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Dow comments on the draft Climate, Environmental and Energy Aid Guidelines (CEEAG)

Dow is committed to the Paris Climate Agreement and the EU Green Deal. In 2020 Dow set new targets to reduce GHG emissions, stop plastic waste, and drive toward a circular economy. We intend to be **carbon neutral by 2050** and are committed to implementing and advancing technologies to **manufacture products using fewer resources and that help customers reduce their carbon footprints**.

The EU chemical industry is a **key provider for EU Green Deal solutions across virtually all EU economic sectors** including automobile, construction, health care, renewable energy generation and storage. Base chemicals at the start of these value chains are highly energy intensive. The transformation of these production processes will be essential to enable products with a low CO2 footprint in all these value chains. Achieving this will require massive investments in the European chemicals sector estimated at €27bn every year between now and 2050. Private investment and government funding within State Aid Guidelines will be needed to support transformation projects, but they need to be complemented by operating conditions that maintain industry competitiveness throughout the transformation process.

The European Commission has published its "Fit for 55" package, and the achievement of a 55% reduction in GHG emissions by 2030 and carbon neutrality by 2050 will require transformational changes in society and the economy. The EU ETS sectors are expected to reduce their emissions by 61% by 2030 which means that industry is expected to be at the forefront of the transition. **The revised EU Climate, Environmental and Energy Aid Guidelines (CEEAG) should support the business case for these transformative investments by ensuring continued globally competitive conditions for industry in Europe**. Energy prices especially play a key role in maintaining this competitiveness.

Key messages

Dow welcomes the overall approach in broadening the scope of the Guidelines, by:

- Supporting potentially all technologies necessary to deliver the Green Deal.
- Expanding aid to new areas such as circular economy.
- Increasing flexibility and streamlining rules currently defined in the 2014 Energy and Environment Aid Guidelines, especially when it comes to aid resulting in the combination of different funding streams.

However, Dow is concerned with two items in particular in the draft CCEAG:

- The technology neutral approach for delivering the Green Deal underpinning the draft is welcome, but we are **concerned that inconsistencies in the text may exclude certain forms of carbon capture such as natural gas with CCS (blue hydrogen) or CCS and hydrogen from process off-gases**. This would be detrimental to the ambitious plans Dow is preparing for the decarbonisation of its industrial sites, for instance in the Netherlands and Germany. In addition, competitive bidding - the preferred allocation method for support - should safeguard room for a tailor-made approach for complex projects, characterised by staged and sequenced phases (see below our detailed comments on Section 4.1 of the draft CEEAG).

- For Dow, electrification will be a key factor to achieve the full transformation to carbon neutrality. Competitive electricity costs are a crucial condition for this transformation to be possible. In this context, Dow welcomes the decision to confirm Section 4.11 (aid in the form of reductions from electricity levies for energy-intensive users) in the draft CEEAG and we fully subscribe to the points made in paragraph 351[1]. Therefore, it is **indispensable to maintain surcharge exemptions for the energy intensive industry**. However, the proposed revision of the rules under Section 4.11 would deprive energy-intensive companies, in particular, of the safeguards already in place under state aid law and impose significantly tighter criteria on aid availability. This is concerning because international competitive conditions have not changed, and this would significantly impair our capacity to make the necessary transformational investments required by the industry in Europe.

Detailed comments

Our comments are divided into "Key issues" for comments on Sections 4.1 and 4.11 of the draft CEEAG and "Other issues" for comments on other relevant items.

Key issues

Section 4.1 - Aid for the reduction and removal of greenhouse gas emissions including through support for renewable energy

Dow welcomes the new approach proposed in the draft CEEAG open to most technologies. There is no 'silver bullet' solution to decarbonize feedstock and energy use in the chemical industry and in Dow processes. We need a flexible approach to rapidly adapt to technological progress. However, we are concerned by contradictory elements in the draft CEEAG: for instance, paragraphs 71 and 108 suggest measures will not support any fossil fuels, whilst paragraph 110 offers scope for natural gas with CCS. It should be **unambiguously clear that support for hydrogen from process off-gases with CCS, and for hydrogen from natural gas with CCS (blue hydrogen),** are explicitly allowed under the new CEEAG. In order to reduce CO2 emissions as speedily as possible, all forms of carbon captured should be eligible for support.

