



Carrefour Food Transition Pact – 20Megatons Project

Calculation Protocol
V1.0 - 2021

Prepared for:

Carrefour



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1.0 Introduction

Carrefour has adopted a commitment to reduce emissions from purchased goods and services by 20 megatons by 2030 compared to 2019 levels. Emissions in this category come from suppliers' direct and indirect emissions (Scopes 1 and 2) as well as their Scope 3 upstream emissions.

This document provides the calculation steps and approach to monitoring performance of the 20 Megatons objective adopted by Carrefour and suppliers participating in the project as part of the Food Transition Pact.

Since most participating suppliers have emission reduction targets of their own, annual monitoring will also provide forecast estimates of the contribution of participating suppliers to the 20 Megatons target by 2030.

The purpose of this document is to provide guidance on how to calculate progress towards the 20Mton target. This document is not a protocol for the annual calculation of all Scope 3 emissions of Carrefour. It focusses on cat. 1 Purchased goods and services only by describing the data needed, overriding the current Scope 3 cat. 1 data based on spends, and how to deal with new suppliers joining the initiative.

1.1 Leveraging existing reporting obligations

An Excel-based data collection template was used for suppliers' initial data inputs. Once the website is operational, it will be possible to also provide data directly via the online platform.

Since several suppliers already report to CDP, the data collection template was developed to follow the CDP reporting approach, essentially replicating some of the data points from the annual CDP Climate Change questionnaire.

It is unfortunately not possible to simply use data reported via the CDP supplier platform at this stage since not all suppliers report to CDP and there are additional annual costs to use that data.

It is expected that any additional administrative burden of actually providing the data already prepared for CDP to Carrefour for the purposes of the project will be minimal. We also propose that data on targets for example is only provided on an annual basis if there are changes to adopted targets to further limit supplier administrative efforts.

2.0 Baseline setting

Emissions from purchased goods and services are currently estimated based on spend categories and by applying emission factors developed by the French Agency for Ecological Transition (ADEME). The estimates for 2019 provide the starting point (baseline) against which project progress will be measured.

As participating suppliers collect and provide their own emissions data, the spend-based estimates used by Carrefour will be replaced at least partially with actual data from suppliers (focusing on Scope 1 and 2 emissions initially) and eventually it is expected that the full value chain will have availability of actual emissions that can be used.

2.1 Project baseline calculation

Below a step-by-step description of the methodology to be used to set the baseline while including the primary data from suppliers.

1. Estimate emissions from purchased goods and services at Carrefour by applying emission factors to spend based on product for 2019.
2. Collect emissions and target data from participating suppliers, specifically Scope 1-2 and upstream Scope 3 emissions. Regional splits as well as differentiation by product are not considered to avoid unnecessary complexity. Globally operating supplier partners therefore report their global Scope 1, 2 and upstream Scope 3 emissions.
3. Subtract Carrefour's spend on participating suppliers – those who provided data from total spend - on FMCG by category (as available¹) and also subtract corresponding emissions. It is expected that, assuming spend by supplier is available, replacing spend-based estimates with actual emissions alone, will reduce Carrefour's Scope 3 emissions due to more accurate data.
4. Add actual emissions of participating suppliers by applying the share of sales to Carrefour provided by suppliers to their absolute Scope 1 and 2 and upstream Scope 3 emissions.
5. The sum of the remaining Scope 3 emissions from purchased goods & services based on spends plus the emissions reported by the participating suppliers allocated to Carrefour based on the share of sales, is the initial 2019 baseline.

3.0 Monitoring annual progress

Annual progress against the 20 Megatons target will be monitored by essentially applying the steps described above. The approach to allocating emissions to Carrefour is therefore the same as the one used when setting the baseline.

