

From: [REDACTED] <[REDACTED]@wwf.eu>
Sent: mardi 23 février 2021 09:55
To: GAUER Celine (SG-RECOVER); WATSON John (SG); ARBAULT Francois (DEFIS)
Cc: [REDACTED]
Subject: CSO statement and attachments: Why keeping fossil gas out of the EU Taxonomy is a must
Attachments: CBI 7 key points on the EU Taxonomy 100g threshold Feb21.pdf; CBI Hidden emissions from gas-fired power Feb21.pdf

Dear Celine Gauer, John Watson and François Arbault,
We have the pleasure to send you below a statement from 10 organisations, that highlights the need to stick to the threshold of 100g CO₂/KWh for electricity generation in the EU Taxonomy.

The statement is accompanied by two new very short briefings coordinated by Climate Bond Initiative, presenting:

- Seven key points about the EU Taxonomy's 100g emissions threshold and why it is the correct threshold science-wise
- The hidden emissions from gas-fired power, due to fugitive methane emissions along the full life cycle: 40% of EU gas imports come from Russia, the country with the highest contribution to global methane emissions from oil and gas; and 36% of EU gas imports come from the US as liquefied natural gas (LNG), a product that uses a further 25% to fuel the process of liquefaction and transportation: this extra amount means that the power produced from LNG emits more emissions than power from coal.

Please do not hesitate to ask us if you have any questions. With my best regards,
[REDACTED]

Statement about how new unabated gas-fired power has a higher-than-expected GHG footprint, compromises EU climate commitments and should be kept out of Taxonomy:

We call on EU member States to maintain the EU TEG's science-based emissions threshold for electricity generation. The robust approach to (unabated) gas for electricity generation in the EU Taxonomy is under scrutiny.

The EU Taxonomy proposes a threshold of 100gms CO₂/KWh for electricity generation. There is pressure to allow a much wider role for unabated gas.

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[REDACTED] Bellona Europa
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7 key points about the EU Taxonomy's 100g emissions threshold

In March 2020 the EU Technical Expert Group on Sustainable Finance (TEG) published its recommendations for an EU Taxonomy for Sustainable Activities.

A key feature of the recommendations around electricity generation was an emissions threshold of 100g CO₂e/kWh. This is the limit on the intensity of greenhouse gas (GHG) emissions produced from the generation of electricity, heat and power from hydropower, geothermal energy or gaseous and liquid fuels.

On 20 November 2020 the European Commission released its draft Delegated Act for the EU Taxonomy, which adopted the TEG recommendation for an electricity generation threshold.

This briefing details the science behind that 100g threshold.

1 The European Union has adopted a net zero emissions target for 2050. This is in line with the recommendations of the 2018 report of the Intergovernmental Panel on Climate Change (IPCC).

This target has also been adopted by a number of other OECD governments, notably Japan, South Korea, Canada and the United Kingdom.

In November 2020 the European Union also adopted an interim target of 55% emission reduction over 1990 levels by 2030, again in line with recommendations of the IPCC.

2 These targets mean that Europe has a limited carbon budget left between now and 2050. Production of CO₂ in Europe was 4,391 million tonnes in 2018¹. This must be net zero by 2050.

1. <https://www.eea.europa.eu/publications/european-union-green-house-gas-inventory-2020>

3 The calculation of the 100g threshold is based on the EU targets for future allowed emissions from the power sector, divided by the expected evolution of electricity demand².

This calculation, rounded to the nearest 5g, results in a threshold value of 100 gCO₂e/kWh for the power sector.

The threshold represents the average value of power generation emissions between 2020 and 2050 to enable the EU to meet the net-zero by 2050 goal.

4 Any one plant can over its lifetime emit only so much carbon and still be in line with the Union's collective Paris Agreement goals³.

