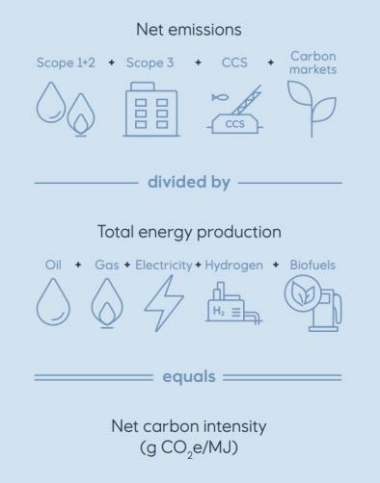
Equinor's Net Carbon Intensity - methodology

Equinor aims to be a leading company in the energy transition and has set an ambition to become a net-zero emissions company by 2050. On a global scale, "net zero" means achieving an overall balance in net emissions – an equalization of the amount of greenhouse gases (GHG) added to, and removed from, the atmosphere. Equinor's Energy Transition Plan 2025 lays out the strategy for delivering on this ambition, including emissions from production and final consumption of the energy we produce.

Net Carbon Intensity: a tool for measuring transition toward net zero

To track progress on the strategy of becoming a net-zero emissions company by 2050, Equinor has developed a metric called Net Carbon Intensity (NCI) and set related ambitions. NCI tracks net emissions, including scope 3 emissions from the use of the energy products that Equinor produces, as well as the impact of removal solutions and reduction services, in relation to our total energy production in the form of e.g. oil, natural gas, petroleum products, hydrogen, biofuels, and electricity from renewables and power plants. Using a combination of options available to us as an energy company, the metric tracks how we will deliver energy with lower emissions over time, helping our customers in their efforts to achieve emission reductions. The NCI is not only a reporting tool for measuring our progress relative to our goals, but also a planning tool which helps to inform the selection and prioritization of business opportunities.



Both our NCI and net-zero emissions ambitions include direct and indirect emissions associated with initial energy production (scopes 1 and 2), emissions from the use of the energy products that we produce (scope 3, category 11), and related emissions from our investments (scope 3, category 15) - all on an equity basis.[1,2,3] The numerator in the NCI metric represents net emissions. Reaching our 2050 ambition to be a net-zero emissions company implies reducing our net emissions, i.e. the numerator in the NCI, to zero.

[1] Inclusion of scope 3 emissions associated with the use of our products in the NCI should in no way be construed as an acceptance by Equinor of responsibility for the emissions caused by such use

[2] https://ghgprotocol.org/standards/scope-3-standard

[3] With reference to CDP, Category 11 is by far the most material scope 3 emissions category for our activities, estimated to represent a significant majority (around 90%) of our total scope 3 emissions across all categories. (https://cdn.cdp.net/cdp-production/cms/guidance_docs/pdfs/000/003/504/original/CDP-technical-note-scope-3-relevance-by-sector.pdf)

Because the NCI is used by Equinor within the context of our strategy and net-zero ambitions, the methodology underpinning this metric is tailored to Equinor's context. There are a variety of methodological considerations that must be made when using the NCI metric at a company level. The inclusion of emissions associated with the use of the energy products that we produce (i.e. scope 3) in the NCI requires methodological choices, as scope 3 emissions always represent another entity's scope 1 emissions. Such emissions may also be double counted as another entity's scope 3 emissions. The way in which the abatement of these multi-accounted emissions is counted is complex and may imply some overlaps between companies, as is typically the case due to the nature of scope 3 accounting. For these reasons the NCI should be viewed within a company context. Energy and net-emission values expressed in the NCI for Equinor cannot be placed directly within, or viewed from, a global or sectoral mass-balance perspective.

The following principles guide our NCI approach.

1. **The NCI metric supports Equinor in tracking progress on its strategy of becoming a broad energy company.**

    - The NCI aims to represent different types of energy products in a consistent way – applying concepts such as partial substitution or implied fossil equivalency to account for energy, where appropriate. This approach acknowledges the fact that Equinor will produce a range of energy products, and that these energy products will occupy different segments of the "energy chain", with some energy products representing primary energy and others representing secondary energy/fuels. By accounting for different energy products using consistent principles, Equinor's NCI methodology does not directly disincentivize Equinor's role in the production of different types of energy products along the energy chain.[4,5]

2. **The NCI accounts for Equinor's role in the energy chain of a specific energy product only <u>once</u>.**

