

# Scope 3 Dominance Analysis

## CO2 Performance Ladder



<b>Client</b>	Rijkswaterstaat
<b>Contract Number</b>	31109331
<b>Doc. name</b>	A9BH-PW-0000-PC-SU-RP Scope 3 Dominance Analysis
<b>Revision</b>	V1.0
<b>Date</b>	15 November 2022
<b>Status</b>	Final
<b>SBS</b>	OBJ-00 - A9 Badhoevedorp - Holendrecht
<b>WBS</b>	WP-01.08.04.01 – CO2 Management

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# 1 Introduction

## 1.1 Scope 3 emissions

To comply to the certification of the CO2 Performance Ladder level 5, version 3.0, it is required to map out the most material emissions of scope 1, 2 and 3.

In this report, FCC Construcción provides an overview of her most material emissions (in terms of CO2) of scope 3. These emissions are identified and quantified according to ISO 14064-1 and 14064-3.

## 1.2 Requirements CO2PL

The Scope 3 Dominance Analysis report is established to comply to the following CO2PL requirements:

- 4.A: The organisation reports its CO2 footprint for scope 1, 2 & 3.
  - 4.A.1. The organisation has a demonstrable insight into the most material emissions from scope 3, and can present at least two analyses (one for small organisations) of these scope 3 emissions of GHG-generating (chains of) activities.
- 5.A.1. The organisation has insight into the material scope 3 emissions of the organisation and the most relevant parties in the value chain that are involved in this.
- 4.B: The organisation has quantitative CO2 reduction objectives for scope 1, 2 & 3 CO2 emissions.
  - 4.B.1. The organisation has formulated CO2 reduction objectives for scope 3 based on the 2 analyses in 4.A.1. Or, the organisation has formulated CO2 reduction objectives for scope 3 based on 2 material GHG-generating (chains of) activities. A related action plan has been drawn up, including the measures to be taken. Objectives are expressed in absolute values or percentages in relation to a reference year and within a fixed period of time.
- 5.B: The organisation reports, on a structural and quantitative basis, the results of the CO2 reduction objectives for scope 1, 2 & 3.
  - 5.B.1. The organisation has formulated a strategy and CO2 reduction objectives for scope 3, based on the analyses in 5.A.2. A related action plan has been drawn up, including the measures to be taken. Objectives are expressed in absolute values or percentages in relation to a reference year and within a fixed period of time.
  - 5.B.2. At least twice a year, the organisation reports (internally and externally) on its emission inventory scope 1, 2 & 3-related CO2 emissions, as well as its progress in terms of the reduction objectives, for the organisation and its projects.

## 2 Categories for Scope 3 emissions

Upstream	Downstream
1. Purchased goods and services	9. Downstream transportation and distribution
2. Capital goods	10. Processing of sold products
3. Fuel and energy-related activities (not included in scope 1 or scope 2)	11. Use of sold products
4. Upstream transport and distribution	12. End-of-life treatment of sold products
5. Waste generated in operations	13. Downstream leased assets
6. Business travel	14. Franchises
7. Employee commuting	15. Investments
8. Upstream leased assets	

Table: Category division upstream and downstream scope 3 emissions in accordance with GHG Protocol Scope 3 Standard (July 2022; p.32; table 5.3).

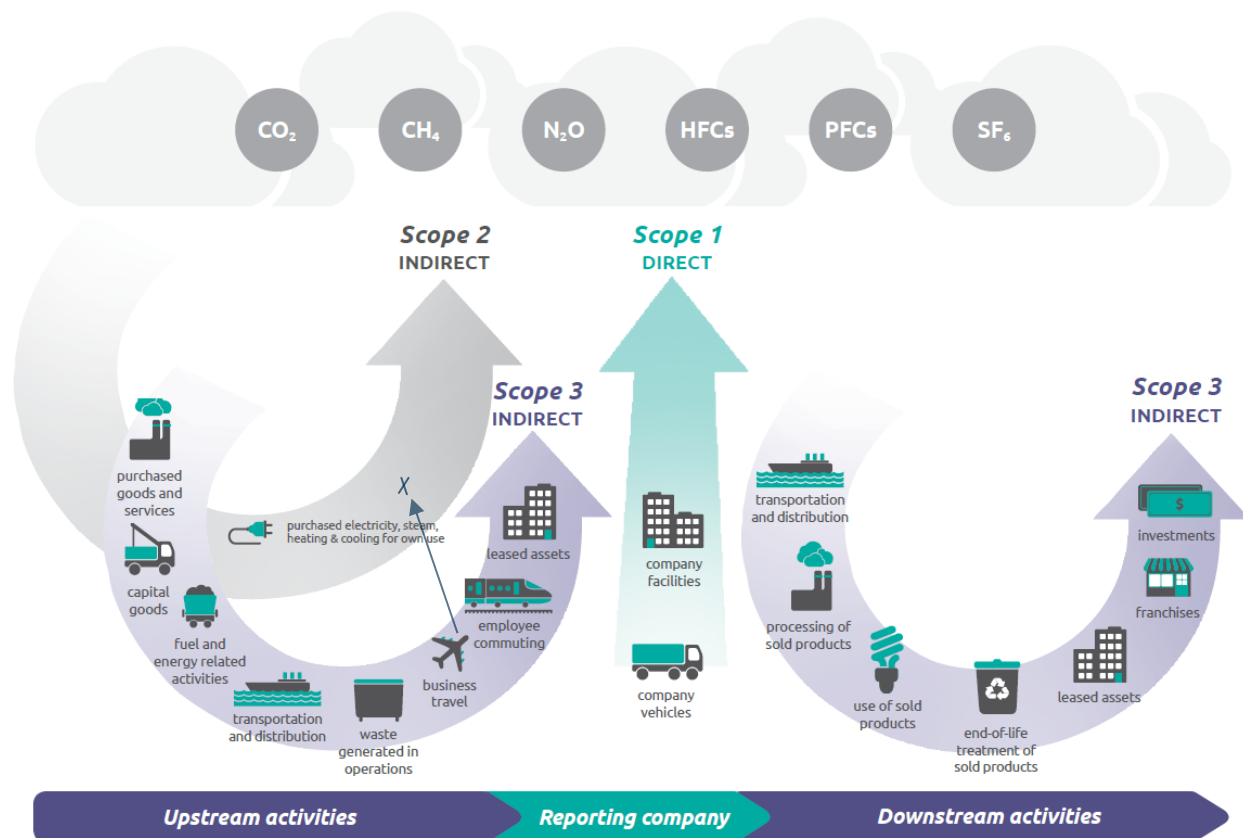


Figure: Scope division according to GHG Protocol Scope 3 Standard with addition of business travel adjustment (July 2022; p.5; figure 1.1).

### 2.1 Upstream categories

#### 1.2.1 Purchased goods and services

This category includes:

- A. Purchased goods and services directly related to the production of the company's products. This is not relevant to FCC Construcción SA because it is not a manufacturing company.

- B. Purchased goods and services that are not related to the production of the company's products, but are necessary for the activities of FCC Construcción SA. These are goods and services such as:
- Crushed rubble (site paving or as a foundation for roads and site construction);
  - Geotextiles (used in combination with soil, in road construction applications);
  - Asphalt;
  - Steel construction;
  - Concrete construction.

For FCC Construcción SA, this is a category of interest. However, for some of these goods and services, FCC Construcción SA cannot exert any influence on the supplier.

### **1.2.2 Capital goods**

These are purchased capital goods that are used to make a product or provide a service. For FCC Construcción SA, it involves the purchase of equipment and vehicles. For FCC Construcción SA, this category is not yet relevant, as there is no construction work done in 2020 but it is expected in the following years.

### **1.2.3 Fuel and energy-related activities**

This relates to electricity and fuel used on-site FCC Construcción but not purchased by her. For FCC Construcción SA, this category is not yet relevant, as there is no construction work done in 2020 but it is expected in the following years.

### **1.2.4 Upstream transport and distribution**

This is related to transportation and distribution services purchased by the FCC Construcción in the reporting year (either directly or through an intermediary), including inbound logistics, outbound logistics (e.g., of sold products), and transportation and distribution between FCC's own facilities (in vehicles and facilities not owned or controlled by FCC).

### **1.2.5 Waste generated in operations**

It concerns the waste produced by FCC Construcción SA. The waste processing company collects the waste and it is removed and processed by third parties. For FCC Construcción SA, this category is not yet relevant, as there is no construction work done in 2020 but it is expected in the following years.

### **1.2.6 Business**

### **travel**

This is "work-to-work" traffic between the various offices or locations of FCC Construcción SA (in Netherlands and Spain), project sites and visits to chain partners. Since there is no construction work in 2020, this category relatively stands out.

### **1.2.7 Employee commuting**

Due to covid measures, the commuting by employees of FCC Construcción SA is neglectable in 2020. In 2021, there has been commuting by car and plane.

### **1.2.8 Upstream leased assets**

Our scope 3 emissions from upstream leased assets include the scope 1 and scope 2 emissions of lessors (depending on the lessor's consolidation approach). However, FCC Construcción SA does not make use of leased assets and emissions related to the use of assets (energy consumption).

## **2.2 Downstream categories**

### **2.2.1 Downstream transportation and distribution**

These are emissions related to transportation and distribution of sold products in vehicles and facilities not owned or controlled by FCC Construcción. This also includes emissions from retail and storage.

### **2.2.2 Processing of sold products**

These are CO<sub>2</sub> emissions from the processing by third parties (e.g. manufacturers) of intermediate products sold by FCC Construcción SA, prior to the sale of the product. Again, these are typical retail products and for that reason do not apply to FCC Construcción SA.

### **2.2.3 Use of sold products**

These are emissions from consumer use of goods and services sold by FCC Construcción SA. This is not applicable at FCC Construcción SA.

