



# Annual report CO<sub>2</sub>-Performance Ladder 2022 in accordance with manual version 3.1

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## 1. Introduction

The COVID-19 pandemic has changed the world, our industry and our business, what we have learned during this time will guide and shape our way of working and global office needs.

Ricardo has the following vision regarding hybrid working:

*“We are all individuals who together form our wonderful company. Our strength and added value for our customers lies in working together and sharing knowledge. We strengthen each other and that is why we need each other! The Management Team would like to meet you at the office. It is your own responsibility when you work in the office and you pay attention to your position and / or the project you are working on. You will agree on this with your manager. Together we form Ricardo, so as far as we are concerned, no one works completely from home. We are setting up our office on the Daalsesingel for this, and Ricardo also supports in setting up a good home workplace. In the coming period we will try, discover and experiment what this means for ourselves as a team and individually. In any case, we will be there at those times when our work, the customer or the organization requires it.”*

Our digital-first strategy enabled us to deliver innovations such as virtual certification, remote audits and inspections. Together with the use of virtual conferencing tools, we have been able to use this approach to continue our business processes largely unimpeded.

We are able to conduct our activities in such a way that we protect the environment and in a structured way we improve systems and processes that lead to energy performance, energy efficiency and consumption.

Ricardo Nederland B.V. wants to be corporate social responsible and as such take the surroundings and the environment into account. A valuable indicator for these aspects are CO<sub>2</sub> emissions. These provide insight into the current state of affairs within the company and the possibility to measure changes in the future.

Corporate Social Responsibility (CSR) is more than a topic for the management table. At Ricardo Nederland we believe that all our employees can contribute to a fairer and cleaner world. At home, at the office, on the road or at the customer. That is why we are committed to working in a socially responsible manner every day in various ways.

In the Ricardo plc Annual Report & Account 2021/22 pages 37 – 55 information is found about Sustainability and Environmental, Social and Governance (ESG).

CSR information is published on [www.werkenbijricadorail.nl/mvo](http://www.werkenbijricadorail.nl/mvo). In addition, Ricardo Nederland has a policy statement, see Appendix A1.4.

In July 2016 Ricardo Certification B.V. was established and all activities in the field of testing and certification have been incorporated into this. The technical consultancy activities fall under Ricardo Nederland B.V. Both B.V.'s are included in this report and in the associated 2022 footprint.



## 2. Ricardo and CO<sub>2</sub> Performance Ladder

### 2.1 Scope report and period

This report provides insight into the CO<sub>2</sub> emissions of Ricardo Nederland B.V. and Ricardo Certification B.V., both hereinafter referred to as Ricardo Nederland. It concerns the direct and indirect emissions that are emitted by the activities of both B.V.'s. In addition, this report describes Ricardo Nederland ambitions to limit CO<sub>2</sub> emissions in the future. The report describes the CO<sub>2</sub> emissions from 2022, which consist of scope 1, 2 and also scope 3 emissions.

As of 2017, scope 1 includes the consumption of lease cars in liters. The electrical part is processed in kWh in scope 2, but because the hybrid cars are not equipped with charging cables, the usage in 2022 is zero. The rented cars are also processed in scope 1 on the basis of kilometers driven.

The report is based on the Dutch standard for Greenhouse Gases part 1 (NEN-ISO 14064-1) and follows section 7.3.1 of this standard. That is why a cross-reference table has been included in the last chapter. In addition, in some cases, reference is made to the CO<sub>2</sub> Performance Ladder and the SKAO manual. The report uses the emission factors of the CO<sub>2</sub> Performance Ladder in accordance with the SKAO manual version 3.1 and which are published on <https://CO2emissiefactoren.nl/>.

The financial year at Ricardo Nederland runs from July 1 to June 30. However, this report is based on a calendar year (January 1 to December 31, 2022).

### 2.2 Responsible person

Richard Laan, Manager Finance, ICT & Sales Support and MT member, is responsible for this report and is internally supported by Marco Slotboom, HSEQ Advisor. Every year a report is made on the previous calendar year. Every six months, in January and July, Daniëlle Keller, Facility & Environment Coordinator, requests information from various parties to determine the CO<sub>2</sub> footprint. The Facility & Environment Coordinator and the HSEQ advisor jointly implement the communication plan, see also A.1.6. For the chain initiatives Martijn Wolf is the coordinator and the necessary budgets are agreed with the Team Manager, HR and the Manager Finance.

## 3. The organisation

### 3.1 Ricardo plc

Ricardo plc is a global strategic, environmental and engineering consulting company at the intersection of the mobility, energy and environmental agendas, solving the most complex issues to help achieve a safe and sustainable world. We have a diversified portfolio that addresses the common challenges of clean and decarbonized transport, energy needs and environmental impact. We are renowned for our best in-class expertise. With more than 100 years of experience, Ricardo is relied upon by our customers worldwide to deliver engineering, scientific and consulting capabilities supported by niche manufacturing. We now operate in 27 countries across the world and employ around 3,000 colleagues. Our work extends across a range of market sectors – including governments and NGOs, energy and resources, automotive, rail and mass transit, general industry, maritime, aerospace and defense. We are proud to possess a customer list that includes leading transport operators, manufacturers, energy companies, financial institutions, government agencies and non-governmental organizations (source: Ricardo plc Annual Report & Accounts 2021/22, page 4).

#### 3.1.1 Ricardo Rail

Ricardo Rail is a global consultancy and offers the rail industry a range of technical services. With our extensive knowledge and know-how of the most critical and complex technologies in the industry, we provide our customers - carriers, manufacturers, maintenance companies, infrastructure operators, investors and regulators - with specialized technical support. We help our customers to manage risk, reduce costs and improve performance.

#### 3.1.2 Ricardo Rail in Utrecht

Ricardo Rail in Utrecht is a leading consultancy with more than **165** specialist rail engineers. Our areas of expertise include the purchase, maintenance, performance improvement and functional safety of trains, trams, metros and rail infrastructure.

Ricardo Rail in Utrecht is represented by two companies:

Ricardo Nederland B.V. and Ricardo Certification B.V. both of which fulfill an important function in the European rail industry:

- Ricardo Nederland B.V. provides consultancy services in the field of Rolling Stock and Signaling & Infrastructure. It concerns high-quality technical advice in the field of the purchase, maintenance and performance improvement of trains, trams and metros, the rail infrastructure and the interaction between them.
- Ricardo Certification B.V. is a separate and independent B.V. and includes all testing and certification activities and is accredited to perform a wide range of specialist testing and certification activities.

### 3.2 Vision and strategy

Ricardo PLC vision is: “To create a safe and sustainable world”.

## OUR STRATEGY

### ALIGNED TO KEY LONG-TERM MEGATRENDS

Our strategy is driven by our purpose and underpinned by the global megatrends that help inform how we maximise impact.

Ricardo is uniquely positioned at the intersection of the mobility, energy and environmental agendas. This is our greatest differentiator from our competitors, as we harness our expertise to adapt and mitigate the impact of climate change.

Monitoring the megatrends that are affecting our stakeholders underpins our growth strategy. Our operating segments are all aligned to key long-term megatrends, which form the basis of our five-year strategic direction.



The climate crisis continues to drive additional opportunities in the areas of evidence, policy and sustainability. Ricardo is well positioned to create value through its strong presence in all aspects of the environmental consultancy market, but we are seeing the fastest growth in our environmental, social and governance (ESG) and sustainability solutions. Sustainability is firmly built into our DNA and our customers choose us because we are leading by example, from the solutions we deliver to the actions we take in our own ESG commitments.



Energy transition requires high-calibre skills to decarbonise energy systems and assets while increasing resilience. Ricardo is uniquely placed to support our customers in developing a pathway from fossil-based energy generation to a low-carbon future. We also serve the water sector, in which we are globally recognised for our expertise in planning and overseeing complex and sensitive water and environmental projects to solve water scarcity – a growing challenge globally, exacerbated by climate change and urbanisation.



Zero-emission propulsion is driving transformational change in all forms of transport. We are well positioned to support the rail sector in delivering safe and sustainable solutions through our focus on systems engineering, operations, maintenance and assurance. Our differentiation in independent assurance comes from our breadth of expertise and international coverage, together with our digital compliance platforms that allow assessors to collaborate. Across the transportation and mobility sectors, we offer technological expertise in engineering services around electrification and software – one of our key differentiators is we can help original equipment manufacturers (OEMs) bridge the transition from internal combustion engines to technologies with zero tailpipe emissions.

(from Ricardo plc annual report & Accounts 2021/22)



### 3.3 The Ricardo values

**Ricardo's shared values actively guide our behaviours and reflect how we work together.**

 <p><b>CREATE TOGETHER</b></p>	 <p><b>BE INNOVATIVE</b></p>	 <p><b>AIM HIGH</b></p>	 <p><b>BE MINDFUL</b></p>
<p>We achieve success for our business and for our customers by collaborating, connecting and always learning.</p> <ul style="list-style-type: none"> <li>• Be collaborative</li> <li>• Embrace diverse teams</li> <li>• Share knowledge</li> </ul>	<p>We seek to foster debate, embrace possibilities and nurture the new ideas that will enable our customers to solve complex challenges.</p> <ul style="list-style-type: none"> <li>• Be customer focused</li> <li>• Act on evidence</li> <li>• Push boundaries</li> </ul>	<p>We are rigorous and tenacious in our passion to find outcomes that best meet the long-term needs of our customers.</p> <ul style="list-style-type: none"> <li>• Plan for success</li> <li>• Be pioneers of change</li> <li>• Act with agility</li> </ul>	<p>We pride ourselves on our integrity and commitment to care – for each other, our customers, our communities and the environment.</p> <ul style="list-style-type: none"> <li>• Be respectful</li> <li>• Show that we care</li> <li>• Take ownership</li> </ul>

(from Ricardo plc annual report & Accounts 2021/22)



## 4. Method and scope

A first step is to gain insight (angle A) into the current energy flows. The method of the emission inventory calculation for Ricardo Nederland for 2022 (general inventory, data, CO<sub>2</sub> footprint, emission factors, supporting documents, building, passenger transport (rental cars and lease cars), business travel, commuting, waste, paper consumption, electronics) corresponds to the method of the first reference year 2012. The scope classification in accordance with the GHG protocol method has been used.