    - This means that if Equinor produces one energy product (e.g., natural gas), which Equinor then uses to produce another energy product (e.g. blue hydrogen), the energy produced by Equinor is only accounted for once.[6]

3. **The NCI rewards Equinor for decarbonizing its own equity oil and gas production, while also recognizing the value of additional low-carbon energy production.**

    - When Equinor produces low-carbon energy products that are *derived from* Equinor's equity oil and gas production, net emissions are reduced in the NCI numerator. When Equinor produces low-carbon energy products that are *additional to* Equinor's oil and gas production, energy is increased in the NCI denominator.[7]

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[4] The approach to energy accounting described here is relevant within the context of the NCI but does not necessarily explicitly reflect the amount of energy produced by the company and made available to customers.
[5] Fossil equivalency is chosen for energy accounting as the majority of energy produced by Equinor at present is fossil based.
[6] There may be cases where Equinor's role in the *emissions chain* of a specific energy product is accounted for twice. This is a direct result of the fact that Equinor's NCI methodology includes scope 3 emissions and applies a netting approach. Refer to Principle 5 for more details.
[7] Note that in this case net emissions could increase as a result of non-captured scope 1 emissions, e.g. projects with a 98% capture rate. However, as energy is increased in the NCI denominator, the net effect will be a decrease in NCI.

- This approach also acknowledges and highlights the fact that while both types of energy production help to reduce Equinor's NCI, only those activities that transform Equinor's equity oil and gas production into low-carbon products reduce Equinor's net emissions and directly move the company closer to its ambition to be a net-zero emissions company by 2050.

4. **The NCI recognizes cooperation with customers, where this results in an absolute or net reduction in emissions related to the end use of specific energy products produced by Equinor.**
    - In those cases where Equinor sells oil or gas that it has produced to a customer who then decarbonizes this oil or gas by transforming it into a low-carbon energy product or non-energy product, Equinor accounts for the impact of this decarbonization in its NCI metric, provided sufficient mechanisms exist to substantiate and verify this decarbonization. This is because use-related emissions associated with the low-carbon energy, or non-energy, products derived from Equinor's oil or gas production will be reduced or eliminated. As such, Equinor's scope 3 emissions related to these products will be reduced or eliminated.
    - Similarly, in those cases where Equinor sells oil or gas that it has produced to a customer who then neutralizes the emissions associated with its use - through the retirement of credits - Equinor accounts for the impact of this neutralization in its NCI metric, provided sufficient mechanisms exist to substantiate and verify this neutralization. As use-related emissions associated with Equinor's oil or gas products are neutralized, so too are Equinor's scope 3 emissions to the extent permitted in the corporate principles on credits.

5. **The NCI frames the accounting of carbon capture and storage (CCS) activities specifically within the context of scope 3 emissions accounting.**
    - Equinor accounts for the emissions associated with customers' use of the oil and gas products that Equinor produces in its scope 3 emissions. As a corollary to that principle, Equinor also accounts for its role in reducing customers' scope 1 emissions, such as through the provision of CCS services, as reducing its net-scope 3 emissions. This is done by including the impact of such reductions that Equinor has facilitated in the NCI metric. Equinor treats such reductions as netted against its scope 3 emissions, specifically.

6. **The NCI recognizes the important role of nature- and technology-based reduction and removal solutions in a transparent and proportionate way.**

    - Credits can play a supplementary role to emissions reductions. Only credits that are sufficiently substantiated and verified according to relevant industry standards will be considered as allowable as negative emissions levers within the context of Equinor's NCI metric.

An overview of emissions and energy accounting within the context of the NCI metric is included below.

Net emissions (i.e. the NCI numerator)

Net emissions: Scope 1, scope 2 and scope 3 (category 11, use of sold products) GHG emissions, associated with the energy produced by the company[8], are treated as net-emissions and form the numerator in the NCI indicator. The GHG emissions included are CO_2 and methane. A global warming potential of 29.8 is used to convert methane to CO_2 equivalents.[9] The net-emissions numerator of the NCI also includes emissions reductions and removals, such as CCS as a service and natural sinks. Net emissions represented in the NCI numerator are in grams of CO_2 equivalents (gCO_2e).

Scope 1 and scope 2 emissions are included on an equity basis to ensure that the NCI metric reflects the emissions associated with the energy that Equinor produces and accounts for, in the same metric. Scope 2 emissions are calculated using location-based emission factors.

Scope 3 emissions are based on the estimated emissions from the use of the energy products that Equinor produces (on an equity basis).

