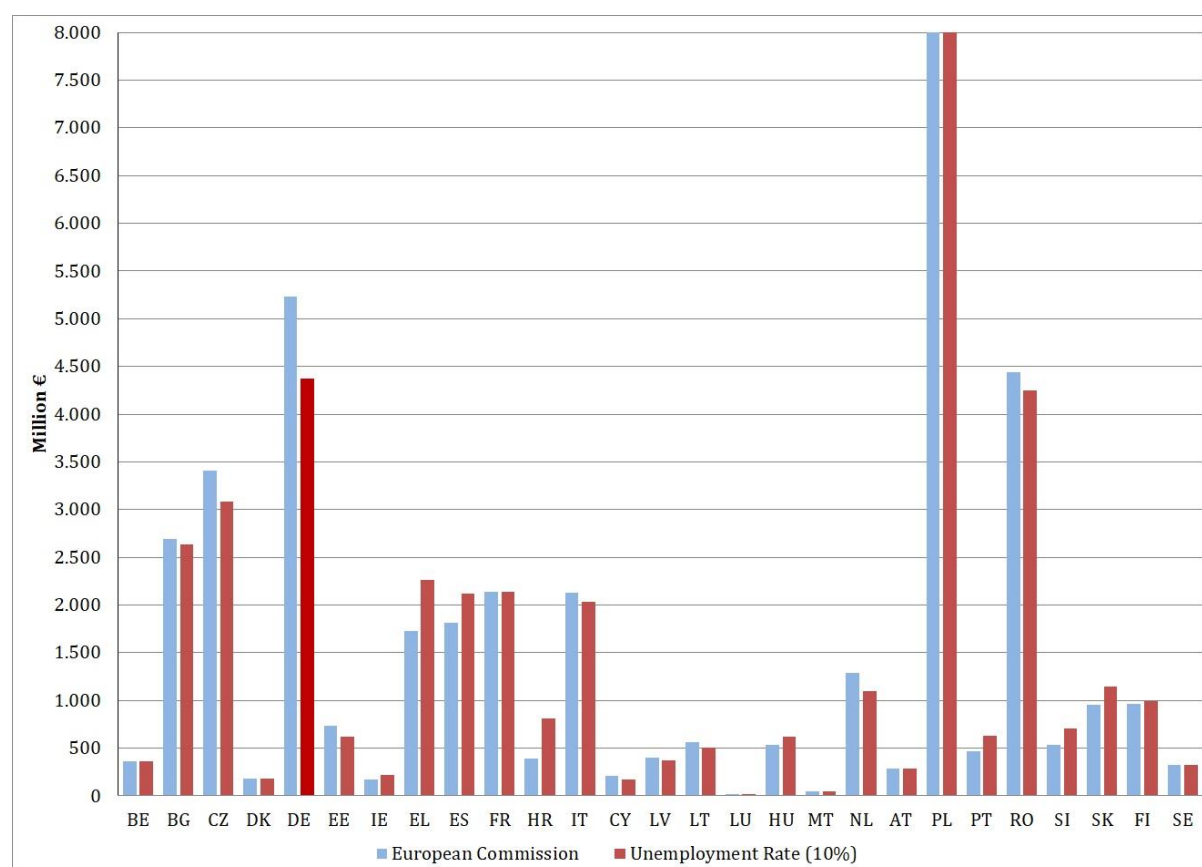
Greece and Spain have the highest coal-related unemployment rates (18,5% and 17,2% respectively), which is a direct consequence of the fact that Greece's two lignite regions (Western Macedonia and the Peloponnese) and Spain's Andalucía and Castilla-la Mancha coal regions respectively have the first, sixth, second and third highest unemployment rates among the 96 coal regions in the EU-27. On the other end, coal regions in Czechia and Romania have the lowest cumulative unemployment rates with 2,5% and 3,4%, respectively.

