

Integrating Gas Power Generation and Cogeneration in the EU Taxonomy for Sustainable Activities

1. Improving the sustainability of the energy system vs the sustainability of a single activity

- **Reasoning**

The taxonomy focuses on single activities and defines thresholds distinguishing between sustainable and non-sustainable ways to perform the individual activity. The impact of a certain activity to improve the overall sustainability of the economy or a system is not systematically recognised.

Gas power plants are only evaluated and compared to other technologies as suppliers of a defined quantity of electricity. This ignores that gas power plants provide additional value to an overall sustainable energy system through ensuring the flexible balancing of supply and demand and providing grid stability in times when wind and solar do not sufficiently deliver. At the same time, the storage of electricity in batteries – for the same purpose – is considered to provide substantial contribution to climate change mitigation according to Art 10 (1)(i) of the Taxonomy Regulation.

The lack of systematic evaluation of indirect sustainability contributions leads to a biased classification of sustainable and non-sustainable activities.

- **Our proposal for the taxonomy**

The taxonomy approach must include a systematic evaluation of the indirect impact of activities on contributing to a sustainable economy.

In the absence of an adequate approach for overall sustainability criteria, the Climate Delegated Act should not favour some solutions only and treat supply-side technologies like gas power generation equal to storage solutions with regard to the benefits they provide to the energy system (Art 10 (1)(i) of the Taxonomy Regulation).

2. No carbon lock-in: Transitioning from natural gas to renewable and climate-neutral gas power plants

- **Reasoning**

The approach of the taxonomy connects specific energy-related activities to a defined technology and fuel. This is misleading as, in cases like gas power generation, the same

technology can be used with multiple fuels, including renewable and climate-neutral gases.

Gas power and cogeneration (or combined heat and power, CHP) plants may change the gas used during their lifetime – once or several times for shorter periods. Also, the blending of different fuels is common practice. For that reason, the activities for power generation and cogeneration with gas should not be defined as separate activities for each gas used: one activity each should cover all gases.

The energy transition leads to a growing availability of renewable and climate-neutral gases like hydrogen. For the moment, the available quantities of clean gases are still limited, but this will quickly change. Therefore, today many gas power plants will start operating with natural gas and switch over to clean gases whenever these become available. Using clean gases, the power plants will become climate-neutral.

- **Our proposal for the taxonomy**

Electricity generation and cogeneration with gas should have screening criteria for a substantial contribution to climate change mitigation applying to all gases, including blends. To recognise that gas power plants can be a sustainable activity through the use climate-neutral fuels – including hydrogen-based gases and blends –, the published EU Taxonomy Climate Delegated Act should not refer to “renewable” and “non-fossil” gases and the description and technical screening criteria should be adapted accordingly.

Additionally, there should be a solution that recognises the use of natural gas as “transitional activity” with less strict thresholds for a limited period. The activity may become a fully sustainable activity fulfilling the stricter threshold through the switch to climate-neutral gases or alternatively the use of CCS/CCU technologies. For that reason, a technological readiness of the plant for the use with a defined adequate share of renewable gases or hydrogen (“H2-ready”) shall be ensured.

3. Contributing to the Sustainability of the Electricity System: Integrating more wind and solar power requires gas power plants ensuring grid stability and supply balancing

- **Reasoning**

The EU plans for a sustainable energy system foresee a reliable, massively extended electricity system as basis. In that system, gas power plants will ensure the flexible balancing over different time periods – a task becoming increasingly important, the bigger the share of variable renewable sources and the smaller the share of other dispatchable generation technologies, like coal or nuclear plants.

These gas power-only and highly efficient CHP plants will not run steadily over the year or their life-time – as assumed in the definition of the 100g CO₂e/kWh threshold – but will operate when the renewable variables do not sufficiently provide energy to meet the demand. The lower number of operating hours will therefore drastically reduce the overall GHG emissions per year or lifetime. The switch to renewable and/or climate-neutral gases during the lifetime of the plant will also reduce its life-time emissions.