### **2.2.4 End-of-life treatment of sold products**

This category deals with emissions from waste disposal/treatment of sold products at end-of-life. Again, this is a category that is particularly applicable to the retail sector (think for example of the 'disposal contribution' required in the Netherlands) and is not applicable to a company like FCC Construcción SA.

### **2.2.5 Downstream leased assets**

These are assets that FCC Construcción SA itself would make available to be leased. This category is particularly applicable to leasing companies; they are not applicable at FCC Construcción SA.

### **2.2.6 Franchises**

A franchise is a company that operates under a license to sell or distribute another company's goods or services at a particular location. This aspect does not apply to FCC Construcción SA.

### **2.2.7 Investments**

This refers to, for example, investments in partnerships (creation of a company with another company), joint ventures, project investments, etc. This category is particularly interesting for the financial sector. This is not applicable to FCC Construcción SA.

### 3 Qualitative ranking scope 3 emissions 2021

Each scope 3 category in upstream and downstream are qualitatively scored using 5 criteria. The criteria are recommended by the GHG Protocol Scope 3 Standard and the CO2PL Handbook 3.1. They propose 5 criteria for identifying relevant scope 3 emissions:

- Size;
- Influence;
- Risk;
- Importance to stakeholders;
- Outsourcing;

Score	Definition
<b>Size</b>	They contribute significantly to the company's total anticipated scope 3 emissions
<b>Influence</b>	There are potential emissions reductions that could be undertaken or influenced by the company
<b>Risk</b>	They contribute to the company's risk exposure (e.g., climate change related risks such as financial, regulatory, supply chain, product and technology, compliance/litigation, reputational and physical risks)
<b>Outsourcing</b>	They are deemed critical by key stakeholders (e.g., customers, suppliers, investors or civil society)
<b>Importance to stakeholders</b>	They are outsourced activities previously performed in-house or activities outsourced by the reporting company that are typically performed in-house by other companies in the reporting company's sector
<b>Other</b>	They meet additional criteria developed by the company or industry sector

The scoring system has the following definitions:

Score	Definition
1	Negligible
2	Small
3	Neutral
4	Medium large
5	Large

The categories with the highest total score are the most relevant. In this way, qualitative criteria and data were used to estimate a dominance (quantitative) analysis.



### 3.1 Scope 3 category ranking

Emissions scope 3 - 2020						
Categories	Criteria					
Upstream	Size*	Influence	Risk	Outsourcing	Importance for stakeholders	Total points
1. Purchased goods and services	0	3	3	1	3	10
2. Capital goods	0	3	1	1	1	6
3. Fuel and energy-related activities (not in scope 1 or scope 2)	0	2	2	1	1	6
4. Transport and distribution	1	4	2	1	3	11
5. Waste generated in operations	0	4	2	1	1	8
6. Business travel	0	4	2	1	1	8
7. Employee commuting	0	4	1	1	1	7
8. Upstream leased assets	n/a?					
Downstream						
9. Transport and distribution	1	4	2	1	3	11
10. Processing of sold products	n/a					
11. Use of sold products	n/a					
12. End-of-life treatment of sold products	n/a					
13. Leased assets	n/a					
14. Franchises	n/a					
15. Investments	n/a					

Table above: Method for qualitatively determining the most relevant scope 3 emissions based on the GHG Scope 3 Standard and the CO2PL Handbook 3.0 (p.53, Table 6.1).

From this qualitative dominance analysis the following categories are of importance:

- Purchased goods and services
- Transport and distribution upstream
- Transport and distribution downstream

It should be emphasized that the quantitative scoring was done in a qualitative, descriptive manner. The categories and criteria of the GHG protocol leave a lot of room for individual interpretation, so 'hard' conclusions should be avoided.

### 3.2 Scope 3 material ranking

Most scope 3 emissions are related to the materials purchased or used in the execution of the project. To get a better insight and understanding of the relevance of these materials, the top 7 materials that cause the most emissions are qualitatively ranked as well using the same criteria. This top 7 is deduced from the reference Environmental Cost Indicator which is provided by Rijkswaterstaat (see Contract RWS) ECI reference used at the tender and are expected to be the most dominant for the scope of the whole project.

Dominance ranking materials of entire project						
Material type	Criteria					
	Size*	Influence	Risk	Outsourcing	Importance for stakeholders	Total points
Concrete	4					4
Asphalt	2					2
Ground (transport of)	3					3
Steel	5					5
Foundation	1					1
Barrier	1					1

From this analysis, we can see that Steel and Concrete are the most relevant materials. When influence is low, the relevance decreases accordingly.

## 4 Scope 3 boundary

### 4.1 Organizational boundary

To set the boundary of investigation of scope 3, a choice is made how to consolidate from within the organization. According to the GHG protocol there are three possibilities; The 'Equity share', the 'Financial Control' and the 'Operational control'. FCC Construcción SA has further developed the Financial Control when it comes to scope 3. This is done by putting all financial costs (upstream/downstream) in one list. This list is also used to determine the A and C suppliers of the entire 'Boundary'. In this method, the top 80% of cost of sales is used as the threshold for choosing the suppliers for the scope 3 emission analysis.

### 4.2 List of A-suppliers 2020

From the supplier analysis described in the "Attachment: Boundary analysis Suppliers 2020", a list is derived that covers 80% of the cumulative cost of sales in 2020 of FCC Construcción SA (from high to low):

1. Count & Cooper Consulting B.V. (Consultancy)
2. Sweco Netherlands B.V.(Design)
3. Fugro NL Land B.V. (Design)
4. IV-Infra B.V. (Design)
5. FCC Construcción SA (Financial)
6. Siemens Mobility B.V. (Design)
7. Traffic & More B.V. (Execution)
8. Springrivet C. M. S. B.V. (Execution)
9. MAPFRE (Financial)
10. Asset People B.V. (General services)
11. Property View B.V. (General services)
12. ZJA B.V. (Design)
13. Heijmans Infra B.V. (Execution)

### 4.3 List of Execution suppliers 2020

As FCC Construcción (NL) is involved with construction work, most expected scope 3 emissions will be related to suppliers in the execution phase. The execution of the project VeenIX BaHo BV has not started in 2020, yet there are three execution suppliers in the 80% cost of total sales. These are:

1. Traffic & More B.V.
2. Springrivet C. M. S. B.V.
3. Heijmans Infra B.V.

Traffic & More B.V. has provided traffic plans, provided insights regarding to controlling the hours of traffic, provided traffic measures and provided access to roads. This partly is related to design services and related to execution work it is mainly preparation work along the A9 road.

Springrivet C. M. S. B.V. has provided management of assets of A9. Although it is related to the execution activities, Springrivet provides rather management services than execution.

Heijmans Infra B.V. has provided asphalt works for the access assets by Traffic & More B.V.. This means setting barriers and creating space and roads for the construction. This is related to preparation work along the A9 road.

## 5 Quantified scope 3 emissions 2020

Scope 3 emissions are a consequence of the company's activities, but they are produced at sources that are not owned or controlled by FCC Construcción. FCC Construcción has formulated scope 3 emissions as indirect emissions from the production chain originating from subcontractors and suppliers.

A decision has been made to include the following emissions in scope 1, 2 and 3, according to the GHG protocol:

- Direct emissions:
  - Associated with the consumption of fossil fuels in fixed sources (divided in CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O).
  - Associated with the consumption of fossil fuels in mobile sources (divided in CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O).
  - Associated with fuel consumption (unspecified) (divided in CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O).
- Own indirect emissions:
  - Associated with the consumption of electrical energy
  - Associated with the consumption of electrical energy for vehicles
- Other indirect emissions:
  - Emissions associated with the production of used materials. Emissions from the manufacture of concrete, asphalt agglomerate, steel, non-ferrous metals, bricks, glass and cement are considered.
  - Emissions associated with the transport of used materials. This includes the transport to the site of concrete, asphalt agglomerate, earth, graded aggregate, soil, steel, non-ferrous metals, bricks, glass and cement.
  - Emissions associated with the performance of subcontracted work units. Considered to be earthmoving works.
  - Emissions associated with transport and management of waste and excess materials. Considered to be emissions linked to transporting excess earth, excess clean rubble and transportation and landfill of municipal solid waste and wood.
  - Emissions associated with employee business travel.
  - Emissions associated with company staff commuting to the workplace.
  - Emissions caused by loss during transport and distribution of electricity.

See the table below with the quantified emissions of scope 1, 2 and 3 accordingly.

Scope 3 emissions 2020 (GHG Protocol)	tCO <sub>2</sub> e
<b>Scope 3: Other indirect emissions:</b>	<b>90,39</b>
Associated with the production of used materials	0,00
Associated with the transport of used materials	0,00
Associated with the performance of subcontracted work units	0,00
Associated with transport and management of waste and excess materials	16,45
Associated with employee business travel	72,27
Associated with company staff commuting to the workplace	0,00
Caused by loss during transport and distribution of electricity	1,67
<b>Total Scope 3 Emissions</b>	<b>90,39</b>

Table: FCC Construcción Scope 3 emissions of year 2020 according to the GHG protocol (translated from "InformeEmisiones-BPajos-2020\_TOT\_Junio").

FCC Construcción has identified their emissions according to the GHG protocol, as seen in the table above. However, there is a small deviation between the CO<sub>2</sub> performance ladder and the GHG protocol concerning the reporting of scope 1, 2 and 3: for the CO<sub>2</sub>PL, the category business travel of scope 3 is included in scope 1 and 2. Below is the emissions table shown according to the CO<sub>2</sub>PL.