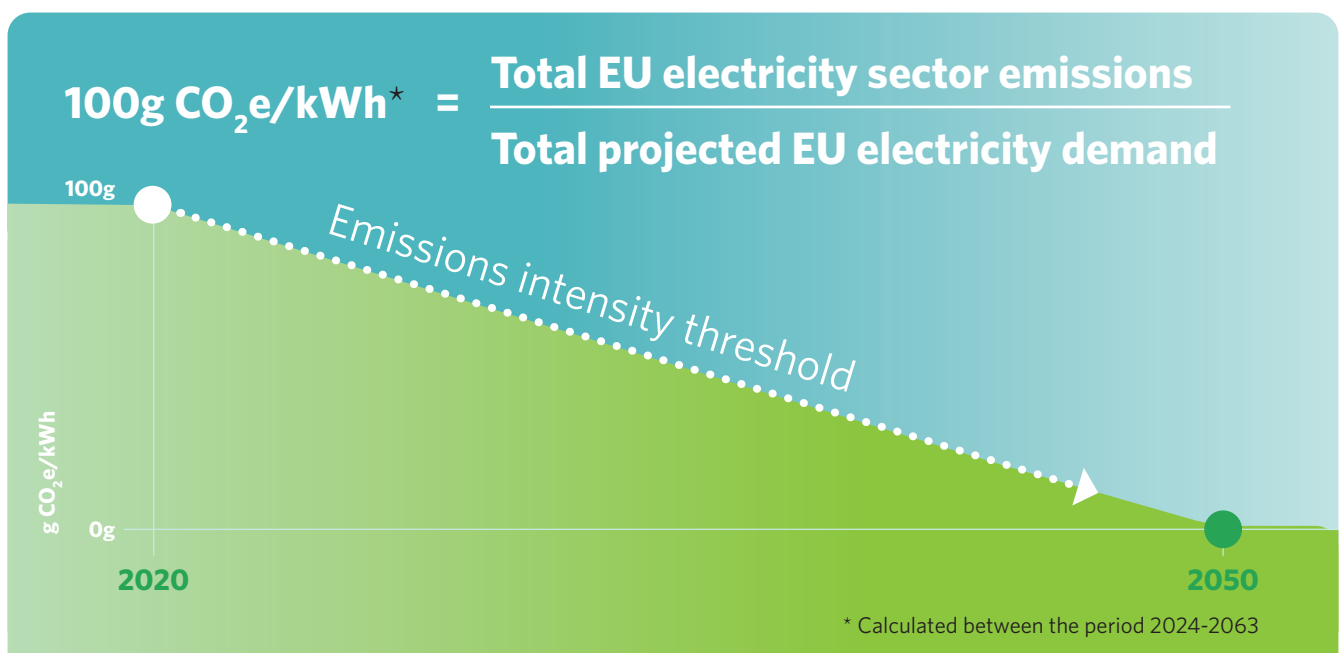
As we approach 2050, the less of an emissions budget we have left, the lower the total carbon that plant can emit. The TEG recommended this should reduce every five years, towards zero in 2050.

5 A given power generator is considered aligned with these policy targets if its emissions are below the 100g average of annual emission - a "substantial contribution".

For a given investment or activity to be compatible with this trajectory, its average emissions over its physical lifetime, or 40 years (whichever is shorter), must be lower than the threshold. See points 6 and 7 over page.

2. The formula is based on two key data sets, both specific to the EU: (1) Historical power sector GHG emissions and electricity demand data, sourced from Eurostat and (2) forecast electricity demand (net generation) found in the "EU 2016 PRIMES Reference Scenario". Details at <http://data.europa.eu/euodp/en/data/dataset/energy-modelling>

3. Power plants can have typical lifetimes of between 15 and over 100 years, depending on technology, operating mode and maintenance profile. Forty years is the maximum period over which the large majority of power plants can reasonably be expected to operate and emit GHGs without some form of repowering.



6 Certain technologies clearly operate below the threshold, for example wind, solar and ocean/tidal power.

Other technologies such as geothermal, hydropower and bioenergy have a wider range of emissions intensities (emissions/kWh generated) and will therefore need to show that their emissions fall below the 100g CO₂e/kWh threshold.