<sup>10</sup> Amendment 836, <https://bit.ly/2BRTXKF>

<sup>11</sup> Eurostat. Unemployment rate by NUTS 2 regions. <https://bit.ly/3e1oKml>

<sup>12</sup> Eurostat. Economically active population by sex, age and NUTS 2 regions <https://bit.ly/2Zq1msy>

The new criterion on the unemployment rate in coal regions was introduced with a weight of 10%. This weight was removed from the first criterion on greenhouse gas emissions from carbon-intensive industries, which became 39%. Leaving all else the same, the results of the calculations are shown in figure 5.



**Figure 5:** Effect of adding a new criterion on the unemployment rate of coal regions. Blue: European Commission's amended proposal. Red: with new criterion with a weight of 10%.

As in all previous cases, the six Member States where the correction for minimum aid intensity is activated remain unaffected by the new criterion. The same is true also for Poland, which retains the maximum possible share of €8 billion, despite the fact that coal-related unemployment in Poland is one of the lowest in the EU (see figure 4). The result is interpreted by the fact that Poland ranks very high in other criteria with more significant weights (1<sup>st</sup> in employment in industry and mining, 2<sup>nd</sup> in greenhouse gas emissions in industries with carbon intensity) and also has one of the lowest GNI per capita, thus benefiting from the relevant correction factor.

As expected by the cumulative unemployment rates presented in figure 4, Greece, Spain and Croatia benefit the most from the inclusion of the new criterion on the unemployment rate, whereas Germany, Czechia and Romania receive less compared to the EC's amended proposal.

Overall, this criterion is a step towards improving the fairness of the allocation since it increases the cumulative amount Category II Member States with early coal exits receive by almost €1,1 billion, while also slightly reducing the corresponding amounts of Category III Member States by €837 million.

## Transition speed

In order to channel funds where they are most urgently needed, MEPs and other stakeholders such as mayors of coal and lignite regions and NGOs have recommended a new criterion based on the speed by which Member States have committed to phase out coal and lignite<sup>13</sup>, defined as the rate by which CO<sub>2</sub> emissions from coal and lignite plants reduce over time.

To compute the transition speed for each Member State, common starting and end points are required where the CO<sub>2</sub> emissions can be either known or estimated in an official and transparent fashion. A natural end point is 2030 as this is the reference year of all National Energy and Climate Plans (NECP). The emissions of coal and lignite plants in 2030 can be estimated based on the official, legally binding commitments of Member States enshrined in their NECPs, officially submitted to the EC<sup>14</sup>. Similarly, a natural starting point for the calculation of the transition speed would be the average of years 2016-2018 as official data on CO<sub>2</sub> emissions from coal and lignite plants are available from the EU-ETS<sup>15</sup>. Since the capability of each Member State to finance the transition of its coal regions depends on its GDP, it is logical to normalize the transition speed with the average GDP of Member States for the period 2016-2018. Hence, the transition speed referred to in the amendments and requests by various stakeholders, can be mathematically expressed as follows (eq. (1)):

$$S = - \frac{1}{\text{GDP}} \cdot \frac{CO_2^2 - CO_2^1}{\text{year}_2 - \text{year}_1} \quad (1)$$

where:

- S: Transition speed
- $CO_2^2$ : Expected CO<sub>2</sub> emissions from coal and lignite plants in 2030 as documented in the NECP or 0 for Member States committed to a specific coal/lignite phase out year prior to 2030.
- $CO_2^1$ : Average CO<sub>2</sub> emissions from coal and lignite plants in 2016-2018 as reported in the EU ETS
- Year<sub>2</sub>: Either 2030 or the coal/lignite phase out year if it is prior to 2030
- Year<sub>1</sub>: Average of years 2016-2018 (i.e. 2017)
- GDP: Average GDP of the Member State in 2016-2018

In order to estimate the CO<sub>2</sub> emissions from coal and lignite plants in 2030 ( $CO_2^2$ ), the coal and lignite-based electricity production in the same year were first obtained from the corresponding NECPs and are shown in Table 3. For comparison purposes, the electricity generated by coal and lignite plants on average in 2016-2018, calculated using Eurostat data<sup>16</sup>, is also shown.