Scope 3 emissions 2020 (CO2PL)	tCO2e
<b>Scope 3: Other indirect emissions:</b>	<b>18,12</b>
Associated with the production of used materials	0,00
Associated with the transport of used materials	0,00
Associated with the performance of subcontracted work units	0,00
Associated with transport and management of waste and excess materials	16,45
Associated with company staff commuting to the workplace	0,00
Caused by loss during transport and distribution of electricity	1,67
<b>Total Scope 3 Emissions</b>	<b>18,12</b>

Table: FCC Construcción Scope 3 emissions of year 2021 according to the CO2PL.

### 5.1 Insight scope 3 emissions

Compared to scope 1 and 2, the emissions for scope 3 are little. The scope 3 emissions are mostly related to the transport and management of waste and excess materials. Additionally to the 80% cost of total sales, an analysis is done on the 80% cost of execution sales to create increasing insight in the execution suppliers (see Attachment: List of A-suppliers & execution suppliers 2020). From this list, JDB Groep B.V. (nr. 4) is likely to have played a large role in the transport of ground materials in 2020. The quantified emissions are therefore likely to be originated from the work of this supplier. However, the actual execution phase will start in 2023 and the scope 3 emissions are expected to increase strongly.

## 6 Forecast scope 3 emissions

The VeenIX A9BAHO project is a large infrastructure construction project. Therefore, the majority of the project's emissions are related to upstream scope 3 activities by nature. More specific; 1) the purchased goods and services, 2) capital goods, 3) fuel and energy related activities and 4) transportation and distribution. Figure 2 indicates these activities with respect to the different scope activities from the GHG protocol.

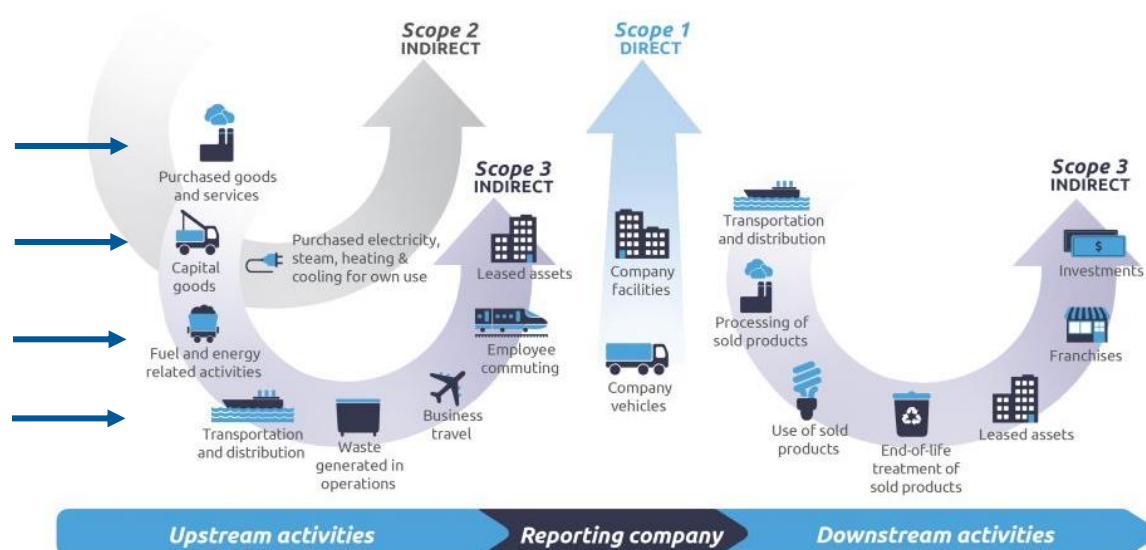


Figure: GHG protocol scope 1, 2 and 3 visualization

We consider the reference design to determine the scope 3 forecast for the entire project. The reference design is the same design that is used to determine the project's ECI during the tender phase of the project. Since the design alterations refer to different book years compared to the reference year, only the CO<sub>2</sub> reference value is determined and considered at this stage.

### 6.1 Scope 3 emissions

The bill of quantity of the tender phase and CO<sub>2</sub> lifecycle profiles are used to calculate the total tons of CO<sub>2</sub>. The life cycle of the CO<sub>2</sub> profiles differ depending on the type and use of the material. The project lifetime of the A9BAHO project is divided into an 8-year construction period and a 50 year user-, End-of-Life and Recovery period. The total duration of the project is therefore considered to be 58 years. The total expected tons of CO<sub>2</sub> emissions of the project, related to the most impactful material categories are stated, in Table below, and later visualized at the top of next page.

	Tons CO <sub>2</sub> (tender)	CO <sub>2</sub> [%]
Concrete	74.233	23,6%
Steel	110.272	35,1%
Ground	73.443	23,4%
Asphalt	19.515	6,2%
Barrier	9.449	3,0%
Foundation	11.071	3,5%
Other	16.165	5,1%
<b>Total</b>	<b>314.148</b>	<b>100,0%</b>

Table: FCC Construcción total emissions Scope 1, 2 and 3 for the entire lifetime of the A9BAHO project

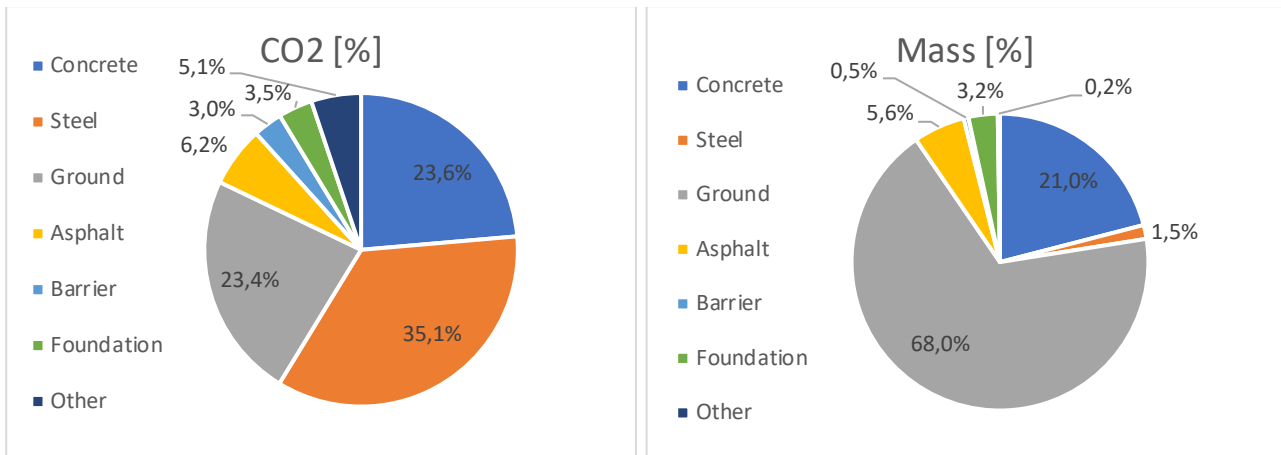


Figure: Percentage of CO2 contribution related to the materials used in the project.

Observing Figure above and table (bottom previous page) it is determined that the majority (88,3%) of the project's CO2 emissions are related to steel (35,1%), concrete (23,6%), ground (23,4%) and asphalt (6,2%). For the remaining of the report, the top 4 CO2 components of the project refers to these four categories.

Later, the top 4 CO2 components will become the focus of the reduction strategy.

## 6.2 Collect emission data of direct chain partners

The analysis in Chapters 6 and 7 give a clear view on where the majority of CO2 emissions are located. At the time of writing the exact subcontractors for the construction phase are yet to be determined. Therefore, we are unable to collect the emission data of the direct chain partners.

Important to note: the emissions from book year 2020 and 2021 only include service related (and not construction) related emissions. The amount of scope 3 related emissions from this period are very small with respect to the forecasted construction related emissions. Therefore, the impact of the 2020 and 2021 chain partners is very small as well.

Once the direct chain partners are selected, their emission data will be collected and added to this report.

## 7 Scope 3 CO<sub>2</sub> reduction targets

See Declaration CO<sub>2</sub> reduction targets (2022).

### 7.1 FCC Construcción S.A. (NL) main reduction target

As part of CO<sub>2</sub> handbook requirement level 4 we need to determine ambitious reduction targets to reduce the scope 1, 2 and 3 emissions for the A9BAHO project. We have aligned our understanding of 'ambitious' to the CO<sub>2</sub> emissions targets of the European Union. Compared to the reference year 1990, the EU strives to reduce a total percentage of 55% by 2030. Figure below represent this reduction linearly.

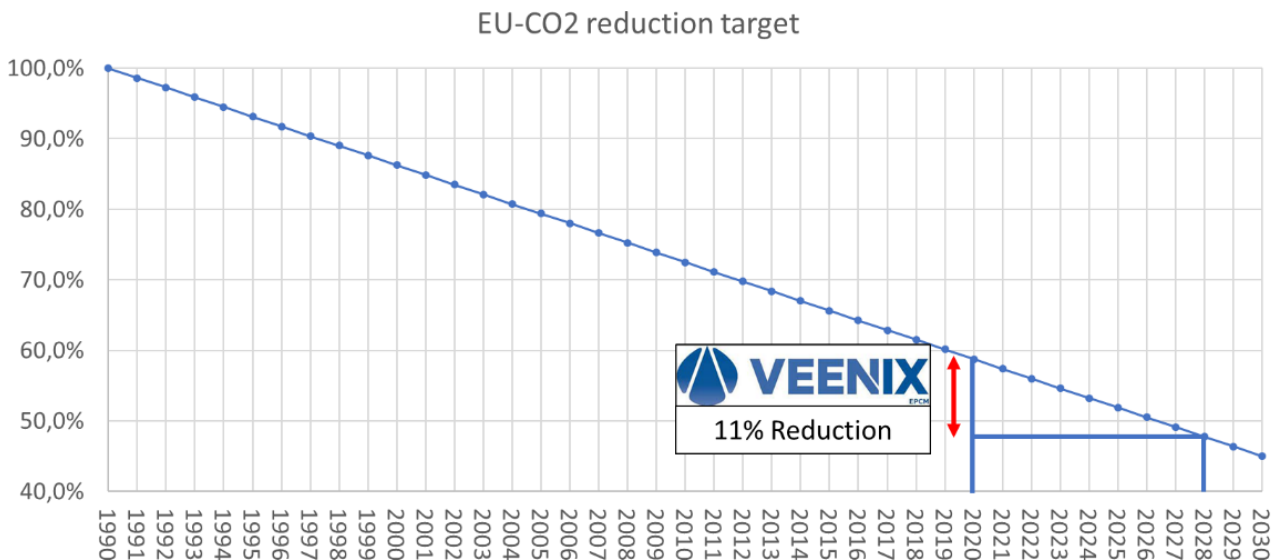


Figure: Linear CO<sub>2</sub> reduction target of the EU

The lifecycle of the project consists of an 8-year construction phase and 50-year user to End-of-Life phase. The total lifecycle therefore is 58 year.