The uniform Dutch list of emission factors from SKAO was used in the study. (Emission factors SKAO manual, version 3.1, available at <https://CO2emissiefactoren.nl/>). In the first paragraph, this chapter describes the method for mapping the most important energy flows. Subsequently, the demarcation of this research is described in section two. The last paragraph describes the key figures and assumptions used. Every year the latest CO<sub>2</sub> emission factors will be used in the calculation.

### Movement

As per the 1<sup>st</sup> of January 2022 we moved to another building. Due to this movements there are changes in the calculation of the STEG.

### 4.1 Method

In this report the emissions (expressed in CO<sub>2</sub>) of Ricardo Nederland are analyzed. This is done on the basis of the CO<sub>2</sub> footprint as described in NEN-ISO 14064-1. NEN-ISO 14064-1 distinguishes different types of CO<sub>2</sub> emissions. To determine Ricardo Nederland CO<sub>2</sub> footprint, three categories of CO<sub>2</sub> emissions were used (see SKAO manual version 3.1).

The emissions are classified in three scopes:

- Scope 1: Direct CO<sub>2</sub> emissions
- Scope 2: Indirect CO<sub>2</sub> emissions
- Scope 3: Other indirect CO<sub>2</sub>-emissions

The scopes for the CO<sub>2</sub> Performance Ladder have been slightly adjusted, so that 'fuel consumption for business traffic by private cars' and 'fuel consumption for business air traffic' belong to scope 2 instead of scope 3 as described in NEN-ISO 14064-1, see also table 4.1 and scope diagram 4.1.

In addition to CO<sub>2</sub> greenhouse gases, according to Handbook 3.1, it is not mandatory to include other greenhouse gases, such as CH<sub>4</sub>, N<sub>2</sub>O and PFCs, and refrigerants. These are not included in the in the calculation.

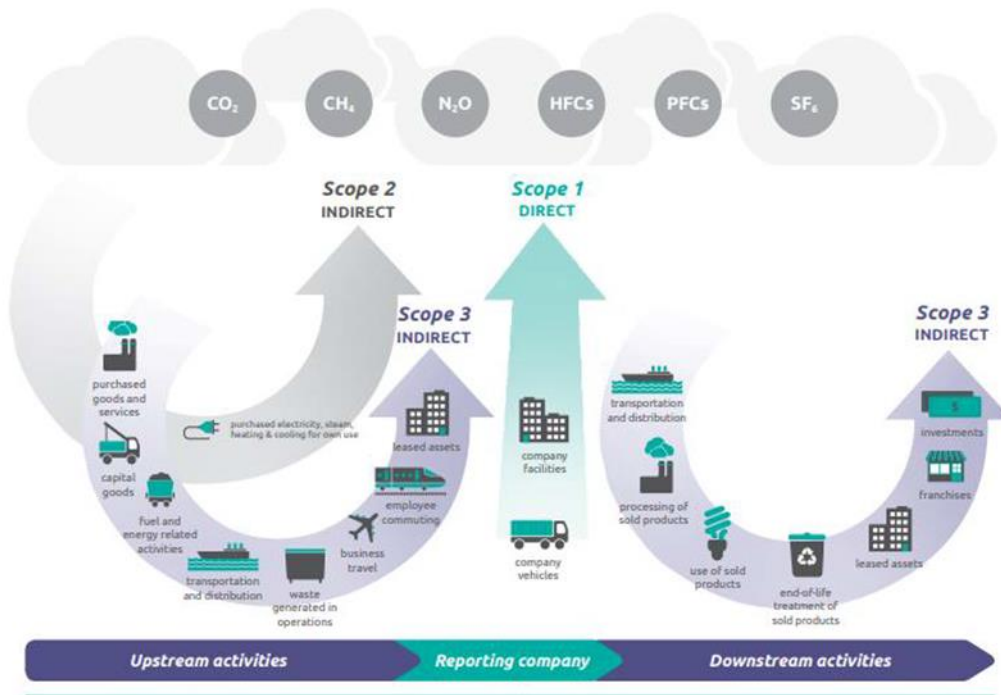
#### 4.1.1 General rules for the use of CO<sub>2</sub> emission factors

In order to determine the CO<sub>2</sub> footprint of Ricardo Nederland, data was collected on the emissions from scope 1 and 2. These data and emission factors were then used to calculate the amount of CO<sub>2</sub> emissions. The emission factors from the CO<sub>2</sub> Performance Ladder have been used. The CO<sub>2</sub> footprint includes the factors from scope 1 and 2, as used in the CO<sub>2</sub> Performance Ladder. 2022 is taken as the base or reference year due to the movement to the Daalsesingel in Utrecht per January 2022

Table 4.1. Category classification *upstream en downstream* scope 3 emissions conform GHG Protocol Scope 3 Standard

Upstream:	Downstream:
<ol style="list-style-type: none"> <li>1. Purchased goods and services</li> <li>2. Capital goods</li> <li>3. Fuel and energy-related activities (not included in scope 1 or scope 2)</li> <li>4. Upstream transport and distribution</li> <li>5. Production waste</li> <li>6. <del>Passenger transport during working hours (Business Travel)</del></li> <li>7. Employee commuting</li> <li>8. Upstream leased assets</li> </ol>	<ol style="list-style-type: none"> <li>9. Downstream transport and distribution</li> <li>10. Processing of sold products</li> <li>11. Use of sold products</li> <li>12. End-of-life treatment of sold products</li> <li>13. Downstream leased assets</li> <li>14. Franchises</li> <li>15. Investments</li> </ol>

### Scope diagram



Scope diagram 4.1. The scope diagram of the GHG Protocol Scope 3 Standard

<sup>1</sup> The emission factors as included in the most recent version of the 'CO<sub>2</sub> Performance Ladder' (SKAO manual version 3.1).

## 4.2 Organization description and environment

The demarcation describes the organizational boundaries of Ricardo Nederland. In addition, the calculation method for determining the floor area is explained and the number of employees is determined.

### 4.3 Organisational Boundary (the scope)

In the context of the Greenhouse Gas protocol, or GHG protocol, the Organizational Boundary of Ricardo Nederland has been determined. In accordance with the manual 3.1. the GHG-protocol consists of several modules.

- Corporate Accounting and Reporting Standard: 2004.
- Corporate Value Chain (scope 3) Accounting and Reporting Standard: 2011 is "GHG Protocol Scope 3 Standard"
- Product Life Cycle Accounting and Reporting Standard: 2011.

There are two options available to determine the scope. To determine the CO<sub>2</sub> footprint of Ricardo Nederland, the (operational) control approach was used, whereby Ricardo Nederland takes responsibility for 100% of the emissions for the business units, namely Ricardo Nederland B.V. and Ricardo Certification B.V., over which it has operational control. For a detailed description, see 3.1.2. Ricardo Rail in Utrecht.

The external stakeholders of the organization have been identified and this overview is updated annually. An overview is not given in this report, but this can be found in Hya 539751 - Context analysis Ricardo Nederland, where a distinction is made between the various aspects of the environment, quality, information security and occupational health and safety.

### 4.4 Organisational Boundary accountability

Ricardo Nederland B.V. and Ricardo Certification B.V. are both located in the Netherlands (Utrecht). Both companies use the same office building with the same facilities. All input for the calculation of the CO<sub>2</sub> footprint with regard to the office, air travel, car rental, data on the use of your own car, commuting and public transport use therefore concerns both of the above-mentioned companies.

Ricardo Nederland's financial year runs from June 1 to July 1. However, data based on a calendar year is used both for determining the annual footprint and for the annual reporting. As a result, this annual report contains data from the financial years 2021-2022 and 2022-2023.

We have analyzed our purchasing from 1 January to 31 December 2022 in accordance with the method of the CO<sub>2</sub> Performance Ladder. In total 251 providers have delivered to Ricardo Nederland B.V. of these, **18** organizations can be characterized as type A providers. Approximately 71% of all purchases are made with these providers.

In addition, we are dealing with two Ricardo entities, which should be characterized as C providers, namely Ricardo plc. and Ricardo Rail Ltd. These companies have been excluded from the scope because they are located outside the Netherlands and are not financially and operationally managed from the Netherlands.

The Organizational Boundary for this 2022 report has been set at: Ricardo Nederland from 1 January to 31 December 2022.

### 4.5 Award advantage

In 2021 Ricardo Nederland have started two projects with award advantage: at the end of 2

- TSI certificering (NoBo/AsBo) Opwaardering Maaslijn (project number 50560, Hya 802382) - ends at the end of 2027.
- AsBo/NoBo/ISA diensten t.b.v. PHS (project number 50582, Hya 802383) – ends 31st of December 2024.

In 2022 Ricardo Nederland has become a third project with award advantage

- PHS Alkmaar – Amsterdam (project number 50668 Hya 844036) – ends 31st of December 2027.

The organization of the CO<sub>2</sub> Performance Ladder for these 3 projects is the same as that of the entire organization. For this reason, the energy management action program, the steering cycle and the participation in initiatives have not been described again.

