

**NØIE  
CARBON  
FOOTPRINT  
GUIDE**

## BACKGROUND

In 2020, Nøie set a goal. An ambitious one:

We wanted to become net carbon negative by the end of 2021. What that means in the real world is that we want to remove more CO<sub>2</sub> from the atmosphere that we emit across the entire organisation and supply chain.

When we set the goal we didn't know the magnitude of our emissions.

So, first things first: We had to start measuring it.

And not just for the sake of measuring it, but for the sake of finding hotspots in our supply chain where we can reduce our carbon footprint. And then do so.

### **ZERO EMISSIONS VS. NET CARBON NEGATIVE**

**These terms are two very different things:**

**Zero emissions refers to a process where no CO<sub>2</sub> is released into the atmosphere. In today's world, no technology produces zero emissions.**

**Net carbon negative means that more CO<sub>2</sub> is being removed and captured than what is emitted.**

**When we say we want to become net carbon negative, it means that we'll remove our carbon emissions - plus extra. Because, well, we like to be on the safe side. And while doing that, we're also working on reducing our emissions.**

**So, the "net" part in net carbon negative refers to the fact that there are still emissions, but that these are being removed somewhere else.**

### **CARBON NEGATIVE VS. NET CARBON NEGATIVE**

**These terms may sound similar, but they're not:**

**There are many ways in which companies can claim to be carbon negative (or carbon neutral). One way is to offset emissions by avoiding or reducing emissions somewhere else. A specific example is paying someone to not cut down trees. While this is a good thing, it doesn't lead to planting more trees.**

**On the other hand, net carbon negative (or net carbon neutral) means that a company actually removes carbon from the atmosphere. This can be done by planting trees or investing in direct air capture, a technology that extracts CO<sub>2</sub> directly from the atmosphere and stores it in deep geological formations.**

**It's important to understand the difference between offsets by emission reductions and offsets by emission removals. In September 2020, a team from the University of Oxford published The Oxford Offsetting Principles, which outlines the need to shift to carbon removal offsets to eventually achieve a net zero global society.**

## MEASURE - REDUCE - REMOVE

What gets measured gets managed. And the same goes for emissions.

There are a few emission measuring frameworks out there and we decided to go with the Greenhouse Gas Protocol. It's widely regarded as the most comprehensive global standardised framework to measure and manage greenhouse gases (GHG). More specifically, it covers all emissions in the company and throughout the entire supply chain, called scope 1, 2, and 3.

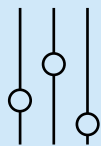
We partnered with The Footprint Firm to make our carbon footprint calculations.

Once you've measured your emissions, the hardest part begins: Then you need to reduce your emissions. This is where the real work begins. This is where you need to

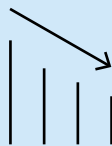
collaborate with your suppliers and partners to make actual reductions. Every responsible company needs to reduce what they can today and have a clear path to how they'll continue to make reductions going forward.

And lastly, you should take responsibility for the emissions in your supply chain that you can't immediately reduce by investing in carbon removal offsets.

Until Nøie reaches zero emissions (believe it or not - it'll happen one day), we're taxing ourselves for the carbon we do emit, while investing in high quality offsets to fund projects that remove carbon from the atmosphere and put our footprint in net negative.



