20 November 2020

Competition Policy & The Green Deal

The views of the European Non-Ferrous Metals sector

Eurometaux, representing the European non-ferrous metals industry, welcomes that the European Commission has decided to launch the debate on how competition policy can support the European Green Deal. The European Green Deal and the transition to a climate neutral Europe is both an opportunity and challenge for Europe, the challenge being to ensure that climate neutrality can be achieved whilst at the same time maintaining a European industrial base. The EU's competition law rules will thus have an essential role to play in ensuring that these two twin objectives: 1) reaching climate neutrality and 2) maintaining electro-intensive industries in Europe can be achieved.

With the production of non-ferrous metals being an unavoidably electro-intensive process, competitive electricity costs are key for our industry. Indeed, electricity represents 30% to 45% of the overall operational costs for many of our installations[1] and thus, globally competitive electricity costs are thus one of the key localisation and investment factors for the continuation of investments in existing locations. The 'Clean Planet for all' Strategy of 2018 stipulates that power can be climate neutral by 2045 with wind and solar representing 85% of Europe's electricity supply. As the frontrunner of industrial electrification, if Europe can decarbonize its electricity supply, while maintaining globally competitive electricity prices, the NFM industry would reduce its CO2 footprint by 81%[2]. The challenge is to ensure that electricity - both the electricity costs themselves and the system costs incurred - remains competitive and available in the quantities demanded, throughout this transition. EU state aid rules, in particular the upcoming EEAG, alongside the recently revised ETS Guidelines, will thus have an essential role to ensure that this challenge can be overcome. Therefore, they are of great relevance to the future of our industry in Europe.

Thus far, EU decarbonisation policy has focused on the supply side measures (production processes) to reduce GHG emissions. Looking ahead, policymakers will need to look in more detail at demand side measures and, being more precise, how to create a market for low-carbon products. Here, competition policy will also have a major role to play[3].

In this document, we respond to the consultation questions posed by the Commission, while also outlining our thoughts on how Competition policy should be designed to achieve climate neutrality whilst ensuring electro-intensive industries **remain here**, in Europe. In the consultation response we focus predominantly on the questions posed in part 1 'State Aid Control'. We do not respond on part 2 'Anti-trust rules' or part 3 'Merger control'. Alongside this, we provide details on specific issues related to our sector where we feel competition policy can be instrumental. In particular, we focus on the importance of long term power purchase agreements (PPAs) to our sector and potential competition law measures that could be introduced to ensure that the lack of regulatory certainty no longer undermines our ability to undertake long term PPAs in Europe. In addition, in the Annexes, we provide data and details on our contribution to the transition, the non-ferrous metals sector's roadmap to achieve climate neutrality by 2050, our electro-intensive nature, our exposure to carbon leakage as a result of high electricity costs and our price-taker characteristics.

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[1] The production of non-ferrous metals such as aluminium, copper, zinc, nickel and silicon is extremely electro-intensive. To take the case of primary aluminium as an example, as indicated in the Commission's recently published Energy Prices and Costs report 2018 (**here**), the average share of electricity costs in total production costs is approximately 38% (ranging from 30% to 45% depending on the power prices and the energy mix of the country/region where the smelter operates).

[2] IES/VUB 2019. Metals in a Climate Neutral Europe, **here**.

[3] The importance and potential strategies of the creation of markets for climate neutral solutions and financing their uptake, is elaborated upon in the Industrial Transformation Masterplan. The masterplan can be accessed **here**.

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Part 1 State Aid Control

As input to the debate on how State aid control and environmental and climate policies work together – and how they could do that even better, please consider the following questions:

Q1.What are the main changes you would like to see in the current State aid rulebook to make sure it fully supports the Green Deal? Where possible, please provide examples where you consider that current State aid rules do not sufficiently support the greening of the economy and/or where current State aid rules enable support that runs counter to environmental objectives.

Introduction

Competition law and the EU State aid rules are crucial to support industry's competitiveness and enable industrial transformation, necessary to achieve a climate neutral economy. Electro intensive industries such as non-ferrous metals are dependent on a fully functioning and robust framework which allows to contribute to the objectives of the green transition, while remaining competitive on the global scale.

It should be noted that non-ferrous metals are key enablers of the transition[4] but a climate neutral economy requires enormous investments to develop, upscale and implement new technology in existing or new plants. These investment costs cannot be borne solely by the non-ferrous metals industry and must be proportionate given the high level of global competition we face. A revised state aid framework is extremely important to provide producers with the much-needed financial support and long-term regulatory certainty.

Eurometaux welcomes the ongoing review of the Environmental and Energy State Aid Guidelines (EEAG), an extremely important tool for the Green Deal objectives. Our experience is that aid granted under the 2014 EEAG has been vital for our sector to remain competitive, while facilitating industry projects to promote energy efficiency, emissions reduction and the development of innovative production and process methods. We refer in particular to the aid granted to EIIs to reduce costs resulting from the support to renewable energy sources, which is a prerequisite for those industries and companies most heavily exposed to international competition and with no ability to pass on climate or energy related costs to product prices, hence facing a particular risk of carbon and investment leakage (cf.§189, 2014 EEAG). Furthermore, the renewable support has been important for the technologies to mature and become competitive, has not distorted the power market functioning, and has reduced the CO2 footprint of the power source which consequently reduces the carbon footprint of electro intensive industries. It is important that the support to renewables is balanced out by cost reductions for electro-intensive industries such as non-ferrous metals who cannot bear this cost in global competition.

Changes

Looking ahead, to ensure the state aid framework is better aligned with the Green Deal, we recommend the following 5 changes:

1. Principle – a more assertive globally focused competition policy. In addition, EU Strategic autonomy/industry's competitiveness should be considered an objective in line with the Green New Deal
2. Ensuring competitive electricity prices for industry:
    a. Ensuring renewable surcharge exemptions for electro-intensives are maintained
    b. Limit the climate costs of other elements of electricity bill which industrial consumers facing global competition must pay – PSOs, capacity mechanisms, CHP-HP, etc.
    c. Financial support for long term RES and low-carbon Power Purchasing Agreements (PPAs).
3. Create a market for low carbon products
4. Innovation support for low carbon technologies
5. Establishing long term certainty

4 Global and EU demand for non-ferrous metals is projected to rise more steeply than any other raw material by 2050, due to their essential use in in low-carbon technologies.In a recent study, the World Bank concluded that demand for metals is forecast to rise significantly in key low-carbon applications by 2050: wind turbines (-/+300%); solar panels (-/+200%); energy storage (-/+ 1000%). See the study **here**.

