THE POSITION OF THE POLISH CONFEDERATION LEWIATAN ON THE EUROPEAN UNION'S 2030 ENERGY AND CLIMATE POLICY

3 INTELLIGENT PROTECTION OF INDUSTRY FOR EFFICIENT LOW CARBON TRANSFORMATION IN THE EU

Report prepared for Polish Confederation Lewiatan

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SUMMARY

/ The emissions reduction in the industry is a greater challenge than the one in other sectors of the economy. Firstly, the potential of profitable reduction measures has largely been exploited. Secondly, in the global competition, the situation where the burden of emission costs is imposed on the European industry while outside the EU comparable actions are not being taken, poses a threat of relocating the production outside Europe, thus carbon leakage.

/ It will be impossible to create and implement low carbon technologies in the EU without effective mechanisms protecting the European industry against carbon leakage and, at the same time, stimulating to develop innovative solutions that will enable to reduce industrial emissions.

/ The protection mechanisms that are currently in place require a modification as they do not provide stable and predictable conditions allowing the industry to function.

/ In the case of emission-intensive industries it is recommended that:

1. Benchmarks should be made more realistic and the cross-sectoral correction factor should be discarded, especially in relation to process emissions (inseparably linked with production processes);

2. The ex ante free allocation of allowances should be replaced by the ex post allocation (on the basis of a real production volume);

3. The existing surplus of allowances should be used to create a reserve which would enable to carry out the above-mentioned actions 1) and 2) without falling short of the reduction target in the medium term (in the 2030 perspective).

/ In the case of energy-intensive industries it is recommended that:

1. A centralised mechanism compensating indirect emission costs should be created;

2. A relatively high contribution of Poland to the financing of this mechanism should be compensated by the increase in a pool of emission allowances allocated to Poland

/ If a more far-reaching emissions reduction targets after 2030 are introduced, even these modified instruments cannot guarantee effective and long-term protection of the industry against carbon leakage. Therefore, it is essential for Brussels to clearly signal that irrespective of developments in the next decades, the European industry will not be burdened with higher emission costs than the rest of the world.

CHALLENGE

The European industry directly emits approximately 15 per cent of greenhouse gases in the EU. When indirect emissions resulting from the production of energy used by industrial plants are taken into account, this share rises to approximately one fourth. The European Union's policy aims at deep emissions reduction across the economy as a whole, which translates into a pressure to lower emission intensity of the industrial production. Simultaneously, in terms of emissions reduction, the industry is confronted with more serious technological limitations than energy, services or transport sectors. This stems from the specificity of the most emitting industries (such as the production of steel, cement and fertilisers) in the case of which all or almost all realistic reduction options have already been exercised. The technological advancement of the modern European industry is now close to the theoretical limitations imposed on technological efficiency by the laws of physics and chemistry. This also concerns the Polish heavy industry, which over the last years has undergone a vast modernisation and, at the moment, is one of the most modern industries in the EU.

Another problem is a substantial exposure of the industry to the global competition. It poses a real threat that the emissions reduction will turn out to be too expensive for some industries and that a cheaper solution will be to import goods from outside the EU, where they would be manufactured by means of less environment-friendly technological processes than in Europe. This is all the more important as until now the policy of emissions reduction carried out by the European Union has been unilateral. A rise in emission costs in the EU, both direct and indirect, has increased the risk of a permanent loss of global competitiveness by emission and energy intensive European industries. These concerns are further deepened by a common feeling of scepticism about the possibility of reaching in the upcoming years a global climate agreement, especially on the introduction on the global scale (or at least in relation to the main industrial areas in the world) of a single emission taxation or a common emissions trading scheme.

While developing the European Union's climate and energy policy framework for 2030 it is essential to address the risk of carbon leakage. Protection tools should not, however, discourage the European industry from improving its energy efficiency and lowering emission intensity of its production. On the contrary, these instruments should motivate it to reach this goal. At the same time, the level of protection necessary to eliminate the phenomenon of relocating the production of selected goods to the area outside the EU should be maintained. It will otherwise be impossible to develop and implement low-emission industrial technologies in Europe. The creation of intelligent protection instruments against carbon leakage is a key factor in success of the European Union's climate and energy policy both from an environmental and economic point of view.