1. MEASURE



2. REDUCE



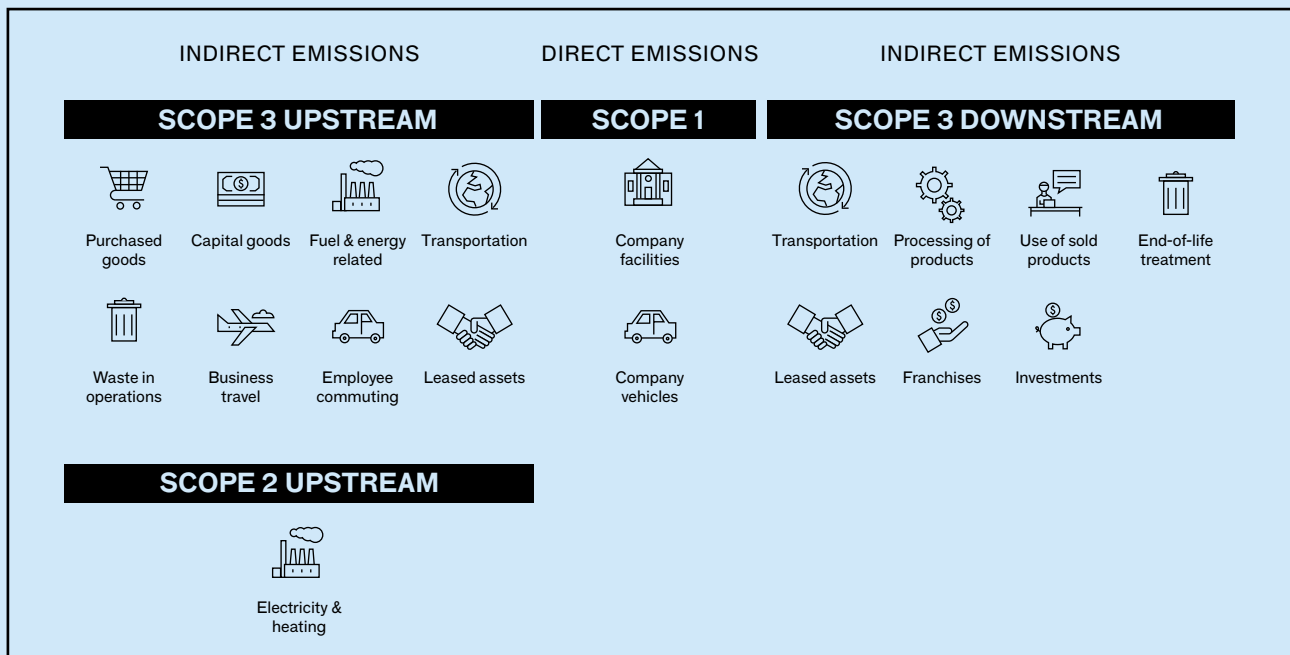
3. REMOVE

## INTRODUCTION TO THE GREENHOUSE GAS PROTOCOL

The [GHG Protocol](#) establishes comprehensive global standardised frameworks to measure and manage greenhouse gas emissions from private and public sector operations and value chains. The protocol is the world's most widely used greenhouse gas accounting standard.

The GHG Protocol covers the accounting and reporting of the six greenhouse gases covered by the [Kyoto Protocol](#): Carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>).

# INTRODUCTION TO SCOPE 1, 2, AND 3



Emissions are broken down into three categories by the GHG Protocol for the sake of better understanding the actual source of emissions.

## Scope 1: Direct emissions

Scope 1 are direct greenhouse gas emissions from sources that are owned or controlled by the reporting company. This could be the emissions that are directly created by manufacturing goods with fossil fuels and direct emissions from fossil fuels used in owned company vehicles.

## Scope 2: Indirect emissions

Scope 2 includes emissions that are a result from the generation of electricity, heat or steam purchased by the reporting company from utility providers.

## Scope 3: All other indirect emissions

Scope 3 are emissions from sources that aren't owned and not directly controlled by the reporting company. This is usually considered to be the supply chain of the company and examples are emissions caused by vendors within the supply chain, outsourced activities, and from business travels and employee commutes.

The GHG Protocol covers fifteen scope 3 categories where emissions are reported. Eight for so-called upstream activities and seven for so-called downstream activities. Scope 3 categories intend to provide companies with a systematic framework to organise, understand, and report on the diversity of activities within a value chain. Also, they help companies identify areas to focus on for emission reduction activities.

98% of Nøie's emissions stems from scope 3, which underlines the importance of including scope 3 in your carbon footprint calculations.

## CALCULATING CARBON EMISSIONS

Simply put, carbon emissions are calculated from the following formula:

**EMISSIONS = ACTIVITY DATA X EMISSION FACTOR**

Examples of activity data are litres of fuel consumed, kWh of electricity consumed, distance travelled, DKK spent on materials, kg or tons of waste created, etc.

Emission factors can be gathered from official national or international data sources, for example [DEFRA](#), [IEA](#), [ecoinvent](#) and [EXIOBASE](#). Some of these data sources can only be accessed through payment, so it can be beneficial to partner with a consultancy that already has access.

## SEVEN KEY STEPS IN DEVELOPING A CO<sub>2</sub> BASELINE

### 1. Defining the scope of the baseline by selecting the consolidation approach

Before you start your GHG accounting, you must first decide where the boundaries of your GHG accounting are. The boundaries are determined by the ownership and control that your company has over the assets that are part of your organisation and the consolidation approach you select.

There are two distinct consolidation approaches that can be used to consolidate GHG emissions: The equity share and the control approaches ([see page 29 in the GHG Protocol Scope 3 Standard](#)). Your company should consider the different approaches and select the one that you believe is most relevant to your company and industry. Consider which one covers what you believe should be under your company's GHG accounting and reporting responsibility.

