



LC Packaging
Environmental
Report 2022



Introduction

Before you lies the **LC Packaging Environmental Report 2022**, which includes data from 2022 (1 January 2022 – 31 December 2022) related to the environmental impact of LC Packaging International B.V.* (LC Packaging). This report is part of LC Packaging's [Sustainability Update 2023](#). The information provided in this report serves as a supplement to the chapter 'Environment' and is a combination of the company's previously published 'Environmental Report' and 'Solutions Report'.

With this report, LC Packaging aims to measure and understand the company's environmental impact in its value chain and on society at large, identify areas of improvement, and increase the environmental value of our operations and with that, our packaging and services.

The Environmental Report 2022 presents data aligned with multiple reporting requirements and is produced in accordance with the GRI Standards: Core Option. In accordance with the GRI Standards, this report shows data from 2019, 2020, 2021 and 2022.

This document is publicly available and provides LC Packaging's management, shareholders and stakeholders with detailed information related to the topics '**Climate Change**', '**Environmental footprint (water, waste, and energy)**', and '**Material use and Circular Economy**'.

Noteworthy developments compared to last year's report:

- In September 2022, LC Packaging acquired all shares in [Karl Weiterer Sack- und Planenfabrik GmbH \(Weiterer\)](#). This report already includes environmental footprint data related to Weiterer.
- In 2022, LC Packaging launched its new [2030 Ambition](#) sustainability strategy, and set itself the following environmental goals:
 - At least 80% of turnover comes from packaging that delivers the circular economy.
 - 50% emissions reduction in scope 1, 2 and 3.
 Hence more extensive data on energy use and emissions and circular packaging criteria have been added to this report.

In the years leading up to reporting year 2025, this report will be supplemented according to EU CSRD reporting standards.



Lotte Mastwijk

Head of Sustainability
LC Packaging International B.V.
lmastwijk@lcpackaging.com

* LC Packaging International B.V. includes all subsidiaries of which we have more than 50% ownership: LC Packaging affiliates, Hagens Verpakkingen B.V., Weiterer GmbH, WorldBag B.V. and production facilities Dutch-Bangla Pack Ltd. (DBPL) and LC Shankar (PTY) LTD. When referred to as 'LC Group', the production facilities are excluded from the calculation.

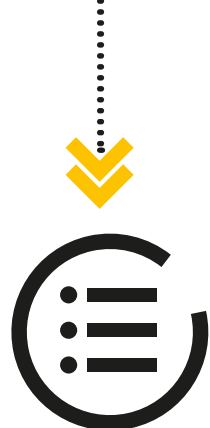


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Summary

LC Packaging International B.V. includes all subsidiaries of which we have more than 50% ownership: LC Packaging affiliates, Hagens Verpakkingen B.V., Weiterer GmbH, WorldBag B.V. and production facilities Dutch-Bangla Pack Ltd. (DBPL) and LC Shankar (PTY) LTD. This chapter summarised the 2022 results. More detailed information can be found in the following chapters.





Climate change

Greenhouse gas emissions

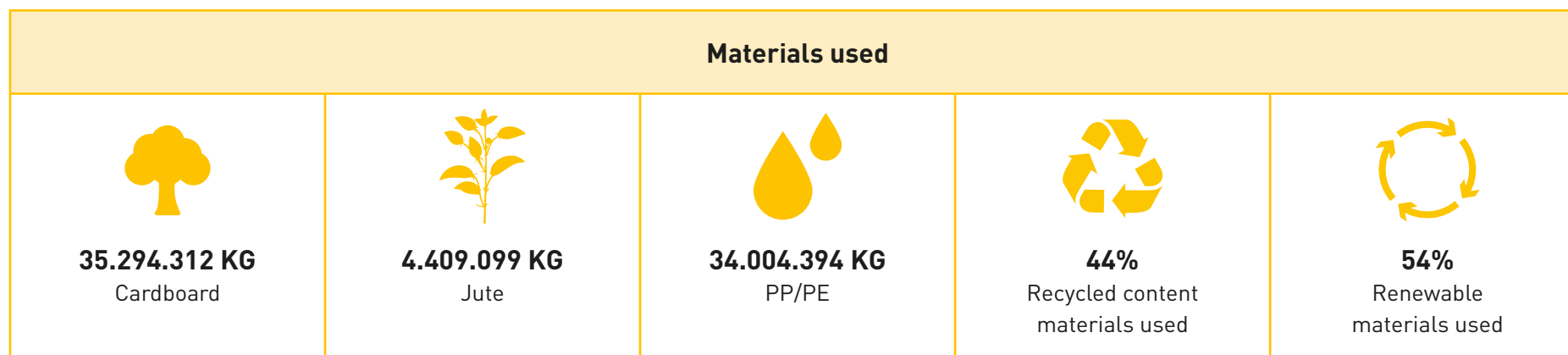
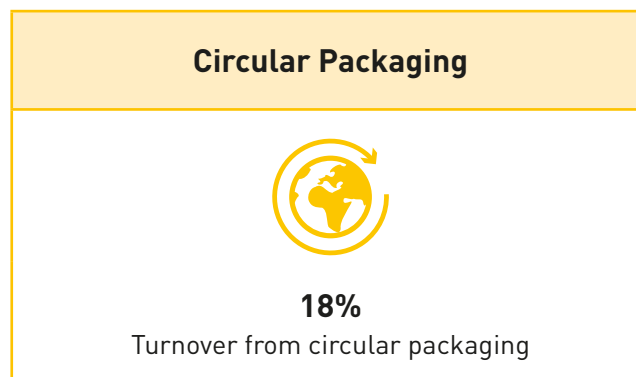
Total Gross GHG emissions	Total GHG emissions per net turnover	Gross Scope 1 GHG emissions	Gross Scope 2 GHG emissions (market based)	Gross Scope 3 GHG emissions
254,897 MT CO _{2e}	0.001 MT CO _{2e}	5,148 MT CO _{2e}	4,219 MT CO _{2e}	245,530 MT CO _{2e}