Carbon leakage means relocating emission and energy intensive industries outside the EU as a result of disadvantageous differences in costs of greenhouse gas emissions in Europe and in the rest of the world.

'Relocating' means not only closing the existing plants or the smaller use of their generation capacity but also resigning from new investments in the EU which would otherwise take place if the emission costs in the European states were equal to the emission costs in other parts of the world. The absence of new investments destroys the long-term industrial potential of Europe and does not allow the development of innovative low-emission industrial solutions within the EU. **Carbon leakage may result from both direct emission costs** (for example, the necessity to buy CO2 emission allowances) and **indirect costs** that result from a rise in prices of energy bought by energy-intensive plants.

PAST EXPERIENCE

The European Union's climate and energy policy for 2020 contains instruments which aim at protecting the Community's industry against the risk of carbon leakage. On the basis of the experience of the past years, it is possible to indicate some key shortcomings of the solutions used so far:

1. **The free pool of allowances** for the industry covers only a part of the needs of the most effective low-emission installations. This problem will continue to worsen when the reduction targets become more stringent.
2. **The *ex ante* free allocation of allowances** on the basis of historical levels of production has turned out not to match a volatile level of the economic activity in a business cycle. Particularly, a rise in the industrial economic activity is penalised whereas a decrease is rewarded, which makes it more difficult for Europe to rebuild its industrial potential in energy intensive and emission areas.
3. **The absence of a full protection guarantee** for the European industry in a long-term perspective discourages it from investing in low-emission solutions characterised by a long payback period.
4. **The free allocation of allowances based on product benchmarks** assuming the use of gas as an energy source in the industry is disadvantageous for the existing plants that make use of coal, even if they use the most effective installations to produce energy from that fuel. This is especially important for the Polish industry, traditionally based on hard coal.
5. **Problems with ensuring protection against the carbon leakage** concern also indirect emitters. Not all Member States are willing to or have an opportunity to compensate their energy-intensive industries for a rise in electric energy costs stemming from the functioning of the ETS. This also concerns Poland.

The current debate on possible changes in the European Union's climate and energy policy enables to draw some additional conclusions on the potential choice options pertaining to instruments of industry protection against the risk of carbon leakage:

- As it follows from the debate on the structural reform of the ETS, the instruments influencing the number of allowances and, consequently, directed towards a rise in their prices, will be preferred in the future. Simultaneously, they need to ensure emissions reduction coherent with the determined targets.
- An alternative method of protection against carbon leakage, i.e. the *Border Carbon Adjustment (BCA)*, is not widely supported by Member States, which may be related to the fear of provoking a trade war with the United States and Asia.

Having considered these factors, alternative methods of counteracting carbon leakage by 2030 are being presented in the following section. These propositions are divided into those related to direct emission costs and those concerning indirect emission costs, taking into account different actions that may be taken in both cases.

POSSIBLE METHODS OF PROTECTION AGAINST CARBON LEAKAGE – DIRECT EMISSIONS

Disadvantageous or unrealistic options

MAINTAINING STATUS QUO

An overview of the past experience shows that maintaining current rules of the free allocation of emission allowances by 2030 would weaken the competitiveness of the most emission-intensive European industries, prolong their investment uncertainty and, as a result, threaten their long-term presence in the Europe's economy. As the reduction target becomes more stringent, ever smaller part of industrial emissions will be covered by free allowances and, simultaneously, the allowance price will probably rise. The drawbacks of the ex ante allocations will eventually multiply. Thus, over time, the exposure of the European industry to the risk of carbon leakage will probably increase. Innovations reducing energy and emission intensity of the production may help, but the potential of cheap (or even profitable) activities in the medium-term within this area is limited. Necessary technological changes in the industry are far more challenging than in construction or energy sectors. They will certainly require more time and far-reaching transformations in, inter alia, the production profile. In the 2030 perspective, faced with the choice between the implementation of expensive measures (such as CCS) and the production relocation outside the EU area, a substantial part of the most energy- and emission-intensive European industries may choose the second option.