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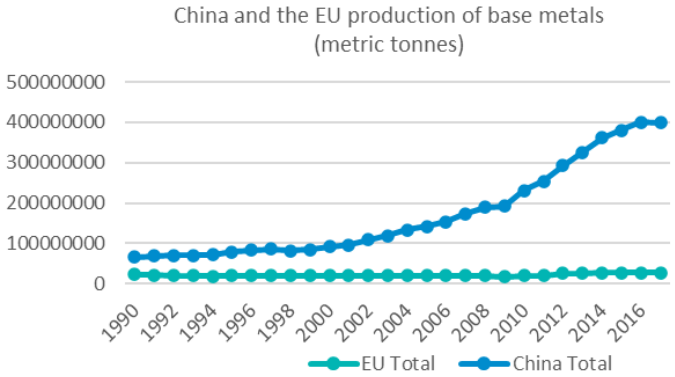
1. *A more assertive globally focused competition policy, seeking to address global distortions, not only internal market distortions*

Thus far, the EU has largely strived to maintain an open and fair market. To tackle this, the EU should develop a more globally focused competition policy that looks at extra-EU market distortions, not just at the Single Market.

A climate ambitious state aid policy and its enforcement should, as a general principle, take into account the impact on the global competitiveness of the European industry as a key factor. Global warming is not an EU internal-market problem, but rather an international one. Through its ambitious climate policy, Europe is leading on international climate action, but its effort will have limited effect if we do not see corresponding, reciprocal effort by other large nations or regions. By acting alone, European industry is suffering from added costs compared with main international competitors. Until this global level playing field is established, European industrial competitiveness needs to be safeguarded also via competition policy. In today's carbon constrained world, globally competing industries, such as non-ferrous metals, are exposed to market distortion due to different non-reciprocal climate policies worldwide. Therefore, it is of utmost importance that competition policy and state aid address growing global competition imbalances, too.

Particularly, for the non-ferrous metals industry, it should be noted that we face major competition distortions vis-à-vis China, whose non-ferrous metals production has multiplied tenfold in 20 years and currently represents 50% of global production. The Chinese non-ferrous metals sector is also characterized by a number of state-owned enterprises who are primed to become national champions. Despite the coal-based electricity grid, the Chinese industry is not subject to any direct or indirect carbon cost.



Its overcapacity has been documented[5] and industrial installations receive consistent subsidies that the EU Commission has repeatedly acknowledged[6]. Indeed, the OECD[7] reported between 2013 and 2017 five leading Chinese aluminium companies received 63 billion dollars in direct state subsidies, i.e. 85% of all support in the global aluminium sector.

It is essential to ensure that effective state aid controls safeguard fair global competition. State subsidies, market protection, and unfair trade practices that infringe market-based principles can give an unfair competitive advantage to competing firms (See above section with details on Chinese market distortions) To counter this, we need strengthened rules to address market-distorting subsidies, including indirect industrial subsidies in the form of tax cuts, cheap sovereign loans to state-owned enterprises and/or inflated procurement prices paid by local public authorities. This is often considered the role of the EU's trade policy, but trade policy is inherently too slow and inflexible to adequately deal with all of these risks alone.

A key aspect of EU state aid policy has always been the definition of the 'relevant market. When the EU's competition policy was designed, the internal market was the relevant market. However, the market in which non-ferrous metals operate is now a global one, in which the internal market is merely a sub-market, in fact one that's becoming less and less crucial in shaping the (global/relevant) reality of the market. Thus, competition distortions have to be assessed in the correct framework, i.e. the global one. Focusing simply on whether one European company is in an advantageous position compared to another, is sub-optimal at a time when both of these companies are being out-competed by subsidised Chinese non-ferrous metals production. In attempting to maintain a level playing field within Europe, the EU is inadvertently helping non-EU companies, who are not subject to the same restrictions and have therefore grown to enjoy dominance in the actual market (i.e. the global one). The end result is that the EU's competition policy actually ends up

[5] Analysis of Market-Distortions in the Chinese Non-Ferrous Metals Industry': here
[6] Commission Staff Working Document "on significant distortions in the economy of the People's Republic of China for the purposes of trade defence investigations" SWD(2017) 483 final
[7] OECD, 2019: Measuring distortions in international markets. The aluminium value chain. Available here.

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helping the globally dominant players, which can lead to a counter-intuitive effect to the one competition policy should have.

Finally, it should not be forgotten that state-aid control is in fact a tool aimed at forging genuine competition. State-aid schemes should also consider the need for a level-playing field between EU EIIs and global competitors, acknowledge the specificities of industrial sectors and avoid the unintended effect of compromising the global competitive position of European EIIs. EU State aid rules only arrange for a level playing field within the EU, without also ensuring a level playing field for EU companies competing worldwide, apart from the existence of a so called "matching clause" in some situations (e.g. the Research, Development and Innovation framework) to compensate for the distortive third-country subsidy. However, this clause has never been applied because there is a lack of data regarding aid granted to competitors by third countries.

2. Ensuring competitive electricity price for Industry

The importance of competitive power costs for non-ferrous metals producers

In two detailed reports published last year, the 'Industrial Transformation Masterplan[8]' and 'Metals for a Climate neutral Europe9', the access of industry to abundant, competitively priced energy was identified as the most important framework condition for the industrial transition to climate neutrality. The "Clean Planet for all' Strategy of 2018 stipulates that power can be climate neutral by 2045 with intermittent renewables, wind and solar, representing 85% of European electricity by 204510. With this decarbonisation of power and the penetration of variable renewable electricity, the EEAG will have a crucial role to play to ensure electricity remains sufficient and globally competitive.