The construction phase of the A9BAHO project spans from 2020 until 2028. This is indicated on the x-axis of Figure 4. During the 8-year construction phase of the project, the European Union aims to reduce 11% of its own CO<sub>2</sub> emissions. Therefore, our understanding of 'ambitious' CO<sub>2</sub> emissions reduction during the entire lifecycle of the project is also set at 11%.

The calculated total amount of scope 3 emissions of the entire lifecycle (58-years) of the project is 314.000 tons. Based on the ambitious reduction percentage of 11% the main reduction target of the scope 3 emissions of the A9BAHO project is calculated as follows:

$$\text{Main reduction target} = 314.000 \text{ tons CO}_2\text{eq} * 11\% \approx 34.500 \text{ tons CO}_2\text{eq}$$

This means we have to reduce a total amount of 34.500 tons of CO<sub>2</sub> during the entire 58-years lifecycle of the project (2020-2078).

The construction phase of the VeenIX A9BAHO project relates to phase A1-A5 of the project. It is our expert judgement that 85% of the total CO<sub>2</sub> emissions are emitted in these stages. The remaining 15% of the CO<sub>2</sub> emissions are emitted during the Use stage (B), End-of-Life Stage (C), and Benefits and Loads Beyond the System Boundary (D) and are therefore outside of the scope of influence to implement reduction measures on.

Based on the 85% of CO<sub>2</sub> emissions that are within the scope of FCC Construcción's influence: 1) the total CO<sub>2</sub> emissions of the entire lifetime of the project and 2) the main CO<sub>2</sub> reduction target is calculated as follows:

$$1) \text{ Total Scope 3 CO}_2 \text{ Emissions of Construction phase of Project} \\ = 314.000 \text{ tons CO}_2\text{eq} * 85\% \approx 267.000 \text{ tons CO}_2\text{eq}$$

$$2) \text{ Main reduction target} = \\ 34.500 \text{ tons CO}_2\text{eq} * 85\% \approx 29.400 \text{ tons CO}_2\text{eq}$$



This means we have to reduce a total amount of 29.400 tons of CO2 during the entire 8-years construction phase of the project (2020-2028).

Product Stage			Construction Process Stage		Use Stage								End-of-Life Stage				Benefits and Loads Beyond the System Boundary		
Raw Material Supply	Transport	Manufacturing	Transport to Building Site	Installation into Building	Use/Application	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction/Demolition	Transport	Waste Processing	Disposal	Reuse	Recovery	Recycling	
																			A1
Inside Scope of Work					Outside Scope of work														
2020-2028					2028-2078														

Table: FCC Construcción S.A. (NL) impact potential on CO2 reduction in relation to scope of work

Important note: At the time of writing (2022), the world is suffering two major events which cause disturbances in the supply chain of the construction materials. 1) COVID-19 pandemic, 2) Russia Ukraine war. The current and future effects on the supply chain might harm FCC's possibilities to apply different reduction measures. FCC Construcción wishes to keep their reduction target of Scope 3 emissions 29.400 tons. Nevertheless FCC Construcción stresses the possibility they will need to re-consider their ambitious targets according to the developments and effects of the current global events.

## 7.2 Yearly reduction target per material category

The constructions works consist of different materials, different volumes and different CO2 emissions per material categories. Setting equal sub-reduction targets would therefore be inefficient. The following exercise aims to correct for this, thereby determining the right reduction ambition for each of the largest CO2 components of the project.

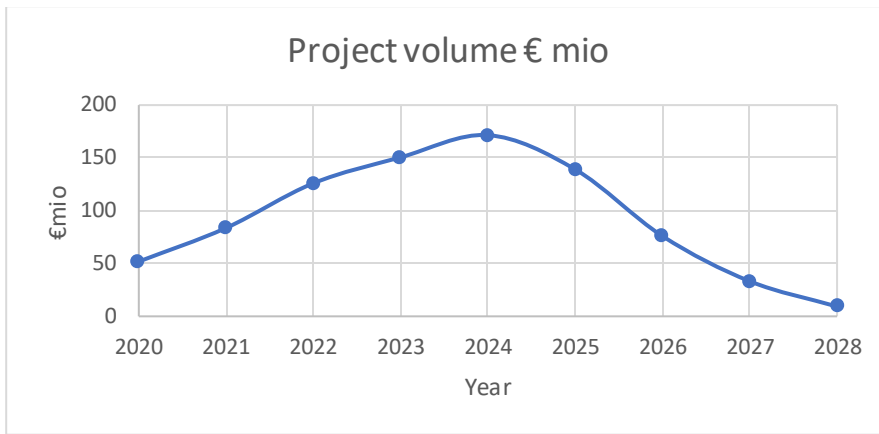
Considering the main reduction target we are able to determine the target reduction tonnage per category for the top-4 CO2 categories steel, concrete, ground and asphalt. Since these categories only represent 88,3% of the total emissions, they are extrapolated proportionally to 100%, whilst reducing the remaining categories to 0% in table below.

	CO2 [%] of total emissions	CO2 [%] (extrapolated)
Concrete	23,63%	26,75%
Steel	35,10%	39,74%
Ground	23,38%	26,47%
Asphalt	6,21%	7,03%
Barrier	3,01%	0%
Foundation	3,52%	0%
Other	5,15%	0%
Total	100,00%	100,00%

Table: Expected annual project volume in €mio

This proportional transformation of percentages is done to ensure we reach 100% of our reduction target whilst only focussing on a subsection of the material categories.

During the lifetime of the project, the annual project volume (€) and corresponding activities (emissions) will differ a lot. To determine yearly reduction targets, the annual project volumes need to be considered first. Figure and table below show to expected annual project volume in €mio.



Year	Project volume € mio
2020	51,89
2021	83,69
2022	126,02
2023	150,56
2024	171,55
2025	139,08
2026	75,90
2027	33,18
2028	9,25

Figure & Table: Expected annual project volume in €mio

Figure and table above show how the project volume (€) linearly climb towards 2024. After 2024, the project volume decreases to only a fraction of the total in 2028.

For the purpose of setting yearly reduction targets, it is assumed that the project volume (€) is proportional to the emissions that are produced annually. This assumption mainly holds during the 2022-2027 period of the project, since most of the activities during this phase involve actual construction works.

The total emissions per category and the ratio of project volume are used to determine the CO2 emissions per category per year in Table below and Figure next page.

CO2 emissions/ year	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Concrete	4.407	7.108	10.704	12.788	14.571	11.813	6.446	2.818	786	71.441
Steel	6.546	10.559	15.900	18.996	21.645	17.548	9.576	4.187	1.167	106.124
Soil	4.360	7.032	10.590	12.652	14.416	11.687	6.378	2.788	778	70.680
Asphalt	1.159	1.869	2.814	3.362	3.830	3.105	1.695	741	207	18.781
<b>Total</b>	<b>16.472</b>	<b>26.567</b>	<b>40.007</b>	<b>47.798</b>	<b>54.462</b>	<b>44.153</b>	<b>24.095</b>	<b>10.535</b>	<b>2.937</b>	<b>267.026</b>

Table: CO2 emissions targets per category per year

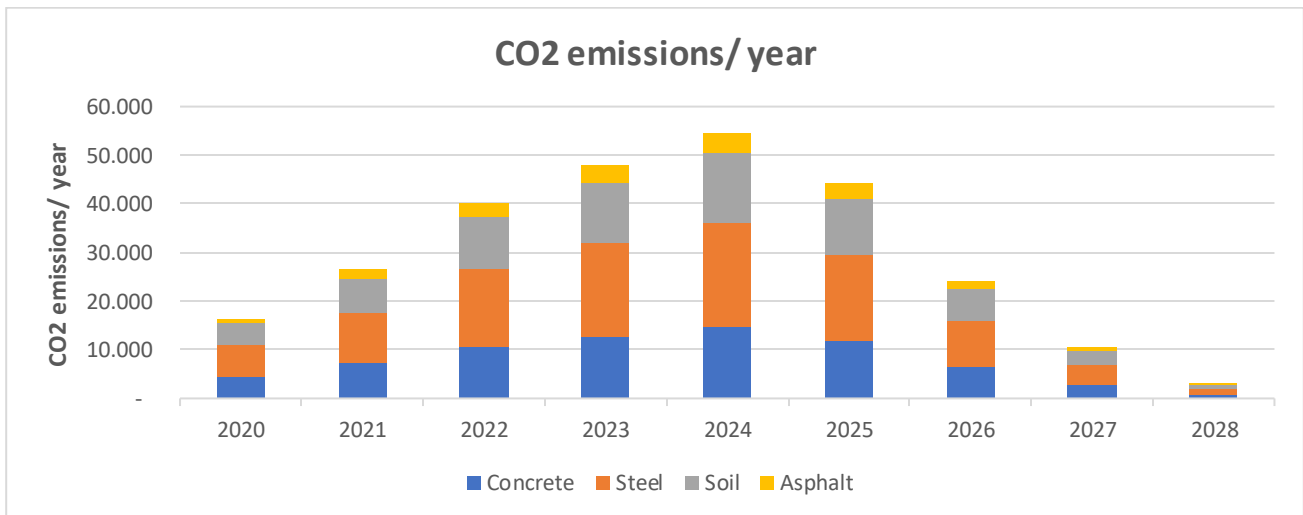


Figure: CO2 emissions targets per category per year

Next, based on the 11% main reduction target and the values from Table 8, we determine the yearly reduction target per category in table and figure below.

