

**POLSKA FUNDACJA GAZÓW TECHNICZNYCH**

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PFGT response to the public consultation on the Climate, Environment, Energy Aid Guidelines (CEEAG)

The Polish Industrial Gases Foundation (PFGT) as member of EIGA is closely following the adoption of the new Climate, Environment and Energy Aid Guidelines (CEEAG) and is pleased to share its views on the draft text made available by the European Commission.

Our environment is shaped by the regulatory framework and by the economics of the industries we supply. The existing climate and energy *acquis*, including the EU Emissions Trading System (ETS), Renewable Energy Directive (RED) and state aid framework are all important factors, which have influenced decarbonisation trajectories. Therefore, we must consider the new CEEAG in a holistic way with other climate policies that have an impact on our business model and on our ability to deliver the climate goals that the EU has set.

The result of that consideration is that the Industrial Gases sector is highly concerned by the proposed removal of the industrial gases sector – including hydrogen, oxygen, nitrogen and argon – from the list of sectors eligible for reductions from electricity levies for energy intensive users (EIU). NACE code 20.11 sector is today part of Annex 3 of Guidelines on State aid for environmental protection and energy 2014- 2020 (EEAG) and this, when correctly transposed by Member States, has limited the negative impact on the competitiveness of EU industries generated by the rising cost of electricity due to environmental taxes and financing costs of renewable energy supports.

In this regard, we would like to bring to your attention the specific issues addressed in the following paragraphs.

Key messages

- The Industrial Gases (IG) sector is an enabler of the EU climate agenda and its products are already critical to the decarbonization of many hard-to-abate sectors such as steel, non-ferrous metals, chemicals, refining, glass and transport.
- Outsourcing of industrial gases ensures the highest possible safety and efficiency standards, so a level playing field between outsourced and insourced industrial gases should be safeguarded. **Removal of the IG sector from Annex I will in fact cause emissions to rise without significant reduction in levies collected by Member States; by reinserting the IG sector to Annex I, the cost to other sectors who have to pay full energy levies will remain constant.**
- Without aid for energy intensive users (EIU), higher costs for industrial gases will have a negative impact on EU competitiveness at global trade and industrial value chains.

For these reasons, the IG sector should be included in the Annex 1 of CEEAG, and the means by which this can be achieved are laid out below.

This consultation response of PFGT was based on the similar paper issued by

EUROPEAN INDUSTRIAL GASES ASSOCIATION AISBL



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1. The Industrial Gases (IG) sector is an enabler of the EU climate agenda

The industrial gases (IG) sector is well-placed to support the climate transition, providing solutions, products and expertise which can drive the development of the most energy-efficient industrial economy and enable decarbonisation of hard-to-abate sectors. A long-standing example is the use of oxygen to increase process efficiency by increasing production capacity, for example in furnaces, providing both economic and environmental gains.

Indeed, industrial gases are essential for almost all manufacturing sectors and are often central components of their long-term decarbonisation strategies. **In the future, oxygen, nitrogen, argon and hydrogen – separately and together – will play an increasingly important role in the environmental transition**, e.g. oxygen demand in electric arc furnaces (EAFs) will be inextricably linked with hydrogen demand for direct reduced iron (DRI); the same applies for nitrogen requirements for renewable ammonia. Demand for green hydrogen produced from renewable electricity, in concert with the other industrial gases, will continuously grow towards 2050 (with the growth of renewable electricity in the grid).

Despite the benefits outlined above, the exclusion of NACE Code 20.11 will undermine the development of a clean industrial economy supported by renewable and low carbon hydrogen and air gases. Furthermore, it will not improve the “overall funding of support to energy from renewable sources”. This is because only energy-intensive sectors which are eligible for state aid would be able to present economically sustainable projects; vast swathes of the industrial economy would be *de facto* excluded.

The IG sector has the expertise and capabilities to invest, own and manage key assets which are critical for the energy transition. For example, members of PFGT already own and operate many hydrogen plants, including the largest electrolyser in the world. PFGT would welcome state aid that supports such technologies and would urge that such supportive measures are developed in recognition of hydrogen's market and technological links with other industrial gases.

2. Priority for safety and energy efficiency. A level playing field¹ between outsourced and insourced industrial gases should be safeguarded

Our first priority has always been the safe handling of our products throughout their value chains, with the understanding that just one accident could impede promising technological progress. **Second only to safety, the objective of the IG sector - and its outsourcing model - is to provide the most efficient technical and economical solution since it has to compete with insourced solutions of end-users who can be *de facto* competitors.** We believe the outsourced model will play a key role in the development

¹ The draft ‘Guidelines on State aid for climate, environmental protection and energy 2022’ clearly refers to this need for level-playing field: “4. [...] The Green Deal Communication specifically sets out that the State aid rules will be revised to reflect those policy objectives, to support a cost-effective and just transition to climate neutrality, and to facilitate the phasing out of fossil fuels, in particular those that are most polluting, while at the same time ensuring a level-playing field in the internal market.”