Electricity tends to represent around 40% of the production costs of primary metal producers and thus, non-ferrous metals producers are particularly sensitive to any increase in the costs of electricity[11]. High electricity costs act as a disincentive to investment in the production of non-ferrous metals in Europe and have already led to carbon and investment leakage in our sector[12]. The reality is exacerbated by the fact that non-ferrous metals prices are set in global markets (most notably the London Metals Exchange) and any costs increases brought about by regulatory measures cannot be passed on to consumers without losing significant market share to non-EU producers who do not face the same costs (i.e. European non-ferrous metals producers are 'price-takers')[13]. According to the 2030 Impact Assessment, energy costs are expected to rise by roughly 19%, whereby modelling accompanying the IA acknowledges that the EU NFM industry may suffer a major blow under the new paradigm. Given the significant global supremacy in terms of sustainability performance achieved by the EU NFM industry (including but not limited to GHG emissions, given that sustainability is a far broader concept encompassing 17 SDGs), competition policy must allow sufficient room for concrete measures reversing the trajectory described in the 2030 IA, with a view to actively contributing to climate change mitigation, which can only be measured at a global scale anyway.

i. Maintain current system of reduction in renewables support in EEAG to allow electro-intensive industries to remain competitive

For the most electro intensive industries as primary non-ferrous metal producers, electricity cost is about 40% of the production cost and represents the main parameter deciding the producer's global competitive position. Therefore, the current EEAG rules on reduction of RES support should be maintained and strengthened in view of the increasing costs stemming from Green Deal implementation. State aid policy must allow for adequate hardship regimes, cost limits and specific measures for industrial users most exposed to the risk of carbon leakage, until a level global energy and climate playing field is established. The provisions in current Section 3.7 paragraphs 188 & 189 of the current EEAG, wherein

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[8] Masterplan for a Competitive Transformation of EU Energy-intensive Industries Enabling a Climate-neutral, Circular Economy by 2050. Available here.
[9] IES/VUB 2019. Metals in a Climate Neutral Europe. Available here.
[10] On electricity, the strategy projects wind with a 60% share by 2045 and solar representing 25%. The remaining 15% will be a mix of nuclear, hydro and/or gas with CCS.
[11] For more details on our electro-intensity and price taker status, see Annex i 'electro-intensive nature of non-ferrous metals producers' and Annex ii 'Price-taker status'.
[12] Since 2008, the EU has lost 36% of its primary aluminium smelting capacity (due to plant closures & curtailments). See **Annex iv** 'Carbon Leakage in our sector'.
[13] See Annex ii on our price taker status for more details

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relief granted is proportionate to the specific exposure of each sector at the level of undertaking/activity, removes any risks of overcompensation or market distortion

ii. Limit future climate related costs impacting electricity consumption prices

Looking ahead, the new rules should allow for reduction in or exemption from the future extra costs resulting from financing the EU Green Deal and higher climate ambition, which are not faced by international competitors. These costs include direct funding support for additional infrastructure, storage that enables the targeted renewable electricity uptake in the power mix. Further, reductions in capacity mechanisms surcharges, system balancing costs and extra network investments should also be allowed.

iii. Support schemes for renewables

New EEAG should include clear and specific guidance on how to design cost-effective, competitive bidding schemes for RES and other technologies, how they should be implemented at national level and monitor the implementation of such guidance. The massive decrease of RES technology costs must be reflected in the maximum aid allowed; the state aid guidelines must address this. Operating aid is not the only measure that can ensure the deployment of renewables: investment aid can be a more viable option that offers certainty to investors in green technologies and state aid guidelines should encourage this approach. Regulate clearly the "contract for difference" mechanism which has recently started to be used for RES projects. The mechanism must also take into consideration the massive drop of RES technology costs.

Elsewhere, it would be useful if all notified support measures were accompanied by a study analysis the impact on the measure on the final price of electricity and the competitiveness of EU companies. This would bring greater certainty to industry.

Facilitating long term Power purchasing agreements

i. Support for long term low carbon power purchasing agreements

Given the importance of competitive power prices to our industry, we traditionally engage in long term power purchasing agreements (PPAs)[14]. At present, high power costs and the lack of regulatory certainty, are undermining the attractiveness to undertake a PPA here in Europe. This is something which the upcoming Competition Policy Framework should seek to address.

Renewable energy power purchase agreements have been important for investors in Member States where the support cost is low and uncertain and where the investors are exposed to future uncertainty. It is apparent that when the overall electricity market is competitive and liquid and support schemes are correctly designed, both RES generators and non-ferrous metal producers have incentives to sign long-term PPAs. Within this paradigm, RES support costs and other taxes have a major impact on the competitiveness of the non-ferrous metals industry and their long-term investment strategies. The energy intensive industries interest to enter commercial RPPAs is depending on the framework conditions for industrial consumers with clarity on some regulatory components, in particular compensation for the indirect costs of the EU ETS and cost reductions in the EEAG, playing a crucial role.

However, outside of the Nordic electricity market, numerous obstacles remain that prevent large scale RES PPAs from being signed. With regards the decarbonisation of electricity supply, a report published by DG Energy last year detailed significant challenges that large corporate consumers face in consuming renewable electricity[15]. In particular, the requirement for massive volumes of baseload electricity makes it very difficult, and very expensive, for large electro-intensive consumers to cover their demand using low-carbon generation, which tends to be much more variable given the profiles of wind and solar production. Given that baseload electricity is needed for non-ferrous metals producers, the cost of matching variable electricity generation with an industrial consumption profile (so called "firming costs") was identified

[14] European non-ferrous metals are at the forefront of renewable power corporate purchasing. Having signed around 20TWh/year in RES PPAs in the past 6 years. For information on our procurement of carbon free electricity, see of non-paper **here**.
[15] See report 'Competitiveness of the heating and cooling industry and services. Part 2 of the study on the competitiveness of the renewable energy sector' here.

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as a major barrier to the further uptake of RES sourcing in the "Masterplan for a Competitive Transformation of EU Energy-intensive Industries"[16].

In order to incentivise the corporate sourcing of renewable electricity, cost reductions should be considered (such as contracts for difference, exemptions/reductions to network charges, relief from shaping costs etc) in order to offset the additional costs that these entail, thereby safeguarding the competitiveness of Europe's energy-intensive industries while significantly reducing their carbon footprint. The cost of providing such compensation on the consumption side is much lower than the equivalent cost of supporting the same volume of electricity on the production side via a RES support scheme.

3. Support for Innovative Technologies

Materials produced with breakthrough technologies may be more expensive than the ones produced with conventional processes, at least in a transition phase until the new technologies reach a sufficient level of maturity and become cost competitive. This will require investigating and developing incentives that foster the uptake and cost competitiveness of innovative products.