Target reduction/category/year	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Concrete	485	782	1.177	1.407	1.603	1.299	709	310	86	7.859
Steel	720	1.161	1.749	2.090	2.381	1.930	1.053	461	128	11.674

Soil	480	774	1.165	1.392	1.586	1.286	702	307	86	7.775
Asphalt	127	206	310	370	421	342	186	82	23	2.066
Total	1.812	2.922	4.401	5.258	5.991	4.857	2.650	1.159	323	29.373

Table: Yearly reduction targets per category

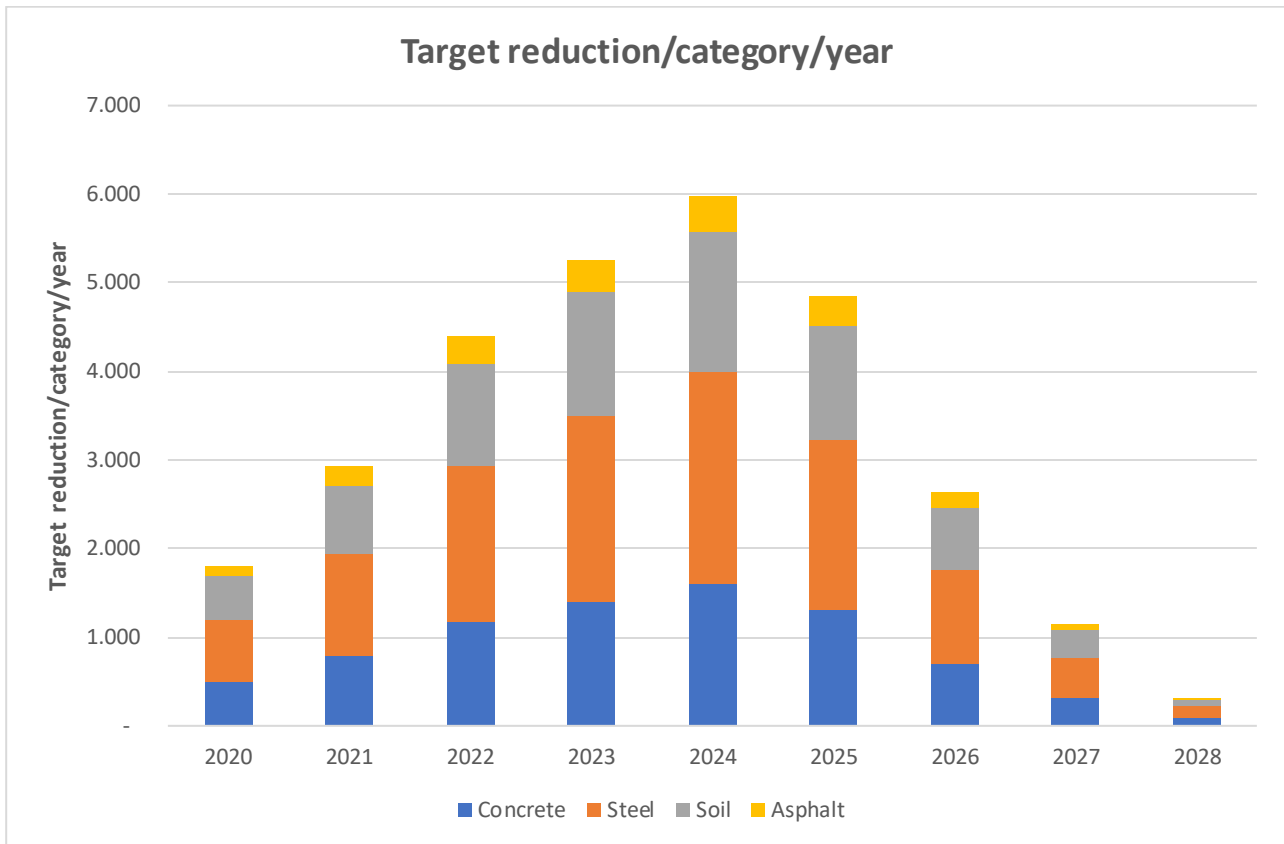


Figure: Yearly reduction targets per category

The ratio between the reduction targets in Figure above does not consider how well the reduction targets are achievable in terms of available alternatives or applicability to the current project phase. The following exercise is a correction to make the actual reduction targets more balanced and therefore achievable.

Instead of 11% for each material category, the following reduction targets are considered.

	Initial reduction target	Corrected reduction target
Concrete	11%	11%
Steel	11%	1%
Ground	11%	25%
Asphalt	11%	16%

Table above: Corrected reduction target per material category

The newly set reduction target per material category in Table corresponds to the decisive reduction target tonnage per year, per category for the VeenIX A9BAHO project

Target reduction/category/year	2020	2021	2022	2023	2024	2025	2026	2027	2028	Total
Concrete	493	796	1.199	1.432	1.632	1.323	722	316	88	8.000
Steel	62	99	150	179	204	165	90	39	11	1.000
Soil	1.073	1.731	2.607	3.115	3.549	2.877	1.570	686	191	17.400
Asphalt	185	298	449	537	612	496	271	118	33	3.000
Total	1.812	2.922	4.401	5.258	5.991	4.857	2.650	1.159	323	29.373

Table: Corrected yearly reduction targets per material category

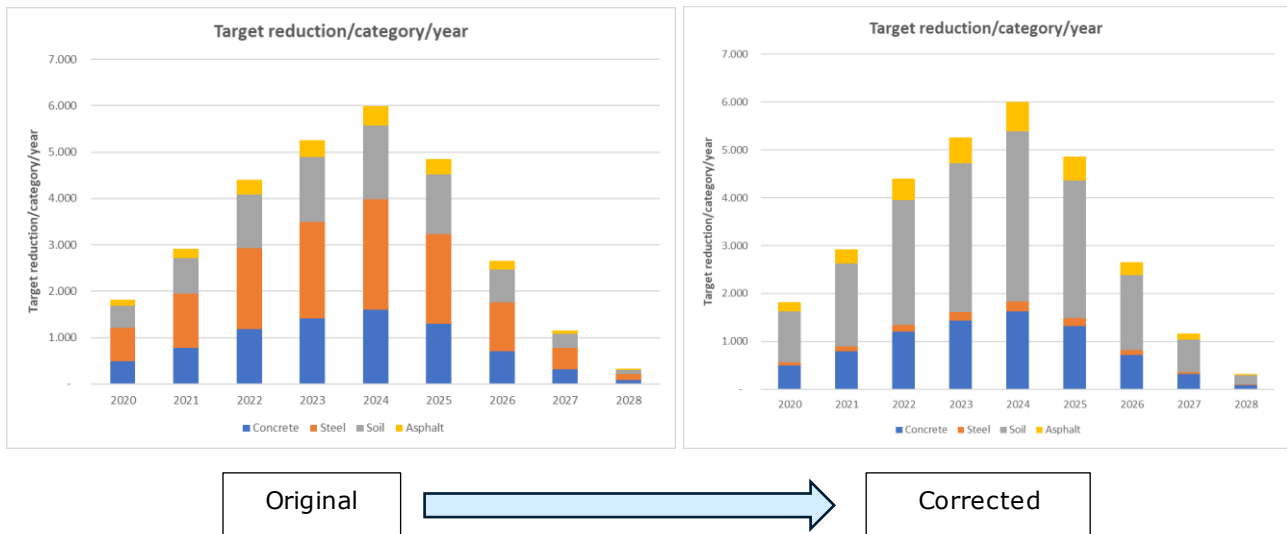


Figure: original (left) and corrected yearly target reduction per category (right)

### 7.3 Declaration form

In November the reduction targets are proposed to the Project Management Team (PMT) of FCC Construcción S.A. (NL). The PMT has been thoroughly informed about the creation of the main- and sub reduction target. The declaration signed by the VeenIX project director and FCC Construcción S.A. representative stating the PMT of FCC Construcción S.A. (NL) agrees on the reduction targets. By signing the declaration form, the PMT declares to prioritize and the implementation of the reduction measures that are required to reach the targets.



The form contains the following content:

**FCC Construcción** logo (left) and **VEENIX** logo (right).

### Declaration statement of CO<sub>2</sub> reduction

FCC Construcción S.A. (NL) declares to be committed to pursue a reduction of approximately 3750 tons of CO<sub>2</sub> emission per year. The total expected reduction comprises 30.000 tons of CO<sub>2</sub> over the lifetime of the project (2020 till 2028). The management team will be committed to formulating effective strategies and are devoted to its implementation.

This reduction will be achieved starting 2023 by deploying renewable energy instead of fossil fuels in the office and site locations, by adopting energy efficiency measures and tackling CO<sub>2</sub> emissions related to the four most impactful materials in the design: steel, concrete, ground & asphalt.