FUEL BENCHMARKS

Theoretically, the introduction of fuel benchmarks would allow a better adjustment to the specificity of the industrial infrastructure in particular Member States, especially in Poland. Higher emissions resulting from the use of coal instead of gas could be absorbed by an addition pool of allowances for the industry, described in the next section. The major drawback of this negotiation option is the resistance of the European Commission and Member States whose industry is based on natural gas, which is more expensive but less emission-intensive source of energy compared to coal. Hence, this option seems to be a highly unrealistic choice as far as the European policy for 2030 is concerned.

Polish negotiators should not treat a potential discussion on fuel benchmarks as a realistic solution likely to be accepted in the European Union's forum. However, this discussion may be an opportunity to highlight once more the necessity to improve access of the Polish economy to stable and cost-competitive natural gas resources.

Preferred options

USING SURPLUS OF ALLOWANCES TO PROTECT INDUSTRY

Specific determinants of the emissions reduction and the energy intensity improvement in the industry may be taken into account by applying instruments that de facto to establish a separate reduction target for industries exposed to the risk of carbon leakage. The division of the ETS scheme into an energy part and an industrial part, with a less stringent reduction target for the industry and more ambitious one for the energy sector, is theoretically possible but practically hard to introduce. Main difficulties in convincing European partners to this solution lie in a discretionary character of burden sharing between the energy sector and the industry, disturbances in price signals encouraging the emissions reduction and a persisting problem of a higher burden of emission costs shouldered by the European industry in comparison to global competitors. An alternative and, at the same time, a more advantageous and easier to adopt solution would be to increase a pool of allowances allocated to the industry free of charge. In this case, the uniform price signal encouraging the emissions reduction would be maintained. A substantial surplus of emission allowances makes it easier to adopt this solution. Surplus allowances withdrawn from the market as a result of the ETS reform could form an additional pool designated for the industry. It would allow to set product benchmarks at realistic levels and abandon a cross-sectoral correction factor without falling short of the overall target.

Preferred options

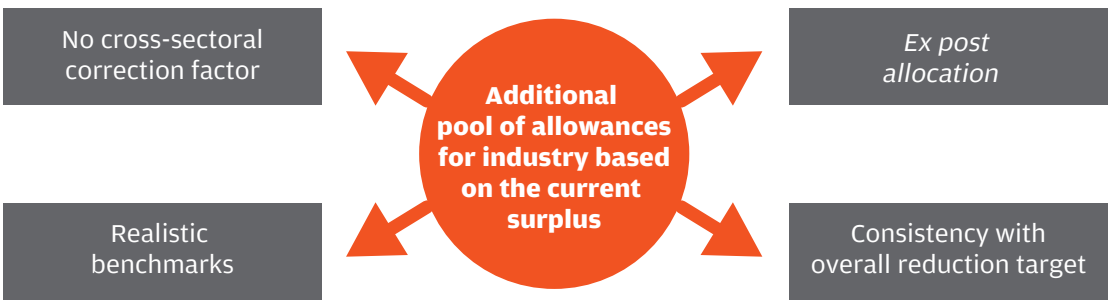
ALLOCATION OF ALLOWANCES ON BASIS OF PRODUCTION VOLUME

In the light of the problems with the free ex ante allocation of allowances, it would be desirable to shift to the ex post allocation, based on a real production level over the current trading period. Allowances could be allocated in two steps:

1. The ex ante allocation of allowances at the beginning of the year on the basis of a real production level over the past years (in order to reduce the influence of yearly fluctuations in an economic cycle, it would be desirable to take into account an average for a period of several years)
2. The compensation of the difference between the ex ante allocation and the allocation resulting from a real production level after a year.

This approach has a number of advantages: it is adjusted to a real level of economic activity, it does not award bonuses for the decreased production and it maintains the price signal to reduce emissions. A drawback of this approach is the uncertainty of the emission volume in a given period.

The solution that would ensure the consistency of the ex post allocation with the reduction target is the above-mentioned additional allowance pool for the industry, which could play a role of a reserve. The greater the reserve, the longer and to a higher degree the industries exposed to the risk of carbon leakage could be protected without exceeding the limits of overall emissions in the scheme in the 2030 perspective.