Environmental footprint

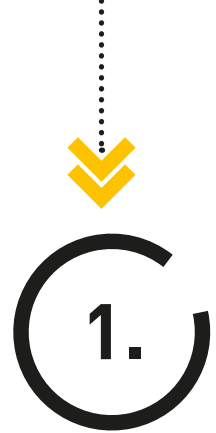
Water consumption, waste production and energy use

 Water used	 Waste generated	 Energy used	 Renewable energy used
45,200 M ³	594,124 KG	33,798,128 kWh	30.7%
-8.3%	-7.8%	+3.8%	+1.8%

Material use and circular economy



Reusable Packaging	(closed-loop) Recyclable packaging	Home-compostable packaging
7% of turnover from technically reusable packaging	59% of turnover from recyclable packaging	18% of turnover from home-compostable packaging
2% of technically reusable packaging actually reused	41% of turnover from closed-loop recyclable packaging	



Climate change



Introduction

GRI 305-1 Direct (Scope 1) GHG emissions

GRI 305-2 Energy indirect (scope 2) GHG emissions

GRI 305-3 Other indirect (Scope 3) GHG emissions

GRI 305-5 Reduction of GHG emissions














LC Packaging has set itself the goal to reduce its absolute greenhouse gas emissions from its value chain by 50% by 2030. Based on improved data quality and availability in 2022, a recalculation has been made for base year 2021. In base year 2021, **274,775 MT CO₂e** was emitted in LC Packaging's value chain. Meaning that by 2030, no more than **137,387 MT of CO₂e** may be emitted in our value chain. LC Packaging's emission reduction goal includes the company's full operations and value chain, which includes the direct (Scope 1) and indirect emissions (Scope 2 and 3) of all our sales offices and warehouses, and our FIBC production facilities in Bangladesh and South Africa.

Greenhouse gas emissions

In 2022, **254,897 MT CO₂e** has been emitted in our value chain. This means a decrease of **7.2%** (18,353 MT) compared to base year 2021.

Greenhouse Gas Inventory 2022 - In accordance with the Greenhouse Gas Protocol

Total Gross GHG emissions	Total GHG emissions per net turnover	Gross Scope 1 GHG emissions	Gross Scope 2 GHG emissions (market based)	Gross Scope 3 GHG emissions
254,897 MT CO₂e	0.001 MT CO₂e	5,148 MT CO₂e	4,219 MT CO₂e	245,530 MT CO₂e

Scope	Category	MT CO ₂ e	% of total emissions	Progress compared to 2021 (%)
Scope 1 (Direct emissions)	 Fuel use and refrigerants in activities	4,912	1.9	-12.3%
	 Company owned vehicles	236	0.1	-25.5%
Scope 2 (Indirect emissions)	 Purchased electricity for own use	4,219	1.7	+23.7%
Scope 3 (Indirect emissions)	 Purchased goods and services	193,013	75.7	-6.9%
	 Capital goods	1,736	0.7	+17.7%
	 Fuel and energy related activities	857	0.3	-15.0%
	 Transportation and distribution	6,271	2.5	-14.7%
	 Waste generated in operations	78	0.0	+15.6%
	 Business travel	168	0.1	+76.8%
	 Employee commuting	213	0.1	+8.2%
	 Leased assets (up- and downstream)	534	0.2	-12.7%
	 End-of-life treatment of sold products	42,661	16.7	-9.7%
	 Investments	0	0.0	-100%
	Total	254,897	100	-7.2%

Explanation: The calculations for the 2022 GHG Inventory are based on the Greenhouse Gas Protocol Corporate Value Chain Accounting and Reporting Standard. The Scope 3 emissions are calculated in accordance with the guidelines of the GHG Protocol Standard, including at least the "minimum boundaries".

Explanation

In 2022, data availability and quality improved significantly due to among others better product-related data and lifecycle assessments that were conducted for our main product groups. Based on that data, base year 2021 has been recalculated and rectified in this report. Overall, in 2022 we achieved a **7.2%** decrease of CO₂e emissions compared to base year 2021.

A summary of the results:

- Our affiliates and FIBC production facility LC Shankar (LCSH) together managed to bring down their scope 1 and 2 emissions by **9.2%** in 2022 (116 MT CO₂e), compared to 2021.
- As FIBC production facility Dutch-Bangla Pack (DBPL) – responsible for over **80%** of total scope 1 and 2 emissions – had to use more energy from the grid, instead of its own generators, its CO₂e emissions have increased by **309 MT CO₂e**.
- In total we can conclude a **12.3%** decrease of scope 1 emissions and a **23.7%** increase of scope 2 emissions.
- As scope 1 emissions have been reduced, emissions related to 'fuel and energy related activities' have also been reduced **(-15%)**.
- Even though in 2022 we distributed more packaging products compared to 2021, less material has been used, leading to a **6.9%** decrease in emissions in the 'purchased goods and services' category.
- Emissions related to 'capital goods' have increased with **17.7%** due to a larger investment in capital goods in 2022 compared to 2021.
- Less sea freight has led to an emission reduction **(14.7%)** related to 'transportation and distribution'.
- Even though we produced less 'waste' in 2022, the emissions related to this category have increased by **15.6%**, as more waste was incinerated compared to 2021.
- As in 2022 COVID restrictions eased, we have experienced an exponential growth in emissions related to 'business travel' **(+76.8%)** and employee commuting **(+8.2%)**. Overall, this still has a small impact **(0.2%** of total emissions).
- Emissions related to upstream 'leased assets' have decreased due to the gradual yet steady transition towards electric lease cars. Downstream leased assets have decreased due to an emission reduction in the dormitories at our main production facility in Bangladesh and fewer cardboard erecting machines leased to customers.
- For the 'end-of-life of sold products', an emission reduction of **9.7%** has been achieved. This is mainly due to a decrease in the materials used in the distributed packaging compared to 2021, including **3 mln.** kilos less plastics.

2.