Scope 1 emissions (gas consumption): 300 tons of CO<sub>2</sub> reduction  
Scope 2 emissions (electricity & business travel): 300 tons of CO<sub>2</sub> reduction  
Scope 3 emissions (related to materials): 29.400 tons of CO<sub>2</sub> reduction

Amsterdam, FCC Construcción S.A.,  
Date: November, 2022

Name: Raúl Hortal Project Director 28/11/2022 Signature: 	Name: Pablo Ovejas FCC Construcción S.A. Representative Signature: 
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Figure: Signed declaration form

## 8 Scope 3 Reduction strategy

In Chapter 8 the scope 3 CO2 reduction targets were set according to figure below. Chapter 9 introduces the reduction measures by which FCC Construcción S.A. (NL) aims to reach their reduction targets. The reduction measures focus on the parts of the project where the largest amount of CO2 emissions are located. These are 1) concrete, 2) asphalt, 3) steel and 4) ground.

### 8.1 Potential driven approach

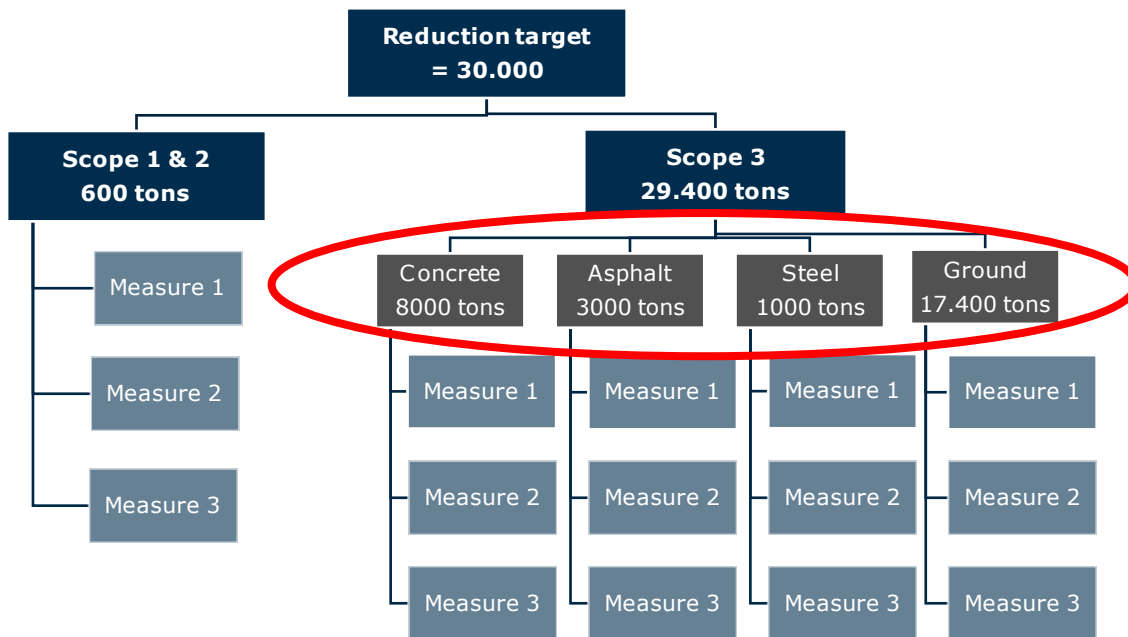
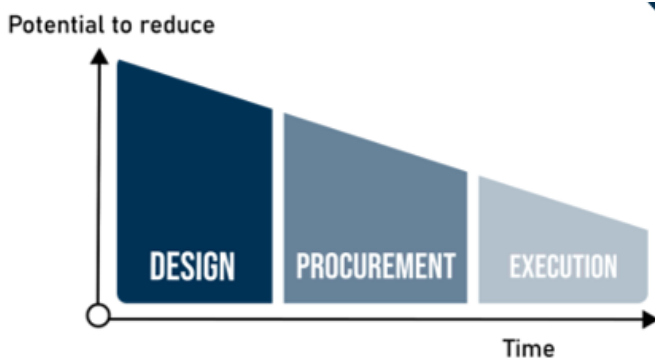


Figure: Overview reduction targets per material category

Reduction measures are determined according to a predetermined selection process. In the selection process we assume that the most effective measures are taken firstly in the design phase and lastly in the execution phase.



The reduction measures focus on the parts of the project where the largest amount of CO2 emissions are located. These are 1) concrete, 2) asphalt, 3) steel and 4) ground. For all four categories, the selection process to determine measures are based on this approach. At the time of writing, the research to determine the highest reduction potential is well on its way.

## 8.2 Scope 3 reduction measures

The Appendix contains an inventory of possible measures that can be taken. Future research will provide a choice of measures in 2023. The measures and Key Performance indicators to monitor the effectiveness are described in Scope 3 Dominance Analysis.

### Soil

The reduction target for ground is 17.400 tons (25%). The approach described for soils is meant as a descriptive support to the earlier mentioned approach in Section 8.1. The same description is true for the material categories Concrete, Asphalt and Steel.

### Reduction measures: soil (example)

Total soil emissions during construction phase = 62.400 tons CO<sub>2</sub>-eq

Total target = 29.700 tons CO<sub>2</sub>-eq

SCOPE 3 measures		Expected reduction % to total
STEP	Soil	
1	Lower soil usage by 5%	±3.200 tCO <sub>2</sub>
	Close soil balance inside project by 50%	±31.200 tCO <sub>2</sub>
2	Purchase ground closer (from 20km to 1km)	±1.500 tCO <sub>2</sub>
	Use trucks with EUR6 motors instead of EUR5	±1.000 tCO <sub>2</sub>
3	Use (20%) HVO with diesel blend for all trucks for soil/ground tra	±8.000 tCO <sub>2</sub>
	100% of trucks for soil transport run on LNG natural gas:	±6.500 tCO <sub>2</sub>
	100% of trucks for soil transport run on LNG natural gas:	±35.000 tCO <sub>2</sub>
	Provide reuse destination outside project for 10% of released soil	±4.000 tCO <sub>2</sub>

#### Selection process



8 3-1-2023

### Difficulty giving absolute numbers

Soil, Steel, Concrete, Asphalt

Example: Use X% HVO diesel for all trucks for soil/ground transport to reduce X tons of CO<sub>2</sub>.

Question from us: How much % HVO diesel for all trucks for soil/ground transport can be maximum have?

Sub-question 1 - How many trucks? What kind of trucks?

Sub-question 2 - Included in subcontractor's fleet?

Sub-question 3 - Budget available for HVO diesel?

Sub-question 4 - Availability of HVO in the market?

Answer to you: The reduction measure can reduce a maximum of X tons of CO<sub>2</sub>

How do we get our answers according to a cooperative approach?



10 3-1-2023

## 8.3 Implementing reduction measures

The implementation of reduction measures fall under the responsibility of the CO<sub>2</sub> Board, as described in the SMP CO<sub>2</sub>. The process of implementing reduction measures is described in the CO<sub>2</sub> implementation plan.

**Attachment: List of A-suppliers & execution suppliers in 2020**

2020		
	A-Supplier name	Cost of sales (80%)
1	COUNT & COOPER CONSULTING B.V.	€ 11.975.886
2	SWECO NETHERLANDS B.V.	€ 5.776.543
3	FUGRO NL LAND B.V.	€ 5.352.386
4	IV-INFRA B.V.	€ 5.221.794
5	FCC CONSTRUCCION SA	€ 2.692.116
6	SIEMENS MOBILITY B.V.	€ 2.295.872
7	TRAFFIC & MORE B.V.	€ 2.206.221
8	SPRINGRIVET C. M. S. B.V.	€ 1.443.154
9	MAPFRE	€ 1.153.275
10	ASSET PEOPLE B.V.	€ 1.031.024
11	PROPERTY VIEW B.V. (MERIN)	€ 1.015.148
12	ZJA B.V.	€ 947.857
13	HEIJMANS INFRA B.V.	€ 905.122

2020		
	Execution supplier name	Cost of execution sales (80%)
1	TRAFFIC & MORE B.V.	€2.206.221
2	SPRINGRIVET C. M. S. B.V.	€1.443.154
3	HEIJMANS INFRA B.V.	€905.122
4	JDB GROEP B.V.	€794.517
5	T & A SURVEY BODEMONDERZOEK	€710.887
6	AKSON B.V.	€638.435
7	BENTVELZEN & JACOBS	€461.105
8	VAN DEN BROEK	€291.877
9	GEONIUS MILIEU B.V.	€282.627



### Attachment: Boundary analysis suppliers 2020

For the ladder assessment, we must determine what deems important and what needs to be certified. The limits and scope of the organisation are guiding here. A method according the ladder certification is used to limit the boundary to solely A-suppliers and no C-suppliers, called the lateral method.

The first step of the lateral method is to arrange all suppliers (creditors) according to cost of sales in decreasing order. See the figure below.

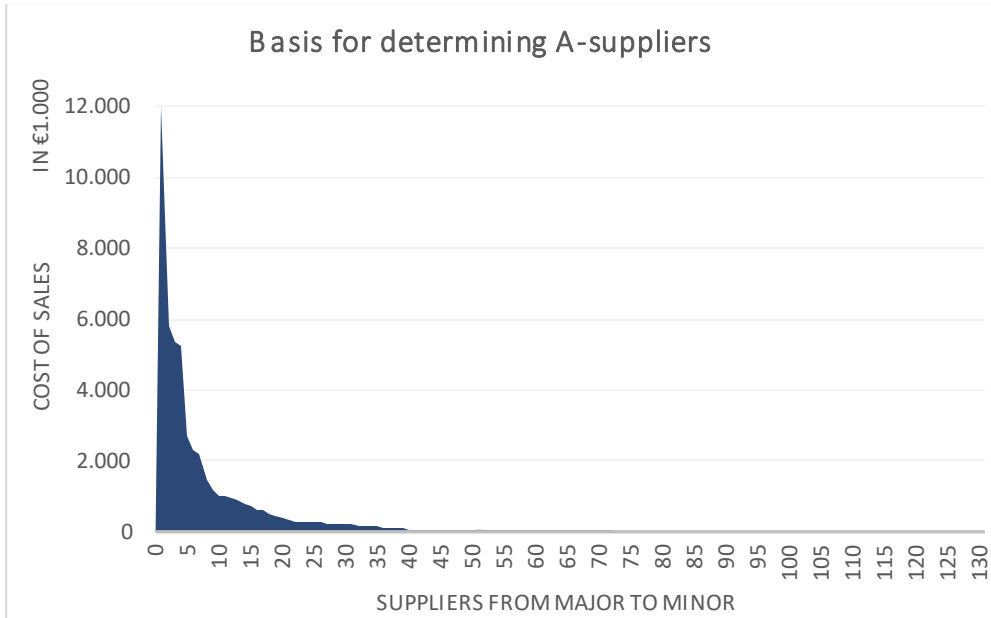


Figure: Suppliers from large to small on the basis of cost of sales.