The Energy Intensive Industries have identified several technology pathways that could enable deep emissions reductions and companies are working at concrete projects to implement them. Considering the additional time required for their uptake and deployment, it is essential to test the most promising technologies at industrial scale as soon as possible in the coming decade. These solutions entail high technology risks, **very large capital requirements** and often higher operating costs than conventional technologies

The European metals sector have already reduced their absolute emissions by 61% since 1990, matched only by the chemicals sector[17]. Moving forward, we are fully committed to further innovation and constant reduction of greenhouse gas emissions in our production processes. However, many of the technologies in consideration[18] for further lowering the sector's footprint have not yet reached pilot or large-scale demonstration stage and will hence require high risk and large capital-intensive investments. EU and Member State innovation programmes are essential for funding new projects in their early stages and onwards. Ensure that EU State aid policy supports investment in research and innovation projects of common European interests that contribute to growth, jobs and EU global competitiveness while fundamentally safeguarding a market and company driven European economy. Supportive state aid rules should help mobilise also national resources and allow for accelerated depreciation of the new assets, while de-risking instruments could facilitate access to private capital at competitive conditions

In parallel to breakthrough technologies scalability, action is also needed to establish European markets and demand for low-carbon metals. We elaborate upon this in the next section.

- **Carbon contracts for difference (CfDs)?**

Carbon CfDs could support climate neutral projects by covering the incremental costs of breakthrough low-carbon investments and create a business case for very risky first movers in such technologies. The idea would be to provide a cash payment to top-up the market price of conventional products based on the carbon price differential. While it cannot cover all the sites in Europe, it could ensure a certain share of the market going green. Such a measure could be more useful together with the other tools like the Innovation Fund.

Elsewhere, carbon CfDs should not just be considered to promote technological breakthroughs. A similar model can be used to promote the procurement of green electricity. Here the purchaser (i.e. a metals producers) would agree to buy renewable electricity at an agreed strike price (This price would include balancing costs). Like this, the purchases would

[16] Published by the High Level Group on Energy-intensive Industries and was mentioned in the Green Deal Communication **here**
[17] See page 41 of the IES/VUB 2019 report: Metals in a Climate Neutral Europe **here**.
[18] For a list of those technology pathways, see page 16 of the IES/VUB 2019 report: Metals in a Climate Neutral Europe **here**

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have greater certainty of the electricity price and the seller would have certainty that it's electricity would be purchased thus facilitating renewable PPAs.

4. Creating a market for low-carbon products

The large-scale deployment of breakthrough technologies by EIIs on the supply side will need significant changes to incentives and consumption patterns of industrial materials on the demand side. A supportive policy framework needs to define a proper mix of pull and push measures that shape new business models and create markets for climate-neutral, circular and sustainable products. Such measures need to consider firstly, the environmental footprint including GHG over the full life cycle – beyond manufacturing (cradle to cradle) and secondly, a level playing field with third countries' producers. Product information, including product labelling, can be a useful tool to empower consumers, from simple awareness to active involvement.

As identified in the above-mentioned Masterplan, a supportive policy framework needs to define a proper mix of pull and push measures that shapes new business models and create markets for low-carbon products. In the transition phase, until new products and solutions reach maturity and become cost competitive, demand side instruments - including financial support – will be needed. Public procurement (15% of EU GDP) could play a role in acceleration in market creation (in particular sectors like transport, energy, construction and telecommunications). Once these innovative technologies and solutions are developed and reach a sufficient market penetration, standards may support their market update.

A facilitating regulatory framework for bringing products with low GHG footprint to the market can be found in rules on public procurement, labelling or in standardization efforts. In each of these regulatory initiatives, it is essential to understand what "product" means: the CO2 performance does not stop when placing the product on the market, it extends to its use and its treatment at the end of life. The development of a life-cycle assessment that provides a fair treatment for all materials equally is a necessary precondition for the development of further regulatory measures.

While it is correct that previous attempts for an industry-wide accepted LCA methodology have not been successful, there is now clearly a sense of urgency with policymakers and industry alike that spurs initiatives such as "Building Levels" which assesses CO2 performance over the life-cycle and across different materials as part of the built environment. There is no doubt about the need for a transparent and robust accounting methodology throughout the value chain and product life cycles, which empowers consumers to make informed choice.

5. Long term certainty: Predictability on Regulatory Costs

The new state aid framework should provide long-term certainty on regulatory costs so that green investments are more attractive.

It is worth noting that RES support schemes and capacity mechanisms typically approved for max 10 years, but agreements and contracts for individual beneficiaries can last for 10-15 years. However, the duration of State Aid Guidelines, averaging 5 years, is typically much shorter. With regard to agreements and contracts signed in accordance with EEAG provisions, changes in the Guidelines do not usually involve changes to the renewable support schemes that have already been approved, nor contracts awarded under schemes already approved under previous guidelines[19]. A similar approach could be considered for relief for energy intensives. The benefit would be that it would provide the certainty needed for industry over timescales relevant for investment and better ability to match the corporate PPA duration (Which can range from 10-25 years), which in turn would help to achieve the overall competitiveness objective.

It is essential and would be greatly beneficial for energy-intensive undertakings if regulation would establish better long term reliability. Such reliability would encourage long term investments in the non-ferrous metals sector (which tend to be

[19] Article 6 of the RED II (Directive 2018/2001) specifically provides that "the support granted to renewable energy projects are not revised in a way that negatively affects the rights conferred thereunder".

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highly capital-intensive, and therefore have long payback periods). At present, there remains great uncertainty and insecurity regarding the future existence and scope of EU regulations. This regulatory uncertainty creates an unsuitable framework for investment and innovation in electro-intensive sectors.

Q2.If you consider that lower levels of State aid, or fewer State aid measures, should be approved for activities with a negative environmental impact, what are your ideas for how that should be done? For projects that have a negative environmental impact, what ways are there for Member States or the beneficiary to mitigate the negative effects? (For instance: if a broadband/railway investment could impact biodiversity, how could it be ensured that such biodiversity is preserved during the works; or if a hydro power plant would put fish populations at risk, how could fish be protected?)

For many negative environmental impacts, there is already the necessary EU legislation in place. Examples of this include on biodiversity and biological and chemical water quality. There is thus no need for additional requirements in state aid regulations. In fact we could suggest that state aid should tangibly encourage the transition of activities with a negative environmental impact towards more sustainable ways of production etc. Blacklisting entire sectors, which would result in excluding mitigation projects from state aid, would actually compromise the transition.

Q3. If you consider that more State aid to support environmental objectives should be allowed, what are your ideas on how that should be done?

a. Should this take the form of allowing more aid for environmentally beneficial projects than for comparable projects which do not bring the same benefits ("green bonus")? If so, how should this bonus be defined?

b. Which criteria should inform the assessment of a green bonus? Could you give concrete examples where, in your view, a green bonus would be justified, compared to examples where it would not be justified? Please provide reasons explaining your choice.

