Correspondence Address

Hollandia BV
Postbus 12
2920 AA Krimpen a/d IJssel
T : +31 (0) 180 – 540 540
F: +31 (0) 180 – 519 956

Visiting address

Hollandia BV
Schaardijk 23
2921 LG Krimpen a/d IJssel

E: info@hollandia.nl
I: www.hollandia.biz

CO2 footprint H1 2018

Project:	CO2 performance ladder
Client:	Hollandia B.V.
Document type:	Report
Document No.:	2018-SHEQ-CO2 Footprint H1-UK
Revision:	1
Revision Date:	3-10-2018
Status:	Final
Discipline/team:	SHE&Q

Internal approval

Name	*Function*	*Department*	*Initials*	*Date*
J.M. Cornet	**Manager SHE&Q**	**SHE&Q**		**01/10/2018**

Contents

1 Management statement

A safe, healthy and sustainable world of steel

Hollandia is a socially responsible organisation that wants to play an active role in building a better world. That is why Hollandia actively contributes to a sustainable future. Short-term and long-term interests are carefully weighed up, with economic, environmental and social considerations which inform part of their business decisions. Hollandia strives for the right balance between people, planet and profit, for the continued existence of our organisation and the well-being of our people and future generations.

People are central to everything that we do. We must be alert to the depletion of raw materials and their effects on climate change. We only have one planet to work with. The way in which we deal with our living environment is increasingly shifting from cost-efficiency to social responsibility. Attitude and behaviour are becoming increasingly more important. It is our duty to focus our company policy on this from a social, economic and environmental point of view.

"Without sustainable construction, no sustainable society"

The Carbon Footprint Analysis (CFA) fits in well with the theme of sustainability. Sustainability is not just about words, it's also about doing things. That is why we must ensure that our work contributes to a sustainable living environment. After all, without sustainable construction, there can be no sustainable society. We will continue to develop as an organisation, to further reduce our CO_2 emissions and to develop concepts and services for our partners and customers.

"Sustainability is not just about words, it's also about doing things"

The CFA is also part of our certification for the CO_2-prestatieladder (CO_2-performance-ladder). By testing our performance, we also make it clear to our environment that we are serious. It also helps as a signal to our own employees. We do this by being transparent about our energy consumption, vehicle fleet emissions and waste flows. This encourages each of us to take an extra step to minimise consumption and reduce mileage by changing our approach to transport and external visits. After all, every step starts with yourself.

Hollandia is a leader in the design, manufacture, assembly, installation, maintenance and repair of mechanical and steel construction works and installations for the Offshore, Infra, Industry and Utility market segments.

Hollandia uses its technical know-how to make a significant contribution to CO_2 reduction. We are constantly looking for ways and applications to excel as a reliable partner in improving the performance of our own installations and those of our customers.

Steven Lubbers
Hollandia B.V.

2 Organisation

2.1 Reporting organisation

The reporting organisation Hollandia B.V. (hereinafter referred to as Hollandia). For this report, the part of Hollandia that operates within the Dutch borders has been considered insofar as the influence of Hollandia as an organisation is noticeably present.

"Since its foundation in 1928, Hollandia has been at the forefront of major steel and mechanical developments"

Hollandia is one of the largest and most active steel and mechanical engineering companies in the Netherlands. Since its foundation in 1928, the company has been at the forefront of all major technological developments. In this time, Hollandia has built up a great deal of expertise in the field of steel and mechanical engineering applications in the Infra, Offshore, Utility and Industrial market segments.

Hollandia is seen as a reliable, solid technical service provider that offers good solutions to ambitious clients within the business community and the non-profit sector. Hollandia carries out both simple and bold, leading projects.

Hollandia's services contribute to the proper, sustainable and cost-efficient functioning of organisations, buildings, ships, infrastructure and industrial installations. From design to management and maintenance.

2.2 Responsible person

The statutory responsible person for the reporting organisation is Mr S. Lubbers.

2.3 Organisational boundaries

The organisational boundaries of Hollandia and the participations are determined within the framework of CO_2 (carbon dioxide) consciousness according to the principle of the operational sphere of influence of the company to be certified. Within the GHG protocol, this is described as the 'operational boundary'. In practice, this means that where activities are managed by Hollandia, including the responsibility for CO_2-production: the management clearly lies with the organisation itself.