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of a clean industrial economy supported by renewable and low carbon hydrogen and air gases.

When compared with internalized production units operated by end-users, outsourced plants operated by IG producers are generally larger in capacity and produce a greater variety of products because they bundle the demands of multiple end-users. They can make use of scale and synergy effects that lower costs and **raise efficiency, thereby also reducing emissions**. The constant push for efficiency that defines the IG sector is fully in line with the EU's guiding principle "energy efficiency first", which is enshrined in Art. 2 (18) of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and also a central element of the EU Green Deal.

However, we are highly concerned that the exclusion of our sector from the guidelines (especially in reference to the eligibility criteria in section 4.11 'Aid in the form of reductions from electricity levies for EIU and to Annex I) will jeopardize PFGT members' ability to compete on a level playing field with IG end-users in other sectors that may continue to be eligible according to the draft Annex 1. Such end-users can and will rationally respond to the resulting market distortion by producing industrial gases internally, despite the accompanying loss of the environmental and economic benefits provided by outsourced plants.

Specifically, the exclusion of NACE code 20.11 installations (outsourced IG production) versus insourced production under other NACE codes will distort the competition on the market in three crucial ways:

1. between insourced IG production, eligible for reduction from electricity levies for energy-intensive users, and outsourced IG production
2. between energy-intensive installations currently outsourcing IG production and those from the same sector that are insourcing IG production
3. between the EU's energy-intensive installations currently outsourcing IG production and equivalent installations in the rest of the world, which do not face comparable additional costs to finance renewable energy

The compounding effect of these distortions means insourcing will be artificially promoted while outsourced plants lose out. Levy reductions currently targeted towards efficient, outsourced production will be shifted towards less efficient insourced production leading to substitution and net emissions growth. This substitution will further result in overcapacities and increased emissions as remaining facilities operate less efficiently due to "turndown" effects.².

As a consequence, it should be expected that removal of the IG sector from Annex I will cause emissions to rise without significant reduction in levies collected by Member States.

The market distortion due to exclusion of IG sector from Annex 1, would cause IG end-users benefitting from the exemptions to insource production at the earliest contractual opportunity. In consequence, most of the IG production that is currently outsourced would disappear while **the cost to other sectors who have to pay full energy levies will remain constant as it would be the case when IG sector is reintroduced**

² Ecofys, 2017

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to the Annex 1.

3. Higher costs for industrial gases will have a negative impact on competitiveness of EU industrial value chains

As noted above, the IG sector is an integrated part of the value chain of industrial sectors that are exposed to international trade. **In consequence, it is not only itself exposed to the risk of relocation, albeit indirectly, but also represents a factor in the exposure of those downstream sectors; the exclusion of the production of industrial gases from the CEEAG would inevitably increase costs for downstream sectors which would ultimately bear the consequences.** (see Appendix 1)

In the context of the ETS State Aid guidelines, it has already been noted³ that indirect carbon intensity has a greater impact in the determination of indirect carbon leakage risk than does trade intensity. Renewable electricity levies, which can be expected to increase in the future, may therefore come to have a significantly higher weight in the electricity price structure. Considering that IG sector is one of the most electro-intensive sectors, the risk of relocation will therefore increase. In quantitative terms, the sensitivity scenarios from the study referred to above reveal a high carbon leakage risk for the IG sector at what was then considered a high carbon price of 35 €/tCO₂. As current EUA prices have now risen to 55 €/tCO₂, the withdrawal of aid for the IG sector would mean that the effect is likely to be even greater; increasing electricity surcharges without exemption for key sectors such as IGs can only exacerbate the risk to EU competitiveness and the consequent risk of relocation.

³ In the impact assessment compiled by ADE and Compass/Lexecon on behalf of the Commission



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Solution

PFGT would propose the following text to resolve the distortions the CEEAG as drafted would generate. This is based on the principal of a third criterion for sectors with very high electro-intensity, who in turn supply sectors with high risks of carbon leakage