Step-by-step guide to monitoring annual progress:

1. Estimate emissions from purchased goods and services at Carrefour by applying emission factors to spend based on product categories (or use more accurate data, as available) for the previous year.
2. Collect emissions and target data (if amended) from participating suppliers. Each participating supplier will need to calculate² the current year's Scope 1, 2 and Scope 3 upstream emissions attributable to Carrefour by applying the share of sales to Carrefour.
3. Subtract Carrefour's spend on participating suppliers – those who provided data from total spend - on FMCG by category (as available) and also subtract corresponding emissions. It is expected that, assuming spend by supplier is available, replacing spend-based estimates with actual emissions alone will reduce Carrefour's Scope 3 emissions due to more accurate data. However, because this reduction is based on a change of the calculation methodology, it cannot be counted as progress towards the 20Mtons, rather it will be an [adjustment of the baseline](#).
4. Add actual emissions from participating suppliers to the remaining spend based emissions to calculate the previous year's final emissions.

² It is expected that the vast majority of suppliers will have this information readily available as part of preparation for CDP or other sustainability reporting.

As more accurate data becomes available, it is likely that emissions from previous years will also be amended within supplier inventories. We suggest not updating those on the Carrefour side, since the current data will in any event represent the best available estimate for the reporting year.

3.1 Estimating expected target achievement

In addition to emissions data, Carrefour is requesting data on supplier targets to estimate the potential contribution to the 20 Megatons target of suppliers who fulfill their own absolute³ emissions reduction targets. The likelihood of achieving the 20 Megatons target is estimated by assuming a straight-line reduction of emissions from the respective baseline year to the respective target year for each supplier.

Step-by-step guide to estimating likelihood of target achievement:

1. Calculate the expected annual reduction percentages, assuming a straight line of reductions from the respective baseline year to the respective target year of each participating supplier.
2. Multiply annual reduction percentages with baseline emissions to calculate annual emissions/emission reductions compared to baseline.
3. Apply share of sales to Carrefour to calculated annual emissions/reductions
4. Add all participating suppliers' emissions/reductions to calculate the expected 2030 outcome

If during any year until 2030 new or revised targets are adopted by a supplier, each supplier should update the relevant information originally provided to Carrefour in the annual data collection template/online portal. This data will then be calculated manually and not be shared via the web-based platform to avoid accidental progress updates.

4.0 Adjusting the baseline

4.1 New suppliers joining

When a new supplier provides data for the first time, the Carrefour baseline needs to be amended to reflect the different scope of suppliers. In order to do so, a rolling base year approach⁴ is used. This approach allows for an annual recalculation of the base year based on new participating suppliers in the program.

If a new supplier joins the program, the emissions provided by the supplier will replace the monetized data of Carrefour's product categories as described in Chapter 2.0. This new base year might present an increase or decrease of emissions compared to previous years. This increase or decrease, however, will not affect the 20 Mtons target itself. So a decrease

³ Some suppliers have intensity-based targets for all or some of their emission scopes. For simplicity, these targets are not included in estimating expected supplier contributions to the 20 Megatons target thus likely underestimating expected progress to 2030.