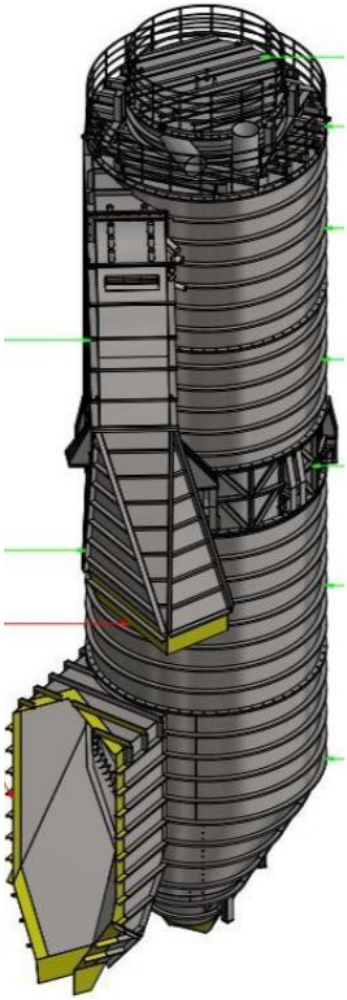
The activities in question are carried out from the following locations:

Krimpen aan den IJssel	Infra
	Services
	Offshore
	Systems
Heijningen	Structures

The following companies are not included in the boundary:

- Hollandia UK, London, United Kingdom;

There are no projects that may have been obtained with any award advantage.



Hollandia Systems has realised, for a waste disposal customer, an afterburner housing and liner The system will be in operation to clean the effluent airflow.

Hollandia Engineering realised the engineering voor dit project, fabrications will be executed by the professionals of Hollandia Offshore.

Technical specifications:

Project: afterburner housing and liner
Customer: ATM afvalterminal Moerdijk
Delivery date: wk 23, juni 2018
Dimensions: Ø 9,5 mtr, Hight 40 meter & incl. extremities Width 14 meter
Weight: appr. 200 ton

Build in collaborations with Hollandia Engineering, Hollandia Systems, Hollandia Offshore

Specialty: In de mantel appr. 25.500 studs are applied for a 30cm thick concrete lining The inside temperature will rise to appr. 800^{o}C

3 Carbon Footprint Analysis

3.1 The basis of the analysis

The CO_2 emissions and CO_2 absorption of the organisation's activities are identified on the basis of the established operational limits. When identifying emissions, in accordance with the Greenhouse Gas (GHG) Protocol, a distinction is made between three sources of emissions (known as scopes) in two categories: direct emissions and indirect emissions.

- Scope 1
  includes the direct emissions under the management and control of the organisation. Examples include the combustion of fuels in fixed machinery, company transport in vehicles owned by the reporting organisation and emissions from refrigeration and air-conditioning equipment;
- Scope 2
  includes indirect emissions from the generation of purchased electricity, steam or heat;
- Scope 3
  includes the other indirect emissions from sources such as commuting, the production of purchased materials and outsourced activities such as the transport of goods.

This Carbon Footprint Analysis includes the CO_2 emissions (one of the six greenhouse gases) produced by Hollandia for scopes 1, 2 and 3 in the first half of the calendar year 2018.

The CO_2 emissions are analysed in accordance with the CO_2-performance ladder, shown in figure 1.