Some technologies utilizing natural gas combustion may be able to meet this threshold IF they are able to fully incorporate carbon capture and storage into the plant, but there is a strong burden of proof for those assets seeking to make this claim.

Although the 100 gCO₂e/kWh threshold is derived from power sector assumptions, it will apply equally to both electricity and heating/cooling generation.

7 The 100g threshold ensures the EU will meet its Paris Agreement commitments. European average emissions from the power sector are currently around 270g. To reach net zero by 2050, they will have to follow a rapidly declining pathway from current levels.

Any power plant operating below the 100g threshold is consistent with this pathway, and is making a substantial contribution to the EU meeting its Paris commitments.

Any plant operating above 270g increases average EU emissions from current levels and risks harming the Paris Agreement.

Energy assets that cannot meet this operating threshold face retirement earlier than their expected operating life, creating a risk of asset stranding.

The Takeaway

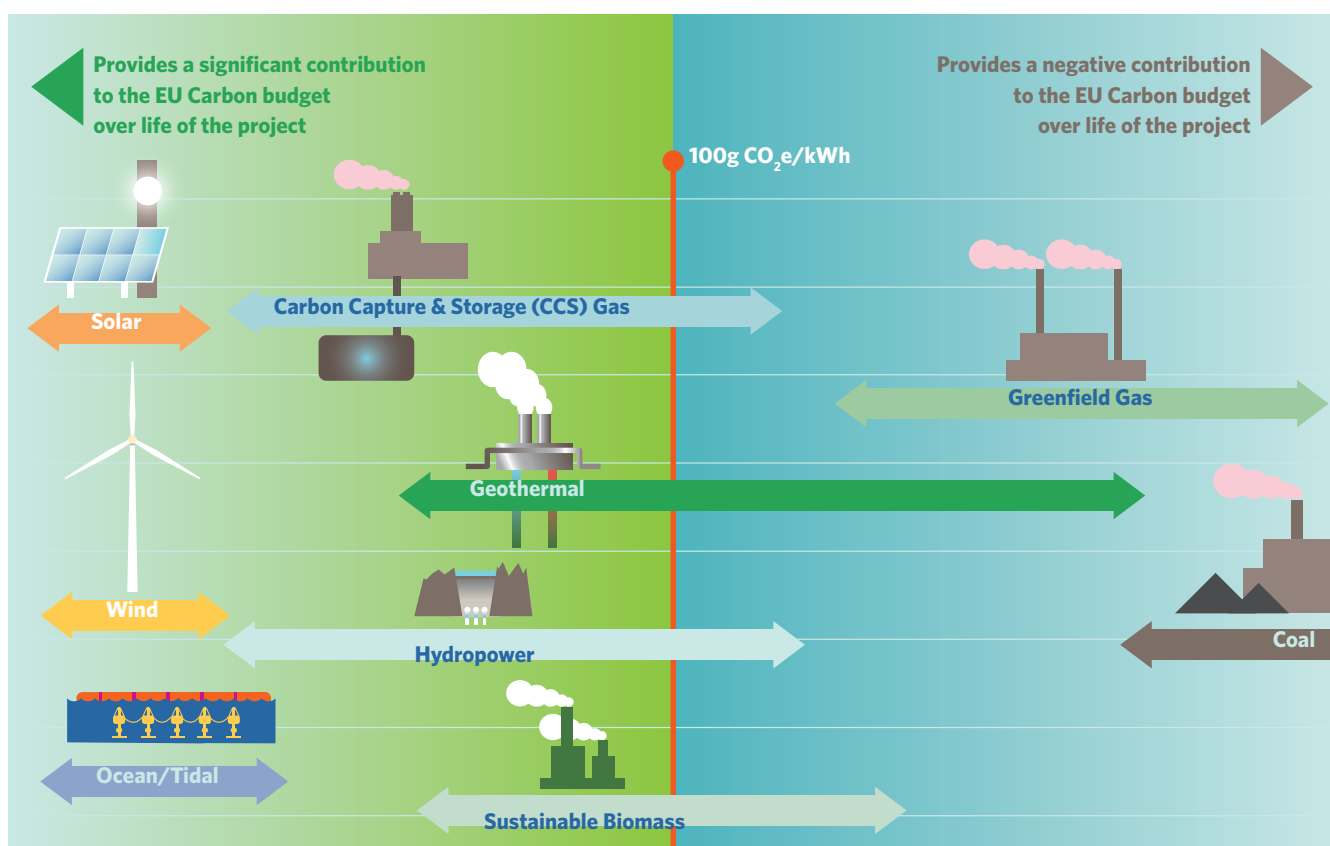
A power plant operating below 100g CO₂e/kWh over its lifetime is making a substantial contribution to reaching Paris Agreement targets.