Environmental footprint



Introduction

GRI 307-1 Non-compliance with environmental laws and regulations

GRI 303-5 Water consumption

GRI 302-1 Energy consumption within the organisation

GRI 302-4 Reduction of energy consumption

GRI 306-3 Waste generated

GRI 306-4 Waste diverted from disposal

GRI 306-5 Waste directed to disposal

Since 2017, LC Packaging annually calculates its environmental footprint in the areas of water consumption, waste production, CO2e emissions and energy use. These calculations include all LC Packaging operations. In 2022, LC Packaging extended its operations by acquiring all shares in [Karl Weiterer Sack- und Planenfabrik GmbH \(Weiterer\)](#). This report already includes environmental footprint data related to Weiterer. Additionally, in 2022, the CO2e emission calculations have been extended from only scope 1 and 2 emissions to also scope 3 emissions and are now reported in **chapter 1: Climate change**.

➤ Reported incidents of non-compliance with environmental laws and regulations

Reported incidents			
2019	2020	2021	2022
0	0	0	0

Water consumption

➤ Water consumption

Type of water	Water use (m³)			
	2019	2020	2021	2022
Drinking water (tap)	11,734	3,703	9,560	4,453
Rainwater	30	Unknown	Unknown	Unknown(*)
Ground water	34,560	34,570	39,751	40,747
Total	46,324	38,273	49,311	45,200(**)

*Rainwater use is not measured. Two locations use rainwater: BE SKW and LC Shankar. By using rainwater, their drinking water consumption is lowered.

**Decrease in water consumption due to the use of rain water thanks installed at production facility LC Shankar.

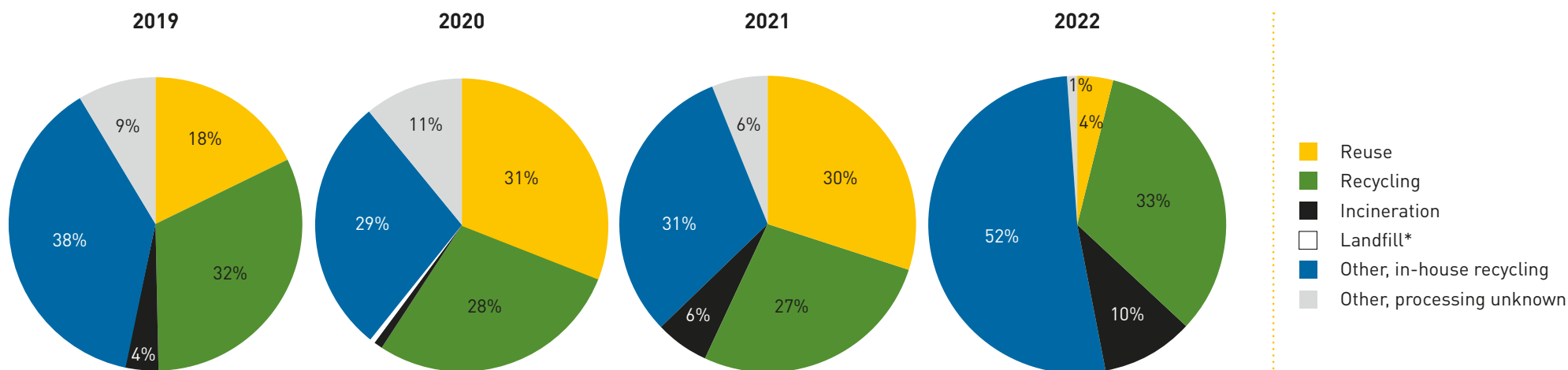
Waste consumption

➤ Total weight of non-hazardous and hazardous waste

	Non-hazardous waste (KG)				Hazardous waste (KG)			
Disposal method	2019	2020	2021	2022	2019	2020	2021	2022
Reuse	330,343	462,543	494,774	47,478	0	0	0	0
Recycling	592,805	420,452	436,734	448,169	0	0	1,550	0
Composting	0	0	0	0	0	0	0	0
Recovery, including energy recovery	0	0	0	0	0	0	0	0
Incineration (mass burn)	65,644	14,528	97,940	133,504	0	0	3,000	0
Deep well injection	0	0	0	0	0	0	0	0
Landfill	1,424	7,400	0	245	0	0	500	0
On-site storage	0	0	0	0	0	0	0	0
Other, in-house recycling initiative	709,230	425,863	503,606	689,223	0	0	100	0
Other, pro-cessing unknown	161,668	159,363	104,262	10,474	2,000	3,860	0	1,725
Total	1,861,114	1,490,149	1,637,316	1,329,093	2,000	3,860	5,150	1,725
Total waste production(*)	823,541	605,603	644,086	592,392				1,725

*Total waste production = waste production – (resold/internal recycling/reused)

➤ Percentage of waste per disposal method



*Landfill: 0.02%

➤ Total weight of hazardous waste treated (KG)

Hazardous waste treated			
2019	2020	2021	2022
2,000	3,860	5,150	1,725

➤ Total weight of hazardous waste transported, imported or exported (KG)

Hazardous waste transported			
2019	2020	2021	2022
0	0	Unknown	Unknown

➤ Percentage of hazardous waste shipped internationally

Hazardous waste shipped			
2019	2020	2021	2022
0	0	Unknown	Unknown

Energy use

➤ Energy use related to electricity, fuel and transport.

Type	Energy use in kWh			
	2019	2020	2021	2022
Electricity fossil[*]	10,672,821	1,628,046	4,721,826	5,370,289
Electricity renew-able, grid & own generation	445,151	1,996,464	1,916,451	2,383,174
Fuel[**]	10,431,932	21,058,569	24,320,942	25,019,342
Company-owned vehicles[***]	1,306,527	1,680,995	1,615,942	1,025,323
Total	22,856,430	26,544,074	32,575,162	33,798,128

➤ Renewable energy purchased/produced across all entities

Renewable electricity use			
2019	2020	2021	2022
4%	7.5%	28.9%	31.7%

Explanation

Today, **31.7%** of electricity use is renewable, of which **0.4%** is self-generated, and **30.4%** is from purchasing renewable electricity. The last number includes purchased guarantees of origin, supplier specific fuel mix for electricity, or grid electricity mix.