The calculation of the footprint per project will be performed based on the turnover related to the total turnover from the organization. For these projects the calculation can be found in Hya 830937 and for these 3 projects the CO<sub>2</sub> foot prints are:

CO <sub>2</sub> Footprint per project in Ton CO <sub>2</sub>	2022		Totaal
	Jan-Jun	Juli-Dec	
Project 50560 Scope 1	0,02	0,01	0,03
Project 50560 Scope 2	0,09	0,03	0,12
<b>Project 50560</b>	<b>0,11</b>	<b>0,04</b>	<b>0,15</b>
Project 50582 Scope 1	0,03	0,05	0,09
Project 50582 Scope 2	0,15	0,26	0,41
<b>Project 50582</b>	<b>0,19</b>	<b>0,31</b>	<b>0,50</b>
Project 50668 Scope 1	0,00	0,01	0,02
Project 50668 Scope 2	0,02	0,06	0,08
<b>Project 50668</b>	<b>0,02</b>	<b>0,07</b>	<b>0,09</b>

## 5. Size of Ricardo Nederland and choice relativity

### 5.1 Size

For the CO<sub>2</sub> Performance Ladder, a distinction is made in size of companies, namely small, medium and large companies. This distinction is determined on the basis of the total CO<sub>2</sub> emissions by the organization. Figure 5.1 shows the conditions per organization size.

	Services <sup>7</sup>	Working/supplying
<b>Small organisation (S)</b>	Total CO <sub>2</sub> emissions amount to no more than (≤) 500 tonnes per year.	Total CO <sub>2</sub> emissions <i>of the offices and industrial premises</i> amount to no more than (≤) 500 tonnes per year, <b>and</b> the total CO <sub>2</sub> emissions <i>of all building sites and production locations</i> amount to no more than (≤) 2,000 tonnes a year.
<b>Medium organisation (M)</b>	Total CO <sub>2</sub> emissions amount to no more than (≤) 2,500 tonnes per year.	Total CO <sub>2</sub> emissions <i>of the offices and industrial premises</i> amount to no more than (≤) 2,500 tonnes per year, <b>and</b> the total CO <sub>2</sub> emissions <i>of all building sites and production locations</i> amount to no more than (≤) 10,000 tonnes a year.
<b>Large organisation (L)</b>	Total CO <sub>2</sub> emissions amount more than (≤) 2,500 tonnes per year.	Other

**Table 5.1: Size categories CO<sub>2</sub> Performance Ladder (SKAO handbook version 3.1)**

Ricardo Nederland provides services and falls within the "small business" category. The total CO<sub>2</sub> emissions of services provided amount to 92,7 tons of CO<sub>2</sub> in 2022. Ricardo Nederland is granted exemptions from the audit checklist, because it belongs to this category.

#### 5.1.1 Floor space Ricardo Nederland

As per the first of January 2022 Ricardo Nederland and Ricardo Certification have moved to the Daalsesingel 51 and 51A in Utrecht. The offices are situated on the first floor and a measurement room and archive in the cellar. The Lettable Floor Space (LFS) for the first floor is 1710,37 m<sup>2</sup> and the cellar 154,68 m<sup>2</sup>. However we have to count in accordance with the NEN2580 with the use of the general spaces for the first floor 275,99 m<sup>2</sup> and for the cellar 24,96 m<sup>2</sup> for the cellar. Total first floor 1.988,36 m<sup>2</sup> and cellar 275,99 m<sup>2</sup>. Total is 2.165,97 m<sup>2</sup>.

#### 5.1.2 Floor space Ricardo Nederland

Ricardo Nederland's turnover is not directly related to energy consumption and also the number of m<sub>2</sub> cannot be directly influenced. This is the reason why the energy consumption per FTE is shown.

#### 5.1.3 Number of employees

The number of employees in 2022 is calculated by the number of employees and the time period in which they were employed. In addition, the hiring of employees from secondment agencies and employment agencies is included. "Hiring" includes employees who work structurally at Ricardo Nederland; in day-to-day business no difference is made with permanent employees. These employees are also treated in the same way for the report as permanent employees. We calculate with the number of FTE instead of the number of employees. We use this number to calculate the CO<sub>2</sub> footprint. For 2022 we assume 164,5 FTE.

#### 5.1.4 Key figures & starting points for calculations

This section describes the key figures and starting points for determining the CO<sub>2</sub> emissions for scope 1, 2 and 3, thus the CO<sub>2</sub> footprint of Ricardo Nederland. All calculations are registered in a collective Excel sheet, see Hya 830937. The results are presented below.

#### 5.1.5 Office heat and energy consumption

The heat and energy consumption of the entire office building is measured centrally by the owner and the total m<sup>2</sup> of the office building is 8309,74 m<sup>2</sup>. As mentioned in paragraph 5.1.1 Ricardo Nederland uses 2.165,97 m<sup>2</sup> and this is 26,1 % of the total m<sup>2</sup> office building.

The total heat and energy consumption of the entire office building is 2187 GJ and 533.465 kWh over 2022. As Ricardo Nederland uses 26.1% of the office building m<sup>2</sup>, the heat and energy consumption for Ricardo Nederland is 26,1% \* 2184 GJ = 571 GJ and 26,1% \* 533.465 kWh = 139.050 kWh.

We obtain district heating by means of an installation based on the STEG technology, a combination of a gas and steam turbine system. Therefore the emission factor 25.37 kg CO<sub>2</sub>/GJ is used.

#### 5.1.6 Office energy consumption

Ricardo Nederland is located in an office building where electricity consumption is determined for the whole building. Using the data and the CO<sub>2</sub> emission factor, a calculation has been made of the CO<sub>2</sub> emissions from purchased electricity consumption.

From the first of January 2022 we are situated at the Daalsesingel 51 and 51A and the deliverer of our green wind energy is arranged by the tenant.

An overview is available of all electrical appliances in use, such as multifunctionals (printers, copiers, etc.), screens etc. See Hya 560344.

#### 5.1.7 Transport and mobility

Ricardo Nederland uses both lease cars and rental cars, both of which fall under scope 1. Under scope 2, the use of private cars (declared kilometers) is processed. The fuel type and driven kilometers of the lease cars are known and the consumption in liters is calculated based on the WLTP-consumption figures from RDW. These are included in scope 1.

The rental cars are also included in scope 1, however, use was made of driven kilometers and the emission factor for fuel type unknown. Although it has not been calculated exactly what the deviation is compared to the detailed calculation, it is assumed that the negligible deviation mentioned below also applies here.

Business trips with private cars are known on the basis of declared kilometers. For administrative reasons, but also in the context of GDPR, it has been decided to use the emission factor for fuel type unknown in this calculation as well. The calculation for 2017 has shown that there is only 0,06% deviation between the calculation using the different emission factors per fuel type and the calculation using the emission factor for fuel type unknown.

Air travel was also undertaken for the work of Ricardo Nederland. Air travel has been analyzed on the basis of the bookings. These bookings are made through FCM travel organization. We have also taken so-called intermediate stops into account. We calculate with kms (emission factor) based on travel distances, as provided by FCM.

Two sources are available for traveling on public transport for business purposes:

- Most Ricardo Nederland employees have a NS Business Card, which they use for commuting as well as for business and private travel. It is not possible to receive a detailed view per card due to privacy legislation.
- Employees who do not have their own NS Business Card can borrow an NS Business Card for business travel from Office Support.

The details of both types of Business Card are transparent and provided by NS.

Because employees can also use the NS Business Card for private travel, the total number of kilometers for commuting is deducted from the total number of kilometers driven. Because, just like before 2020 due to COVID19, it was no longer possible to determine the exact business kilometers, the percentage of private versus business kilometers of 2019 (18%) has been used for the calculation for 2022. From NS the total driven kilometers are received quarterly and 18% from these kilometers are business train travel.

#### **5.1.8 Biomass and CO<sub>2</sub> removal**

Section 7 of NEN-ISO 14049-1 refers to CO<sub>2</sub> emissions from the combustion of biomass and greenhouse gas removal. No biomass combustion took place at Ricardo Nederland, and no greenhouse gases (CO<sub>2</sub>) were removed.

#### **5.1.9 Accuracy and uncertainties**

For the CO<sub>2</sub> calculation of the use of a private car for business purposes, lease and rental cars, use is made of the actually declared or recorded kilometers.

Travel calculation is described in paragraph 5.1.7.

We have no insight into the actual kilometers flown between two places. Airline companies only state the total distance of the journey (ticket). We have therefore tried to arrive at a better approximation of the actual emissions.

To compensate for stopovers, the following adjusted calculation has been made:

- If the total distance divided by the number of routes is less than 700 km, the factor 0,234 is used.
- If the total distance is between 700 and 2500 km, factor 0,172 is used.
- At a distance of more than 2500 km, factor 0,157 is used.

In our opinion, this calculation gives the best approximation of the actual emission. A possible small error cannot be ruled out, but the effect will be very small due to the flight share on the total.

In conclusion, we can say that the total emission is not equal to the exact CO<sub>2</sub> emission of Ricardo Nederland.

## 6. CO<sub>2</sub>-footprint 2022

### 6.1 CO<sub>2</sub>-footprint

The total CO<sub>2</sub> emission by Ricardo Nederland in 2022 is 92,7 tons of CO<sub>2</sub>. This is 0,56 tons of CO<sub>2</sub> per FTE (average 2022: 164,5 FTE's). The distribution of the emissions per scope is shown in table 6.1a and figure 6.1. The table (6.1b) shows the distribution across the scopes and sources.