- **Our proposal for the taxonomy**

For the complementary Delegated Act, power generation and cogeneration with natural gas should be defined as transitional activities according to Art 10 (2) of the Taxonomy Regulation for a limited time span:

The annual GHG emissions in life cycle assessment (LCA) may not exceed the following thresholds:

- Until 2035: the annual GHG budget is set at a level that equals the value of 270g CO₂e per kW per hour. By this, it will be avoided that a gas power plant annually emits more GHG than foreseen by the “Do No Significant Harm” criteria for energy-related activities. This way the activity will stay within the scope of the Taxonomy.
- As of 2035: the annual GHG budget is set at a level that equals the value of 100g CO₂e per kW per hour, the threshold for energy-related activities that provide a substantial contribution.
It is assumed that, by 2035, sufficient hydrogen and renewable gases will be available for a blending of renewable and natural gas and/or other abatement technologies.

All new plants must be technically suitable for the operation with a defined adequate share of renewable and/or low-carbon gases and hydrogen (“H₂-ready”). Directly or after a limited upgrade, plants must be capable of switching to renewable and/or low-carbon gases and hydrogen as soon as these become available in the quantities needed.

The installed technology must meet at least the energy efficiency requirements for new units as defined in the Implementing Decision establishing Best Available Techniques (BAT) conclusions for Large Combustion Plants for the combustion of gaseous fuels ((EU) 2017/1442 and future revisions) as applicable.

4. Contributing to the Sustainability of the heat system: Ensuring fast decarbonisation progress for efficient district heating networks in (Central & Eastern) Europe

- **Reasoning**

In several EU Member States, high GHG emitting solid fossil fuel or crude-oil plants are still providing electricity as well as heat to district heating grids. These coal and oil fuelled cogeneration plants can quickly be replaced by highly efficient gas CHP plants, immediately providing over a 50% GHG emissions reduction. This way, the energy efficient principle of cogeneration can be maintained, and the existing district heating networks can support a cost-efficient decarbonisation of the heating sector in urban areas.

To ensure that these gas power plants are future-proof, they can already now be ready for the use with a defined adequate share of renewable or climate-neutral gases like clean hydrogen (“H₂-Ready”). In a second step, the plants can change to a climate-neutral operation when these gases become available in sufficient quantities.

The switch of the cogeneration technology from coal to natural gas is an important transition step that is needed as a one-time effort during a limited period, and which supports a fast overall GHG reduction. The transition is not a transformation of the same single activity, but rather a transition of the energy system itself, taking into account all possibilities and contributing activities, without disregarding any solutions.

- **Our proposal for the taxonomy**

The complementary Delegated Act should include this transitional activity, limited to the replacement of an existing cogeneration plant using solid fossil fuels. The final investment decision should be taken before the end of 2027 and the new facility must be in operation before the end of 2030.

The new plant must meet the following GHG emission requirements:

- At the start of operation, the GHG emissions of the new plant must be less than 50% of the solid fossil fuel plant it replaces per kWh (referring to the combined electricity and heat output, calculated with the heat bonus methodology)
- In line with the EU climate targets, by 2030 the GHG emissions of the relevant region must be at least 55% below the level of 1990.
- As of 2035, the GHG emissions have to stay below the DNSH limit of 270g CO₂e/kWh
- As of 2045, the GHG emissions have to stay below the threshold of 100g CO₂e/kWh or the annual equivalent of 876kg CO₂e/kWh

All new plants must be technically suitable for the operation with a defined adequate share of renewable and/or low-carbon gases and hydrogen (“H₂-ready”). Directly or after a limited upgrade, plants must be capable of switching to renewable and/or low-carbon gases and hydrogen as soon as these become available in the quantities needed.

The installed technology must meet at least the energy efficiency requirements for new units as defined in the Implementing Decision establishing Best Available Techniques (BAT) conclusions for Large Combustion Plants for the combustion of gaseous fuels ((EU) 2017/1442 and future revisions) as applicable.