- Currently, this equity-energy production is represented by Equinor's (upstream) equity oil and gas production. For such production, a refinery-output approach is utilized, with these equity oil and gas production volumes broken down into several product categories, assuming geography-dependent refinery product yields.[10] The emissions from each assumed product are calculated using lower heating value (LHV) based standard emission factors from the IPCC, expressed as $kgCO_2/TJ$.[11] Equinor assumes an LHV of 5.7 GJ/boe for the scope 3 emissions calculations.[12]
- In some cases, Equinor produces energy products that involve the transformation or processing of equity oil and gas. Some of these energy products will result in GHG emissions when used (e.g., gasoline, diesel, etc.). Others will result in no, or very low, GHG emissions when used (e.g., blue hydrogen). In addition, Equinor also produces non-energy petroleum products (e.g., asphalt, petrochemical) using oil and gas as feedstocks (see below).

Non-energy petroleum products: Not all hydrocarbons that are produced are combusted as part of their use. Equinor's upstream equity oil and gas production volumes that are converted into non-energy products (e.g. plastics, lubricants and asphalt) are therefore excluded from the NCI metric; i.e., no scope 3 emissions are included in the NCI numerator and no energy is included in the NCI denominator.

Similarly, where Equinor is producing the non-energy products, typically from primary energy sources such as crude oil and natural gas, these products are excluded from the NCI as no scope 3 emissions, nor energy, are assumed to be associated with these products.

Decarbonization resulting from customer actions[13]: In cases where customers, including refiners, decarbonize energy products produced by Equinor prior to use, Equinor will reflect this in its scope 3

[8] Including net emissions associated with Equinor's material financial investments in relevant companies. Relevant companies generate energy and/or impact emissions and are of sufficient size to have a discernible impact on the NCI.

[9] https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf

[10] Available through statistics from the International Energy Agency (IEA)

[11] 2006 IPCC Guidelines for National Greenhouse Gas Inventories (https://www.ipcc-nggip.iges.or.jp/public/2006gl/)

[12] Norwegian Petroleum: https://www.norskpetroleum.no/en/calculator/about-energy-calculator/ (1 Sm^3 crude oil = 36000 MJ, 1 Sm^3 = 6.29 boe).

[13] Equinor does not currently assume a contribution from customer actions toward meeting its NCI ambitions.

emissions calculation, assuming sufficient mechanisms exist to substantiate and verify this decarbonization. The potential emissions associated with specific equity-production volumes, decarbonized by Equinor's customers, may therefore be fully or partially excluded from the absolute scope 3 (category 11) emissions calculation - and similarly excluded from the NCI metric.

Emissions reductions and removals: The total emissions represented in the NCI metric are net of contributions from emissions reductions and removals.

Carbon capture and storage (CCS) and carbon reduction and removal solutions: Where Equinor provides CCS as a service (which directly facilitates the abatement of a party's scope 1 emissions), this impact is reflected in the NCI numerator by reducing Equinor's net scope 3 emissions by an amount equal to Equinor's share in the CCS service (contractual/actual volumes). Where Equinor utilizes carbon reduction and removal solutions, including natural sinks and removal technologies - which reduce or remove ambient CO_2 - this is reflected in the NCI numerator by reducing Equinor's net scope 1 or scope 3 emissions (depending upon solution utilized) by an amount equal to that represented by the solution.

Emissions reductions and removals resulting from customer actions: In cases where customers, including refiners, offset the emissions associated with energy products produced by Equinor prior to use, Equinor will reflect this in the net emissions (i.e. the NCI numerator), assuming that sufficient mechanisms exist to substantiate this net reduction. The emissions associated with Equinor's equity-production volumes, which are offset by Equinor's customers, are therefore excluded from the NCI metric to the extent specified in Equinor's corporate principles.

Note that while relevant in an NCI-accounting context, CCS as a service and the use of carbon credits associated with emissions reductions and removals, either by Equinor or by its customers, are not considered in Equinor's absolute-emissions accounting.

Avoided emissions associated with the use of Equinor's energy products in place of other energy products (e.g., wind for gas, or gas for coal), are, in principle, not considered in the NCI metric. Exemptions apply in the case of EU approved methodologies for use of energy products giving minimum 70% GHG savings including waste to fuels.

Energy production (i.e. the NCI denominator)

As the numerator of the NCI metric is represented by net emissions, the denominator is represented by energy. The denominator, therefore, includes the amount of energy associated with Equinor's equity-energy production[14], including e.g., oil, natural gas, petroleum products, hydrogen, biofuels, and electricity from renewables and powerplants. Energy is represented in the NCI metric in megajoules (MJ).

