



The possible climate effect of the gas leaks from the Nord Stream 1 and Nord Stream 2 pipelines

The emissions from the gas leaks on the Nord Stream 1 and 2 pipelines may in worst case be equivalent to approximately 32 per cent of annual Danish CO₂-emissions.

Initial calculations from the Danish Energy Agency show that the leaks from the Nord Stream 1 and 2 pipelines in worst case will emit approximately 778 million standard cubic meters of natural gas. The leaked gas volume amounts to greenhouse gas emissions of approximately 14.6 million tons of CO₂-equivalent (CO₂e). In comparison, Danish CO₂e emission totaled approximately 45 million tons of CO₂e in 2020. The climate effect of the leaks thereby corresponds to 32 per cent of Danish greenhouse gas emissions in 2020.

Nord Stream AG has informed the Danish Energy Agency (DEA), that each of the two Nord Stream 1 pipelines contained 300 million standard cubic meters of natural gas. Additionally, Nord Stream 2 AG has informed the DEA that there was 178 million standard cubic meters of natural gas in the Nord Stream 2 pipe.

The leaks from the three pipelines are all in international waters. The leak from one of the North Stream 1 pipelines and the first leak from the Nord Stream 2 pipeline are both in the Danish exclusive economic zone (EEZ), while the leak from the other Nord Stream 1 pipeline and the second leak from the Nord Stream 2 pipeline are in the Swedish exclusive economic zone.

About the calculation

The calculation above is an estimate, partly because it is not certain that all the natural gas will be released into the atmosphere and partly because it has been assumed that the natural gas contained within the pipelines is pure methane.

The conversion factor from standard cubic meters of natural gas to tons of natural gas is based on the density of methane at atmospheric pressure and a temperature of 20 degrees Celsius, which is the standard used when reporting greenhouse gas emissions to the Federal Nations.

A GWP-factor, Global Warming Potential factor, of 28 has been used for methane. The GWP-factor for methane reflects that the greenhouse gas effect of methane emissions of methane is 28 times higher than a corresponding weight of CO₂ emissions over a 100-year timescale. From 2023, the GWP-factor must be stated when reporting greenhouse gas emissions to the Federal Nations.

The calculation has been made based on the information received by Nord Stream AG and Nord Stream 2 AG about the amount of gas in the three leaking pipelines.

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