For instance, plans to reduce greenhouse gas emissions are being worked on at the various Dow sites, including the eMethanol project at the Stade (Germany) site[2]. Funding and regulatory certainty are necessary in order to be able to realise these projects. In this context, the use of natural gas with corresponding CCS technologies, e.g. to produce blue hydrogen or as a CO2 source for further applications, should be explicitly mentioned. This connection has already been defined in paragraph 110, but from our point of view it is not sufficient. In addition, support in this area must not lead to weakening of the overall provisions currently

[1] Paragraph 351 of the draft CEEAG: "For certain economic sectors which are particularly exposed to international trade and rely heavily on electricity for their value creation, the obligation to pay the full amount of such levies can create a significant additional burden. This burden can heighten a risk of activities in these sectors moving outside the European Union to locations where environmental disciplines are absent or less ambitious. In addition, such levies increase the cost of electricity compared to the cost of direct emissions and can therefore discourage the electrification of production processes, which is central to the successful decarbonisation of the Union economy. To mitigate those risks, Member States can grant reductions from such levies for companies active in the economic sectors concerned."

[2] https://www.erneuerbare-energien-hamburg.de/en/news/overview/details/huge-success-for-hydrogen-research-in-northern-germany.html

in place for energy-intensive production through cumulation with other subsidies. Therefore, the existing aid system for energy-intensive industry as laid down in the current EEAG should be maintained. Without these exceptions, energy-intensive industries will lose the basis to undertake this transformation (see below comments on Section 4.11 of the draft CEAAG).

As another example, Dow has designed a three-phase plan to reduce current CO2 emissions from its Terneuzen, Netherlands, operations by more than 40 percent by 2030, on its path to achieve net CO2 neutrality by 2050[3]. In the first phase, the plan foresees the construction of a **clean hydrogen plant where by-products from core production processes would be converted into hydrogen and CO2**. The hydrogen would be used as a clean fuel in the production process. The CO2 would be captured and stored until alternative technologies develop, and Dow will also look for ways to enable usage of the CO2 in its processes rather than storing it. The first phase would also include **additional investments in site infrastructure for CO2 liquefaction, air separation, hydrogen distribution and CO2 transport**. In the longer-term, the plan will develop and implement additional breakthrough technologies to replace fuel usage in the production processes. An example is Dow's collaboration with Shell to **electrify ethylene steam cracking furnaces**[4]. These furnaces currently rely on fuel combustion, which makes them CO2-emission intensive when not fired on clean hydrogen. Switching to electrical cracking with clean electricity will reduce the CO2 footprint of the production process to near zero emissions. It is crucial for the achievement of industrial carbon neutrality that this type of project remains eligible for aid.

Moreover, **it is important that support in new technology areas should not be passed on by additional charges to industrial energy-intensive consumers**, in order not to create further carbon and investment leakage pressure. Additionally, support in new areas should not reduce or limit existing support to the energy intensive industry, for instance in the form of exemptions on regulatory charges, taxes and levies, as this is needed to continue competitive operation in a global market (see comments below on Section 4.11).

Dow welcomes the use of **competitive bidding**, but calls for some **flexibility in supporting complex projects, characterised by staged and sequenced phases, and/or potentially disadvantaged due to their geographical location**. Projects in the chemical industry are typically complex, evolving in different stages, and competitive bidding should be designed in a way that allows for such projects also to be supported. Specifically, design of competitive bidding processes, as specified in paragraph 90, should be allowed in a flexible way, in order not to exclude sectors/technologies due to the inherent complexity of these sectors/technologies.

Section 4.11 - Aid in the form of a reduction in electricity charges for energy-intensive companies

This section specifically addresses the activities of **Dow Germany. Dow belongs to the industries referred to in paragraph 357 in terms of electricity intensity and trade intensity.**

Dow produces basic chemical products in large integrated chemical sites in Germany. Production in the chlorine value chain especially is highly energy-intensive and feeds into important downstream value chains, such as polyurethane foam insulation materials, which

[3] https://corporate.dow.com/en-us/news/press-releases/dow-benelux-outlines-roadmap-to-support-dutch-climate-agreement-

[4] https://corporate.dow.com/en-us/news/press-releases/dow-and-shell-electrified-cracker-lowers-emissions

provide major energy and emissions savings in a variety of end uses. Chlorine based production routes also feed into resins which go into wind turbine blades, lightweight adhesives and other components which save fuel and emissions in mobility and many other applications.

These electricity-based production routes via saltwater electrolysis and chlorine, are amongst the technically easiest and fastest to decarbonize through conversion to renewable electricity supply. This switch can in itself help to decarbonize entire downstream value chains in a quick and efficient manner. In addition, the hydrogen already produced in such electrolysis processes can be a valuable starting point for fast and low initial investment industrial scale demonstration projects, and to market ramp-up for kick-starting the green hydrogen economy.

This is one example of many that will help to enable carbon neutrality in Europe by 2050. In our view, the CEEAG should support the continued presence in Europe of the full low-carbon technology value chains that are one of the Green Deal's strategic objectives and in line with the strategic autonomy principle of the EU Industrial Policy.