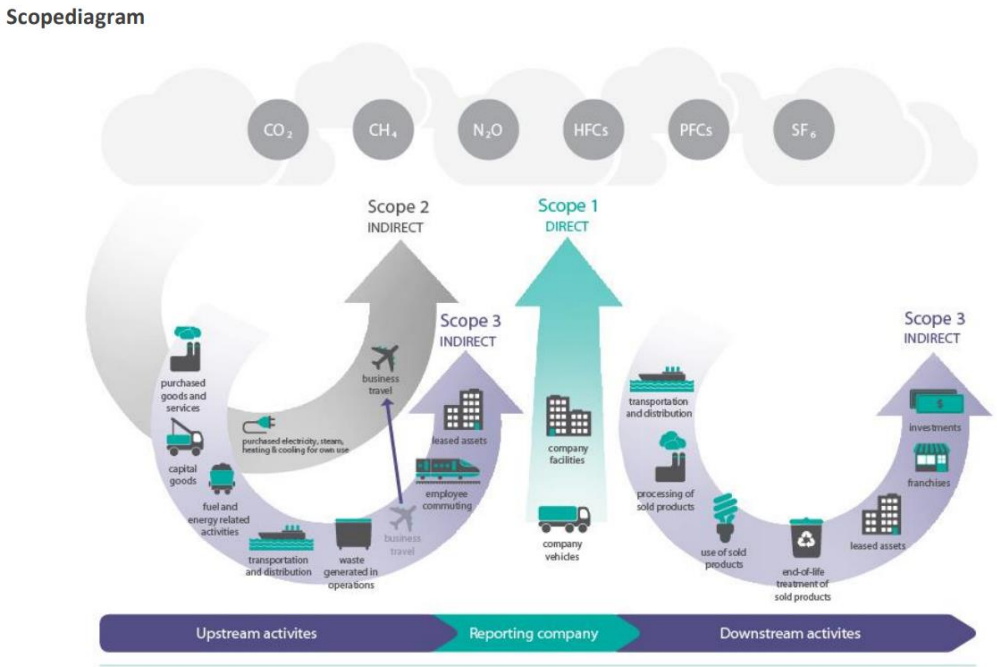


Figure 1: Identification of emission sources

4 Measurement results and explanatory notes

4.1 The reported period

The reported period equates to the first six months of the financial year. Hollandia's financial year runs from 1 January to 31 December. The reported period is the first half of the year 2018, thus 1 January to 31 June 2018.

CO_2 offsetting

There is no offsetting of CO_2 emissions. Available resources are used to bring about improvements in the company's own machinery in order to enable the company's resources to perform optimally in the context of CO_2 emissions.

Declaration of omitted CO_2 sources or sinks

All identified sources and sinks of CO_2 are accounted for in the report. CO_2 binding does not take place, so there are no sinks to speak of.

CO_2 emissions from biomass combustion

Hollandia has not undertaken any burning of biomass.

4.2 Scope1: Direct CO_2 emissions

The direct emissions of CO_2 within Scope 1 were measured and calculated as 1058 tonnes

	Thema			CO_2-parameter	CO_2-equivalent
CO2 scope 1					
Aardgas voor verwarming	Brandstof & warmte	479.025	m3	1,89 kg CO2 / m3	905 ton CO2
Propaan	Brandstof & warmte	322	kg	3,39 kg CO2 / kg	1,09 ton CO2
Acetyleen (alleen CO2)	Brandstof & warmte	0	kg	4,40 kg CO2 / kg	0 ton CO2
Koudemiddel - R410a	Emissies	0,00100	kg	2.088 kg CO2 / kg	0,00209 ton CO2
Diesel	Mobiele werktuigen	5.621	liter	3,23 kg CO2 / liter	18,2 ton CO2
LPG	Mobiele werktuigen	16.996	kg	3,29 kg CO2 / kg	55,9 ton CO2
Personenwagen (in liters) benzine	Zakelijk verkeer	9.646	liter	2,74 kg CO2 / liter	26,4 ton CO2
Personenwagen (in liters) diesel	Zakelijk verkeer	15.859	liter	3,23 kg CO2 / liter	51,2 ton CO2
				Subtotaal	*1.058 ton CO2*

Figure 2: Scope 1, first six months of 2018

Fuel consumption of the company's own fleet vehicles

The vast majority of these emissions, namely 77 tonnes of CO_2, can be attributed to the fuel consumption of the company's own fleet. Hollandia's fleet in the first half of 2018 consisted, on average, of 127 passenger cars and 17 vans/buses. Of the passenger cars, 8 fell into the hybrid category and 1 fell into the electric category. Of the vans, 0 fell into the electric category.

Stationary combustion equipment

905 tons of CO_2 of emissions were caused using stationary combustion equipment. This is almost entirely due to heating Hollandia's business premises.

Leakage of refrigerants

In the first half of 2018, 0 kg of refrigerant was added to air conditioning units.

