The European Association of Internal Combustion Engine Manufacturers

EUROMOT POSITION

TAXONOMY COMPLEMENTARY CLIMATE DELEGATED ACT

18 November 2021

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1. Background

The Taxonomy "Climate Delegated Act" (CDA) adopted by the European Commission in June 2021 (plus its Annexes: here and here), associated with the Communication and the FAQ that accompanied it, postponed the decision on how to classify a number of activities in the energy sector, most notably natural gas (NG)-related activities. As to NG, the FAQ document states the following: "*The inclusion of natural gas has been subject to a technical assessment and public feedback, just as for other sectors. In this context, public feedback revealed a wide range of views among stakeholders on whether and how natural gas-based energy technologies should be recognised in the EU Taxonomy, notably as a potential transitional activity facilitating the switch from coal and oil to renewables. The* ***complementary Delegated Act, to be adopted later this year, will cover natural gas and related technologies as transitional activity*** *in as far as they fall within the limits of the EU Taxonomy Regulation*".

As indicated in our numerous public statements on the EU Taxonomy (here the most recent one, including references to older papers; here a recent paper prepared in cooperation with other associations in the EU energy sector), EUROMOT very much supports the role of strict policy principles that should guide investments towards the most sustainable activities, in line with the EU 2030 and 2050 climate targets.

At the same time, it is important to find a right balance between the objectives of environmental protection and of safeguarding the competitiveness of the EU economy. The regulatory framework should not only encourage the development of new green activities, but also the use of already fully viable technologies enabling a fast cost-effective decarbonization coupled with access to a secure, affordable and sustainable energy system. This particularly applies to the power generation sector.

2. Four key principles to identify “transitional” NG-based power generation

Against the background described in paragraph 1, EUROMOT would like to summarize the key principles that should be the basis for the identification of NG-based power generation as a “transitional” activity.

1. We fully support the principle that **carbon lock-in in gas-fired power generation should be avoided**: this is consistent with our latest position on Taxonomy (December 2020), commenting on the Draft CDA (here).
2. The **grid-stabilizing and renewable-enabling function of modern gas-fired power plants** should be acknowledged.
    - Large-scale electrification will make the society and economy increasingly depending on an uninterrupted electric power supply. With a substantial fraction of electricity coming from variable power generators such as solar panels and wind turbines, it is of crucial importance that the power grid stays stable with a maximum reliability.
    - Batteries alone cannot provide the task of enabling by-nature fluctuating power sources: their coverage would only be for (limited time periods) “hours” (see here).
    - On the other hand, **gas-fired grid-balancing internal combustion engine plants make possible**, thanks to their ability for **rapid** start-up, response to varying demand, and shut down, as well as to their multifuel capability, the **step-by-step integration of intermittent renewables (solar, wind) in the electricity grid**: they **only operate when there is a deficit of electricity produced from intermittent renewable sources and storage**. The importance of flexibility in modern electricity systems is also acknowledged in the EU Energy Efficiency Directive (EED, Directive 2018/2002), current recital 7 (new recital 43 in the Commission’s revision proposal): “*The operational efficiency of energy systems at any given moment is influenced by the ability to feed power generated from different sources — with different degrees of inertia and start-up times — into the grid smoothly and flexibly. Improving efficiency will enable better use to be made of renewable energy*”.
    - In turn, the grid-balancing function of modern power plants contributes to fundamental key policy objectives of the whole EU Energy Union, such as: increase the production and thus the use of low-carbon electricity; replacement of fossil gas with decarbonised gas and fuels (via the production of Synthetic renewable-based ‘Power-to-X’ fuels); increase energy efficiency; ensuring access to secure, stable and affordable energy to EU citizens.
3. Directly related to point 2: as underlined in a presentation of the EU Platform on Sustainable Finance (slide 20), relevant existing decarbonization scenarios rely on **reduction targets of the GHG emissions intensity <u>of the whole EU electric grid</u>**.
4. In order to set viable Technical Screening Criteria (TSC) for gas-based power generation, they should be **subject to low-carbon fuels availability** over time (as decarbonization of gas-based power generation will, of course, depend on that) and to **upstream GHG emissions reduction capacity** (as TSC are based on a Life-Cycle Analysis approach, where upstream emissions can have a deep impact on GHG emissions out of the control of power plants manufacturers and operators).