* Includes nuclear

** Stationary combustion (heating & generators)

*** This category includes vehicles using fossil fuels and electric vehicles. A note for electric vehicles: Electric vehicles are 50% charged on site at LC Packaging, Therefore 50% of their electricity use is excluded to avoid double counting the use of electricity (around 24.000kWh)

Note: For the impact categories 'Fuel' and 'Company-owned vehicles' the conversion factors have changed, to align with the calculation method for the Greenhouse Gas Inventory. The new factors are roughly 5% higher.

3.

Material use and Circular Economy



Introduction

As part of its 2030 Ambition, LC Packaging has set itself the goal to have at least 80% of turnover come from packaging that delivers the circular economy by 2030. Based on internationally accepted standards and guidelines, circular packaging has been identified as follows: Packaging made out of renewable materials or **recycled-content materials**, that is **reusable** if possible, and 100% **recyclable** (preferably closed-loop) or **compostable**.

In the chapter '**Material Use and Circular Economy**', LC Packaging reports on Key Performance Indicators (KPIs) measuring the progress towards our goal, supplemented with KPIs which are part of internationally accepted reporting standards (GRI), and additional reporting obligations.

Data availability and quality

LC Packaging aims to annually improve the availability and quality of its data related to material use and circular economy criteria. Compared to the 2021 report, definitions have evolved due to having obtained more knowledge on the actual reusability, recyclability and composability of many of our packaging products, and due to market developments. As data availability and quality has improved significantly, the data for 2021 has been recalculated and rectified in this report. Modified definitions, estimations and other determinative decisions made in the process are explained throughout the report.

With a view to data availability and quality, this calculation includes **73.9%** of LC Packaging's distributed packaging products*, representing its primary product categories**, **86.1%** of the weight of materials used, and **95.9%** of the company's total turnover in 2022.

* In 2022, 512,402,165 pcs of packaging were distributed.

** Primary product categories: Cardboard packaging, FIBCs (Big bags), Jute bags, Net bags, and Woven PP bags.

Packaging solutions

Explanation

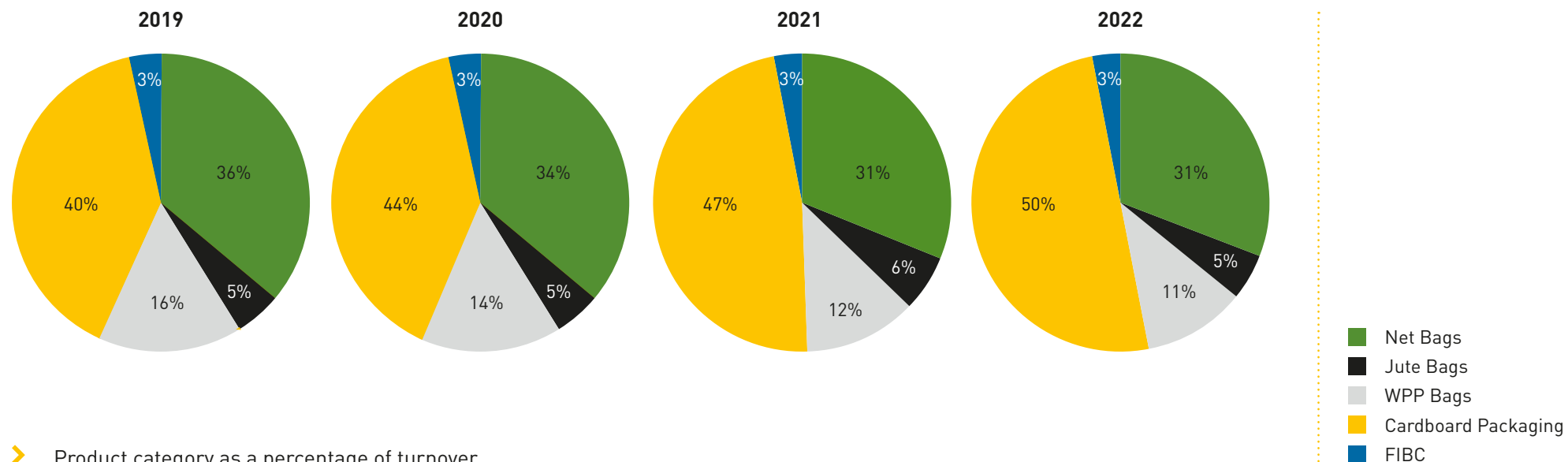
The table below shows the total pcs of packaging distributed in 2022 (100%).

> Packaging distributed (pcs)

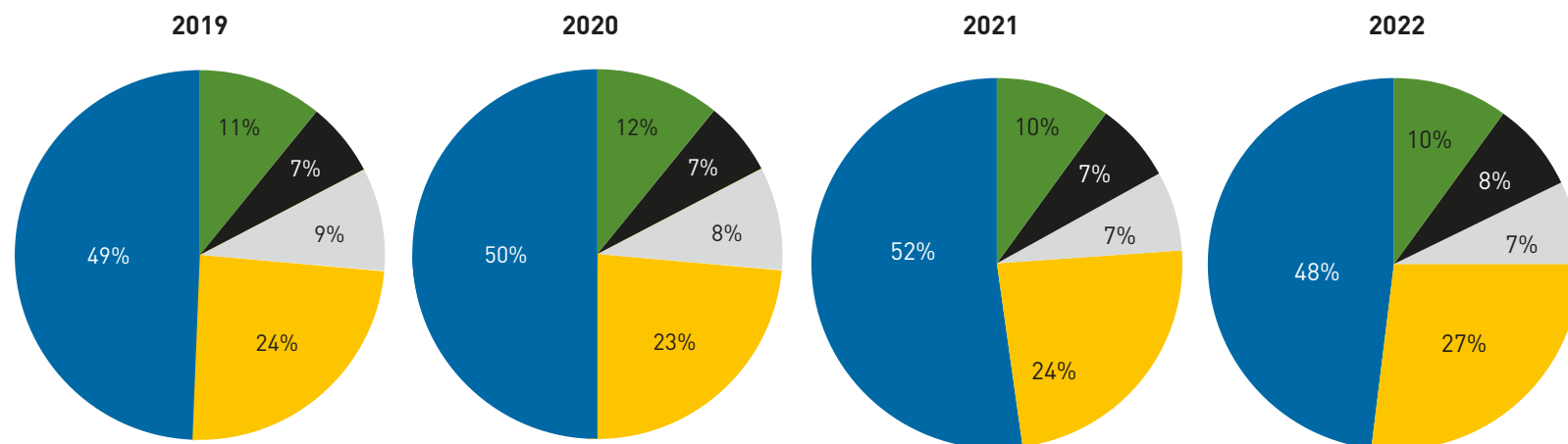
# of solutions			
2019	2020	2021	2022
337 mln.	360 mln.	510 mln.	512 mln.