Yes, more State Aid to support environment objectives should be allowed. To support environment objectives, more State Aid should be allowed in the following areas:

i. Incentivising direct electrification

Direct industrial electrification is a major opportunity for Europe to achieve its climate neutral objectives. Non-ferrous metals producers are the frontrunners in industrial electricity and would reduce their GHG footprint by 81% should power be decarbonised. Given the major potential of direct industrial electrification, equal treatment should be given between direct and indirect electrification (i.e. increased use of hydrogen powered by renewables, etc). Any support schemes designed to support indirect electrification (contracts for difference for renewable power hydrogen, etc) should also be available for direct electrification (i.e. renewable PPAs signed by non-ferrous metal producers).

ii. Providing financial support to the electro-intensive industry for signing RES and low-carbon PPAs

Despite the falling costs of renewable electricity generation[20], industrial consumers in particular are still struggling to consume renewable electricity. This is due to a number of remaining barriers and hidden costs, many of which were identified in a report that was recently published by the European Commission[21] and a report by the IES/VUB[22]. These barriers are jeopardising industrial consumers' attempts to decarbonise their processes and will continue to do so until they are adequately addressed. Given that industry accounts for a large chunk (around 37%23) of the EU's total electricity

[20] According to the latest figures published by the **International Renewable Energy Agency (IRENA)**, the majority of newly commissioned RES capacities already produce electricity at a cost that is comfortably lower than the cheapest fossil fuel alternative.

[21] **European Commission**, 2019. Competitiveness of corporate sourcing of renewable energy.

[22] Institute for European Studies (IES), 2019. **Metals for a Climate Neutral Europe: A 2050 Blueprint**

[23] **European Environment Agency**, 2020. Final energy consumption by sector and fuel in Europe.

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consumption, it is clear that solving the issue of industrial RES sourcing is a pre-requisite to decarbonising the EU's electricity grid and -by extension- reaching climate neutrality.

iii. Important Projects of Common European Interest (IPCEI) and breakthrough innovation

IPCEI criteria should be amended to allow funding for the operational costs incurred by the use of low-carbon production processes. The scope should be extended to support, under a set of defined conditions, innovation for the decarbonisation of existing products, including electricity supply. Public support via IPCEI could for example support the development of relevant breakthrough technologies beyond CCS.

iv. Public support schemes for new technologies and scalability

The success of the Green Deal relies partly on the development of and scaling new technologies such as batteries and green hydrogen into cost competitive components in the climate neutral economy. To ensure such development at sufficient speed is likely to require public support schemes beyond current programs and allowing also for scaling of proven technology. This is limited in current EU state aid rules. As long as European companies compete with international peers, access to similar level and duration of public support will be required. The state aid rules should allow for full compensation of additional costs, but at the same time make sure aid does not go beyond the amount that is really needed. IPCEIs allow for higher maximum state aid, but the processes are complicated and lengthy. Measures to simplify should be considered.

v. Recycling infrastructure and circular economy investments

Support for circular value chains and sorting infrastructure: The current Guidelines do not reflect the higher ambition for circularity under the Green Deal and the recently released Circular Economy Action Plan. Aid should go beyond waste management systems and focus higher up the waste hierarchy to support innovative circular solutions, high quality and innovative recycling facilities and resource efficient industrial production processes. Further down the waste hierarchy, flexibility should be allowed for aid targeting innovative collection and sorting infrastructure and investments in high quality recycling facilities. Such measures would generate benefits in terms of resource efficiency, energy consumption and carbon emissions, thus in line with the EU Green Deal Objectives.

vi. Explore the possibility of demand-side measures to incentivise low carbon products:

As aforementioned, EU State Aid policy should stimulate the demand of low carbon products and incentivise their production. This should be considered through green public procurement, obligatory quotas for green industrial products (private sector) etc (Please see the above section on creating a market for low carbon products).

Q4. How should we define positive environmental benefits?

a. Should it be by reference to the EU taxonomy and, if yes, should it be by reference to all sustainability criteria of the EU taxonomy? Or would any kind of environmental benefit be sufficient?

No, we would not recommend a reference to the taxonomy. There are five main reasons why we believe so:

1. The Taxonomy process has been faulty: There is a lack of expertise in the Technical Expert Group. This is evident in the conclusions for the aluminium sector with regards the definition of sustainable aluminium (among other examples).
2. The thresholds agreed are to a large extent not achievable for the EU industry.
3. The taxonomy only partly covers the sectors that are under the scope
4. The taxonomy does not cover all important sectors
5. The taxonomy does not target R&D and technology development

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6. The taxonomy fails to consider the broad/all-encompassing notion of “sustainability” as outlined in the 17 UN SDGs but only evaluates “tail-pipe” emissions, while e.g. in the primary aluminium industry alone, a demand for essentially zero indirect emissions is introduced, i.e. the aluminium industry is asked to eliminate emissions of an altogether different industrial sector! For this reason, there is massive imbalance in the treatment of sectors and technologies.
7. Finally, the Taxonomy Regulation is addressed to financial market participants and it’s a transparency tool. Its scope is not to restrict or condition access to financing, but to set up certain criteria to be taken into consideration when an investment can be labelled sustainable. State aid does not fall under the scope of the Taxonomy Regulation and this was not the intention of the legal-makers. Competition policy should focus on facilitating access to affordable finance for European industry’s decarbonization projects

Projects outside the taxonomy could therefore have high environment benefits. Therefore, to restrict definition of position to the EU taxonomy would be too narrow. Finally, with regards the Taxonomy dossier, if the EU plans to use it more broadly, it should have an improved process.

Positive environmental benefits

Positive environmental benefits could be defined as:

i. For existing production/technology:
   - reducing environmental /climate impact compared to existing production technology
   - reducing environmental/climate impact to e.g. BAT level, industry standards, best practice

ii. For new technology:
   Rreducing environmental/climate impact compared to existing solutions

iii. Relevant parameters in assessment of environmental benefits of a project could be:
   - Carbon footprint in production
   - Carbon footprint according to full life cycle assessment (LCA) including use phase benefits
   - Recyclability, re-use and end-of life treatment of products
   - Impact on environmental performance in other sectors
   - Contribution to increased circular economy
   - Energy efficiency

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Annex i: The electro-intensive nature of non-ferrous metals producers

Electricity costs – much bigger impact on Europe's metals sector[24]

At the level of electricity consumption per tonne of metal, primary aluminium is the most electro-intense (15.4 MWh/t) followed by silicon (12.4 MWh/t), ferro-silicon (8.9 MWh/t), nickel (5.3 MWh/t), zinc (3.9 MWh/t) and copper (1.5 MWh/t). Compared to other energy intensive industries' production processes, non-ferrous metals production electro-intensity is clearly higher, with the exception of chlorine production.