Distribution scope 1 and 2	CO <sub>2</sub> [ton]	%
Scope 1: Direct CO <sub>2</sub> -emissions	16,2	17%
Scope 2: Indirect CO <sub>2</sub> -emissions	76,5	83%
<b>Total</b>	<b>92,7</b>	<b>100%</b>

Table 6.1a Distribution scope 1 and 2

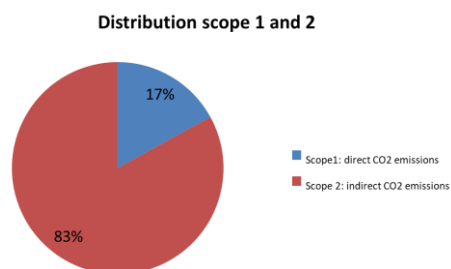


Figure 6.1: Overview CO<sub>2</sub> emissions from scope 1 en 2 (divided) (source Hya 853355)

Activity	Scope	CO <sub>2</sub> [ton]	%
Scope 1: Direct CO <sub>2</sub> -emissions			
• Fuel consumption for business traffic (lease and rental)	scope 1	16,2	17%
Scope 2: Indirect CO <sub>2</sub> -emissions			
• Heat consumption (energy)	scope 2	14,5	16%
• Electricity usage	scope 2	0	0%
• Electricity lease car	scope 2	0	0%
• Business traffic private cars	scope 2	22,8	25%
• Air travel	scope 2	38,6	42%
• Business public transport	scope 2	0,6	1%
<b>Total</b>		<b>92,7</b>	<b>100%</b>

Table 6.1b: Overview CO<sub>2</sub> emissions from scope 1 en 2 (divided)



## 6.2 Direct CO<sub>2</sub> emissions

Direct emissions, scope 1, include fuel consumption for office heating and business traffic in lease and rental cars, in addition to coolants for cooling installations. The direct emission of coolants in cooling installations has not been taken into account; this is permitted according to the conditions of the CO<sub>2</sub> Performance Ladder. There are no direct emissions for heating, because we use district heating. These are therefore reported under scope 2. See table 6.2 for the direct CO<sub>2</sub> emissions.

Scope 1: Direct CO <sub>2</sub> emissions	CO <sub>2</sub> [ton]	%
Scope 1: Fuel consumption		
• Fuel consumption lease cars	10,9	67%
• Fuel consumption rental cars	5,3	33%
<b>Total</b>	<b>16,2</b>	<b>100%</b>

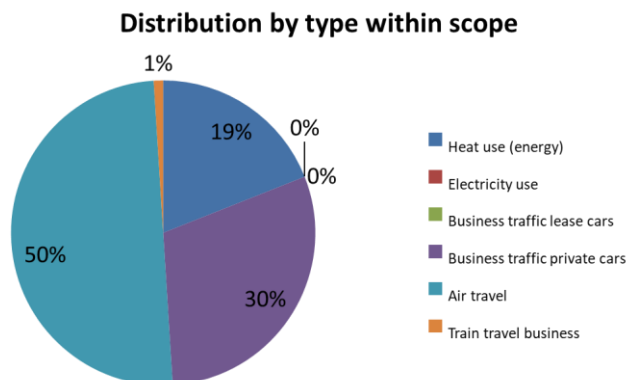
**Table 6.2: CO<sub>2</sub> emissions Scope1 Direct Emissions**

## 6.3 Indirect emissions

This section deals with scope 2: indirect emissions. This category includes warmth consumption, electricity consumption, fuel consumption “business travel private cars”, air travel and business public transport (train).

Scope 2: Indirect emissions (verdeling)	CO <sub>2</sub> [ton]	%
• Heat consumption (energy)	14,5	19%
• Electricity consumption	0	0%
• Business travel electricity lease cars	0	0%
• Business travel private cars	22,8	30%
• Air travel	38,6	50%
• Business travel public transport	0,6	0%
<b>Total</b>	<b>76,5</b>	<b>100%</b>

**Table 6.3a: CO<sub>2</sub> emission Scope 2 Indirect Emissions**



**Figure 6.3: Overview CO<sub>2</sub> emissions from scope 2 (divided) (source 03-853355)**

**6.3.1 Heat and electricity consumption**

For the calculation of the heat and electricity consumption by Ricardo Nederland, use has been made of the data as described in 6.3.

Scope 2: Heat and electricity	Type	Quantity	CO <sub>2</sub> -factor	CO <sub>2</sub> [ton]	%
Heath consumption	STEG	571	25370	14,5	100%
Electricity	Wind	139.050	0	0	0%
<b>Total</b>				<b>14,5</b>	<b>100%</b>

**Table 6.3b: CO<sub>2</sub> emission Scope 2 Indirect Emissions: Heat and electricity consumption**

**6.3.2 Fuel consumption air travel**

Ricardo Nederland also travels by plane for business travel. The results are shown in table 6.3d.

Scope 2: Details flight kilometers	km's	Factor (g/km)	CO <sub>2</sub> [ton]	%
Travel distance <700 km	12.223	234	2,9	7%
Travel distance >=700 - <2.500 km	107.332	172	18,5	48%
Travel distance >=2.500 km	110.027	157	17,3	45%
<b>Total</b>			<b>38,6</b>	<b>100%</b>

**Table 6.3d: CO<sub>2</sub> emission Scope 2 Indirect Emissions: air travel**

**6.3.3 Business public transport (train)**

Ricardo Nederland also travels by train for business traffic. The results are shown in Table 6.3e

Scope 2: Details train kilometers	Type	km's	Factor (g/km)	CO <sub>2</sub> [ton]	%
Train type unknown		206.535	3	0,6	100%

**Table 6.3e: CO<sub>2</sub> emission Scope 2 Indirect emissions: business travel public transport**

## 7. Progress, trends and targets from 2012

This is the ninth report and contains a representation compared to the start year 2012 for Ricardo Nederland. Until last year report the reference year has been 2012. Because we have been moved to a smaller and more energy efficient office in January 2022, we will start using 2022 as new reference year. Nevertheless the overview from 2012 until 2022 will be shown in the next paragraphs.

If necessary the new reference year will be recalculated on the basis of the SKAO manual version 3.1. The Annual Report for 2022 will be published on [CO2-prestatieladder \(ricardo.com\)](https://www.ricardo.com/co2-prestatieladder) and on the SKAO website (angle C).

### 7.1 Trends over the years

	CO <sub>2</sub> [ton/jaar]										
	2012*	2013	2014	2015*	2016	2017	2018	2019	2020	2021	2022
Fuel consumption business travel	8	6	0	16	38,1	51,8	30,1	21,2	13,3	12,9	16,2
Warmth consumption (energy)	33	11	9	30	33,7	30,7	30,5	30,2	28,2	24,0	14,5
Electricity usage	140	140	116	0	0	0	0	0	0	0	0
Business travel private cars and rental cars	62	57	60	51	99,2	29,2	29,4	22,1	27,0	35,6	22,8
Air travel	169	142	141	111	107,7	135	124,4	72,8	14,5	16,0	38,6
Business travel public transport (train)	9	-	-	9	11,1	16,9	2,8	3,5	0,3	0,2	0,6
Total	423	357	326	218	289,8	264,1	217,2	149,8	83,4	88,7	92,7
	CO <sub>2</sub> [ton/fte]										
Fuel consumption business travel	0,04	0,03	0,00	0,08	0,17	0,22	0,14	0,11	0,07	0,07	0,10
Heat consumption (energy)	0,17	0,06	0,05	0,14	0,15	0,13	0,14	0,15	0,15	0,14	0,09
Electricity consumption	0,74	0,73	0,60	0	0	0	0	0	0	0	0
Business traffic private cars and rental cars	0,34	0,29	0,31	0,24	0,45	0,13	0,13	0,11	0,15	0,21	0,14
Air travel	0,93	0,73	0,73	0,53	0,48	0,58	0,57	0,37	0,08	0,09	0,23
Business travel public transport (train)	0,05	-	-	0,04	0,05	0,07	0,01	0,02	0	0	0
Total	2,27	1,84	1,69	1,03	1,30	1,14	1,00	0,78	0,45	0,51	0,56

**Table 7.1a: CO<sub>2</sub> emission compared per year**

\* Start year 2012 and from 2015 based on SKAO manual version 3.0 and with addition of business public transport in 2012 and from 2015. From 2020 based on SKAO manual version 3.1.

Note: Numbers are rounded and may differ slightly from the original footprint.