With a view to data availability and quality, only primary [product categories](#) are included in the rest of this report, representing **73.9%** of total distributed pcs and **95.9%** of LC Packaging's total turnover.

➤ Packaging distributed by product category (pcs)



➤ Product category as a percentage of turnover



Materials used

GRI 301-1 Materials used by weight or volume

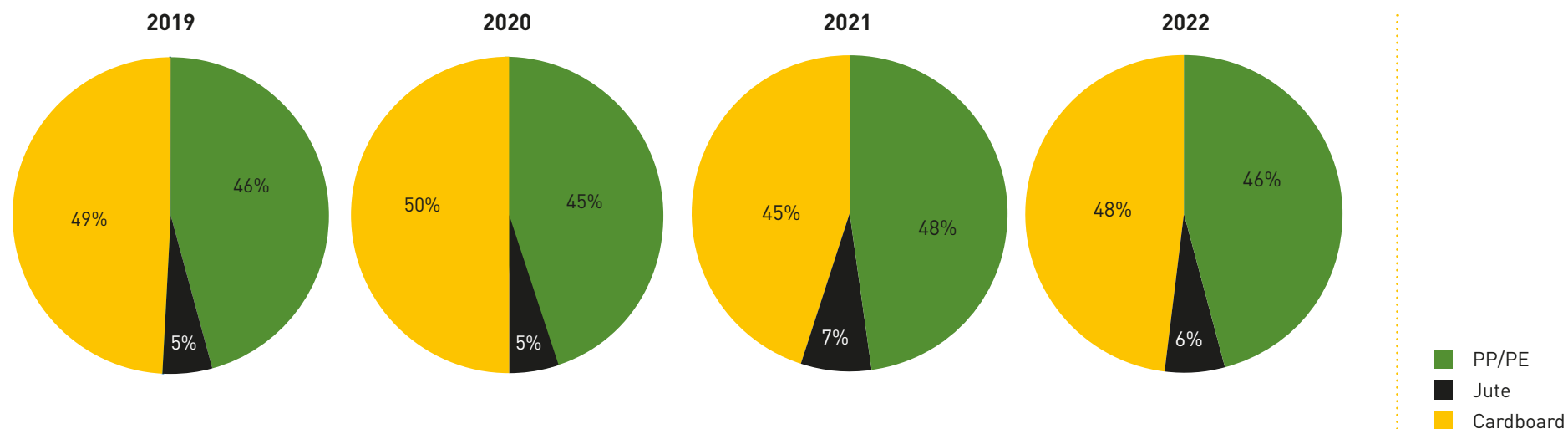
Explanation

The calculation below includes **86.1%** of materials used by weight by LC Packaging, representing **95.9%** of turnover and **73.9%** of all pcs of packaging distributed.

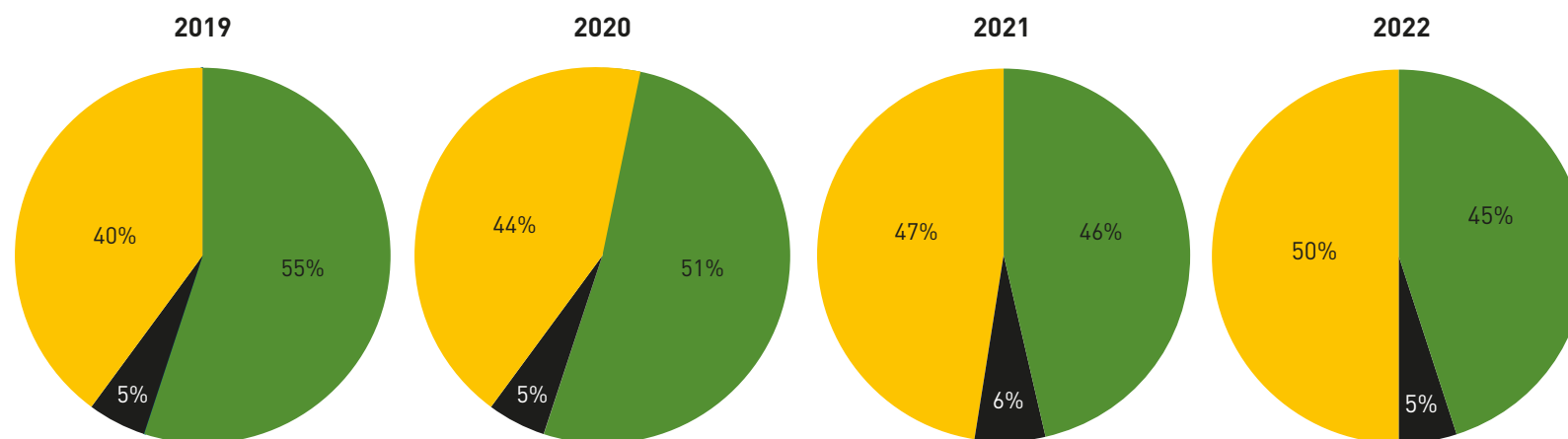
➤ Materials used in KG

	Kilos			
Material	2019	2020	2021	2022
Cardboard	43,658,836	43,653,503	35,051,161	35,294,312
Jute	4,408,156	4,485,928	5,800,882	4,409,099
PP/PE	40,408,412	39,266,485	37,214,144	34,004,394
Total kg of materials used	88,475,505	87,365,916	78,066,188	73,707,804