The second step is to express the turnover per supplier in a percentage of the total. See the figure below.

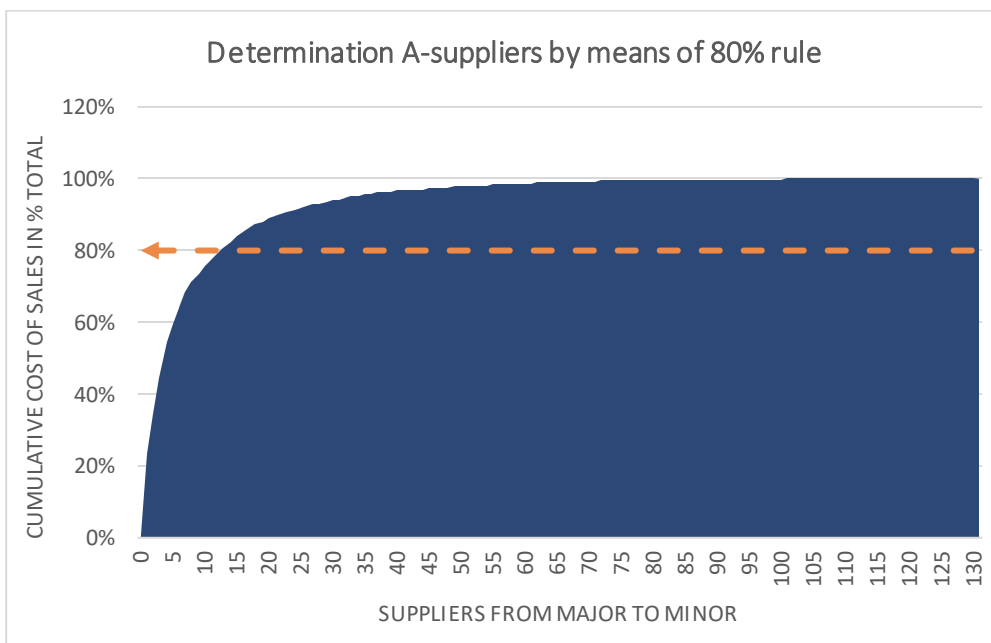


Figure: Cumulative cost of sales of suppliers in percentages of the total.

In the third step the A-suppliers are determined by looking at the suppliers who exceed the cumulative 80% limit for FCC Construcción with its cost of sales. See figure below. Suppliers that do not exceed this limit are C-suppliers and are taken out of the boundary for the ladder assessment.

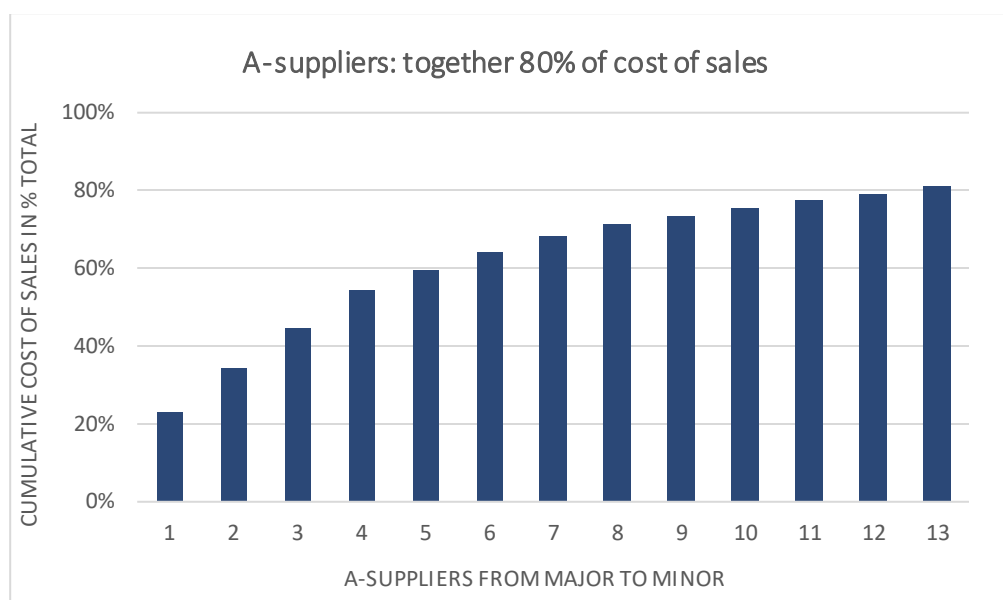


Figure: A-suppliers selection of previous figure 3.

This lateral method is repeated to ensure that there are no longer any C-suppliers among the A-suppliers.

This results in the following list of A-suppliers of 2020:

1. COUNT & COOPER CONSULTING B.V. (Consultancy)
2. SWECO NETHERLANDS B.V. (Design)
3. FUGRO NL LAND B.V. (Design)
4. IV-INFRA B.V. (Design)
5. FCC CONSTRUCCION SA (Financial)
6. SIEMENS MOBILITY B.V. (Design)
7. TRAFFIC & MORE B.V. (Execution)
8. SPRINGRIVET C. M. S. B.V. (Execution)
9. MAPFRE (Financial)
10. ASSET PEOPLE B.V. (General service)
11. PROPERTY VIEW B.V. (MERIN) (General service)
12. ZJA B.V. (Design)
13. HEIJMANS INFRA B.V. (Execution)

## Attachment: List of A-suppliers in 2021

2021		
	A-supplier name	Cost of sales (80%)
1	JDB GROEP B.V.	€ 9.906.423
2	SWECO NETHERLANDS B.V.	€ 9.685.811
3	COUNT & COOPER CONSULTING B.V.	€ 8.211.365
4	IV-INFRA B.V.	€ 7.476.894
5	HEIJMANS INFRA B.V.	€ 5.103.697
6	TRAFFIC & MORE B.V.	€ 4.787.161
7	FUGRO NL LAND B.V.	€ 4.777.280
8	HOLLANDIA INFRA B.V.	€ 4.261.316
9	PIJNACKER INFRA B.V.	€ 2.903.204
10	FCC CONSTRUCCION SA	€ 2.475.990
11	OPTIMUS ADVISERING B.V.	€ 1.668.638
12	MAPFRE	€ 1.639.936
13	SPRINGRIVET C. M. S. B.V.	€ 1.470.784
14	SIEMENS MOBILITY B.V.	€ 1.418.332
15	NOVIS ROADS	€ 1.342.523

2021		
	Execution supplier name	Cost of execution sales (80%)
1	JDB GROEP B.V.	€ 9.906.423
2	HEIJMANS INFRA B.V.	€ 5.103.697
3	TRAFFIC & MORE B.V.	€ 4.787.161
4	HOLLANDIA INFRA B.V.	€ 4.261.316
5	OPTIMUS ADVISERING B.V.	€ 1.668.638
6	SPRINGRIVET C. M. S. B.V.	€ 1.470.784

### Services description of execution supplier list 2021

JDB Groep B.V. provides transport services for ground transportation, [Services to be added later].

Heijmands Infra B.V. provides and processes asphalt to roads [Services to be added later].

Traffic & More B.V. [Services to be added later].

Hollandia Infra B.V. [Services to be added later].

Optimus Advisering B.V. [Services to be added later].

Springrivet C.M.S. B.V. [Services to be added later].

Ballast Nedam Road Specialties B.V. [Services to be added later].

**Attachment: Boundary analysis suppliers 2021**

For the ladder assessment, we must determine what deems important and what needs to be certified. The limits and scope of the organisation are guiding here. A method according the ladder certification is used to limit the boundary to solely A-suppliers and no C-suppliers, called the lateral method.

The first step of the lateral method is to arrange all suppliers (creditors) according to cost of sales in decreasing order. See the figure below.

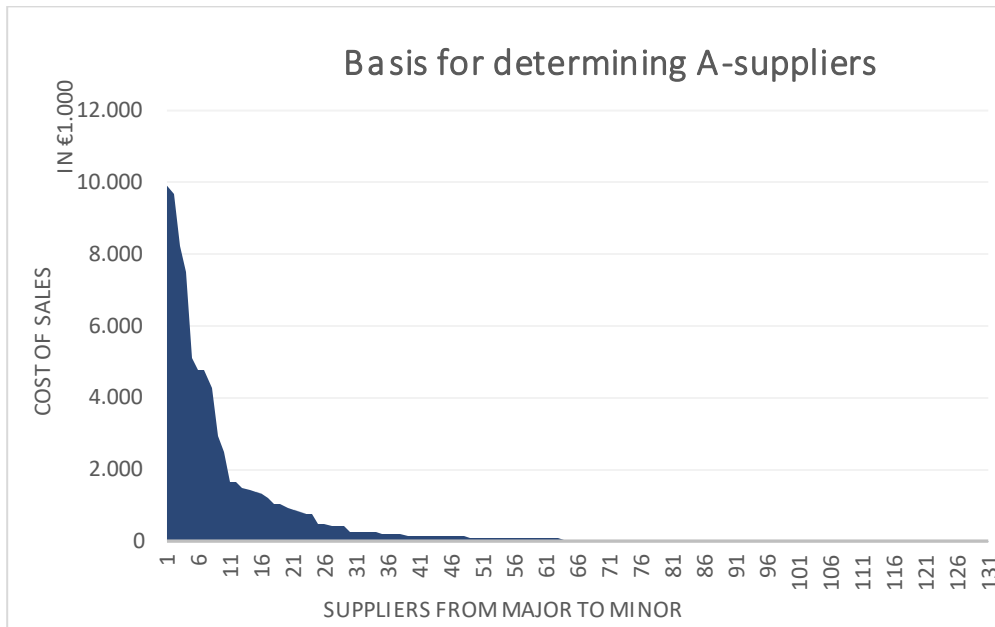


Figure: Suppliers from large to small on the basis of cost of sales.