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<sup>13</sup> Amendment 837, <https://bit.ly/2BRTXKE>

<sup>14</sup> European Commission. National Energy and Climate Plans. <https://bit.ly/3c7j1tV>

<sup>15</sup> Europe Beyond Coal database. <https://bit.ly/3edI5kC>

<sup>16</sup> Eurostat. Production of electricity and derived heat by type of fuel <https://bit.ly/39VLjWB>

**Table 3: Phase-out commitments and coal-based electricity generation in 2016-2018 and 2030**

Member State	Phase-out year	Coal-based electricity generation average in 2016-2018 (GWh)	Coal-based electricity generation in 2030 (GWh)
AT	2020	1.869	0
BG	-	19.646	16.843 <sup>17</sup>
CZ	-	41.540	32.444 <sup>18</sup>
DE	-	243.719	104.197 <sup>19</sup>
DK	2030	7.215	0
EL	2028	18.278	0
ES	2030	39.634	0
FI	2029	6.207	0
FR	2022	10.525	0
HR	-	1.805	748 <sup>20</sup>
HU	2030	5.078	0
IE	2025	3.497	0
IT	2025	32.235	0
NL	2029	31.822	0
PL	-	130.681	113.000 <sup>21</sup>
PT	2023	13.101	0
RO	-	16.102	11.932 <sup>22</sup>
SE	2022	307	0
SI	-	4.819	3.373 <sup>23</sup>
SK	2023	2.934	0

Using the values of CO<sub>2</sub> emissions from coal and lignite plants<sup>15</sup> for the period 2016-2018, one can estimate the average carbon intensity for each Member State. This can in turn be used to estimate the CO<sub>2</sub> quantities which are expected to be emitted from the coal and lignite plants of each Member State in 2030 and correspond to the coal- and lignite-based electricity production enshrined in the NECPs. The results are shown in figure 6.

<sup>17</sup> Information contained in the Annex to the BG NECP <https://bit.ly/2XudYPW>

<sup>18</sup> Information contained in page 344 of the CZ NECP <https://bit.ly/2Rw7jBk>

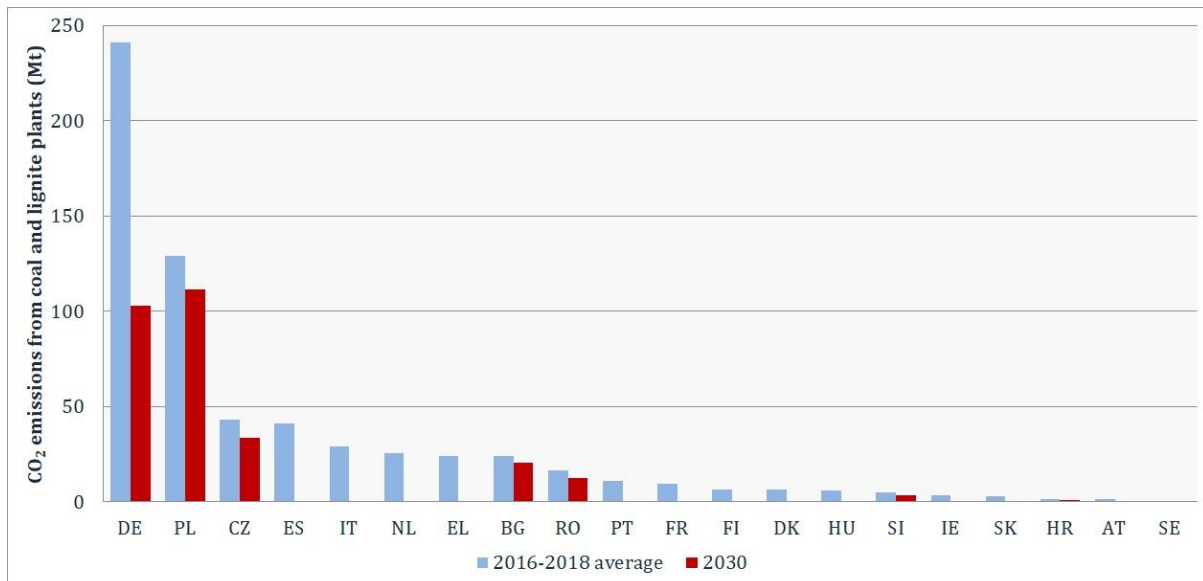
<sup>19</sup> Information contained in page 205 of the DE NECP. <https://bit.ly/3dI4Qvz>