Compared to other European countries, Germany has very high electricity prices and many levies on the electricity price (see the statement in the EEAG revision support study p. XXVIII). As Germany represents a significant part of the overall European industrial footprint, this has a broader impact on competitiveness within the Single European Market and on the international competitiveness of European industry as a whole, including for the value chains of energy-intensive companies like Dow.

The suggestion, in the draft CEEAG, of significantly tightened conditions for financial support (cumulation of aid and introduction of further, strict, maximum and overall limits), puts at risk the continued competitiveness, both within the Single Market and globally, of German electricity-intensive production, and creates considerable uncertainty in the planning of Dow's transformational investment projects.

The achievement of the Green Deal transformation will require the **continuation of the existing aid system for energy-intensive industry as laid down in the current 2014 EEAG.** This applies, in particular, regarding the proposed changes as set out in section 4.11 of the CEEAG.

The following section will mainly address the exemptions granted under German law that are essential for Dow, in particular the new basis in the draft CEEAG for justifying the **"Besondere Ausgleichsregelung" (Surcharge Exemption Scheme, BesAR) in the Renewable Energy Sources Act (EEG)**.

Dow is the second largest electricity consumer in Germany, including for the production of hydrogen, and is therefore significantly affected by the draft CEEAG, notably the exemption for particularly energy-intensive companies in the Renewable Energies Act - EEG BesAR (compensation for competitive disadvantages in an international context).

In addition, other areas such as electricity taxes, energy taxes, electricity price compensation, and possibly also grid charges are affected.

The following proposed rules will have the following impact:

1. "Own contribution" increased from 15% to 25%.

Under paragraph 359, an aid is generally considered appropriate only above a 25% deductible. Compared to the currently applicable 2014 EEAG, this represents almost a doubling of the own contribution, as it is increased from 15% to 25%. There is no apparent justification for this tightening and it also appears arbitrary in the overall context.

If this deductible - viewed singularly - was applied to the regular EEG levy currently existing in Germany (6.5 ct/kWh in 2021; 6 ct/kWh in 2022), Dow would from now on have to bear 25% of the EEG levy. If we refer to the German system, a minimum threshold of 0.1 cent/kWh is applied. Compared to the proposed own contribution of the draft CEEAG, this would increase the surcharge by a factor of 16. **Such an increase in own contribution would fundamentally threaten Dow Germany's competitiveness at global and European levels.**

2. Gross value added (GVA) - Cap tripled

According to paragraph 360, instead of the deductible, it should be possible to set the cap on additional costs resulting from electricity levies at 1.5% of the gross value added of the company concerned. In the current EEAG, the cap was set at a GVA of 0.5%. **The draft CEEAG therefore means a tripling of the limit – representing a further clear limitation of the ability to sustain competitiveness relative to other single market and global manufacturers not carrying equivalent costs to the EEG levy.**

3. Investment Obligation

Paragraph 365 would require Members States to ensure that energy-intensive companies undertake investments as proposed in energy audits or energy management systems, provided that the payback period of the investments is reasonable, or otherwise undertake other prescribed actions to reduce carbon footprint or greenhouse gas emissions. However, such companies already have a strong incentive within the framework of the EU ETS, and other existing legislation, to plan and implement the most appropriate investment decisions. Furthermore, direction of investment by third parties outside of the existing legal framework, runs a significant risk of sub-optimal use of resources and may create considerable uncertainty over longer term investment planning (the opposite of the intended policy objective). It can also be questioned whether it is either legal or appropriate to grant private sector auditors/certifiers effective power over the investment decisions made by other companies for enforcement by a Member State. Dow does not believe this proposal will support or help to advance the required transformation investments for energy-intensive companies in Europe.

4. Cumulation - No "double cumulation"

Paragraphs 54 and 55 of the draft CEEAG regulate the cumulation of aid regarding the same eligible costs. This regulation is not new compared to the current EEAG. What is new, however, is that in section 4.11, for the purpose of examining the risk of relocation, **an additional obligation has been included** to examine "the combined financial effect of all the levies concerned and all reductions from such levies granted to the eligible beneficiaries" (paragraph 355) to subject them to a (not yet defined) maximum limit.

These rules, taken as a whole, would lead to the double cumulation on different levels with different preconditions (on the one hand, costs, on the other hand, the sum of all exemptions).

The introduction of a maximum limit is in contradiction to the objective of the relocation assessment. **The maximum limit is unsuitable because the sum of reductions in various levies says nothing per se about the actual competitive situation of a company in the international context.** At best, it is an indication that a Member State has many levies on the electricity price or similar, each of which is a disadvantage in intra-EU and in international competition, and each of which – if uncompensated – reduces the industry's ability to electrify in order to achieve carbon neutrality.