The second step is to express the turnover per supplier in a percentage of the total. See the figure below.

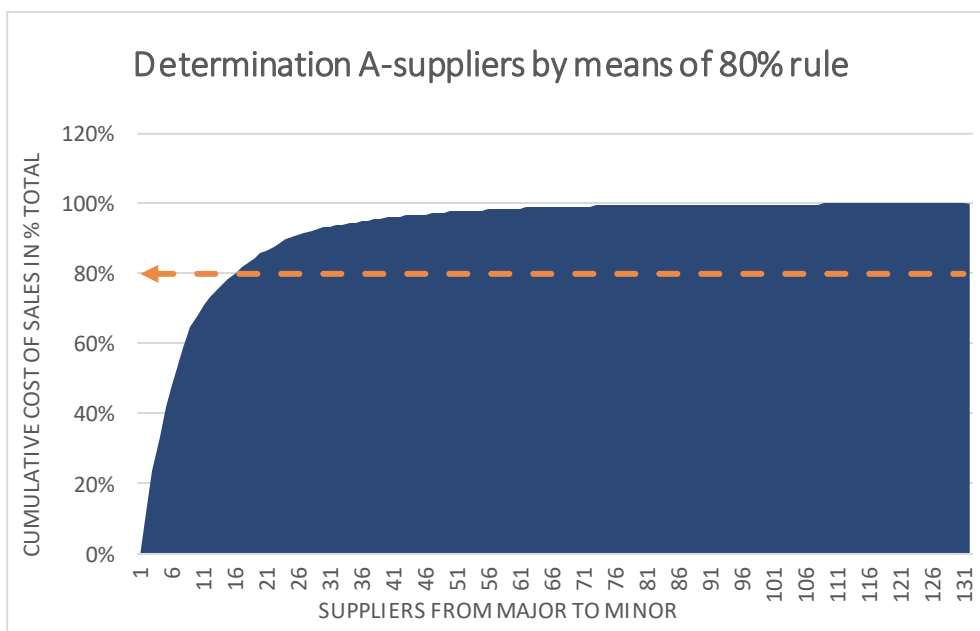


Figure: Cumulative cost of sales of suppliers in percentages of the total.

In the third step the A-suppliers are determined by looking at the suppliers who exceed the cumulative 80% limit for FCC Construcción with its cost of sales. See figure below.

Suppliers that do not exceed this limit are C-suppliers and are taken out of the boundary for the ladder assessment.



Figure: A-suppliers selection of previous figure 3.

This lateral method is repeated to ensure that there are no longer any C-suppliers among the A-suppliers.

This results in the following list of A-suppliers of 2021:

1. JDB GROEP B.V. (Execution)
2. SWECO NETHERLANDS B.V. (Design)
3. COUNT & COOPER CONSULTING B.V. (Consultancy)
4. IV-INFRA B.V. (Design)
5. HEIJMANS INFRA B.V. (Execution)
6. TRAFFIC & MORE B.V. (Execution)
7. FUGRO NL LAND B.V. (Design)
8. HOLLANDIA INFRA B.V. (Execution)
9. PIJNACKER INFRA B.V. (Design)
10. FCC CONSTRUCCION SA (Financial)
11. OPTIMUS ADVISERING B.V. (Execution)
12. MAPFRE (Financial)
13. SPRINGRIVET C. M. S. B.V. (Execution)
14. SIEMENS MOBILITY B.V. (Design)
15. NOVIS ROADS (Design)

**Attachment: Relevant suppliers 2021 analysis**

A follow-up analysis has been done on solely the suppliers that are involved in the execution of the project. Compared to 2020, the dominance of the execution suppliers have increased and is expected to increase strongly the coming years. With future prospect, our scope 3 emissions will originate from these suppliers mainly. This follow-up analysis functions to create understanding of the scope 3 emissions of 2021, but also to anticipate on the expected dominance increase of these suppliers.

The first step of the lateral method is to arrange all suppliers (creditors) according to cost of sales regarding execution services, in decreasing order. See the figure below.



Figure: Execution suppliers from large to small on the basis of cost of sales.

The second step is to express the turnover per supplier in a percentage of the total. See the figure below.

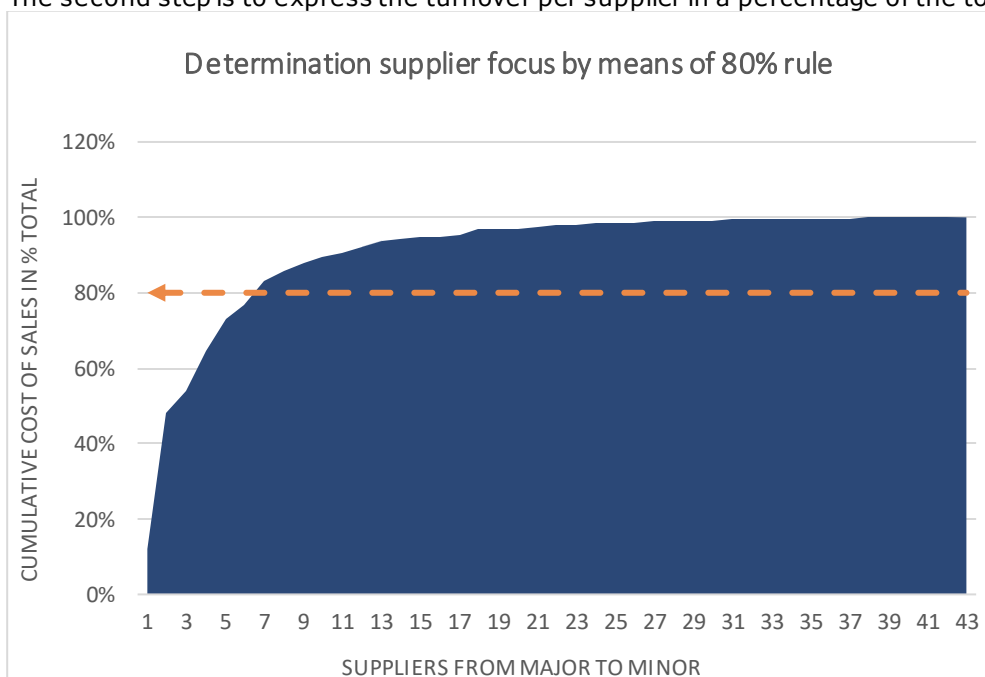


Figure: Cumulative cost of sales of suppliers in percentages of the total.

In the third step the final scope of execution suppliers are determined by looking at the suppliers who exceed the cumulative 80% limit for FCC Construcción with its cost of sales. See figure below. Suppliers that do not exceed this limit are taken out of the boundary for the ladder assessment.

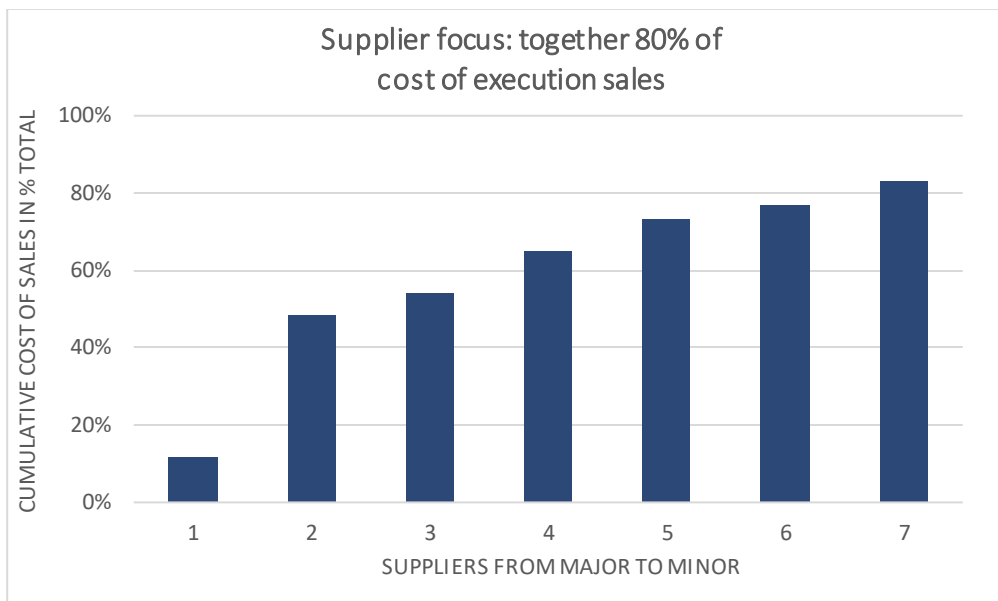


Figure: Suppliers selection of previous figure

This results in the following list of execution suppliers of 2021:

1. JDB GROEP B.V.
2. HEIJMANS INFRA B.V.
3. TRAFFIC & MORE B.V.
4. HOLLANDIA INFRA B.V
5. OPTIMUS ADVISERING B.V.
6. SPRINGRIVET C. M. S. B.V.
7. BALLAST NEDAM ROAD SPECIALTIES B.V.