Note: If your company fully owns all operations, the organisational boundary will be the same whichever approach is used. This is the case for Nøie.

### 2. Selecting which scope 3 categories to include

Scope 1 and 2 cover emissions from your company's own operations and are mandatory to report. Scope 3, on the other hand, includes all other indirect emissions that occur in your company's value chain. Scope 3 isn't mandatory to report, however strongly encouraged.

The GHG Protocol Scope 3 Standard recommends that you identify which scope 3 activities are expected to have the most significant GHG emissions, offer the most significant GHG reduction opportunities, and are most relevant to your company's business goals. Note that while companies aren't obliged to report on all scope 3 categories, you should justify why certain categories have been excluded from your inventory.

The following scope 3 categories were not relevant for Nøie: 3.8, 3.10, 3.13, 3.14, and 3.15.

### 3. Defining the data collection approach

In order to calculate emissions, your company can use an activity-based approach or a spend-based approach. For all relevant categories, you should investigate if activity data is available, otherwise you should rely on spend-based data.

For the activity-based approach, you would need specific data on items purchased or consumed (and if available supplier-specific data).

The spend-based approach is based on the amount spent on a specific category.

Companies may use a combination of the activity-based and spend-based approaches for various scope 3 categories throughout the inventory, as well as for various scope 3 activities within each scope 3 category. For example, within each scope 3 category, you may use more specific methods for the activities that contribute most to emissions and less specific methods for the activities that contribute least to emissions.

In the accompanying **GHG Calculation Sheet**, you will find specific examples of typical places where data sources for activity-based or spend-based data can be collected.

### 4. Collecting data from organisations and suppliers

You can collect primary or secondary data to make your calculations.

Primary data is data from specific activities within your value chain. In many cases, you'll initially have to extrapolate data (e.g. if electricity consumption is only available for one of two facilities, it could be extrapolated

based on kWh per meter). For larger categories, you can initiate a dialogue with your suppliers to collect more accurate data on specific quantities of different types of products/services you have purchased (if you're lucky they have data on the emissions associated with that product).

Secondary data isn't collected from specific activities within your company's value chain. Secondary data should be used to fill the gaps where primary data isn't available.

Examples of secondary data are industry-averages, literature reviews, and other proxy data.

Companies should always strive to collect primary data, and over time, you should seek to improve the data quality of the inventory by replacing lower quality data with higher quality data as it becomes available.

### 5. Finding the correct emission factors

For all categories included in your GHG accounting, you have to find a corresponding emission factor. An emission factor is a representative value that relates the GHG emissions of a product, material or activity, with the amount your company has purchased or consumed.

You should find emission factors estimated in CO<sub>2</sub>e in order to include all relevant GHG emissions. Emission factors are usually expressed as the weight of pollutant divided by a unit (e.g. weight, volume, distance) or spend:

KG CO<sub>2</sub>E / UNIT

KG CO<sub>2</sub>E / SPEND

For example, according to DEFRA the emission factor for 1 litre of diesel with average fuel blend releases 2.55 kg CO<sub>2</sub>e / litre. So, if you consume 100 litres within a year, you have released 255 kg CO<sub>2</sub>e.

## 6. Calculating the baseline and updating the model from year-to-year

Having completed steps 1 to 5, it is time to start calculating your CO<sub>2</sub> baseline.

Once you've established your baseline, it's much easier to recalculate the baseline in the years to come. Then you should go through the model from the previous year and update all data and emission factors. If better data have become available, update the calculation method (e.g. from spend-based to activity-based).

Lastly, finding specialists with experience in making the calculations is highly recommended - especially when calculating your carbon footprint for the first time. Our friends from The Footprint Firm were able to guide us through the process and made sure we concluded a very comprehensive calculation of our carbon footprint.

## 7. Document your approach and make it public

A final best practice while calculating your carbon footprint is to track the details of your approach, assumptions and limitations - and make this public.

This can include information about consolidation approach, data sources, data collection approaches, excluded categories, missing primary data, and other relevant information related to your carbon footprint calculations.

As an example, we released a **Methodology Document** for our 2020 GHG calculations that accompanies this guide.

We've found great inspiration from Allbirds who published their [life cycle assessment \(LCA\) tool](#). Just like we've done And we're calling upon you to follow us by documenting your approach and sharing your results.

Because sharing is caring... well, necessary to make change in our industry and beyond.

Please reach out to us on email [footprint@noie.com](mailto:footprint@noie.com) if you have any questions or comments to this guide.

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CUSTOMISED  
AND YOU  
SKINCARE  
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