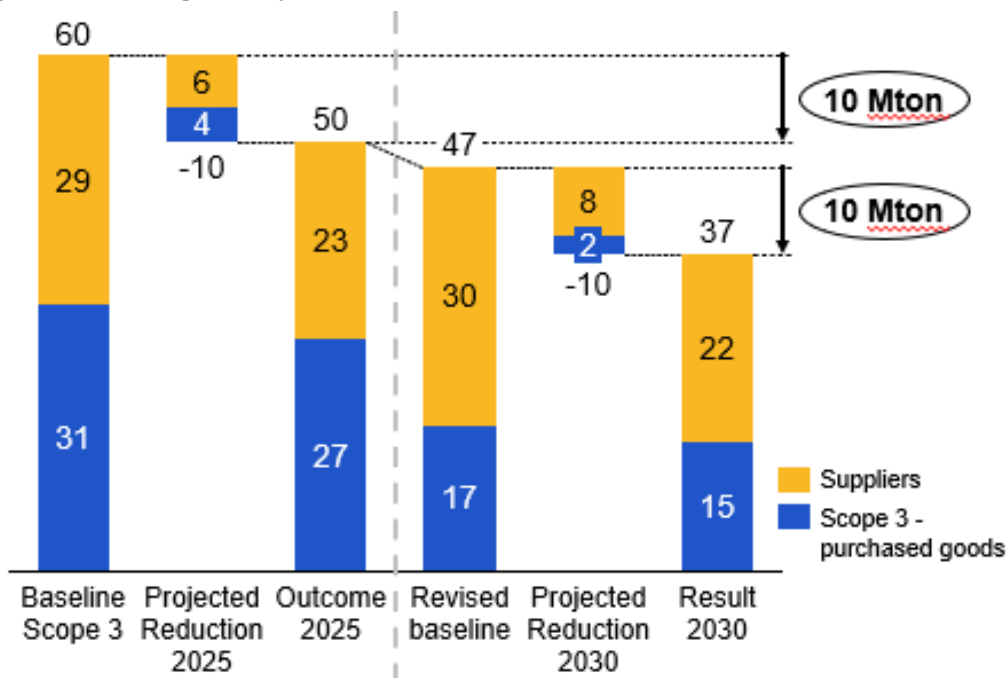
⁴ As described in Chapter 11 of the revised GHG Corporate Standard, the rolling base year approach requires making recalculations of base year emissions only for the previous year, since the base year with which current emissions are compared on a like with like basis is always the previous year. The rolling base year is another title for establishing a new base year every year. This approach is often used for companies with a high level of M&A or divestments.

of emission due to the replacement of monetized emissions by emissions from a new joining supplier will not be added as reduction and can not be seen as a step towards achieving the 20 Mton target. (see

Figure 1)

After adjusting the baseline based on new joiners, the change in emissions will be calculated and potential annual reductions will be monitored as described in the previous chapter.