CEEAG draft text	PFGT proposal
(...) 357. The aid under thisSection should be limited to sectors that are at a significant competitive disadvantage and risk of relocation outside the Union because of the eligible levies. The risk of relocation depends on the electro-intensityof the sector in question and its exposure to international trade. Accordingly, aid can only be granted if the undertaking belongs to a sector facing a trade intensity of at least 20 % at Union level and an electro- intensity of at least 10 % at Union level. In addition, the Commission considers that a similar risk exists in sectors that face an electro-intensity of at least 7% and face a trade intensity of at least 80%. The sectors meeting these eligibility criteria are listed in Annex I.	(...) 357. The aid under thisSection should be limited to sectors that are at a significant competitive disadvantage and risk of relocation outside the Union because of the eligible levies. The risk of relocation depends on the electro-intensityof the sector in question and its exposure to international trade. Accordingly, aid can only be granted if the undertaking belongs to a sector facing a trade intensity of at least 20 % at Union level and an electro- intensity of at least 10 % at Union level. In addition, the Commission considers that a similar risk exists in sectors that either: (a) face an electro-intensityof at least 7% and face a trade intensity of at least 80%.; or (b) face an electro-intensity of at least XX% and are part of the value chain of sectors meeting the above thresholds of trade and electrointensity.⁴. The sectors meeting these eligibility criteria are listed in Annex I

Summary

Industrial gases – hydrogen, oxygen, nitrogen and argon – are already critical to the decarbonisation of many industrial processes, and will be increasingly important in the future, especially in hard-to-abate sectors. The sector's business model brings substantial efficiency benefits to the industrial economy of the EU. The operating costs of the IG sector can be significant in the costs of end-users of its products, end-users which are in many cases themselves exposed to the risk of relocation due to increased electricity costs. For these reasons, PFGT calls for the retention of industrial gases on the list of sectors eligible for aid in the CEEAG under development.

Appendix 1: Example sensitivity analysis of the materiality of the exemption level from energy levies for oxygen production into steel and copper production routes.

Note that production costs refer here exclusively to OPEX; no CAPEX are considered. Note again that the

⁴ It is expected that the proposed value of Y will be 4 although this will only be finalized after the basis of the Commission's calculations has been clarified.



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electricity intensity of oxygen is assumed to be 400 kWh/t O₂ and that this is the theoretical lower limits of consumption, hence we are taking a conservative assumption⁵. We assume a pass-through ability of the IG sector of 100%.

- **Impact of aid in a form of reductions from electricity levies for EIU embedded in oxygen cost on the primary copper smelters production route**

According to Coursol & Mackey (2010)⁶, the oxygen consumption from copper smelter plants lies between 0.6 and 1.1 t O₂/t copper depending on technology and process specifications. For the following analysis, we assume the simple average of these two values, which means that the oxygen consumption for copper is assumed to be 0.84 t O₂/t copper.

The below graph shows the sensitivity analysis of the impact of the exemption levels (40, 60, 80 €/MWh) for electricity levies in cost of O₂ production into cost of tonne of copper. It is calculated as:

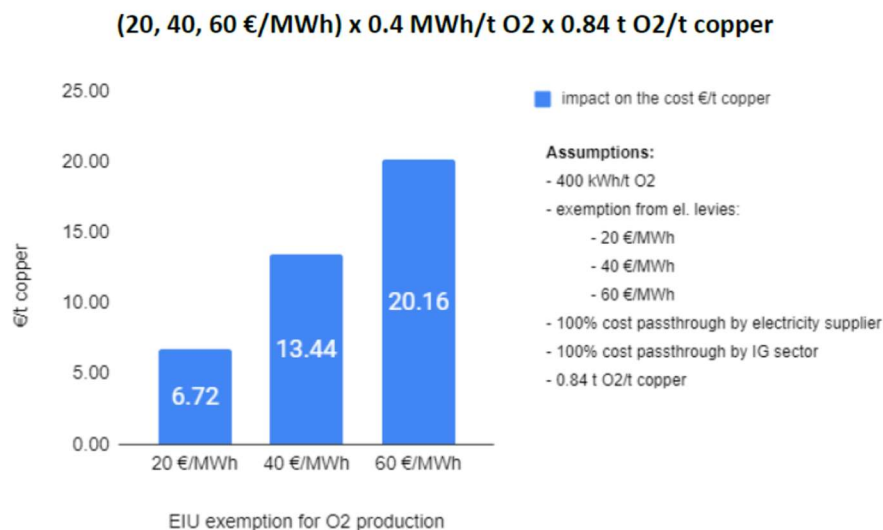


Figure 1. Impact of the aid in a form of reductions from electricity levies for EIU passed via oxygen cost on the production cost of copper in the primary copper smelters (Source: EIGA analysis)

⁵ From experience of EIGA members and EUROFER, the electricity consumption per tonne of oxygen produced can be even higher - i.e. 0.68 kWh/Nm³ O₂ – NAVIGANT study - Assessment of the impact of indirect emission costs & indirect emission cost compensation policies on the industrial gases sector

⁶ <https://www.pyrometallurgy.co.za/pjmackey/Files/2010-Coursol.pdf>