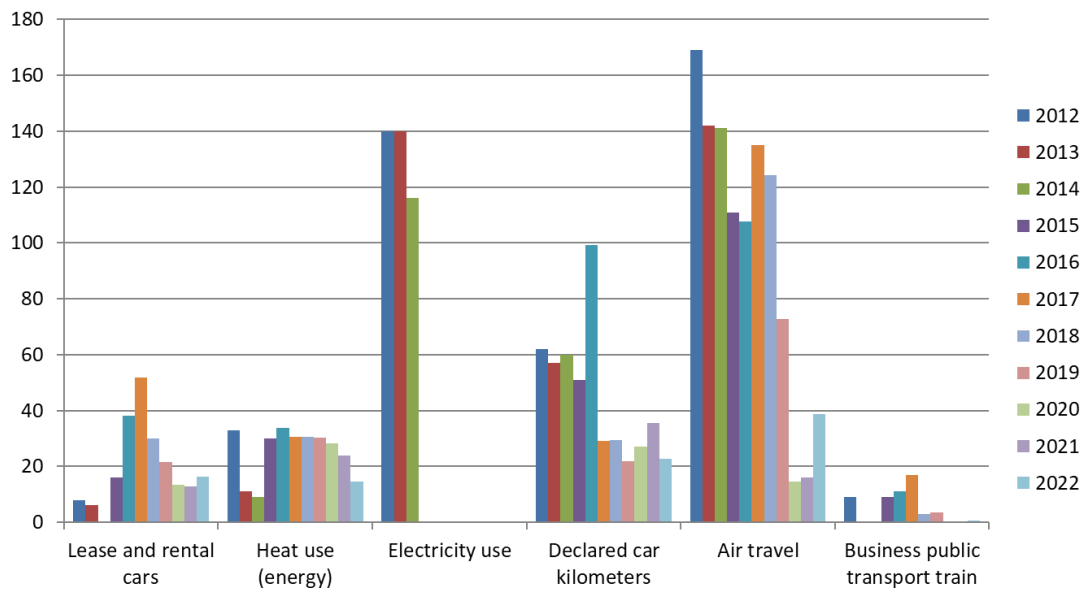
**Absolute CO<sub>2</sub> FTE**

CO <sub>2</sub> [ton/year]											
	2012*	2013	2014	2015*	2016	2017	2018	2019	2020	2021	2022
Total	423,1	355,3	324,6	217,7	289,8	264,1	217,2	149,8	83,4	88,7	92,7
CO <sub>2</sub> [ton/fte]											
	2012*	2013	2014	2015*	2016	2017	2018	2019	2020	2021	2022
Total	2,22	1,87	1,69	1,04	1,30	1,14	1,00	0,78	0,45	0,51	0,56

**Table 7.1b: CO<sub>2</sub> emission compared per year**

\* Start year 2012 and from 2015 based on SKAO manual version 3.0 and with the addition of business public transport in 2012 and from 2015. From 2020 SKAO manual version 3.1.

We have shown the trends in the table above and graph below.



**Table 7.1c: CO<sub>2</sub> emission trends based on table 6.1 b with emission factors 3.0 (except 2013 and 2014) and 3.1 from 2020. Business travel train added in 2015 and changed the first reference year 2012 accordingly.**

## 7.2 Goals, progress and conclusion

In response to the reference year 2022, a target for energy and CO<sub>2</sub> reduction (approach B) has been formulated for the period 2022-2025.

*Ricardo Nederland's objective is to reduce CO<sub>2</sub> emissions by 20% (measured per FTE) in the period 2022 - 2025.*

Compared to the start year 2012 this means a reduction from 80%, but because of the movement to a smaller and more efficient office the reference year has been changed to 2022.

The targets for the distribution per scope up to and including 2025 has been 15% for scope 1 and 85% for scope 2, respectively.

Table 7.2 shows a recalculation (SKAO Manual version 3.1):

	2012	2015	2016	2017	2018	2019	2020	2021	2022
CO <sub>2</sub> ton	423	218	289,9	264,1	217,2	149,8	83,4	88,7	92,7
CO <sub>2</sub> Ton/FTE	2,22	1,039	1,30	1,14	1,00	0,78	0,45	0,51	0,56

**Table 7.2 Realisation CO<sub>2</sub> footprint**

In 2022 business went back to normal as before COVID-19 and this results in more travel by train and airplane. On the travel by plane we see an increase of 22,6 CO<sub>2</sub> tons. The traveling by train an increase of 0,5 CO<sub>2</sub> tons.

Because the travel restrictions by COVID-19 have been released completely in 2022 the travel by car has been decreased by 9,5 CO<sub>2</sub> tons for business travel by car.

From the beginning of 2022, the office is relocated to a smaller and more efficient building also with sun panels. So the heating energy decreased with 9,5 CO<sub>2</sub> tons but also the electricity usage decreased with almost 60.000 kWh. Because we use green Wind power this doesn't result in a decrease of CO<sub>2</sub> tons.

Also for the period until 2025 the objective related to 'Green Energy' is to maintain the supply of electricity based on green wind energy and thus an emission factor of 0.

The conclusion is that in 2022 the CO<sub>2</sub> emissions per FTE have increased with 0,05 CO<sub>2</sub> ton/FTE compared to 2021.

## 7.3 CO<sub>2</sub> Performance Ladder from level 3 to level 5

In 2015, management decided to qualify Ricardo Nederland for level 5 on the CO<sub>2</sub> Performance Ladder.

A qualitative and quantitative chain analysis (03-848521) has been carried out for 2022 to calculate the upstream emissions for requirements 4.A.1 and 5.A.1 The scope 3 emissions mainly consist of (in order of size) :

Scope 3 emissions top 6	CO <sub>2</sub> ton	Influenceable	Source
1. Hired staff	160,9	Moderate	2012 Guidelines to Defra / DECC's GHG Conversion Factors for Company Reporting
2. Computer services	154,1		



3. Subcontracting	113,9		
4. Other service activities	96,6		
5. Legal, consultancy, other business activities	20,4		
6. Waste generated in operations	0,87	Moderate	Prognos, 2008. "Resource savings and CO <sub>2</sub> reduction potential in waste management in Europe and the possible contribution to the CO <sub>2</sub> reduction target in 2020";

Actions for scope 3 reduction are:

- Asking suppliers about sustainability of delivered products and alternatives. Tightening purchasing policy (obligation to implement CO<sub>2</sub> reduction policy).
- Waste separation; paper, plastic, greenery, other, glass, ICT waste, KGA
- Reduction in public transport limited possible.

### 7.4 Progress on the measures and actions

This section provides insight into how we performed in relation to the planning. Sometimes there is a reason for postponement, because resources or options are lacking. We have indicated this with additional information about the circumstances and, if possible, a new schedule. Our chain initiatives are published separately at [CO<sub>2</sub>-prestatieladder \(ricardo.com\)](https://www.ricardo.com) and at the SKAO website (initiative D).

The results for 2013 to 2022 can be found in appendix A.1.2. See A.1.5 for an analysis of the SKAO's List of Measures 2022.

Progress achieved and actions taken within the chain in 2022 are documented in Hya 827928 – Keteninitiatieven CO<sub>2</sub>-Prestatieladder verslag 2022, see also above mentioned website.

### 7.5 Supplementing opportunities for 2023

- Active energy monitoring to detect high consumption by Hello Energy portal – ongoing
- Due to partly working at home/office less travel, communication via teams for meetings (Hybrid working) - Ongoing
- Use of trains for short needed travels instead of flying promoting - Ongoing
- Monitoring energy, city heating, paper use – Ongoing
- Certification for the CO<sub>2</sub> Performance Ladder level 5 by an external organization over 2022 – Ongoing
- Sustainable procurement – ongoing
- Comply to ESG (Environmental, Social & Governance) standards – ongoing
- Comparison of flight and train km's CO<sub>2</sub>-use including time tables – research
- CO<sub>2</sub> compensation for flights – research
- Reduce temperature office building to 20 degrees.

## 8. Reporting in accordance with NEN-ISO 14064-1

The CO<sub>2</sub> emission inventory report has been drawn up in accordance with the requirements of ISO 14064-1, section 9.3.1. In the table below, a cross table has been made of the parts from ISO 14064-1 and the entry in this file.

ISO 14064-1 §9.3.1	BESCHRIJVING	VERMELDING
A	Description of the reporting organization	Chapter 3
B	Person or entity responsible for the report	§2.2
C	Reporting period covered	§2.1
D, E	Documentation of organizational and reporting boundaries, including criteria to define significant emissions	Chapter 4
F	Direct GHG emissions	§6.2
G	Treatment of biogenic CO <sub>2</sub> emissions and removals	§5.1.8
H	GHG removals	§5.1.8
I	Exclusion of sources or sinks	Chapter 4
J	Indirect GHG emissions	§6.3
K	Base year	Chapter 7
L	Changes and recalculations	Chapter 7
M	Quantification approaches	Chapter 4
N	Changes to methodologies	Chapter 4
O, T	Emission or removal factors used	§2.1
P, Q	Uncertainties	§5.1.9
R	Statement in accordance with ISO 14064-1	§2.1
S	Verification	Chapter 8

**Table 8: Comparison ISO 14064 and report**

## 9. Literature

- Netherlands Standardization Institute (2007), NEN 2580, Surfaces and volumes of buildings - Terms, definitions and determination methods,  
[http://nl.wikipedia.org/wiki/Bestand:NEN\\_2580.JPG](http://nl.wikipedia.org/wiki/Bestand:NEN_2580.JPG)  
The content of NEN 2580 is regularly revised; the latest version dates from 2007, supplemented in 2008 with a correction sheet C1 (NEN 2580:2007/C1:2008).
- Greenhouse Gas Protocol  
Since the publication of Greenhouse Gas Protocol's Corporate Accounting and Reporting Standard (2004), Corporate Value Chain (Scope 3) Standard (2011), Scope 3 Calculation Guidance (2013), and Scope 2 Guidance (2015), there have been many important developments in greenhouse gas accounting and reporting. Among these are the Science Based Targets initiative (SBTi), the trend toward net-zero targets, mandatory climate disclosure regulations, use of the standards by thousands of companies, and academic research on their use and impact.  
[www.ghgprotocol.org](http://www.ghgprotocol.org).
- Green Gold Label  
[www.greengoldlabel.com](http://www.greengoldlabel.com)
- Netherlands Standardization Institute (2006). NEN ISO 14064-1:2006, Greenhouse gases — Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals, Delft.  
NEN-EN-ISO 14064-3:2019  
[www.CO2emissiefactoren.nl](http://www.CO2emissiefactoren.nl) – calculating the CO<sub>2</sub> emissions with the CO<sub>2</sub> emission factors.
- CO<sub>2</sub> Performance Ladder, generic manual V3.1 22 June 2020 of SKAO  
[www.skao.nl](http://www.skao.nl).
- NEN-EN-ISO / IEC 17021-1: 2015 Description: Conformity assessment - Requirements for bodies providing audit and certification of management systems - Part 1: Requirements