<sup>20</sup> Information contained in the Annex 1, part 2 of the HR NECP. <https://bit.ly/3a3Hoac>

<sup>21</sup> Information contained in page 71 of the Energy and Climate Policy scenarios accompanying the PL NECP <https://bit.ly/3b68TBE>

<sup>22</sup> On page 209 of the RO NECP it is stated that 15,3% of the gross electricity production of 77.985 GWh will come from solid fuels <https://bit.ly/2y8hHrU>

<sup>23</sup> Slovenia does not explicitly state the amount of electricity that will be generated from coal in 2030 but it commits to a 30% decrease in its use by 2030 (page 32). Therefore, it was assumed that the electricity generated by coal in 2030 in Slovenia will be 30% less than the average of 2016-2018. <https://bit.ly/2ydosZp>



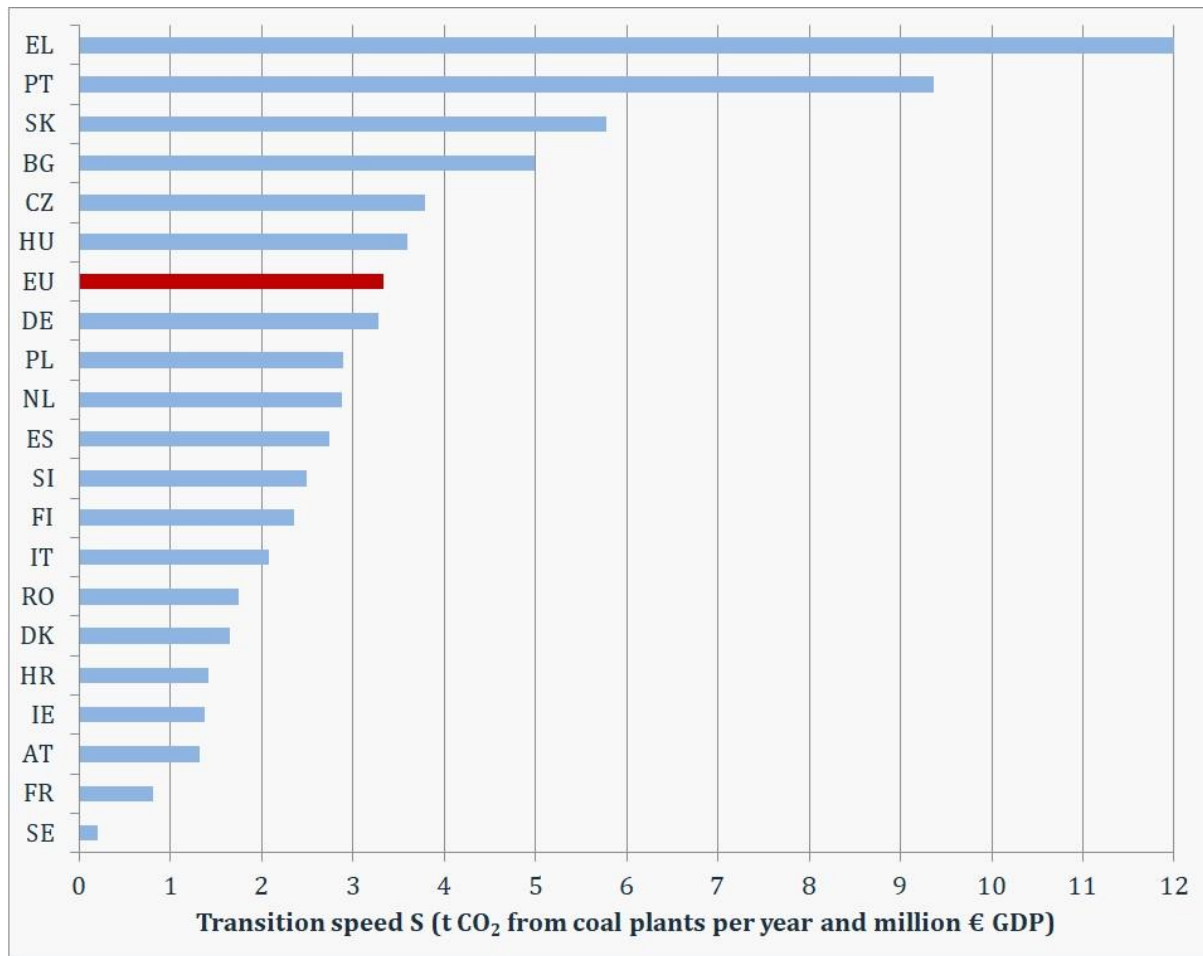
**Figure 6:** Average annual CO<sub>2</sub> emissions from coal and lignite plants in the 2016-2018 period and expected CO<sub>2</sub> emissions from the same in 2030. Data from EU-ETS, Europe Beyond Coal, Eurostat and own calculations.