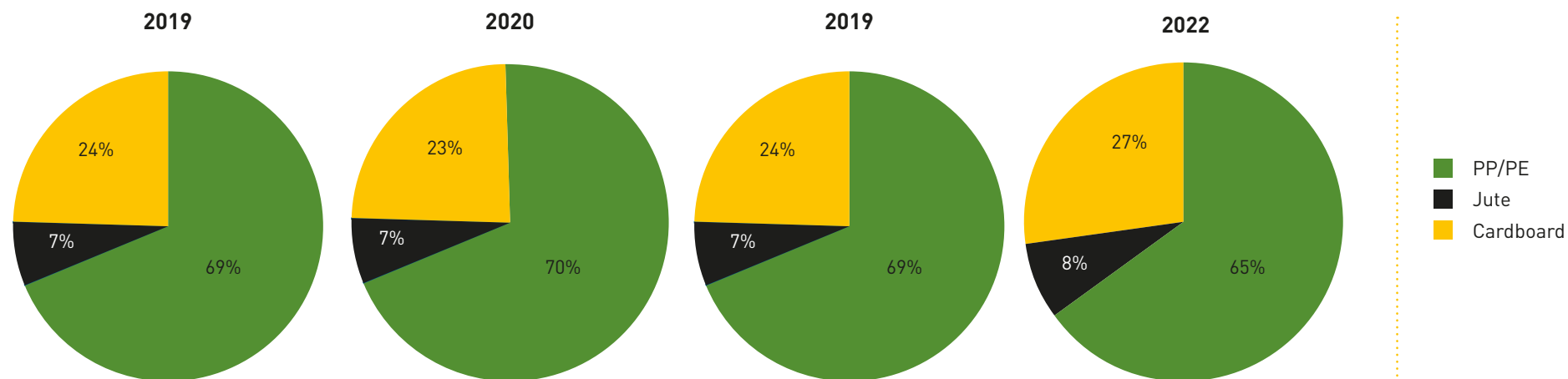
> % of total material use



> % of total distributed packaging solutions (pcs)



> % of turnover per used material



Circular Economy

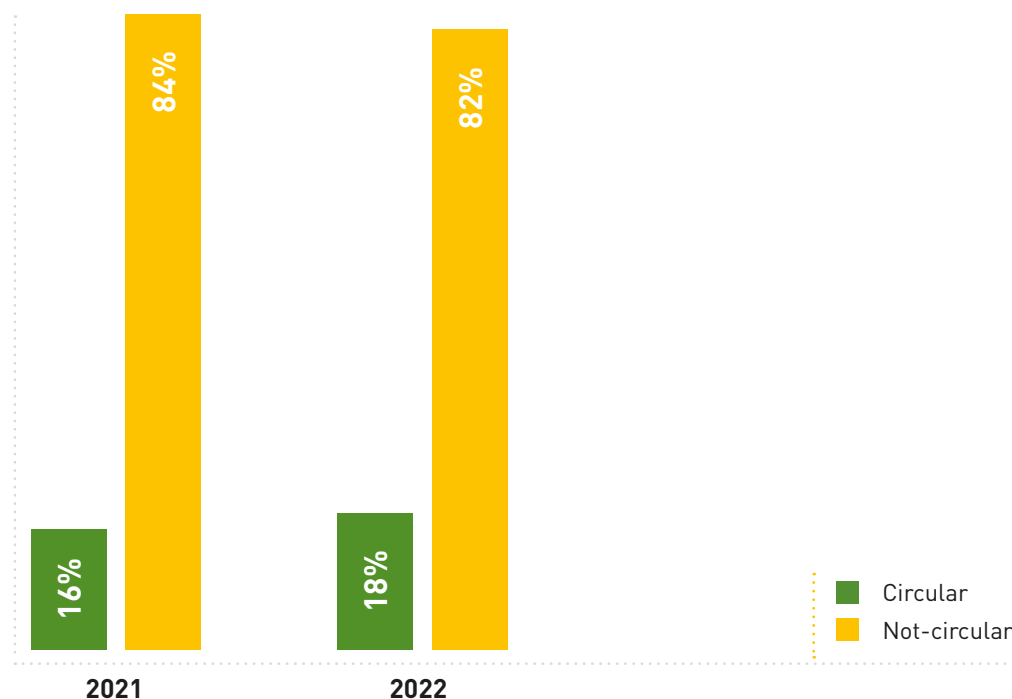
GRI 301-2 Recycled input materials used

Explanation

Based on internationally accepted standards and guidelines, LC Packaging has defined circular packaging as follows: Packaging made out of **renewable materials (a)** or **recycled-content materials (b)**, that is **reusable (c)** if possible, and 100% **recyclable (d)** (preferably closed-loop) or **compostable (e)**.

By 2030, we aim for at least 80% of our turnover to come from packaging that delivers the circular economy. [Read more on our circular economy goal.](#)

➤ % of turnover from circular packaging



In 2022, **17.3%** of LC Packaging's total turnover came from circular packaging.