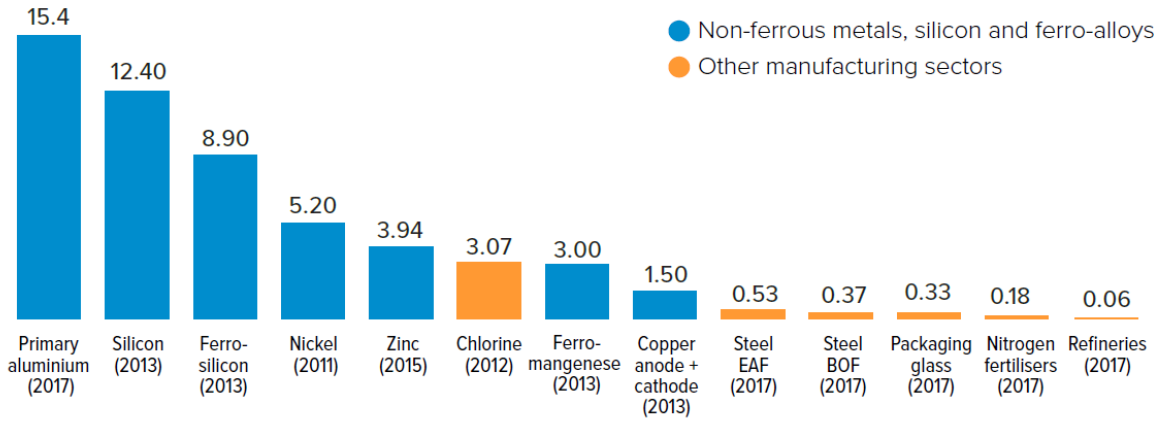

Figure 36: Average electricity use per tonne metal (MWh/t)[242]

When it comes to electricity costs as a percentage of total production costs, non-ferrousmetals show the highest share. For zinc these costs are approximately 38.5%, for primary aluminium 38.3%, for silicon 35% and for copper 27% and nickel 19%. This is significantly higher than most other energy intensive materials with the exception of chlorine production.

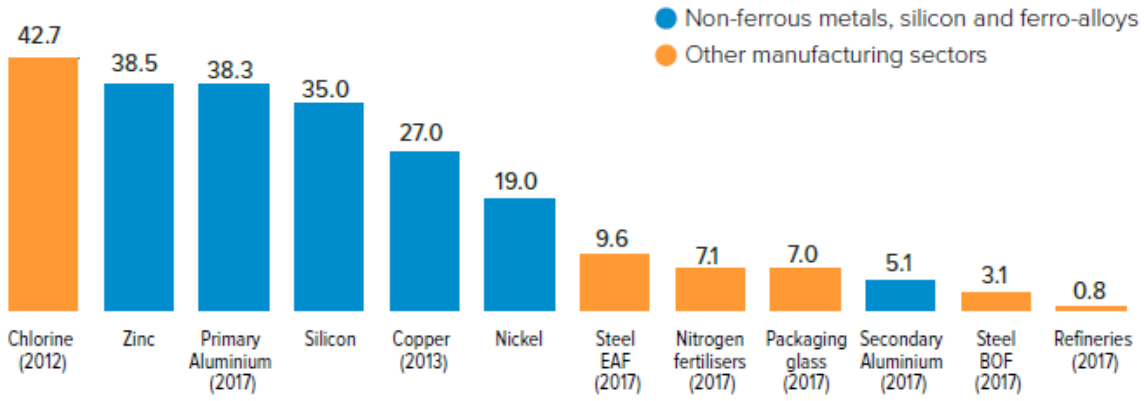

Figure 37: Electricity costs as % of total production costs[243]

[24] Detailed information on the non-ferrous metals' electro-intensiveness can be found in the 2019 IES/VUB report: Metals in a Climate Neutral Europe, page 67. Available here

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Annex ii: Non-Ferrous Metals 'Price-taker' market characteristics

Price takers are sectors whose products are demonstrably incapable of passing on additional local costs – e.g. products traded on global commodity exchanges such as the London Metals Exchange (LME) or other global pricing mechanisms. As a result of these sector's price taker characteristics and globally traded LME commodity price, any additional load is anti-competitive.

A recognition that globally priced industries are incapable of passing on additional costs, is needed in order to have an accurate determination of a (sub) sectors exposure to carbon leakage. This has been recognized in Article 10b 2 (b) of the agreed reform text which refers to *"current and projected market characteristics, "including any common reference price where relevant"*.

This approach would be regulatory consistent as an equivalent approach, which combines quantitative and qualitative criteria, is used in the current guidelines which states that *"account was taken of available market related evidence indicating that the (sub) sector cannot pass on the increased indirect emission costs to its clients without losing significant market share in favour of its third country competitors".* Elsewhere, the Commission's approval of the German EEG 2014 scheme C (2014 5081) paragraph 310 noted *"the fact that aluminium, zinc and copper are sectors which are price takers on commodity markets and are not in a position to pass on additional costs to their customers".*

Inability to pass on cost is best reflected in a very high value of the price elasticity of demand. However, due to a lack of data, the ETS relies on the second-best indicator of trade intensity for which most non-ferrous sectors only show medium values. As a result of using this non-optimal indicator, the quantitative approach underestimates the carbon leakage risk of the non-ferrous metals sector. Due to lack of data we understand that the more accurate price elasticity of demand approach cannot be used. Should this be the case, the default value for 'price-taker' globally priced commodities should be automatically set at the highest level (100%)

In assessing the ability of a sector to pass through carbon costs into product prices, the Commission should factor in the following:

1. Commodities with globally-set prices traded on global commodity exchanges such as the London Metals Exchange or other global pricing mechanisms. As a result of these sector's price taker characteristics and globally traded LME price, any additional carbon load cannot be passed on to customers.
2. The price elasticity of demand. If high, it gives no possibility to pass through costs, and even a small price increase would impact negatively the market share.
3. Global market share: with globally-set prices and relatively low global market share of the European production, European producers are price-takers, and cannot pass through any carbon costs.
4. Homogeneous products meet high global competition and cannot pass through any carbon costs.
5. Transport cost, low transportation cost share of production value cannot pass through any carbon costs.