In order to represent the amount of energy in the NCI denominator in a consistent way, regardless of energy product and Equinor's role in each product's value chain, Equinor accounts for the amount of the primary energy - in the form of molecules - that is needed, or that would be needed, to produce a specific energy product. This amount of energy may be represented on an actual-, implied- or equivalency-basis – depending upon the energy product (e.g., natural gas, hydrogen, electricity) in question.

[14] Including energy production associated with Equinor's material financial investments in relevant companies. Relevant companies generate energy and/or impact emissions and are of sufficient size to have a discernible impact on NCI.

Because the NCI is focused on energy production, the energy represented in the denominator of the NCI is based on Equinor's equity share in the production of a given energy product.

The **general principles for energy accounting** for a variety of energy products that are produced (or could be produced) by Equinor are described below.

Oil and gas: Equinor's NCI accounts for the primary energy associated with the hydrocarbons that it produces, without applying any additional assumptions/modifications. Oil and gas volumes are converted from barrels of oil equivalents (boe) to MJs by assuming an LHV that implies that 1 boe = 5.7 GJ.[15]

Petroleum products: When produced by Equinor, Equinor's NCI accounts for the energy in the hydrocarbons used as the feedstock to produce the petroleum products (on an equity basis). In the case of non-energy petroleum products, no energy is allocated to these products in the NCI denominator, in the same way that no emissions are allocated to these products in the NCI numerator.

Low-carbon hydrogen and ammonia: Equinor's NCI accounts for the energy associated with low-carbon hydrogen and ammonia in one of two ways.

- For **blue hydrogen and ammonia**, Equinor's NCI accounts for the energy in the hydrocarbons used as the feedstock to produce these low-carbon energy products.
- **For green hydrogen and ammonia**, Equinor's NCI accounts for the amount of energy (in the form of hydrocarbons) that would be needed to produce an equivalent amount of (blue/grey) hydrogen.

Electricity: Equinor's NCI represents the energy associated with electricity that it produces as either the energy in the originating feedstock molecules (e.g., natural gas or biomass) used to produce the electricity or as the energy in the molecules that would have been needed to produce an equivalent amount of electricity.

- For **natural gas-based thermal power plants** (e.g. CCGTs) and **Bioenergy with Carbon Capture and Storage (BECCS)** this means accounting for the implied amount of energy in the fuel gas or bioenergy source that is used to produce a given amount of electricity.
- For renewable electricity this means accounting for the equivalent amount of fossil energy that would be needed to produce the same amount of electricity in a conventional thermal power plant (using a global, average efficiency factor).[16] This approach is typically referred to as "fossil fuel equivalency" (or "partial substitution").

Electrofuels (e-fuels): Equinor's NCI accounts for the amount of energy (in the form of hydrocarbons) that would be needed to produce an equivalent amount of (blue/grey) hydrogen that would, in turn, be needed to produce a given amount of e-fuel.

Biofuels: When produced by Equinor, Equinor's NCI accounts for the energy in the feedstock used to produce the biofuel.

Third-party energy: In addition to the electricity, oil, and gas (and energy products derived therefrom) produced by Equinor, Equinor also buys and sells energy that is not produced by Equinor. As these energy products are bought and sold at other points in Equinor's value chain than those of

[15] Ibid

[16] Substitution factors for primary energy of electricity derived from IEA historical data for fossil fuel power generation.

the equity energy that Equinor produces, neither the energy nor the associated emissions are included in the NCI metric.

Cautionary statement

The achievement of Equinor's net zero and net carbon intensity ambitions depends, in part, on broader societal shifts in consumer demands and technological advancements, each of which are beyond Equinor's control. Should society's demands and technological innovation not shift in parallel with Equinor's pursuit of significant greenhouse gas emission reductions, Equinor's ability to meet its net zero and net carbon intensity ambitions will be impaired. Equinor is including an estimate of emissions from the use of the energy products that it produces (GHG protocol scope 3, category 11) in the calculation of the net-emissions and the net carbon intensity as a means to more accurately evaluate the emission lifecycle of what we produce to respond to the energy transition and potential business opportunities arising from shifting consumer demands. Including these emissions in the calculations should in no way be construed as an acceptance by Equinor of responsibility for the emissions caused by such use. There are several initiatives that aim at harmonising energy transition indicators, such as net zero and net carbon intensity, for broad energy companies. As such, the methodology can be subject to change as a result of harmonisation and standardisation, or due to significant changes in business model.