## A.1 Bijlagen

### A.1.1 – Nederlandse Wind Milieukeur Groencertificaat



V2.5.1



## A.1.2 Results 2013-2022

### Results for the year 2013

- Increase waste separation with separation of plastic and organic waste (realised according to plan)
- Continue separation of paper, residual waste, batteries and glass (realised on schedule)
- Awareness in cleaning of waste separation (realised according to plan)
- Awareness of and implementation by security for switching off the lights at the end of the day. (realised in 2013 ahead of planning)
- Digitizing the archive (realised by divestiture of external archive)
- Drawing up an energy balance / CO<sub>2</sub> footprint 2012 and 2013 (realised according to plan)

### Results for the year 2014

- Switch to green electricity. The green energy mix was realised as of May 2014 (however, this has been calculated as gray because we could not obtain the correct data in accordance with the NTA and the ladder and Dutch wind energy as of 1 November 2014).
- Digital monitoring of energy consumption. This is going well, insight via the Stedin portal. That is why we have also decided for this year to start reporting and processing on a calendar year and per month. Has been realised and remains to be a continuous process.
- Transparency in waste flows and making choices for further reduction and/or separation. This has been realised via WIAR and is part of scope 3 and at the moment we do nothing with it in terms of calculations.
- Verification of the prepared CO<sub>2</sub> footprint reports by an external organisation will be realised in mid-2015. Was realised on May 1, 2015.
- Internal and external communication of our CO<sub>2</sub> footprint and progress on measures can be further refined. Continuous point of attention.
- Certification for the CO<sub>2</sub> Performance Ladder by an external organisation will be realised after verification in 2015. Was achieved on June 30, 2015.
- Turn off lighting at the end of the day (by security).
- It is known that employees from our organisation leave the lights on when they leave the building. This has already been communicated, of course, but we have identified that it is possible to prevent the lights from being on all night as well. That is why we will make agreements with security that they switch off the light that is still on. This allows us to estimate the savings. Expected savings based on internet sources: 1-5%. Unfortunately, this is not easy to measure. Update: Completed in 2014 and is still being continued.

### Results for the year 2015

- Research into more environment energy/ CO<sub>2</sub>-friendly rental cars. This is an ongoing process in which we maintain contact with our supplier Avis.
- Maintain a green electricity contract and, if possible, switch to a better version of green electricity. Realised as of November 1, 2014.
- Drawing up an energy balance / CO<sub>2</sub> footprint for 2014. Realised on April 17, 2015.
- Verification of the prepared CO<sub>2</sub> footprint by an external organisation (delayed measure from 2014). Realised May 1, 2015.
- Internal and external communication of our CO<sub>2</sub> footprint and progress on measures. Has been brought to the attention by the CSR Environment communication plan and the Communication Manager.

Certification for the CO<sub>2</sub> Performance Ladder by an external organisation (delayed measure in 2014). Completed June 30, 2015.

### Results for the year 2016

- Maintain green electricity (wind energy) contract. Before October 2016. Realised.
- Analyze (2012-2016) and improve energy consumption and CO<sub>2</sub> emissions in the next 5 years. Continuous.
- Drawing up an energy balance/ CO<sub>2</sub> footprint for 2015. Realised in April 2016.
- Internal audit February/March 2016. Completed in April 2016.
- Internal and external communication of our CO<sub>2</sub> footprint and progress on measures. Continuous.
- Transition to CO<sub>2</sub> Performance Ladder level 5 with insight into quantitative and qualitative analysis, so that the reduction measures are determined aimed at the chain. Deadline May 2016. Realised.
- Drawing up the CO<sub>2</sub> Performance Ladder for Ricardo Certificering B.V. May 2016. Realised.
- Reassessment for the CO<sub>2</sub> Performance Ladder at level 5 by external organisation according to annual cycle, before 1 August 2016. Realised.
- Monitor, optimize and communicate the implementation of MS Lync so that a reduction target can be formulated for the coming years. Partly realised. MS Lync (now Skype) is used, but it is not clear how often.
- Investigate whether there are differences in airlines with regard to CO<sub>2</sub> emissions. Deadline May 2016. Researched, but this has not led to concrete adjustments.
- Review lease contracts and enter into discussions with the lease company about possible CO<sub>2</sub> reduction. It has been decided not to take any further concrete action on this.
- Checking which employees drive a lot of private kilometers (eg top 5) and discuss alternatives with the employee themselves or at company level. Discussed with MT. Decided not to include concrete action yet.
- Where possible, Avis will arrange for us to rent a more eco-friendly car to reduce CO<sub>2</sub> emissions and fuel consumption. It has been decided not to take any further concrete action on this.
- Renovation of housing July - October 2016
  - In the renovation of the housing, investments were made in LED lighting, payback period of 5 years, see Hya 661473.
  - 90% of the office furniture is reused.
  - 85% of the separation walls have been reused.
  - Data and electrical installations are 100% reused.
  - Climate system: adjusted and kept intact as much as possible, updated and 85% reused.
  - Ceilings are acoustic and only with redistributions some adjustments have been made.
  - Recycled materials have been used.
  - Energy-saving taps and sensor lights have been used in the toilet groups.
  - The beamers in the meeting rooms have been replaced by LED screens.
  - During the renovation, there was a check on the removal of packaging materials and construction waste.
  - The paper is disposed of by Shred-it and Renewi and recycled.

The main impact and results were achieved in 2013-2016 through the switching off of the lighting, new LED lighting, switching to green electricity, improvements in insight into actual emissions where 'worst-

case' calculations were used previously and by raising awareness in the organisation.

### Results for the year 2017

- Retain green electricity (wind energy) contract - has been extended until 01-01-2019
- Monitoring energy consumption after renovation (LED lighting) - is tracked
- Analyze (2012-2016) and improve energy consumption and CO<sub>2</sub> emissions in the next five years.
- Drawing up an energy balance/ CO<sub>2</sub> footprint for 2016. Realised
- Internal and external communication of our footprint and progress on measures. Realised
- Certification for the CO<sub>2</sub> Performance Ladder level 5 by an external organisation.
- More insight into the refueled liters of the lease cars instead of the kilometers (electricity consumption). Realised

### Results for the year 2018

- Better separation of waste flows by removing waste bins in workspaces and meeting rooms 6<sup>th</sup>; at strategic locations pantries, copy areas and some workspaces placing of separation bins (4 waste streams).
- Separation of waste (confidential paper as well as glass, environmental bins, computer waste) via two waste companies. Realised
- Maintain green electricity (wind energy) contract. Realised
- Monitoring energy consumption (reduction due to fewer desktops and other multifunctionals possible). Realised
- Monitoring paper/print consumption and communication to employees, minimal printing, black and white if necessary and color by exception. Realised
- Internal and external communication of our footprint and progress on measures. Realised
- Certification for the CO<sub>2</sub> Performance Ladder level 5 by an external organisation. Realised
- Listed in the Green Register municipality of Utrecht - Realised

### Results for the year 2019

- Drawing up a reduction plan for 2019. Realised.
- Monitoring energy consumption (reduction due to fewer desktops and other multifunctionals possible). Ongoing.
- Monitor paper/print consumption and communication to employees, minimum printing, black and white if necessary and color by exception. Ongoing.
- Installed follow-me printers. Realised.
- Digital sending of salary slips. Realised.
- 5th floor rented out and therefore more efficient use of 5th and 6th floor. Realised.
- Drawing up an energy balance/ CO<sub>2</sub> footprint for 2019. Realised.
- Certification for the CO<sub>2</sub> Performance Ladder level 5 by external organisation for 2019. Realised.

### Results for the year 2020

- Drawing up reduction plan 2020 - Realised.

- Monitoring energy consumption (reduction due to fewer desktops and other multifunctionals possible) - Ongoing.
- Monitoring paper/print consumption and communication to employees, minimal printing, black and white if necessary and color by exception – Ongoing
- Drawing up an energy balance / CO<sub>2</sub> footprint for 2020 - .Realised

Certification for the CO<sub>2</sub> Performance Ladder level 5 by an external organisation over 2020 – Ongoing

### Results for the year 2021

- Transferring of report to manual 3.1 of SKAO - Realised
- Promoting Teams for meetings, so that no or less travel is required. - Ongoing
- Drawing up reduction plan 2021 - Realised.
- Monitoring energy consumption (reduction due to fewer desktops and other multifunctionals possible) - Ongoing.
- Monitoring paper/print consumption and communication to employees, minimal printing, black and white if necessary and color by exception – Ongoing
- Drawing up an energy balance / CO<sub>2</sub> footprint for 2020 - .Realised
- Certification for the CO<sub>2</sub> Performance Ladder level 5 by an external organisation over 2020 - Realised.

### Results for the year 2022

- Movement to smaller office – Realized per 1/1/2022

The various opportunities for savings are not only focused on energy, but have been identified for the environment as a whole.

- Due to partly working at home/office less travel, communication via teams for meetings (Hybrid working) - Ongoing
- Monitoring energy, city heating, paper use – Ongoing
- Certification for the CO<sub>2</sub> Performance Ladder level 5 by an external organization over 2021 – Ongoing
- Survey Employee Commuting 2022 across Ricardo Group - realized
- Sustainability and Digital week for employee awareness (non-commercial) - realized
- Lighting to LED and sensor. Lifts, bicycle shed, garage and parking deck have recently been converted. - Realised
- Insulation work district heating space- Realized

### Raw materials (paper, lamps, office supplies, PPE, etc.)

- Keeping smaller stocks of materials/determining optimal order quantities. Is being done.
- Minimal purchase and stock of qualified hazardous substances. See Aspects and Impacts Beheersplan wet- en regelgeving Hya 559824.- Ongoing.