In short, the entire NFM industry, with high price elasticity, global price setting; price taker, homogeneous product and low transportation cost has no ability to pass through carbon costs to our customers.

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Annex iii: How non-ferrous metals producers are enablers of the transition – the 3 P's, products, processes and procurement

Our Products: Increased use of Non-Ferrous Metals in the Transition

Global and EU demand for non-ferrous metals will increase exponentially over the next three decades, linked with their essential use in low-carbon technologies.

In 2017, the World Bank concluded that demand for metals is forecast to rise significantly in key low-carbon applications by 2050: wind turbines (-/+300%); solar panels (-/+200%); energy storage (-/+ 1000%)[25]. The OECD's 2018 Raw Materials Outlook confirms the rising need for metals and forecasts an increase from 7 to 19 Gt per year by 2060[26].

Metals are essential for low-carbon technologies. For example, Aluminium for light weighting cars; Copper for electrics and motors in electric vehicles, solar panels and wind turbines; Battery metals (Cobalt, Lead, Lithium, Manganese, and Nickel) for clean mobility and grid storage batteries; Zinc and Cobalt for protecting off-shore wind turbines; Silicon in solar panels.

Our processes: Baseload Consumers Bringing Flexibility to the Grid

Non-ferrous Metals have traditionally participated in ancillary services to the power grid contributed by interrupting and regulating power consumption to help balancing the power system, given the right incentives and an adequate planning horizon. Some examples of our demand response services include:

- Emergency demand response: Reduction of large blocks of load for short periods within minutes.
- Spinning reserves: similar to the emergency response but on a smaller scale and a shorter length of time.
- Load imbalance: for grids that use solar or wind power, which are intermittent sources of energy, a customer's load is used to keep the grid in balance.
- Regulation Response: A small percentage of a customer's load is controlled directly by the utility, allowing for real-time adjustments to assist with managing the grid.

Although our baseload electricity consumption and the fluctuating production profile of wind and solar generators might not be seen as natural allies, our processes allow us to significantly reduce our power consumption temporarily and provide some flexibility to the grid.

With higher levels of variable renewable energy to be produced in the EU as projected in the Commission's [27], these ancillary markets will be more important. NFM production has a significant potential to offer higher levels of demand-response to the European power market. An example of this potential is Trimet's Virtual Battery Plant. The German aluminium primary producer has taken a step forward and developed a pioneer process technology comparable to a medium-sized pumped-storage power plant. If this technology were to be implemented in the three Trimet smelters in North Rhine-Westphalia and Hamburg, they could increase the country's pumped storage capacity by 40%. [28]

[25] The World Bank (2017): 'Growing Role of Minerals and Metals for a Low Carbon Future': here
[26] OECD (2018): 'Global Material Resources Outlook to 2060': here
[27] LTS, figure 23, looking at the 1.5LIFE and 1.5TECH scenarios for 2050: available here
[28] IES/VUB 2019. Metals in a Climate Neutral Europe, see page 60: here

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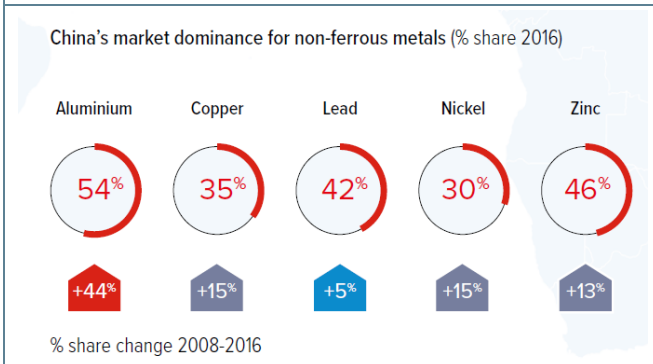
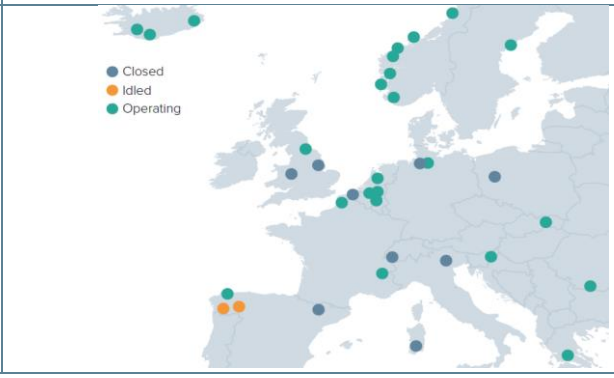
Our Procurement

For information on our procurement of carbon free electricity, see of non-paper here.

Annex IV: Evidence of Carbon Leakage

The European Non-Ferrous Metals sector is being heavily impacted by global competition imbalances. The OECD[29] reported between 2013 and 2017 five leading Chinese aluminium companies received 63 billion dollars in direct state subsidies, i.e. 85% of all support in the global aluminium sector. The consequence of this massive market distortion is excess capacities in China. In the below graph we show the exponential growth of China's share of global base metals production between 2008-2016[30]. To give another example, since 2007, 11 of 36 primary aluminum smelters have closed in Europe[31]. The lack of certainty with regards the regulatory cost component of electricity prices is a major cause for this phenomenon.

China's market dominance	Since 2007, 11 out of 36 aluminium smelting facilities closed in the EU
	

However, the rising European demand is still being met by more carbon intensive products from outside Europe. These imported metals have a significant higher GHG emissions footprint: compared to China, base metals production can be up to 8 times more CO2 intensive[32]. This is largely due to the high use of coal in the power mix[33]. Almost 90% of Chinese aluminium production is powered by coal plants[34]. To give some concrete figures:

- ✓ **Aluminium:** the European primary production has among the lowest carbon footprints in the world, amounting to about 7 tCO2/tAl, which is about one third of the respective Chinese footprint and less than half of the global average.[35]
- ✓ **Nickel**: one tonne of nickel in Europe is roughly 9 tonnes of CO2. In China, it is 70tonnes of CO2 = 7.6 times more CO2 intensive.[36]
- ✓ **Silicon**: one tonne of silicon made in Europe is 3.4 t of CO2. In China, it is 11.6 tonnes = x 3.4 more CO2 intensive.[37]
- ✓ **Zinc:** one tonne of zinc made in Europe is 2.5t. In China, it is 6.1 t CO2/t, i.e. 150% more carbon intensive.[38]