Figure 1. Rolling base year

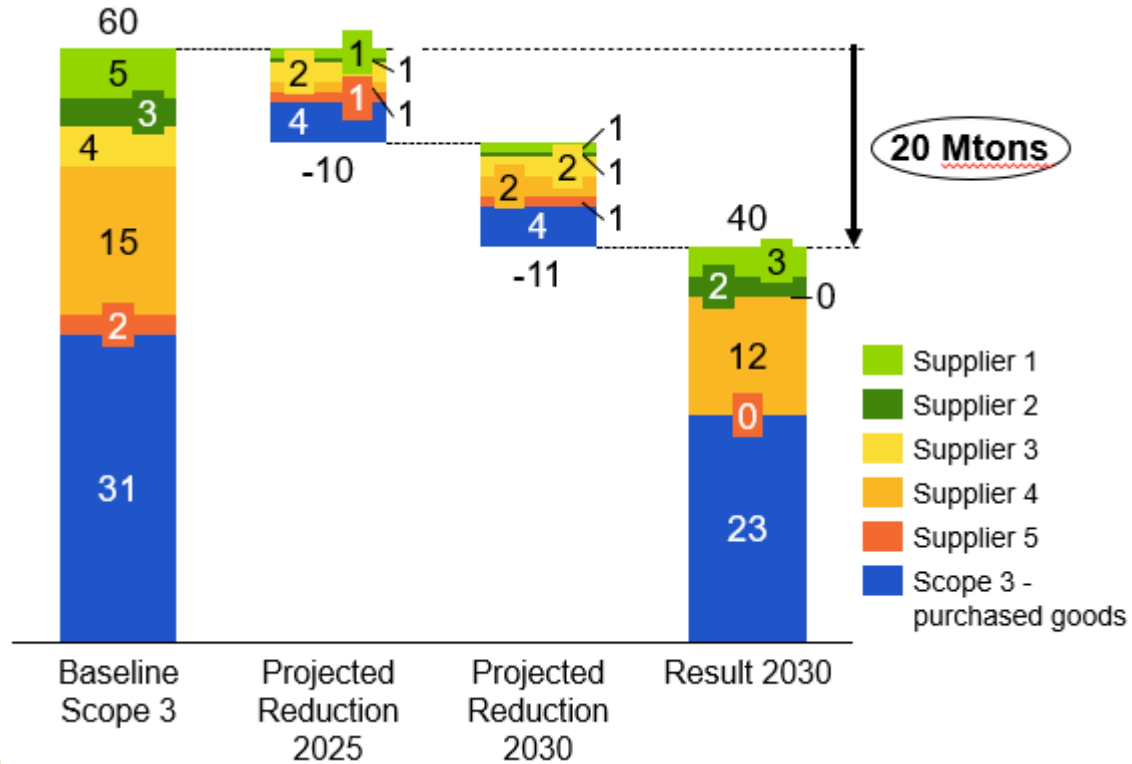


It is also possible that there are changes to Carrefour’s historical GHG inventory as more accurate data becomes available. In this case we recommend to maintaining the above approach of replacing spend based estimates with real data as much as possible to ensure a robust tracking performance on emission reduction targets.

4.2 Growth

Any growth of the business will result in a change of the emissions. Growth of the business will most likely result in higher emissions and any growth needs to be compensated by more reduction measures. This means that, for example, growth of the business resulting in a 5 Mtons increase in emissions, should be completely compensated/reduced in 2030 in addition to the originally targeted reduction of 20Mtons. This is illustrated in Figure 2.

Figure 2. Growth illustration



5.0 Excel

The methodology described in this paper is used in an Excel to calculate the emissions and to produce reduction projections of suppliers' emissions. Below two main ingredients of this Excel explained.

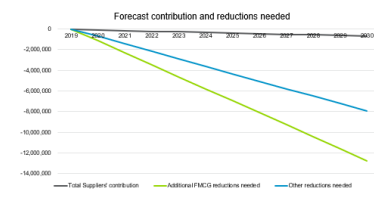
5.1 Dashboard

The user dashboard is where the results are displayed in both tabular and graphic form. The dashboard will show baseline emissions and expected annual outcomes to 2030 in line with suppliers' emission reduction targets.

The figure below gives an impression of how this user dashboard could look like.

Carrefour FTP GHG target and performance allocation method

Metric	Unit	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Scope 1 emissions	tCO2e	827,793											
Scope 2 emissions	tCO2e	1,007,198											
Target Emissions (Scope 1+2)	tCO2e	1,834,991	1,570,420	1,323,501	1,076,607	829,340	581,240	326,240	70,000	0	0	0	0
Actual Emissions	tCO2e	1,834,991	1,570,420	1,323,501	1,076,607	829,340	581,240	326,240	70,000	0	0	0	0
GHG Reductions	tCO2e	0	264,571	501,391	736,994	975,540	1,253,000	1,507,760	1,730,000	1,930,000	2,100,000	2,250,000	2,380,000
Supplier Emissions	tCO2e	1,834,991	1,570,420	1,323,501	1,076,607	829,340	581,240	326,240	70,000	0	0	0	0
Supplier Reductions	tCO2e	0	264,571	501,391	736,994	975,540	1,253,000	1,507,760	1,730,000	1,930,000	2,100,000	2,250,000	2,380,000
Other Reductions	tCO2e	0	0	0	0	0	0	0	0	0	0	0	0



5.2 Design

To allow the user to easily distinguish the different types of cells in the database and which ones can be changed, different cell styles as specified below are used.

- N_Input1** (Yellow background) Cells which have values, not formulae, and which the user can / should change
- N_InputList** (Orange background) For in-cell drop-downs (using data validation)
- N_Comment** (Light blue background) Comments, description of formulae or content
- N_Source** (Light blue background) Description of the source of your data, text etc.
- N_Calc1** (Light green background) Apply if you are using formulae in your cells
- N_Calc2** (Light green background) If you are using different formulae in neighbouring cells
- N_Calc3** (Light green background) please apply for each formula a different calculation style
- N_Calc4** (Light blue background) to show the user that formulae do not fill down / right
- N_Calc5** (Light purple background)
- N_RangeName** (Light blue background) Used to hold the name of a close-by named range (ideally to the top/left of the named range)