Any power plant that emits more than 270g CO₂e/kWh is making this more difficult.

This briefing has been prepared as background to the EU Technical Expert Group's sustainable taxonomy recommendations on electricity generation thresholds. It has been prepared by John Sinner of the European Investment Bank and Lionel Mok, Annika Sandback, Jason Godfrey and Sean Kidney from the Climate Bonds Initiative. February 2021. www.climatebonds.net

Implications of the 100g threshold

- Unabated natural gas-fired power generation is not expected to meet the required threshold. Gas-fired power with carbon capture and sequestration may qualify.
- Blended gas-fired power: co-combustion of multiple gases for the production of electricity, heat/cool and co-generation is also subject to the emissions intensity threshold. This includes combustion of RED II gases.
- Hydropower: the embedded emissions associated with the construction of hydropower facilities and the alteration of landscapes constitutes a significant portion of lifecycle analysis emissions. Such emissions can be compensated for by a complementary emissions reduction activity as mentioned above.
- Although the EU Taxonomy focuses on non-solid fossil fuel and renewable power, the DNSH to mitigation criteria are technology agnostic.



The Hidden Emissions from Gas-Fired Power



There is a major risk that investment in gas is a threat to achieving the goals of the Paris Agreement.

Evidence is emerging that greenhouse gas (GHG) emissions from gas-fired power are much closer to coal than previously realised.

Expected GHG emissions savings from using natural gas instead of coal have been exaggerated. Such claims have been based solely on a plant-by-plant comparison between coal and gas-fired power; they do not include the gas supply chain, which is a significant omission. Gas is lost at the wellhead and through equipment along the transportation route. While the percentage is a small number, because gas is mostly methane, even tiny amounts have a significant impact on climate.

There are four key points:

1. Methane matters because its impact on climate change is 84 times greater than CO₂.¹

Methane levels have been increasing steadily since 1985, according to data from the National Oceanic and

Atmospheric Administration (NOAA).² This is a cause for concern because methane is exceptionally good at absorbing heat. It warms the planet much more quickly than CO₂. If the impact of emitting the two gases is compared over a 20 year period, methane has 84 times the impact of CO₂.³