Preferred options

ACKNOWLEDGING SPECIFIC CHALLENGES FOR PROCESS EMISSIONS

Particular attention should be paid to the industries whose production processes are inseparably linked with greenhouse gas emissions (process emissions). Due to the lack of technological possibilities to reduce emissions, the emissions to the atmosphere may only be reduced by applying unverified or extremely expensive technologies, such as CCS, or through the decreasing production. Such sectors should be particularly protected (stable and realistic benchmarks, a priority in the free allocation of allowances).

The simplest protection method for these industries, especially in a long-term perspective, is to exclude the process emissions from the ETS scheme, complemented by a potential consumption tax on the emission-intensive goods, levied in an equal manner on goods manufactured in the EU and goods imported. An example of such a tax is a commonly applied excise duty on petroleum products. It would enable to ensure equal conditions of competition for emission-intensive goods producers from the EU and from the outside of the Union without the necessity to introduce controversial border carbon adjustments. The amount of fees could be updated on a regular basis in order that the process emission costs related to the production of given goods will correspond to the market price of allowances in the ETS scheme. Incentives to reduce process emissions though the application of the CCS installation would be maintained, as industrial plants would be given emission allowances for the captured and stored GHG emissions. A disadvantage of this solution is its limited scope and potential technical problems with an accurate calculation of the emission intensity of goods available on the market.

Long-term solutions

The use of the present surplus on the allowance market as protection for emission-intensive industries is not a long-term solution to the risk of carbon leakage, as eventually this pool will be depleted. Hence, the European Union should set clear conditions and a schedule for a potential introduction of the border carbon adjustments or for global coupling of emissions trading schemes after 2030. It should be performed with the approval of key trading partners, such as China, the USA and other OECD countries. It should also be clearly highlighted that the current climate policy cannot be continued in this form in a long-term perspective. From this point of view, the proposed protection tools for 2030 should be treated as a transitional solution, giving time for a full harmonisation of climate policies among global actors through the integration of emissions trading schemes or the introduction of fees payable on their borders. An alternative could be the introduction of carbon taxes on consumption of emission-intensive industrial goods for those products whose consumption takes place within the EU.

The EU should also take into account the risk that other states will not approve of Europe's actions and declare that in that case the long-term protection of the European industry will be maintained even if emission limits within the EU are exceeded (it could be compensated by support for the emissions reduction in third countries). **From the point of view of the European industry, it is crucial to guarantee that it will not be burdened with higher emission costs than the rest of the world**.

An important complementing element for actions addressing the risk of carbon leakage should be a review of emission reduction incentives for the industry, taking into account a full product life cycle. For example, the co-firing of waste in industrial installations (the cement sector) enables to avoid greenhouse gas emissions from the landfills or from incineration plants which are outside the cap and trade system. However, this is not reflected in the ETS.

POSSIBLE METHODS OF PROTECTION AGAINST CARBON LEAKAGE – INDIRECT EMISSIONS

Disadvantageous option

MAINTAINING STATUS QUO

It is possible to maintain the status quo, but its drawbacks will continue to multiply. It is worth noting that the instruments that protect the industry against carbon leakage resulting from indirect emission costs are confronted with other limitations than those equalising direct emission costs. While in the case of the latter a key problem lies in maintaining the environmental target (emissions reduction), in the case of indirect emissions their reduction may be ensured by including the energy sector into the ETS scheme. However, the net cost of this solution for a country is uncertain. This is due to the fact that revenues from the auctions of emission allowances are smaller for the energy sector than the costs resulting from them, incurred by energy customers (see the box 1). Taking into account the budget crisis and the necessity to reduce deficits, not all Member States have had a chance or have been willing to channel funds into instruments protecting energy-intensive industries. While the fiscal situation in Europe may gradually improve, the cost of protection instruments for indirect emitters may gradually rise due to the lowering of the European energy sector emission intensity and a rise in prices of allowances. In the future, economic crises of similar scale may arise again and additionally limit the possibilities of protection of energy-intensive industries in particular Member States.

A short-term solution for the countries characterised by a low-emission energy sector could be the taxation of windfall profits generated by low-emission power plants that were built before the introduction of the ETS. However, this would weaken the investment potential of the energy sector.

In a long-term perspective, the window of opportunity for the taxation of the ETS revenues for low-emission plants will close as they will serve as a drive for new investments. A long-term solution to this problem would be to enable to maintain subsidies for energy intensive industries, irrespective of a current budgetary position. This seems, however, very unlikely, taking into account the risks of relaxing budgetary rules, so clearly shown by the last crisis.