4.3 Scope 2: Indirect CO_2 emissions

The indirect emission of CO_2 within Scope 2 was measured and calculated as 154 tonnes

CO2 scope 2

Ingekochte elektriciteit	Elektriciteit	2.264.582	kWh	0,649	kg CO2 / kWh	1.470	ton CO2
Waarvan groene stroom uit windkracht	Elektriciteit	2.264.582	kWh	-0,649	kg CO2 / kWh	-1.470	ton CO2
Gedeclareerde km personenwagen	Zakelijk verkeer	351.145	km	0,220	kg CO2 / km	77,1	ton CO2
Vliegtuig regionaal (<700 km)	Zakelijk verkeer	173.391	personen km	0,297	kg CO2 / personen km	51,5	ton CO2
Vliegtuig Europa (700-2500 km)	Zakelijk verkeer	90.628	personen km	0,200	kg CO2 / personen km	18,1	ton CO2
Vliegtuig mondiaal (>2500 km)	Zakelijk verkeer	48.398	personen km	0,147	kg CO2 / personen km	7,11	ton CO2
				Subtotaal		*154*	*ton CO2*

Figure 3: Scope 2, first six months of 2018

Electricity use

0 tonnes of CO_2 can be attributed to purchased electricity produced by wind or hydropower.

Air travel for business purposes

76 tonnes of CO_2 were accounted for by business air travel.

Private cars for business travel

The remaining 77 tonnes of CO_2 are accounted for by the use of private cars for business travel.

4.4 Influence of measurement inaccuracies

It is clear from the above that the vast majority of CO_2 emissions are caused by the use of the company's own fleet of vehicles and stationary combustion equipment. It is therefore important to accurately record these emissions.

Scope 1:
The measurement data on the fuel consumption of the company's own fleet of vehicles were supplied by the leasing company. The data was obtained from a fuel card, which is linked to the vehicle concerned. The data for the rented cars was obtained by logging the fuel cards issued to employees with a rental car. Kilometre registration was not chosen because it is less accurate. Not every employee carefully keeps track of the kilometres driven by entering the odometer reading when refuelling.

The measurement data of the fuel consumption of stationary combustion equipment for heating purposes have been taken from the supplier's gas meters. These can be considered sufficiently reliable.

Scope 2:
The measurement data for air travel has been provided by the travel agency and checked by the administration. The intermediate stops were also included in the processing, where known. Random checks are carried out via www.gcmap.com.
The measurement data for electricity consumption were collected via telemetry data or by recording the meter readings. Measurement data on the fuel consumption of private vehicles were collected on the basis of kilometres declared by employees

4.5 Scope 3: Other indirect CO_2 emissions

CO2 scope 3

Openbaar vervoer	Woon-werkverkeer	0	personenkm	0,0360	kg CO2 / personenkm	0	ton CO2
Fiets en lopen	Woon-werkverkeer	0	km	0	kg CO2 / km	0	ton CO2
Scooter en bromfiets	Woon-werkverkeer	0	km	0,0528	kg CO2 / km	0	ton CO2
Personenwagen	Woon-werkverkeer	0	km	0,220	kg CO2 / km	0	ton CO2
Papier met milieukeurmerk	Kantoorpapier	2.543	kg	1,21	kg CO2 / kg	3,07	ton CO2
				Subtotaal		*3,07*	*ton CO2*

Figure 4: Scope 3, first six months of 2018

5 Reduction target and progress

5.1 Historical base year

This measurement is the eleventh measurement within the framework of the ISO 14064 standard.

Standardising measurement results

The extent of the CO_2 emissions has a clear correlation with the size of the activities undertaken by Hollandia. For comparing the emissions in the reference year and those during the reported period, a benchmark has been determined on the basis of which the measurement results can be standardised. Hollandia's business activities can be measured based on the project hours that were undertaken. The reported measurement results were standardised against the project hours.

5.2 The objective of CO_2 reduction

Energy Policy

Hollandia has been conducting research to reduce energy consumption for quite some time. This is motivated by, on the one hand, the company's corporate social responsibility, to limit the harmful impact that the use of energy has on the worldwide environment. On the other hand, the motivation is for economic reasons, by trying to use less energy and thus reduce direct costs.

Information about current energy consumption

The first half of 2018 has passed and the results in terms of CO_2 are now known.
Once again, it has been confirmed that natural gas remains the largest cause of CO_2 emissions. The current conversion factors mean that electricity is no longer the largest cause. In recent years, various measures have been taken to reduce emissions from these two energy streams.