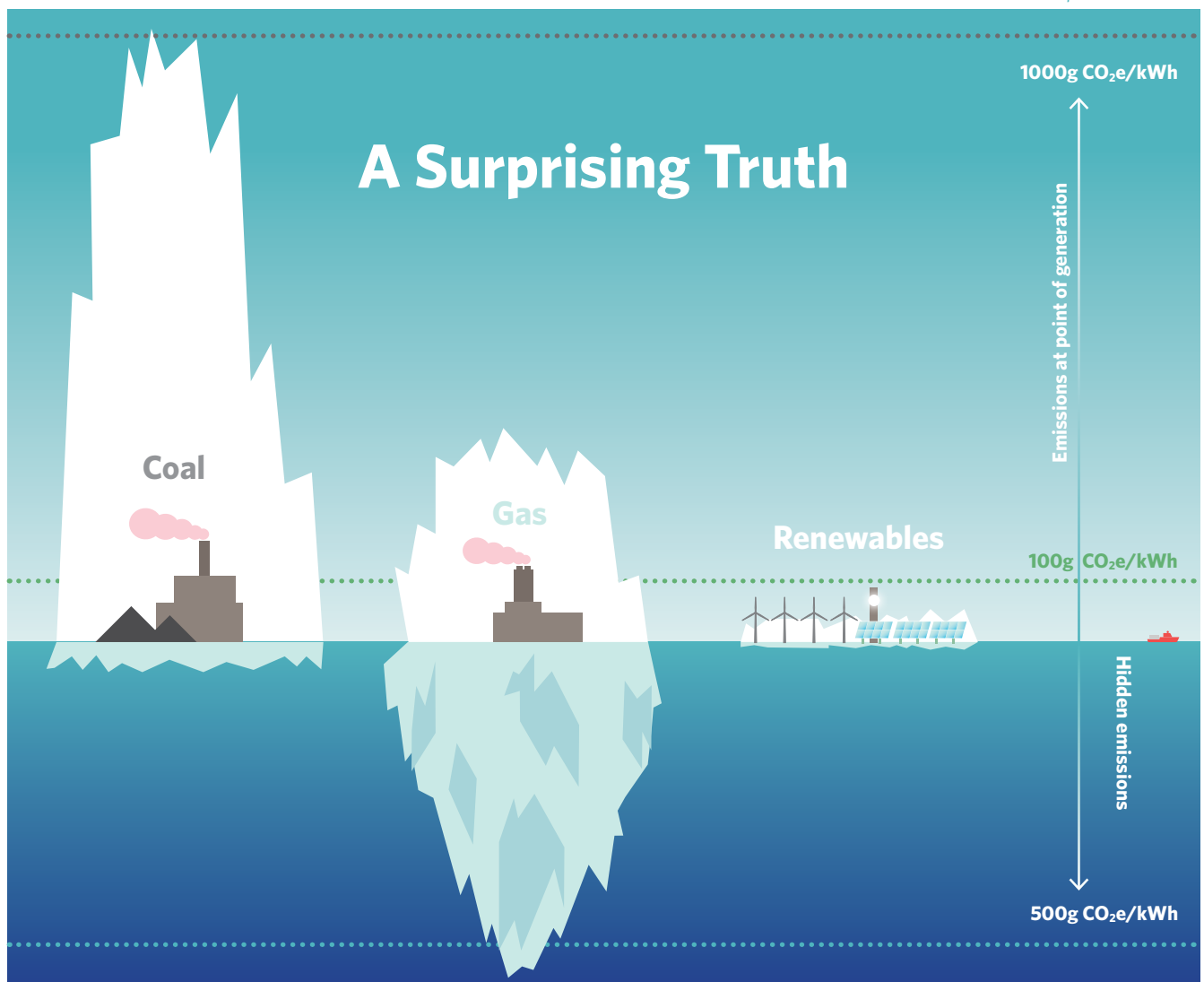
2. If gas leaks more than 3% of its methane content, it is worse for the climate than coal.⁴

Methane can be lost from production wells, pneumatic devices, and valves along transportation routes. In urban areas, gas distribution networks can also be a source of methane leaks.

When well-to-plant methane emissions are included in comparisons of gas- and coal-fired power, the benefits of gas against coal are typically only marginal.

BUT if methane leaks total more than 3% of gas's content, generating power with gas is worse for the climate than coal.

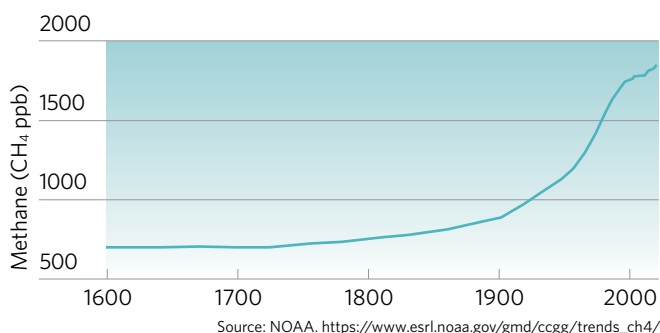
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"We have no room to build anything that emits CO₂ emissions."