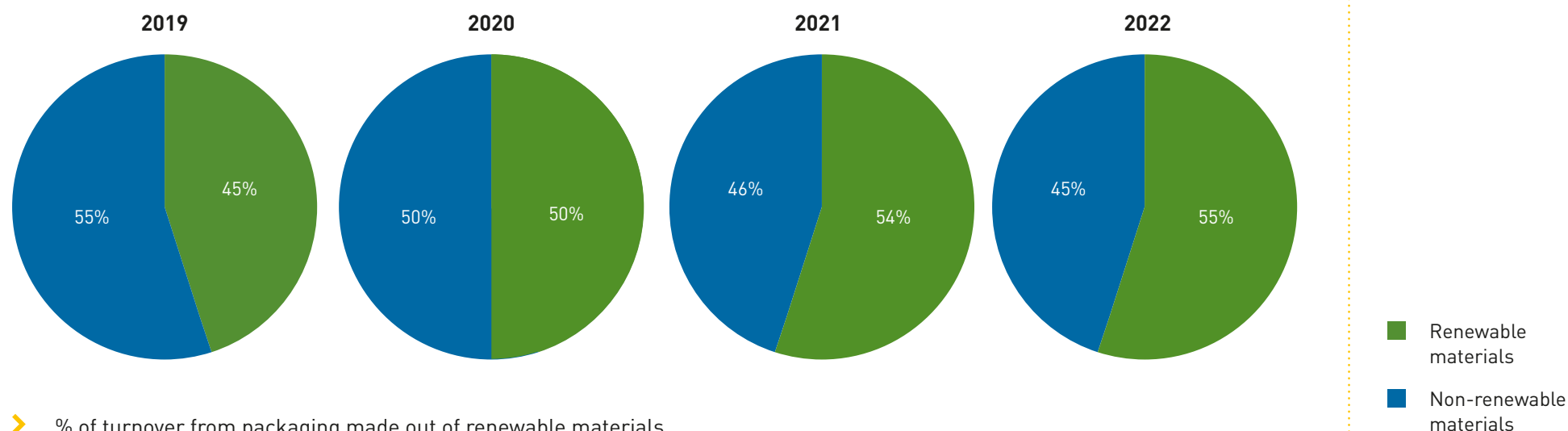
18.0% of the turnover for the primary [product categories](#) included in this report comes from circular packaging.

a. Renewable materials

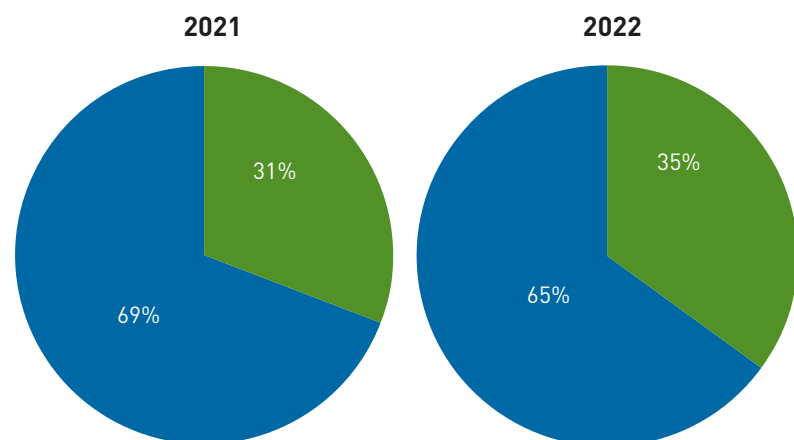
Explanation

In LC Packaging's product portfolio, the renewable materials that are used are jute and cardboard. Some jute bags or types of cardboard packaging include a small percentage of other – non-renewable – materials. In this report, all jute bags and cardboard packaging are identified as 'packaging made out of renewable materials'.

> Distributed packaging made out of renewable materials



> % of turnover from packaging made out of renewable materials



b. Recycled content materials

Explanation

In 2022, LC Packaging distributed its first [FIBCs \(big bags\)](#) that included PCR* rPP and PIR** rPP. In 2022, 900 MT of PIR rPP was used in FIBCs, and another 7.5 MT in [WPP bags](#). However, as PIR has no significant positive environmental impact, only PCR rPP is considered a recycled-content material in this report.

The percentage of recycled-content materials used in distributed cardboard packaging is partly based on accurate data and partly based on well-founded estimations. Approximately 90% of all pcs of cardboard packaging distributed in 2022 included recycled-content material.

Many of LC Packaging's products are food-safe and pharma-clean and comply with that legislation, which in 2022, means that it must contain no recycled content.

* PCR: Post-Consumer Recycling

** PIR: Post-Industrial Recycling

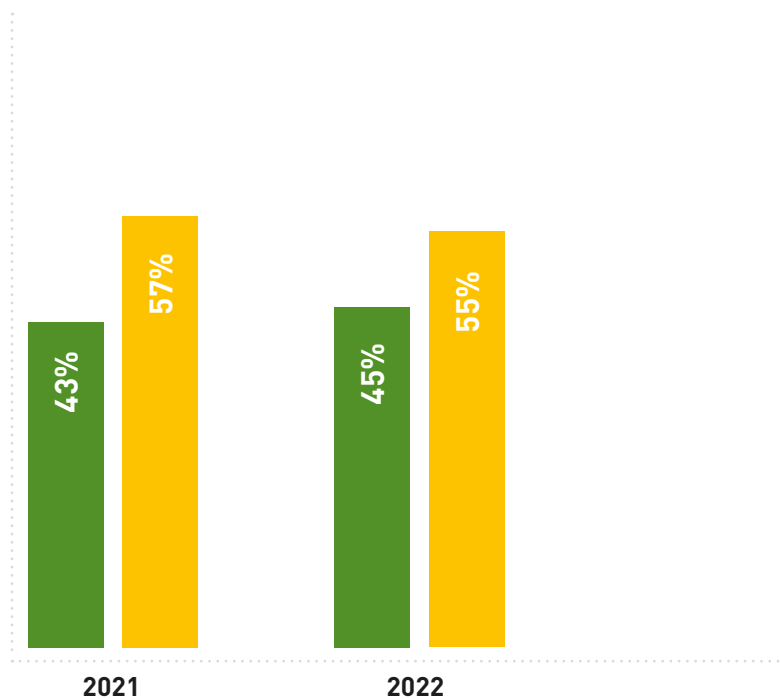
➤ Recycled content materials by product category:

	2019		2020		2021		2022	
Category	% recycled content	recycled content (KG)	% recycled content	recycled content (KG)	% recycled content	recycled content (KG)	% recycled content(*)	recycled content (KG) (**)
Raschel bags (net bags)	25	811,050	0	0	0	0	0	0
Jute bags	0	0	0	0	0	0	0	0
WPP bags	0	0	0	0	0	0	0	0
Cardboard	85	37,110,010	85	37,105,477	85	27,095,478	86	27,604,328
FIBCs	0	0	0	0	0	0	30	2,655
Total		37,921,060		37,105,477		27,095,478		27,606,983