Following the trend in electricity production, CO<sub>2</sub> emissions from coal and lignite plants in EU-27 is expected to drop by 54,5%, from 626 Mt (average of the 2016-2018 period) to 285 Mt in 2030. Poland will become the biggest emitter in the EU-27 in 2030 with 111,4 Mt CO<sub>2</sub> surpassing Germany with 103,1 Mt CO<sub>2</sub>.

Using the average CO<sub>2</sub> emissions from coal and lignite plants in the period 2016-2018<sup>15</sup>, the estimated CO<sub>2</sub> emissions for 2030 (Figure 6), the phase out years for the Member States committed to phase-out coal and lignite by 2030 (Table 3) and the average GDP of the Member States in 2016-2018<sup>24</sup>, the value of the transition speed  $S$  was computed from eq. (1). The results are shown in figure 7.

<sup>24</sup> Eurostat. GDP and main components <https://bit.ly/2wynHK5>



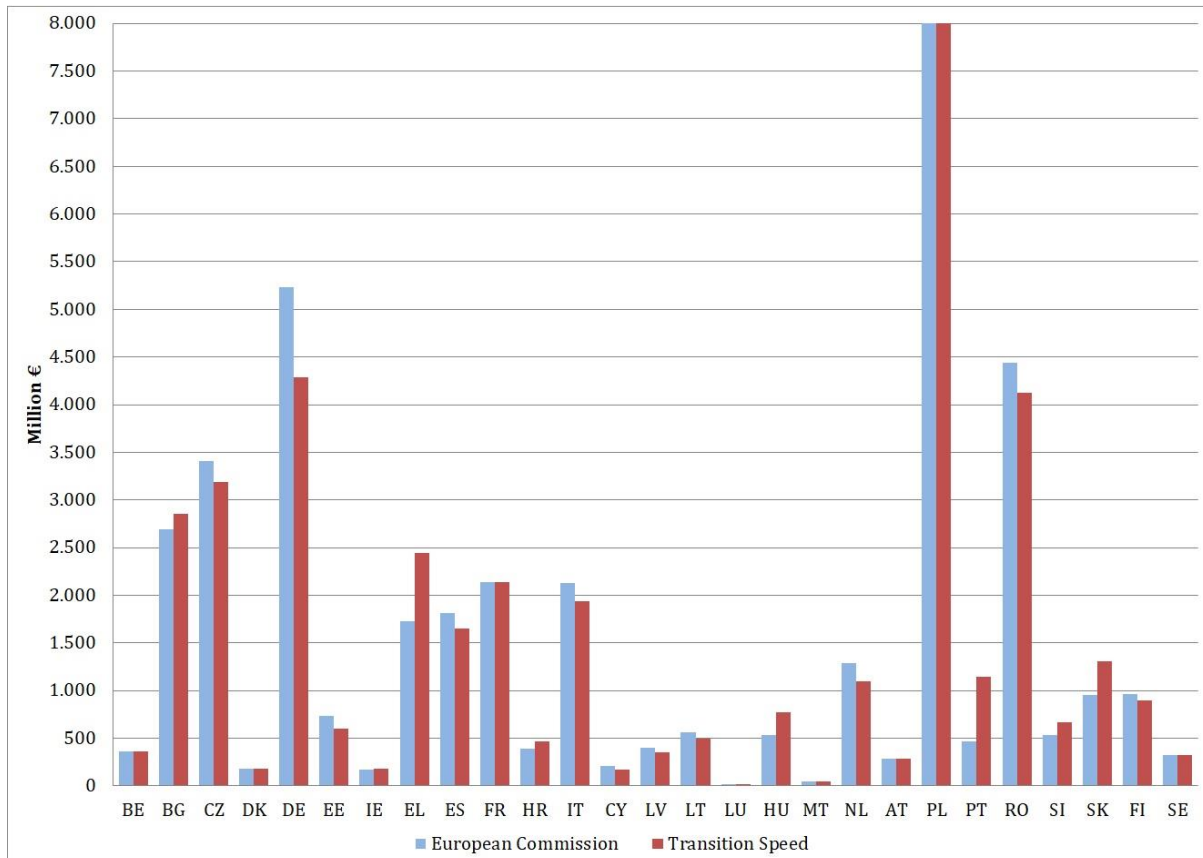


**Figure 7:** Transition speed in tonnes of CO<sub>2</sub> emitted from coal and lignite plants per year and million euro of national GDP, as defined in equation (1) for the 20 Member States which had coal or lignite in their electricity mix in 2016-2018.

The average transition speed in the EU is 3,34 tonnes of CO<sub>2</sub> (from coal and lignite plants) per year and million euro of GDP.

It is clear that this criterion benefits the more ambitious commitments to reduce coal and lignite use relative to the economic capabilities of the Member States. Greece is found to have the highest transition speed. Although in absolute terms its planned reduction of CO<sub>2</sub> emissions from lignite plants is not the highest in the EU, Greece is planning on achieving it relatively quickly (2028), and it also has a low GDP. On the other hand, Germany which has the highest reduction in CO<sub>2</sub> emissions from coal and lignite plants in absolute terms, is seventh in terms of its transition speed because this transition is not occurring fast enough