### **Waste separation**

- No insight into the amount of standard waste (paper, green, other, plastic, glass, batteries), but we do have separate disposal and insight of the weight of confidential paper, waste of measurement group and computer waste.

### **Renewable energy**

- Only 100% green electricity generated by Dutch wind farms. Realised.

### **Communication**

- Periodic internal and external communication about the progress of the energy reduction targets (requirement(s) for the CO<sub>2</sub> Performance Ladder). Footprint, objectives, target, progress, measures every six months
- Periodic internal and external communication about the Carbon footprint (requirement(s) for CO<sub>2</sub> Performance Ladder). Semi-annually

### **Travel**

- Offer Safe & Eco driving training to employees who drive more than 4,800 km annually (this training has already been followed and repeated by several employees) - annually, ongoing process.

### A.1.3 Energy measurement plan (2.C.2, 3B2, 4A2)

The NEN-EN-ISO 50001: 2018 serves as a guideline for setting up the Energy Measurement Plan. The introduction of an energy measurement plan ensures that a complete, reliable and up-to-date consolidation of the energy performance of Ricardo Nederland can take place. The core of the energy measurement plan is continuous evaluation of the activities and identified deviations to realize improvements and are therefore drawn up in accordance with the Plan-Do-Check-Act cycle as included in the NEN-EN-ISO 50001: 2018.

Ricardo Nederland has insight into the power consumption in various areas:

1. Numbers and consumption Multifunctionals, monitors, computers, laptops, mices, keyboards and telephones - Hya 560344
2. Contractual agreement with our landlord ASR who has a contract with Main Energie B.V., see .A..1.1. Green certificate with statement of origin of energy
3. Large-scale consumer is our server space.
4. Climate control is provided by the Reinvent energydata monthly-export, see Hya 824716
5. Net floor area 2.165,97 m<sup>2</sup> - Hya 634467.
6. In 2022 164,5 FTE have been contracted.

Ricardo Nederland has measured the energy over the past years and the historical data you will find in the below overview.

Supplier	Year	Total consumption	Difference from previous year
<b>Essent variable</b>	2013	302777	
Greenchoice 3 yr fixed	2014	301863	-914
Greenchoice 3 yr fixed	2015	289866	-11997
Greenchoice 3 yr fixed	2016	287511	-2355
Greenchoice 3 yr fixed	2017	245231	-42280
Greenchoice 3 yr fixed	2018	239686	-5545
Greenchoice 3 yr fixed	2019	229687	-9999
Greenchoice 3 yr fixed	2020	206926	-22761
Greenchoice 1 yr fixed/Hello Energy	2021	197656	-9270
Hello Energy	2022	139050	-58606

*Overview of energy consumption per year in Kwh*

## A.1.4 Policy statement CO<sub>2</sub>-Performance Ladder Ricardo Nederland 2022

Hya 853374

### Policy statement CO<sub>2</sub> Performance Ladder Ricardo Nederland

Utrecht, April 26, 2023

Ricardo Nederland B.V. and Ricardo Certification B.V., hereinafter referred to as Ricardo Nederland, are a leading rail consultancy and certification company respectively. Both recognize their broad social responsibility with regard to people and the environment. Sustainability is an important factor nowadays. In order to consciously deal with this, we strive for CO<sub>2</sub>-conscious business operations. This results in a continuous improvement of our emission reduction policy and a growing awareness of employees.

#### CO<sub>2</sub> ambition

In response to the reference year 2022, a target for energy and CO<sub>2</sub> reduction has been formulated for the period 2022-2025.

*Ricardo Nederland's objective is to reduce CO<sub>2</sub> emissions by 20% (measured per FTE) in the period 2022 - 2025.*

Compared to the start year 2012 this means a reduction from 80%, but because of the movement to a smaller and more efficient office the reference year has been changed to 2022.

The targets for the distribution per scope up to and including 2025 has been 15% for scope 1 and 85% for scope 2, respectively.

The company's CO<sub>2</sub> footprint indicates that CO<sub>2</sub> emissions are mainly related to our business travel (flights and car travel) and accommodation. Ricardo Nederland will concentrate in the coming years on economically responsible reduction of energy consumption and the associated CO<sub>2</sub> emissions. This will take place in as many areas and reference points as possible in the chain. Also Ricardo will enlarge, where possible, it's insight of the emission figures further.

When assessing new investments, energy performance in relation to economic life and our investment are taken into consideration. Ricardo Nederland management team monitors the progress and results of these processes.

Ricardo Nederland efforts consist of:

- Structurally reducing energy consumption and achieving the intended CO<sub>2</sub> reduction;
- Structural internal and external communication about the results and intentions achieved;
- Creating awareness of the topic of CO<sub>2</sub> reduction both within the organization and in the chain and industry by participating in and contributing to innovations, research and working groups.

The numerical substantiation will be made available in accordance with the requirements of the CO<sub>2</sub> Performance Ladder. Publications are visible on [CO<sub>2</sub>-prestatieladder \(ricardo.com\)](https://www.ricardo.com) and on the SKAO website. Furthermore, all interested parties, both inside and outside the organization, are regularly informed of the results achieved.

On behalf of Management Team Ricardo Nederland,

Richard Laan

Manager Finance, ITC & Sales Support



## A.1.5 Analysis List of Measures CO<sub>2</sub> Performance Ladder 2022 SKAO

Below is an overview of the measures as stated in the CO<sub>2</sub> Performance Ladder 2022 SKAO Measure List. These measures have been implemented in recent years.

### Overview of measures

#### Advice

<b>Research and innovation in relation to carbon emissions</b> Global measure		
Categorie A	Between 2% and 10% of the research and innovation budget is spent on topics that could also cut carbon emissions	Implemented on 06/2017
Categorie B	Between 10% and 20% of the research and innovation budget is spent on topics that could also cut carbon emissions	Not filled in
Categorie C	Over 20% of the research and innovation budget is spent on topics that could also cut down carbon emissions	Not filled in

#### ICT services

<b>Purchase of green power and/or power made greener with GOs.</b> Renewable energy		
Categorie A	Over 75% of the electricity consumed is green power or power made greener with national GOs.	Not filled in
Categorie B	Over 98% of the electricity consumed is green power or power made greener with national GOs.	Implemented on 01/2022 Main Energy from 1/1/22.

#### Material use/Scope 3

<b>Carbon capture through weathering of materials</b> Carbon capture		
Categorie C	The company uses building materials that provide long-term capture of CO <sub>2</sub> during their use phase as a result of weathering and the company reports on the CO <sub>2</sub> reduction achieved in this way.	Implemented on 01/2022 Sedumdak op terras Meubilair begane grond Huismeesters cradle to cradle Buitengevel duurzaam product zonder CO <sub>2</sub> belasting

<b>Development of additional reduction measures</b> Global measure		
Categorie A	The company can demonstrate that it has implemented and arranged financing for measures that further reduce carbon emissions in one or several of its projects.	Implemented on 04/2019
Categorie B	The company can demonstrate that it has implemented and arranged financing for measures that further reduce carbon emissions for at least 20% of its projects.	Not filled in
Categorie C	The company can demonstrate that it has implemented and arranged financing for measures that further reduce carbon emissions for at least 50% of its projects.	Not filled in

#### Offices

<b>Accredited Measures for energy saving in offices</b> Increasing the efficiency of the activity		
Categorie A	All Accredited Measures for energy saving in offices have been implemented, in so far as indicated in that list. Measures are implemented at natural times	Implemented on 01/2022 Nieuw pand betrokken per 1 januari 2022.



<b>Active energy-management offices</b> Increasing the efficiency of the activity		
Categorie A	In at least 50% of offices, the organisation engages in active energy management, supported by a building management system.	Not filled in
Categorie B	In at least 50% of offices, the organisation engages in active energy management, supported by a building management system, including providing energy consumption feedback to the building users (e.g. a panel in the lobby).	Not filled in
Categorie C	In at least 90% to 100% of offices, the organisation engages in active energy management, supported by a building management system, including providing energy consumption feedback to the building users (e.g. a panel in the lobby).	Implemented on 01/2022

<b>Agreements on energy performance in leases</b> Increasing the efficiency of the activity		
Categorie A	Improvement of the building's energy performance forms part of the negotiations when lease agreements for office space are concluded or amended.	Implemented on 11/2021 Breame excellent certificate
Categorie B	All new lease agreements include arrangements regarding improvement of the building's energy performance, such as an agreement regarding any overruns or underruns in relation to the pre-agreed building-related heating and cooling energy.	Not filled in
Categorie C	All new lease agreements stipulate a lease amount that includes energy and quantified savings targets, e.g. in the form of a GreenLease agreement.	Not filled in

<b>Benchmarking and optimising energy consumption</b> Increasing the efficiency of the activity		
Categorie A	For at least 75% of offices, data from the main meter is recorded and benchmarked annually against similar premises (via Milieubarometer, e-nolis or similar).	Implemented on 01/2022 Benchmark though Hello Energy
Categorie B	Aside from main meters, at least 75% of offices also use submeters and analysis software to identify opportunities for improvement.	Not filled in Hello Energy
Categorie C	In at least 75% of its offices, the organisation uses software that automatically identifies and implements improvements in the systems.	Not filled in

<b>Gasless offices</b> Global measure		
Categorie C	At least 10% of all offices are gasless.	Implemented on 01/2021 STEG since the beginning of the CO <sub>2</sub> Performance ladder in 2012.