Fatih Birol, Executive Director, International Energy Agency⁵

Global Methane Emissions Are Increasing



3. Methane emissions attributable to oil and gas production are up to 40% higher than thought.⁶

At its most fundamental level, the extraction and use of fossil fuels is a larger methane emitter than had been understood. In 2020, the journal Nature published a ground-breaking study of the carbon signatures of methane in ice cores.⁷ These signatures allowed for identification of various methane sources. (Methane produced by the extraction and use of fossil fuels has a different radiocarbon signature to methane produced from other natural geological sources such as seeps and mud volcanoes.)

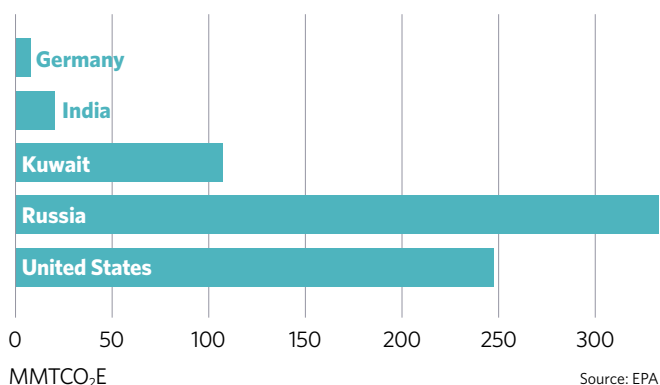
This research found that emissions from fossil fuel production are 25% to 40% higher than previously understood.

The study's lead author, Benjamin Hmiel, explained, "We've identified a gigantic discrepancy that shows the industry needs to, at the very least, improve their monitoring. If these emissions are truly coming from oil, gas extraction, production use, the industry isn't even reporting or seeing that right now."⁸

4. The EU imports most of its gas, increasingly in the form of highly inefficient LNG, and always from sources with high methane footprints.

Nearly 40% is sourced by pipe from Russia⁹ - the country with the highest contribution to global methane emissions from the oil and natural gas sector.

Estimated global methane emissions from oil and natural gas



Europe imports a further 36% as liquefied natural gas¹⁰ (LNG) - a product that uses as much as a further 25% to fuel the process of liquefaction and transportation.¹¹ This extra amount means that total power produced from LNG emits more GHG than power from coal.

Ireland's Parliament has heard evidence¹² that the GHG footprint of LNG imported from the US to Ireland would be 44% higher than coal's.



Maintaining EU Climate Leadership

We are in a climate crisis. The pace at which economies decarbonise will determine the world we inhabit by the end of this century.

The EU Taxonomy's robust approach to electricity generation is under scrutiny. There is pressure to allow a much wider role for unabated gas, which risks compromising the EU's climate commitments and locking in high levels of GHGs for a generation.

The alternative is to fully back Europe's science-based 2030 emission reduction targets and enable European industry to focus on the opportunity to lead a rapid global shift to a green economy.

Footnotes

- <https://www.ipcc.ch/report/ar5/wg1/>
- https://www.esrl.noaa.gov/gmd/ccgg/trends_ch4/
- <https://www.ipcc.ch/report/ar5/wg1/>
- https://webstore.iea.org/download/direct/1055?fileName=World_Energy_Outlook_2017.pdf
- <https://www.theguardian.com/business/2018/nov/13/world-has-no-capacity-to-absorb-new-fossil-fuel-plants-warns-iea>
- <https://www.nature.com/articles/s41586-020-1991-8>
- Ibid
- <https://www.nytimes.com/2020/02/19/climate/methane-flaring-oil-emissions.html>
- <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/46126.pdf>
- Ibid
- <https://publications.jrc.ec.europa.eu/repository/bitstream/JRC47887/eur%2023818%20en.pdf>
- https://data.oireachtas.ie/ie/oireachtas/committee/dail/32/joint_committee_on_climate_action/submissions/2019/2019-10-10_opening-statement-robert-w-howarth-phd-cornell-university_en.pdf
- <https://www.eig.org/en/events/annual-press-conference-2021>