Disadvantageous option

The presented risks and limitations make maintaining the status quo a disadvantageous option, as it does not ensure the stable and predictable protection for energy-intensive European industries. Thus, this option discourages from new investments and the development of energy-saving industrial innovations within the EU.

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+ **Greater elasticity for the Member States**
+ **The possibility of additional stimulation of energy efficiency improvements**

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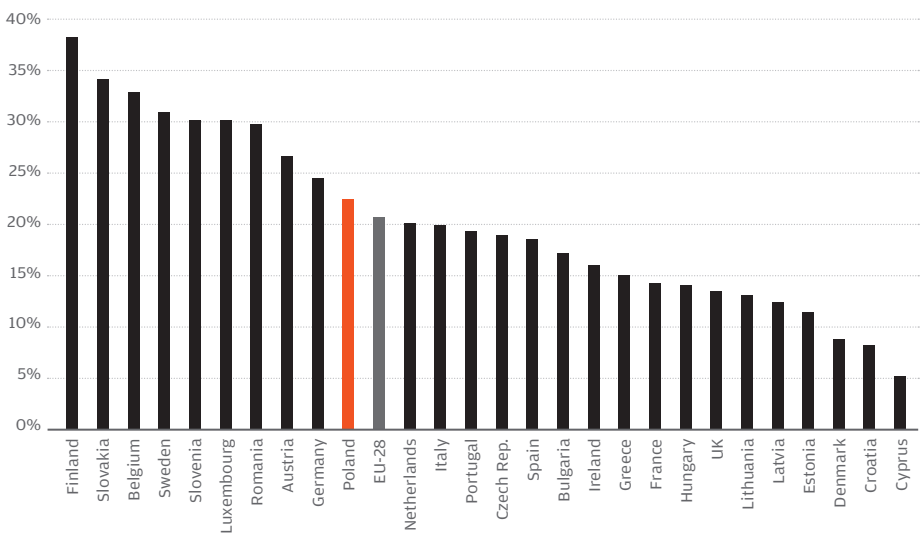
– **Uncertain compensation for the costs of indirect emissions**
– **No guarantee of equal conditions for competition in the EU**
– **Problems with financing will deepen over time**

Preferred options

CENTRALISED COVERAGE OF INDIRECT EMISSION COSTS FROM ETS REVENUES

An alternative to the current solution is an idea that recurs in the European debate, i.e. to standardise and centralise instruments protecting energy-intensive industries. This could be achieved through the free allocation of allowances to indirect issuers or using part of the allowances auction revenues to finance protection instruments for energy-intensive industries. The advantage of this solution is that it makes the support less dependent on the current budgetary position in particular Member State and, simultaneously, gives equal opportunities to energy-intensive industries within the entire European Union. It would create an advantageous and stable framework for the development of energy-intensive industries in Europe, including Poland. For this reason, this solution should be adopted as profitable from both the economic and environmental point of view. It should be noted, however, that from the Polish perspective, the centralisation of energy intensive-industries protection without the introduction of additional compensation mechanisms is a disadvantageous solution. This stems from an extraordinarily high relation of average emission potential of all power plants on the Polish market to the emission potential of price-generating power plants (cf. box 1, pic no. 3), which implies a high share of auction revenues in the overall ETS costs for energy consumers (at the moment, it is lowered due to the derogation mechanism, which de facto transforms auction revenues into benefits for emission-intensive power plants). If a centralised mechanism equalising relative support costs of energy-intensive industries in the entire European Union was introduced, Poland would lose its favourable position. Countries with a low-emission energy sector and a major share of energy intensive industries in the consumption of electric energy would gain at Poland's expense.

Pic 1. Total share of energy intensive industries* in consumption of electric energy



*energy intensive industries include: metal industry, chemical industry, mineral industry, paper industry and mining

Source: own study on the basis of Eurostat data

Preferred options

The Poland's approval of the centralisation of protection instruments for indirect issuers should be absolutely conditioned by the compensation for a disproportionate share in financing this mechanism. This can take a form of an additional redistribution of allowances for the benefit of Poland.