3. EUROMOT’s proposal

Given the growing need for flexibility as illustrated in paragraph 2, the trend is more and more towards use of flexible “peaker” plants, to balance the electricity grid and allow the penetration of electricity from intermittent renewable sources (solar, wind), **thus resulting in greening the whole electricity system**. Such a market trend has also been recently illustrated in the BloombergNEF New Energy Outlook 2020 & 2021: see Annex to this document[1].

Based on this scenario, EUROMOT believes that suitable Technical Screening Criteria (TSC) for **electricity generation from gaseous and liquid fuels** in the Complementary Climate Delegated Act should refer to total **annual** GHG emissions: this would best reflect and capture the actual contribution of such plants to facilitate the integration of renewable electricity, and therefore to decarbonize the **whole electricity grid** (additionally to efforts being made to decarbonize the **individual power plants**, more and more capable of running on renewable gases and hydrogen). Such an annual emissions threshold should be set at the level proposed by our sister organization EUGINE (see here), **equal to the constant emission of the allowed 100g CO2e/kWh over a 1-year period** (i.e. 8760 h* 100 g CO2e/kWh = **876 kg CO2e/kW**). Additionally, as pointed out in paragraph 2, this criterion should be assessed before 31 December 2030, as it is subject to availability of low- and zero-carbon fuels[2] and to upstream GHG emission reduction capacity.

As to **combined heat/cool and power generation from gaseous and liquid fuels**, the proposed TSC should be in line with the definition of "***High-efficiency cogeneration***" as included in the proposal for a revision of the Energy Efficiency Directive (EED), Annex III. In particular, for regulatory coherence (which is a key aspect for the investments needed towards decarbonization) the proposed threshold should be, as in the EED, of **270 gCO2 (direct emissions) per 1 kWh of energy output**.

EUROMOT's proposal for Technical Screening Criteria (TSC) for climate change mitigation in the Taxonomy "complementary" climate Delegated Act

Activity *"Electricity generation from gaseous and liquid fuels"*

*Substantial contribution to climate change mitigation (if only criteria (b) are fulfilled -qualification as **transitional activity**)*

*(a) Life-cycle GHG emissions from the generation of electricity using gaseous and liquid fuels are lower than **100 gCO2e/kWh** **or***

*(b) **Until 31 December 2030** [sunset clause for the commissioning of plants]: **Yearly** Life-cycle emissions of the plant are lower than **876kg CO2e per kW**.*

[1] Also related to this market trend, see the following sources:

- This article: "*it had become clear that baseload power plants had no future. [...] fluctuating wind and solar power require flexible backup generators. Natural gas turbines are generally considered flexible, but combined-cycle units lose efficiency when they ramp up and down. [...] In other words [...], they can be efficient or flexible, but not both simultaneously*".
- This EUROMOT position, page 6: "*Slow dynamic response plants [...] are thus to be kept on-line (at part load) all the time in order to be flexible enough and thus at the same time curtailing production of renewable electricity in times with excess "green power" generation [...]. Fast dynamic/flexible reciprocating engine plants can however be shut down in times with enough/excess intermittent renewable electricity generation and thus fuel is saved and associated CO2 emissions avoided. As a consequence, the share of intermittent renewable electricity penetration into the grid can be increased - average greenhouse gas intensity of the produced grid electricity is thus further reduced*"

[2] This needs to be carefully assessed:

- The EU Hydrogen Strategy (July 2020) estimates (page 7) that only "*from 2030 onwards and towards 2050, renewable hydrogen technologies should reach maturity and be deployed at large scale*"
- The "Energy Transition Outlook 2021" prepared by DNV states (page 7) that "*Global hydrogen production for energy purposes is currently negligible and will only start to scale from the late 2030s, meeting 5% of global energy demand by 2050*".

*Both criteria (a) and (b) are **subject to availability of low- and zero-carbon fuels and to upstream GHG emission reduction capacity**. Therefore, these TSC should be assessed by 31 December 2030, to check whether such options (a) and (b) are viable options.*

Activity "*High-efficiency combined heat/cool and power generation from gaseous and liquid fuels*"

*Substantial contribution to climate change mitigation (if only criteria (b) are fulfilled -> qualification **as transitional activity**)*

(a) Life-cycle GHG emissions from the co-generation of heat/cool and power using gaseous

*and liquid fuels are lower than 100 gCO2e per kWh of energy output **or***

(b) Until 31 December 2030 [sunset clause for the commissioning of plants]

*- Direct emissions of the facility are lower than **270 gCO2** per kWh of output energy (combining electrical, heating and cooling, and mechanical energy) and*

- Primary energy savings of 10% compared with the separate production of heat and electricity (in line with the Energy Efficiency Directive) and

- The facility demonstrates compatibility with co-firing of low carbon gaseous or liquid fuels.