CO_2 reduction targets and measures

Hollandia has set itself the target of emitting 20% less CO_2 (per productive hour) by 2020 compared to 2013. In addition, Hollandia wants to reduce CO_2 emissions by 3% within the chain of used steel and 5% within the chain of commuter traffic by 2018. A large number of activities have been planned to achieve the objectives. This includes replacing lighting and heating sources, greening our energy supply and making our employees more conscious of the energy use involved in commuting. The engineering department is also working on leaner construction, among other things, so that less steel is required.

Progress / Trend

	Thema		CO_2-parameter	CO_2-equivalent
CO2 scope 1				
Aardgas voor verwarming	Brandstof & warmte	479.025 m3	1,89 kg CO2 / m3	905 ton CO2
Propaan	Brandstof & warmte	322 kg	3,39 kg CO2 / kg	1,09 ton CO2
Acetyleen (alleen CO2)	Brandstof & warmte	0 kg	4,40 kg CO2 / kg	0 ton CO2
Koudemiddel - R410a	Emissies	0,00100 kg	2.088 kg CO2 / kg	0,00209 ton CO2
Diesel	Mobiele werktuigen	5.621 liter	3,23 kg CO2 / liter	18,2 ton CO2
LPG	Mobiele werktuigen	16.996 kg	3,29 kg CO2 / kg	55,9 ton CO2
Personenwagen (in liters) benzine	Zakelijk verkeer	9.646 liter	2,74 kg CO2 / liter	26,4 ton CO2
Personenwagen (in liters) diesel	Zakelijk verkeer	15.859 liter	3,23 kg CO2 / liter	51,2 ton CO2
			Subtotaal	*1.058 ton CO2*
CO2 scope 2				
Ingekochte elektriciteit	Elektriciteit	2.264.582 kWh	0,649 kg CO2 / kWh	1.470 ton CO2
Waarvan groene stroom uit windkracht	Elektriciteit	2.264.582 kWh	-0,649 kg CO2 / kWh	-1.470 ton CO2
Gedeclareerde km personenwagen	Zakelijk verkeer	351.145 km	0,220 kg CO2 / km	77,1 ton CO2
Vliegtuig regionaal (<700 km)	Zakelijk verkeer	173.391 personen km	0,297 kg CO2 / personen km	51,5 ton CO2
Vliegtuig Europa (700-2500 km)	Zakelijk verkeer	90.628 personen km	0,200 kg CO2 / personen km	18,1 ton CO2
Vliegtuig mondiaal (>2500 km)	Zakelijk verkeer	48.398 personen km	0,147 kg CO2 / personen km	7,11 ton CO2
			Subtotaal	*154 ton CO2*
CO2 scope 3				
Openbaar vervoer	Woon-werkverkeer	0 personenkm	0,0360 kg CO2 / personenkm	0 ton CO2
Fiets en lopen	Woon-werkverkeer	0 km	0 kg CO2 / km	0 ton CO2
Scooter en bromfiets	Woon-werkverkeer	0 km	0,0528 kg CO2 / km	0 ton CO2
Personenwagen	Woon-werkverkeer	0 km	0,220 kg CO2 / km	0 ton CO2
Papier met milieukeurmerk	Kantoorpapier	2.543 kg	1,21 kg CO2 / kg	3,07 ton CO2
			Subtotaal	*3,07 ton CO2*
			Totaal	1.215 ton CO2
			Compensatie	0 ton CO2
			Netto CO2-uitstoot	**1.215 ton CO2**

Individual contribution

The employees were asked to make an individual contribution to the reduction of CO_2 emissions.
We are thus working together to achieve our CO_2 reduction target.
Attention is paid to this through special Toolbox meetings

6 Calculation models

6.1 Quantification methods

The quantification of raw materials to CO_2 emission values is always done by the registered volumes of the fuels used. The conversion from volume units to emission values is unambiguous and provides the most reliable comparison.

In those situations where no fuel volume units were available, the most reliable information available was used. In the case of vehicle kilometres, the kilometres or tonne-kilometres in the appropriate weight class of vehicles have been used.

Electricity and gas consumption were based on calibrated meters and/or equivalent portal data from the energy supply company. Due to the legislation in force, this is the most reliable source of information available.