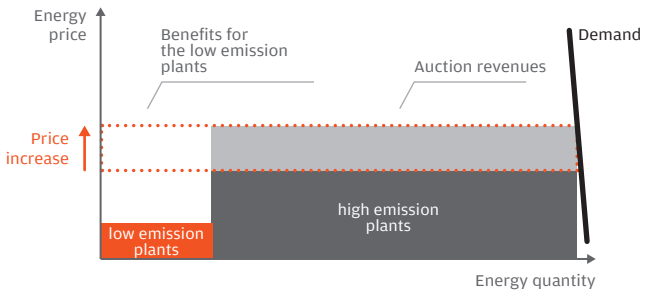
Box 1.
Electric energy market and protection of energy intensive industries against carbon leakage

In the case of direct emissions, costs incurred by emitters correspond to revenues from allowance auctions. Hence, it is possible to protect them by allocating emissions allowances free of charge (at least as long as it does not fall short of the environmental target, namely an overall emissions reduction). On the other hand, in the case of indirect emissions, revenues from the allowances auctions are smaller than costs resulting from them, incurred by energy customers. It is due to the specificity of the energy market, where the price is determined by power plants characterised by the highest variable costs of electric energy production, mainly gas power plants or low-efficient coal-fired power plants. Low-emission power plants characterised by low variable costs (nuclear, RES) gain additional profits thanks to the ETS scheme – emission costs are imposed on emission power plants and the energy price on the market rises. A key factor of the ETS impact on energy prices in a given country is the emission potential of price-setting power plants (operating at the end of the so-called *merit order*), and not the average emission potential of all power plants. This is illustrated (in a much simplified way) by an example in the Pic. no. 2. Despite a higher share of zero carbon power plants in the B country, the ETS impact on the energy price is the same in both countries. The only difference lies in the distribution of ETS revenues – in the case of a more emission-intensive mix, a bigger share goes to the entity which is auctioning allowances. If this entity would like to reimburse the cost difference to customers, it would have to spend more money for this purpose than it gained as a result of an allowance auction. The proportion of auction revenues to total additional costs incurred by energy sellers corresponds to the relation of the average emission potential of all power plants on a given market to the emission potential of price-setting power plants. This relation in Poland is one of the highest in the EU (the Pic. no. 3) whereas the lowest one is in the countries where low-emission plants, such as hydro (Sweden) or nuclear (France) are predominant.