and according to the economic capabilities of the largest economy in the EU. Portugal and Slovakia are high in the list mainly because of their commitments to phase out coal very soon and the relative small size of their economies. Bulgaria and Czechia on the other hand are also relatively high in the list because of their low GDP, and despite their unambitious commitments to reduce coal and lignite use.

The new criterion on the transition speed as defined in eq. (1) was introduced with a weight of 10%. As in the case of the new criterion on unemployment rate, this weight was removed from the first criterion on greenhouse gas emissions from carbon-intensive industries, which became 39%. Leaving all else the same, the results of the calculations are shown in figure 8.



**Figure 8:** Effect of adding a new criterion on the transition speed. Blue: European Commission's amended proposal. Red: with new criterion with a weight of 10%.

As in all previous cases, the six Member States where the correction for minimum aid intensity is activated remain unaffected by the new criterion. The same also applies to Poland which still receives the maximum possible share of €8 billion, despite the fact that its transition speed is well below the EU average (see figure 7).

Since Greece, Portugal and Slovakia have the highest transition speeds, they benefit the most from the introduction of this new criterion. The same is also true for Hungary, Bulgaria and Slovenia. On the other hand, Germany, Romania and Czechia stand to lose the most due to their unambitious coal phase out commitments.

The isolated inclusion of this criterion improves the fairness of the allocation of funds among Member States to the greatest extent since it increases the total amount the 13 most ambitious Member States (Category II) receive by €1,4 billion, while it reduces the amount dedicated to the seven more unambitious Member States (Category III) by €1,1 billion.