<b>Improvement of the energy label of offices</b> Global measure		
Categorie A	Offices have an average energy label of D or E.	Not filled in
Categorie B	Offices have an average energy label of C or B.	Not filled in
Categorie C	Offices have an energy label of at least A.	Implemented on 01/2022

<b>Make charge points available for electric vehicles.</b>		
Electrification		
Categorie A	Minimally 1 charge point per 20 parking spaces	Not filled in
Categorie B	Minimally 1 charge point per 10 parking spaces	Implemented on 01/2022 3 parking places, charging units ...
Categorie C	Minimally 1 charge point per 10 parking spaces + active role in optimising energy management for office/electrical grid	Not filled in
<b>Optimisation of air conditioning systems</b>		
Increasing the efficiency of the activity		
Categorie A	The air conditioning systems of all offices taken into use in the past 5 years have been optimised by a professional installation contractor.	Implemented on 01/2022
Categorie B	The air conditioning systems in at least 75% of all offices are optimised by a professional installation contractor at least once every 5 years.	Not filled in
<b>Public transport location choice</b>		
Global measure		
Categorie A	At least 10% of the building area is located near public transport (maximally 500 m).	Not filled in
Categorie B	At least 25% of the building area is located near public transport (maximally 500 m).	Not filled in
Categorie C	At least 50% of the building area is located near public transport (maximally 500 m).	Implemented on 01/2022 Office move within 500 meters.
<b>Purchase of efficient hardware</b>		
Increasing the efficiency of the activity		
Categorie A	The company is able to demonstrate that it selected products with the Energy Star label when purchasing computers, laptops, screen, power supplies, UPS, servers, copiers and printers.	Implemented on 04/2017
<b>Purchase of green power and/or power made greener with GOs.</b>		
Renewable energy		
Categorie A	Over 75% of the electricity consumed is green power or power made greener with national GOs.	Not filled in
Categorie B	Over 98% of the electricity consumed is green power or power made greener with national GOs.	Implemented on 01/2022 Verhuizing per 1/1/2022
<b>Renewable electricity generation (in-house)</b>		
Renewable energy		
Categorie A	Between 5% and 25% of the electricity used is met by renewable electricity generated in-house (through own investment or a lease).	Implemented on 01/2022 less than 5% through 50 solar panels on the rooftop.
Categorie B	At least 25% of the electricity used is met by renewable electricity generated in-house (through own investment or a lease).	Not filled in
Categorie C	At least 50% of the electricity used is met by renewable electricity generated in-house (through own investment or a lease).	Not filled in
<b>Use of sustainable heat and/or heat and cold storage</b>		
Renewable energy		
Categorie A	Space heating using sustainable heat accounts for 10% to 50% of the total energy consumed in the organisation's offices for heating and cooling.	Not filled in
Categorie B	Space heating using sustainable heat accounts for 50% to 80% of the total energy consumed in the organisation's offices for heating and cooling.	Not filled in
Categorie C	Space heating using sustainable heat accounts for more than 80% of the total energy consumed in the organisation's offices for heating and cooling.	Implemented on 01/2022

*Organizational policy general*

<b>Awareness of carbon emissions among staff</b> Global measure		
Categorie A	CO <sub>2</sub> reduction is demonstrably addressed in the induction process for 20 to 50% of new consultants and project leaders	Not filled in
Categorie B	CO <sub>2</sub> reduction is demonstrably addressed in the induction process for over 50% of new consultants and project leaders	Implemented on 01/2019
Categorie C	CO <sub>2</sub> reduction is demonstrably addressed in the induction process for at least 20% of new consultants and project leaders	Not filled in

<b>Implementation of energy saving measures</b> global measure		
Categorie A	The company structurally implements all scope 1 and 2 energy saving measures that have a payback time of less than 5 years.	Implemented on 01/2022
Categorie B	The company structurally implements all scope 1 and 2 energy saving measures that have a payback time of less than 10 years.	Not filled in
Categorie C	The company structurally implements all scope 1 and 2 energy saving measures that have a payback time of less than 15 years.	Not filled in

<b>Renewable electricity generation (via PPA)</b> Renewable energy		
Categorie A	At least 25% of electricity used is met by the generation of renewable electricity through a PPA contract.	Not filled in
Categorie B	At least 50% of electricity used is met by the generation of renewable electricity through a PPA contract.	Not filled in
Categorie C	100% of electricity used is met by the generation of renewable electricity through a PPA contract.	Implemented on 01/2022 Groene Nederlandse windenergie

<b>Renewable energy generation (for third parties)</b> Renewable energy		
Categorie B	Making roofs or grounds available for renewable energy production under the responsibility of a third party	Implemented on 01/2022 Zonnepanelen
Categorie C	Supply to third parties of an amount of renewable energy generated or produced in-house, as a result of which a significant amount of carbon emissions is avoided by the relevant third party (at least 10% of the footprint (for scope 1 and 2) of the certified organisations).	Not filled in

<b>Supply of materials or gases to third parties</b> Useful applications of CO <sub>2</sub>		
Categorie C	Supply of materials or gases to third parties, enabling these third parties to avoid carbon emissions	Implemented on 01/2022 Post en koeriers

<b>Encourage car pools and the use of car sharing.</b> Increasing the efficiency of the activity		
Categorie A	The company actively encourages employees to carshare and is able to demonstrate this.	Not filled in
Categorie B	The company provides shared cars for communal travel to the office or project locations.	Implemented on 10/2014
Categorie C	All shared cars run on renewable fuel or natural gas or are zero-CO <sub>2</sub> emission vehicles.	Not filled in

<b>Parking policy</b> Global measure		
Category B	The organisation only offers parking spaces, free or otherwise, to staff who: - need to travel more than 10 km from home to work and cannot travel by public transport - require a car for the performance of their duties	Not filled in
Category C	The organisation only offers parking spaces, free or otherwise, to staff who: - require a car for the performance of their duties	Implemented on 01/2022
<b>Provision of bicycles, electric bikes or electric scooters</b> Global measure		
Category A	Where meaningful, the company makes available bicycles, electric bikes or electric scooters at its project or office locations that can be used to cover short distances	Implemented on 01/2019
Category B	The company operates a scheme that offers all employees reimbursement for the purchase of a bicycle or an electric bike.	Not filled in
<b>Purchase/leasing of passenger vehicles based on carbon emissions measured in practice</b> Increasing the efficiency of the activity		
Category A	The carbon emissions of new passenger vehicles (purchased or leased) average less than 160 g/km over the course of a year (according to data measured in practice)	Not filled in
Category B	The carbon emissions of new passenger vehicles (purchased or leased) average less than 140 g/km over the course of a year (according to data measured in practice)	Not filled in
Category C	The carbon emissions of new passenger vehicles (purchased or leased) average less than 120 g/km over the course of a year (according to data measured in practice)	Implemented on 01/2018
<b>Reduce personal mobility by working from home and teleconferencing</b> Restricting activity		
Category A	The average amount of travel (commuting, business trips) per employee with an administrative job is demonstrably reduced by 10% compared to before the coronavirus outbreak (2019)	Not filled in
Category B	The average amount of travel (commuting, business trips) per employee with an administrative job is demonstrably reduced by 20% compared to before the coronavirus outbreak (2019)	Not filled in
Category C	The average amount of travel (commuting, business trips) per employee with an administrative job is demonstrably reduced by 40% compared to before the coronavirus outbreak (2019)	Implemented on 06/2020 Every employee can register themselves before they come to the office. From September 2021 we have place for max. 90 persons of the 173 total of employees. The average persons in the office are about 30 persons a day.
<b>Reducing car usage</b> Restricting activity		
Category A	Provision of a mobility map to staff driving a lease car, with the aim of cutting down on the number of kilometres travelled by car.	Not filled in
Category B	Introduction of an individual mobility budget for all staff driving a lease car, with the aim of reducing the number of lease cars and/or cutting down on the number of kilometres travelled by car.	Not filled in
Category C	Introduction of an individual mobility budget for all staff with the aim of reducing the number of lease cars and/or cutting down on the number of kilometres travelled by car.	Implemented on 12/2016
<b>Application of award advantage for CO<sub>2</sub> targets in tenders for services</b> Global measure		
Category A	up to 25% of the services	Implemented on 04/2021
Category B	25-75% of the services	Not filled in
Category C	All services	Not filled in



### A.1.6 Communication plan

WHAT (Message)	WHO (executor)	HOE (Resources)	TARGET GROUP	WHEN (Planning & frequency)	WHY (objective)
CO <sub>2</sub> -footprint of company and projects with award advantage	Coordinator Facility & Environment, HSEQ-advisor	Sharepoint, internal mail	Internal	Semi-annually	Increase internal awareness of the CO <sub>2</sub> -footprint
CO <sub>2</sub> -footprint of company and projects with award advantage	Coordinator Facility & Environment, HSEQ-advisor	Website	External	Semi-annually	Increase awareness of the footprint among external parties
CO <sub>2</sub> -reduction targets + progress and measures for company and projects with an award advantage	Coordinator Facility & Environment, HSEQ-advisor	Internal mail	Internal	Semi-annually	Increase awareness of the objective and measures among employees
CO <sub>2</sub> -reduction targets + progress and measures for company and projects with award advantage	Coordinator Facility & Environment, HSEQ-advisor	Website	External	Semi-annually	Increase awareness of the objective and measures among external parties
Opportunities for individual contribution, current energy consumption and trends within the company and projects	Coordinator Facility & Environment, HSEQ-advisor	Internal mail	Internal	Semi-annually	Stimulating employee involvement and encouraging employees to reduce CO <sub>2</sub> emissions
Website update	Coordinator Facility & Environment, HSEQ-advisor	Website	External	Semi-annually	Update documents
Publication obligation SKAO	Coordinator Facility & Environment, HSEQ-advisor	Website SKAO	SKAO	Annual	Publish documentation associated with requirement 3.D.1 and update the list of measures annually

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