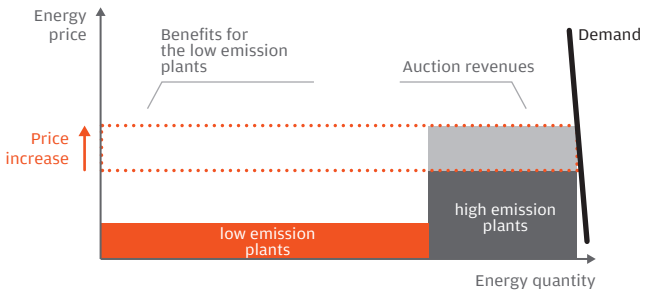
Preferred options

Pic 2. ETS auctions vs. electricity market

Country A — high-emission mix

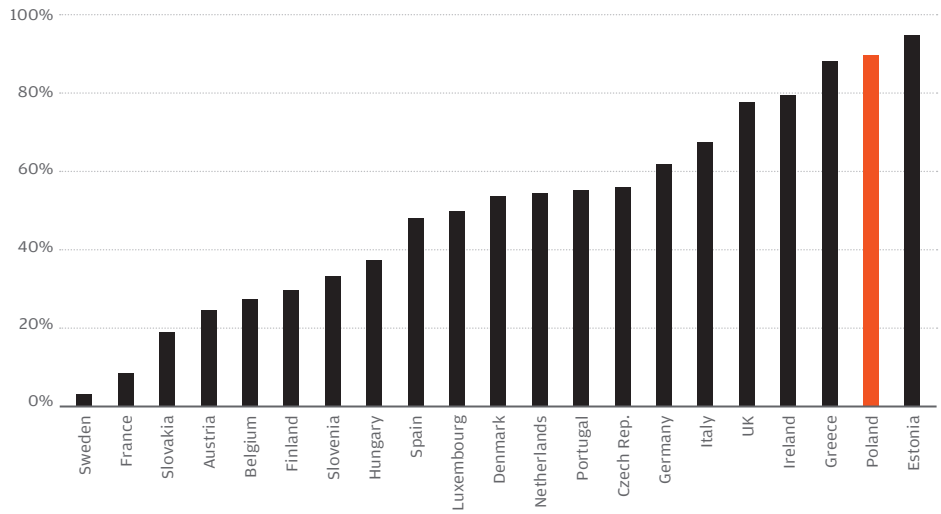


Country B — low-emission mix



Source: own study

Pic 3. Relation of average emission intensity of all power plants to emission intensity of price-setting power plants



Source: own study on the basis of the IEA and the EC data

Long-term solutions

Similarly as in the case of direct emissions, protection tools for energy intensive industries, irrespective of a level of their centralisation, are of a transitional character. As the average emission potential of the energy sector in Europe gradually decreases, revenues from allowance auctions will cover a smaller and smaller part of protection costs of energy intensive industries. In this case as well, a possible long-term solution could be to levy a consumption tax on the goods requiring energy intensive production processes. This could be achieved through the introduction of border carbon adjustments with the approval of major trading partners and a gradual formulation of a consistent climate policy on the global scale.

"Plan B", in case of no consent of the EU's global partners to this solution, could be to move from emissions trading in the energy sector to rewarding low-emission producers. Examples of such mechanisms include:

- Low-emission certificates (the extension of a green certificate scheme to include, for example, the nuclear energy sector, CCS installations)
- Capacity market or other similar instruments combined with emission standards (support only for low-emission power plants).

Energy-intensive industries could be exempt from a part of charges covering the costs of the support scheme for low-emission energy investments, as it is currently the case with the RES support in some EU Member States. An advantage of this solution, compared to the maintenance of the ETS scheme together with the protection of energy intensive industries, could be its neutrality for Member States' budgets as the development of low-emission sources of energy would be paid by entities for which the increase in energy costs would not create the risk of carbon leakage.

SUMMARY

The creation of conditions fostering the development of low-emission (eco-)innovations in the European industry requires its protection against unfavourable differences in the emission taxation compared to global competitors. The current form of instruments addressing the risk of carbon leakage provides only partial protection, uncertain and gradually diminishing. It is possible to reinforce these instruments within an existing paradigm of the European Union's climate and energy policy. This could be achieved in such a manner that these instruments would create a stable environment for emission- and energy-intensive industries in the 2030 perspective.

Nevertheless, this period should be treated as additional time enabling to gradually strengthen and harmonise a global climate policy, with the possibility of the introduction of a consumption tax or an even more profound correction of a long-term climate policy framework, when the potential of instruments protecting the European industry against the risk of carbon leakage is depleted.

The European Union should understand and clearly communicate to its main trading partners that it will not be capable of indefinitely protecting the industries at risk. It will be essential to gradually strengthen the links between the regional climate policies. On the occasion of the COP in Paris, a good solution would be to establish not only a set of ambitious reduction declarations but also a roadmap for a gradual unification of climate policies of, at least, the group of the biggest economies (China, the EU, the USA and other OECD states) by 2030.

Recommended solutions for a stable and low-emission development of the industry in the EU

Necessary corrections of existing solutions

For emission-intensive industries

- Making benchmarks more realistic
- Discarding the cross-sectoral correction factor
- The introduction of the ex post allocations
- The use of the existing surplus of allowances to create a reserve which would enable to carry out the above-mentioned actions

For energy intensive industries

- The creation of a centralised mechanism compensating indirect emission costs
- The compensation of a relatively high contribution of Poland to the centralised mechanism

Long-term direction of changes after 2030

General direction of actions

- The harmonisation of the climate policy on the global scale (merging emission trading schemes and/or introducing the border carbon adjustments with the approval of main trading partners)

For emission-intensive industries — in case of the absence of global agreement

- The exclusion of process emissions from the ETS and the introduction of taxation on the most emitting goods
- Reaching the reduction target through actions outside the EU

For energy intensive industries — in case of the absence of global agreement

- The modification of support for low-emission energy production towards the solutions that allow to diversify costs for energy customers (for example, low-emission certificates)

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