Not only is European production replaced by filthier imports, but new investments are happening elsewhere, outside Europe. Investments in energy-intensive sectors in Germany have been shrinking. Depreciations have been higher than

[29] OECD, 2019: Measuring distortions in international markets. The aluminium value chain. Available here.
[30] Taube, 2017, Analysis of Market-Distortions in the Chinese Non-Ferrous Metals Industry, THINK!DESK China Research & Consulting, pages 130-133
[31] Source: European Aluminium, 2019 (nb: Since 2020, the remaining smelter in Spain was idled).
[32] IES/VUB 2019. Metals in a Climate Neutral Europe, see pages 69-70.
[33] Coal-based power accounts for 57.7% of China's energy use in 2019. Looking ahead, by 2030, far from being phased out, coal power installations are expected to increase from the current 1.05 bn kilowatts (1050GW) to nearly 1.3 bn kilowatts (1300GW). See here.
[34] http://www.world-aluminium.org/statistics/primary-aluminium-smelting-power-consumption/#histogram
[35] Environmental Profile Report 2018, European Aluminium: here
[36] The Nickel Institute
[37] AlloyConsult 2016 Study on CO2 emissions in silicon and manganese ferroalloys for EuroAlliages
[38] Zinc, Congcong Qi, et al., 2017 and the Zinc institute

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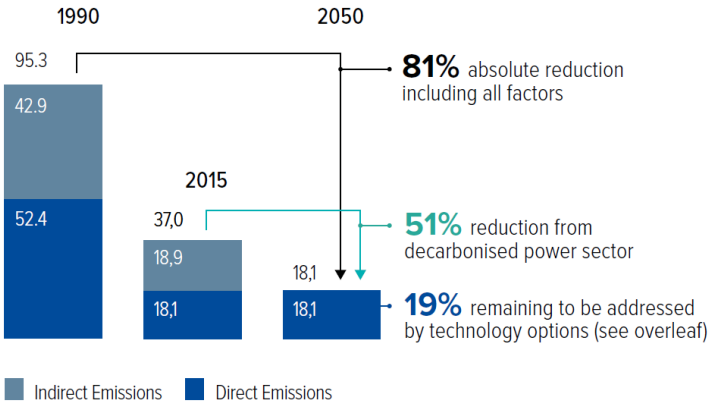
investments. Since 2010, the energy intensives' capital stock was reduced by 8.5% (€ 25 billion). Since 2000, the capital stock has dropped by 17,7%[39]. This is a trend across all EU Member States.

Annex V: How Non-Ferrous Metals can achieve climate neutrality

Our Plan: Decarbonising non-ferrous metals is technologically feasible

Due to the high level of electricity use, **decarbonisation of EU power production will be the most important factor in the decarbonisation of non-ferrous metal production**.

In the long term, assuming power can be decarbonised by 2045, renewables can be fully integrated in the grid[40], non-ferrous metals indirect emissions will hence be reduced to zero. **Carbon-free electricity supply alone would imply a GHG reduction of 81%** compared to 1990 levels.



For the 19% remaining emissions, there are a wide-range of technological options with major potential for achieving GHG reductions in line with climate-neutrality by 2050:

- **Energy efficiency:** Digitisation and automated process management and efficiency in furnaces.
- **New processes in primary aluminium production**: including inert anodes to eliminate direct emissions
- **Further electrification**: of pyrometallurgical processes and/or shift to hydrometallurgical processes and electrification (heat) in downstream processes
- **Hydrogen or bio-based carbon as a smelting reducing agent:** relevant for ferro-alloys/silicon and recovery of metals from slag.
- **Fuel-shift:** Fuel shift from fuels/coal to gas has already occurred in non-ferrous metals industry where possible. Further shifts to natural gas and bio-feed (including reducing agents) are possible.
- **Carbon capture and utilisation and/or storage (CC(U)S)**: Due to relative low level of GHG emissions compared to e.g. steel, chemicals and cement, non-ferrous metals would be depend on the infrastructure developed by other larger industries.
- **Enhanced metals recovery from secondary raw materials:** mining residues, slag, sludges and scrap recovery with new technology.
- **Sector coupling**: demand response and waste heat usage outside of non-ferrous metals production when market conditions allow.

[39] https://www.iwkoeln.de/fileadmin/user_upload/Studien/Kurzberichte/PDF/2019/IW-Kurzbericht_2019__Kapitalstock.pdf

[40] Aligned with the Commission's Long Term Strategy

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Our Policy Request: A toolbox to keep a growing, sustainable, competitive non-ferrous metals industry in Europe

The successful research, development, upscaling and deployment of these technologies needs a fully integrated industrial strategy, underpinned by a strong governance framework. This will require a five vertex[41] strategy composed by:

1. **Competitively-priced carbon-free electricity:** by (i) guaranteeing stable and predictable renewables energy support schemes and compensation for indirects; (ii) introducing a positive regulatory framework for PPAs; (iii) adequately value industry's potential in balancing the grid; (iv) a market-responsive framework for cost-efficient electricity meeting industrial needs & (v) an integrated strategy for the development of low-carbon energy infrastructure and energy storage in Europe.
2. **Innovation & investments support:** Use fiscal and financial instruments to assist in guiding industrial investments towards low-CO2 solutions and support brownfield conversion through regulatory flexibility and access to the EU ETS modernisation fund.
3. **Assertive competition & trade policies:** Most importantly, to pursue a globally focussed competition policy, as well as addressing the distortive effects of foreign companies on the EU internal market, including state ownership and financing.
4. **Nurturing value chains & industrial symbiosis:** Inter alia, to extend the strategic approach under the action plan for batteries to other value chains which are critical for Europe's transition to a climate-neutral economy or to support metals producers to enhance energy efficiency in other sectors, e.g. through the valorisation of low temperature waste heat in the residentials sector.
5. **Creating Markets for green products:** develop a framework demand and supply-side conditions (including in the field of state aid) that allow supporting the cost competitiveness of climate neutral, circular economy solutions.[42]

ABOUT EUROMETAUX

Eurometaux is the decisive voice of non-ferrous metals producers and recyclers in Europe. With an annual turnover of €120bn, our members represent an essential industry for European society that businesses in almost every sector depend on. Together, we are leading Europe towards a more circular future through the endlessly recyclable potential of metals.

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[41] IES/VUB 2019. Metals in a Climate Neutral Europe, see page 16 **here.**

[42] See page 13 of the Masterplan for a Competitive Transformation of EU Energy-intensive Industries Enabling a Climate-neutral, Circular Economy by 2050: here.