## Main findings and Conclusions

Based on the methodology described in Annex I of the Regulation for the Just Transition Fund, a simulation tool was developed and used to estimate the allocation of the Just Transition Fund among Member States in EU-27. Using the same data as those used by the European Commission, the tool was validated through comparison of its results with those of the first proposal by the European Commission. It was subsequently employed to predict the allocation of funds in the more recent, amended proposal by the European Commission as well as to comparatively evaluate the quantitative effects of five key amendments that have been tabled by MEPs in the various Committees of the European Parliament.

Despite the recent, **significant increase in the size of the JTF, its allocation among Member States remained unjust due to the fact that the criteria used do not accurately describe the magnitude or the urgency of the transition challenge especially in coal and lignite regions**. To remedy that, several amendments in the allocation criteria have been proposed in the various Committees of the European Parliament. The simulation tool was employed to analyze their quantitative effect on the allocation of funds among Member States.

It was found that **increasing the weight of the criterion on the employment in mining** leaves the share that Poland receives intact, but further increases the support towards the five Member States which have not yet committed to a specific date for phasing out coal and lignite (RO, CZ, BG, SI, HR); thus, **deteriorating the fairness** of the allocation compared to the European Commission's amended proposal.

**Augmenting the scope of the employment in mining criterion** to also include employees in coal and lignite plants in addition to miners, **renders the allocation more just** as it increases the total amount that Member States with ambitious coal phase out commitments receive. Germany benefits the most from this change (+€ 539,8 million), while Romania experiences the most significant reduction (-€ 1,17 billion), showing the sensitivity of the corresponding shares on the source of the employment data.

**Increasing the correction factor for the GNI per capita shifts funds from the economically stronger Member States** such as Germany (-€626,8 million) and the Netherlands (-€178,6 million) **towards the economically weaker Member States**, such as Romania (+€263,7 million), Bulgaria (+€183,1 million) and Czechia (+€99,1 million). Overall, however, this amendment is almost neutral with respect to the cumulative level of support to the ambitious (Category II) and unambitious (Category III) Member States since the corresponding total amounts remain essentially as in the EC's amended proposal (€12,9 billion and €24,6 billion, respectively).

**The inclusion of a new unemployment criterion for coal regions** leaves Poland and the six Member States for which the minimum aid intensity correction is activated (BE, DK, FR, LU, AT, SE), unaffected. However, it increases the shares of Greece, Spain and Croatia, which have the highest unemployment rates in their coal and lignite regions, whereas Germany, Czechia and Romania receive less compared to the EC's amended proposal. Overall, this criterion **is a step towards improving the fairness of the allocation** since it increases the cumulative amount Category II Member States with early coal exits receive by almost €1,1 billion, while also slightly reducing the corresponding amounts of Category III Member States by €837 million.

**The inclusion of a new criterion on the transition speed** expressed as a decrease in the CO<sub>2</sub> emissions from coal and lignite plants per year and million euro of national GDP, **renders the allocation of funds more just**, since it increases the total amount the 13 most ambitious Member States (Category II) receive by €1,4 billion, while it reduces the amount dedicated to the seven more unambitious Member States (Category III) by €1,1 billion. Since Greece, Portugal and Slovakia have the highest transition speeds, they benefit the most from the introduction of this new criterion. The same is also true for Hungary, Bulgaria and Slovenia. On the other hand, Germany, Romania and Czechia stand to lose the most due to their unambitious coal phase out commitments.

It is noteworthy to underline the robustness of the results for Poland and the six Member States (BE, DK, FR, LU, AT, SE) receiving the minimum aid intensity of 32€ per capita, since none of the five amendments analyzed here influence the final amount these Member States receive.

**The analysis results show that a more just allocation of the JTF among Member States, which prioritizes regions with more significant or more urgent transition needs, is perfectly possible.** This shift can be achieved in a variety of ways especially if several amendments among those tabled so far are combined. Specifically, the results indicate that a modification of the second criterion to include employment in mining and coal and lignite plants and an increase in the GNI correction factor combined with the implementation of new criteria on the unemployment rate in coal regions and the transition speed, may lead to an allocation of funds which better reflects the true and more urgent needs of coal regions in transition.