The introduction of a cap is likely to deepen rather than solve the problem of relocation. It also forms another serious obstacle to the transformational investments that are needed urgently so that the goal of carbon neutrality in 2050 can be achieved. Paragraphs 355 and 356 should therefore be deleted. Instead, a prudent application of the principle of proportionality is more likely to lead to acceptable results overall (see paragraphs 33 et seq., 46 et seq.).

Other issues

- Comments on *Section 2.4 - Definitions*

- (14) Carbon capture and use (CCU): "*a set of technologies that captures the CO2 emitted from industrial plants based on fossil fuels or biomass, including power plants and waste-to-energy plants [or captures it directly from ambient air], and transports it to a CO2 consumption or utilisation site*".

The above definition of 'carbon capture and use' would necessarily require the transportation of CO2. This could be read as excluding the use of CO2 directly on-site, in a facility that converts or uses the CO2. We would consequently propose to amend the definition:

'carbon capture and use' or 'CCU' means a set of technologies that captures the CO2 emitted from industrial plants based on fossil fuels or biomass, including power plants and waste-to-energy plants [or captures it directly from ambient air], and **transforms the CO2 into materials and fuels and/or** transports it to a CO2 consumption or utilisation installation.

- (24) Demonstration project: "*a project demonstrating a technology as a first of its kind in the Union and representing a significant innovation that goes well beyond the commercial state of the art*)".

A strict interpretation of the term "first of its kind" would mean that only one project per technology to be scaled up could be recognised as a demonstration project. As well as presenting challenging problems of defining when one technology application is different from another, this will also cut off at source the considerable 'learning curve' benefits to be obtained from multiple projects based on a common core technology. We suggest the cumulative demonstration and learning effect should be fully allowed for in this definition.

- (30) Eco-innovation: "*all forms of innovative activities, including new production processes, new products or services, and new management and business methods, resulting in or aimed at* **significantly improving environmental protection and significantly reducing the environmental impacts of pollution**. *For the purposes of this definition, the following are not considered innovations: (…)*".

The cumulative condition of (i) improvement of environmental protection and (ii) impact on pollution leads to a very narrow definition. As a result, much of what is currently considered as "eco-innovation" would no longer qualify. Reducing the environmental impact as such should be sufficient. Moreover, environmental impact should be interpreted in a sufficiently broad manner to allow all demonstrable environmental benefits (e.g. CO2 emissions reduction and avoidance, resource efficiency, sustainable products with reduced impact on people and environment, etc.).

- We noted that, according to the draft CEEAG, the group of beneficiaries is smaller. In particular, **industrial gases (NACE 20.11) producers are no longer to be included in the group of eligible parties**. As a result, these companies will have to reckon with significantly higher costs, which they could pass on to their customers. Since industrial gases in particular play a key role in a wide range of applications in energy-intensive production processes, these restrictions and the cost increase will particularly affect all energy-intensive companies that are eligible to apply here (i.e. are recognized as being at risk of carbon leakage). This is a clear contradiction.

- Dow is also concerned with the **impact on regulatory stability**, due to the changing rules and the short time given to Member States to potentially adjust existing environmental protection and energy aid schemes. While the current EEAG provisions run until 31/12/2021, the draft CEEAG sets 31/12/2023 the deadline to adjust ongoing provisions where necessary.

- The Guidelines are a good instrument insofar that Member States actually make use of them. However, **as long as there is no obligation to provide transformational support, State Aid can by no means be regarded as EU wide carbon leakage protection**. In order to accelerate the industrial transformation and make sure it is based on a level playing field, Dow invites the European Commission to play an active role in ensuring Member States effectively do provide State Aid to the maximum extent allowed by the guidelines. The Commission could, for instance, regularly report on aid granted, share best practices, provide training and assistance to national administrations etc.

- The draft CEEAG includes the right of the Commission (paragraph 415) to **revise the CEEAG at any time**. In contrast to the current 2014 EEAG, in which the aid schemes have been laid down for more than 6 years, the Commission could therefore reopen the CEEAG provisions at any time. This is clearly the opposite of any concept of regulatory stability. A clear timeframe is important in order to be able to make investment decisions. At the same time, it must be recognised that the transformation is an ongoing and evolving process. Against this background, consideration should be given at most to setting interim targets - in terms of time or linked to specific milestones – with appropriate review processes.

- Notwithstanding this, it should also be clearly stated in the transitional provisions that once a notification has been issued, it cannot be invalidated or shortened in time by these guidelines for the time frame specified therein. In this respect, the **protection of legitimate expectations in the official decision should be guaranteed**. Without

these exceptions, the energy-intensive industry's ability to tackle the Green Deal transformation while remaining competitive will be significantly impaired.

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