*Both criteria (a) and (b) are **subject to availability of low- and zero-carbon fuels and to upstream GHG emission reduction capacity**. Therefore, these TSC should be assessed by 31 December 2030, to check whether such options (a) and (b) are viable options.*

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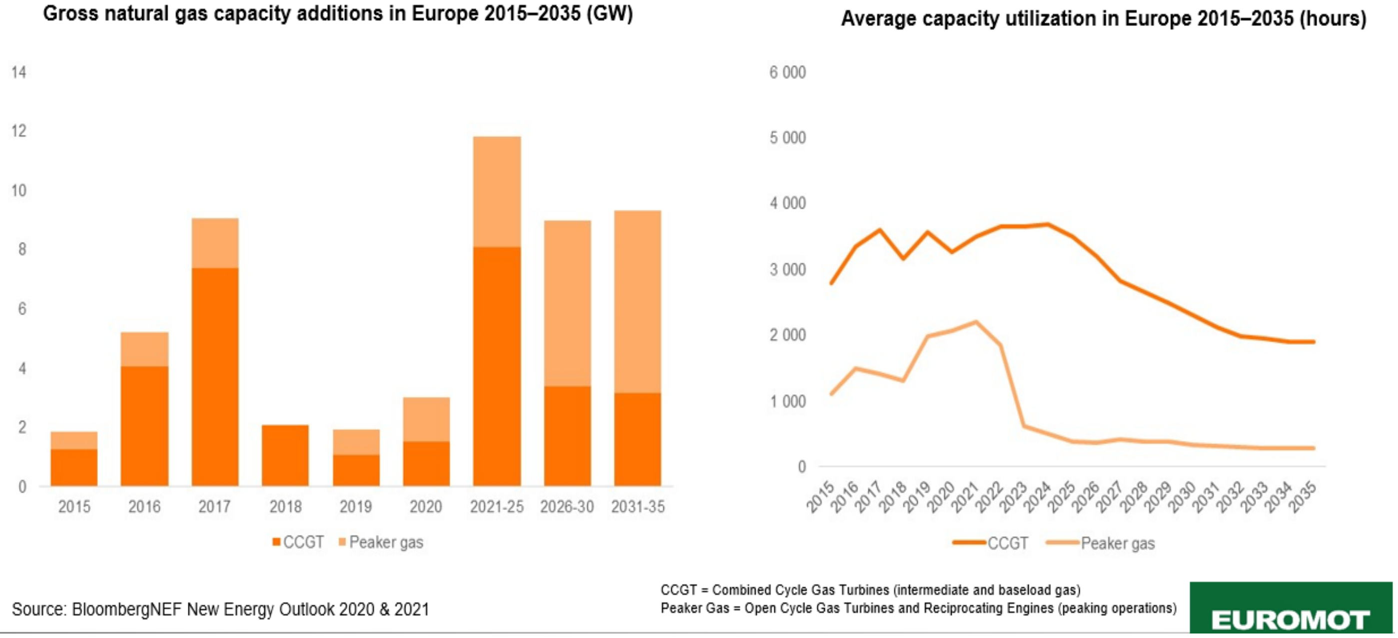
ANNEX

Current and future trends in power generation – flexibility as a key aspect

1) Increasing amount of intermittent renewables in power system require additional flexible thermal capacity, which will be based on Natural gas during this decade. 2) Future natural Gas plants will run less and more infrequently (“peaker” plants). 3) If climate ambitions are increased the need for thermal balancing capacity increases even further. Then natural gas would be largely replaced by cleaner fuels after 2030 or emissions are abated in some other way.



EUROMOT is the European Association of Internal Combustion Engine Manufacturers. It is committed to promoting the central role of the IC engine in modern society, reflects the importance of advanced technologies to sustain economic growth without endangering the global environment and communicates the assets of IC engine power to regulators worldwide. For more than 25 years we have been supporting our members - the leading manufacturers of internal combustion engines in Europe, USA and Japan - by providing expertise and up-to-date information and by campaigning on their behalf for internationally aligned legislation. Taken together, the EUROMOT member companies employ about 200,000 highly skilled and motivated workers. The European market turnover for the business represented exceeds 25 bn euros.

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