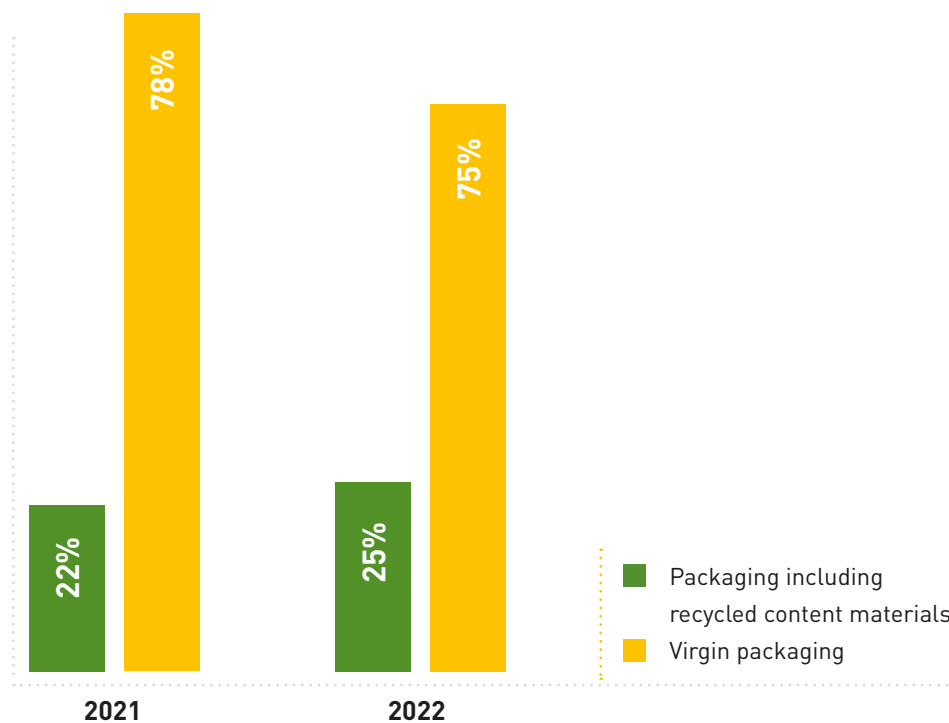
* Percentage of recycled input materials used (total KG recycled input materials used / total KG input materials used) * 100.

** Recycled-content materials used in KG

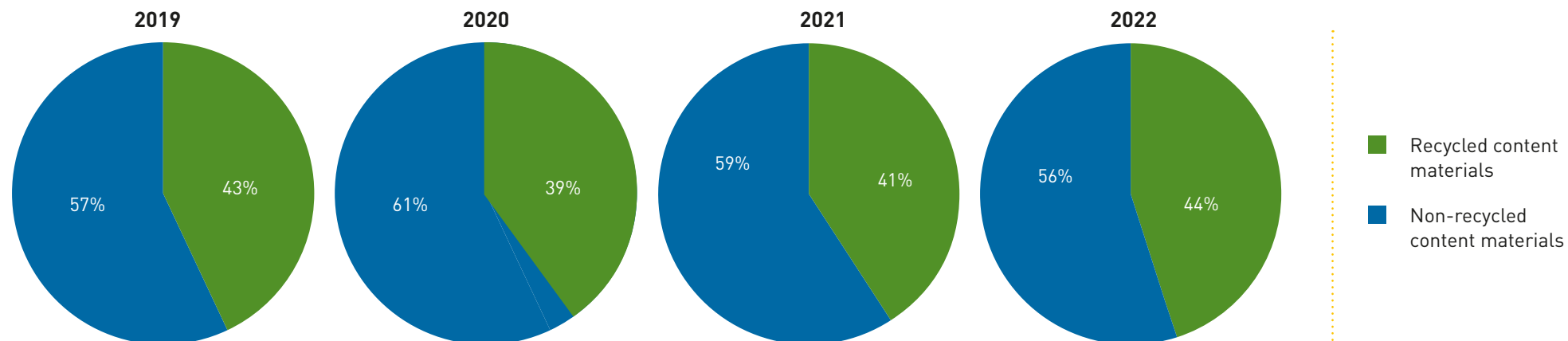
➤ Distributed packaging including recycled content materials



➤ % of turnover from packaging including recycled content materials



> % Recycled content materials used in packaging



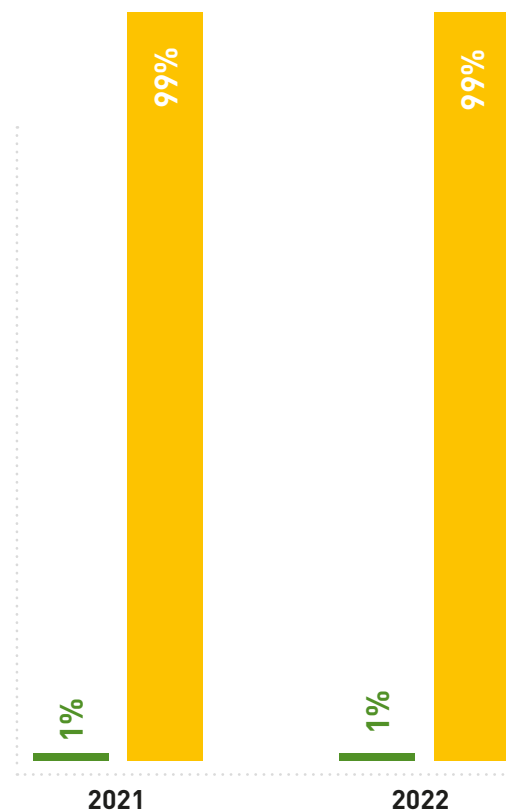
c. Reusable packaging

Explanation

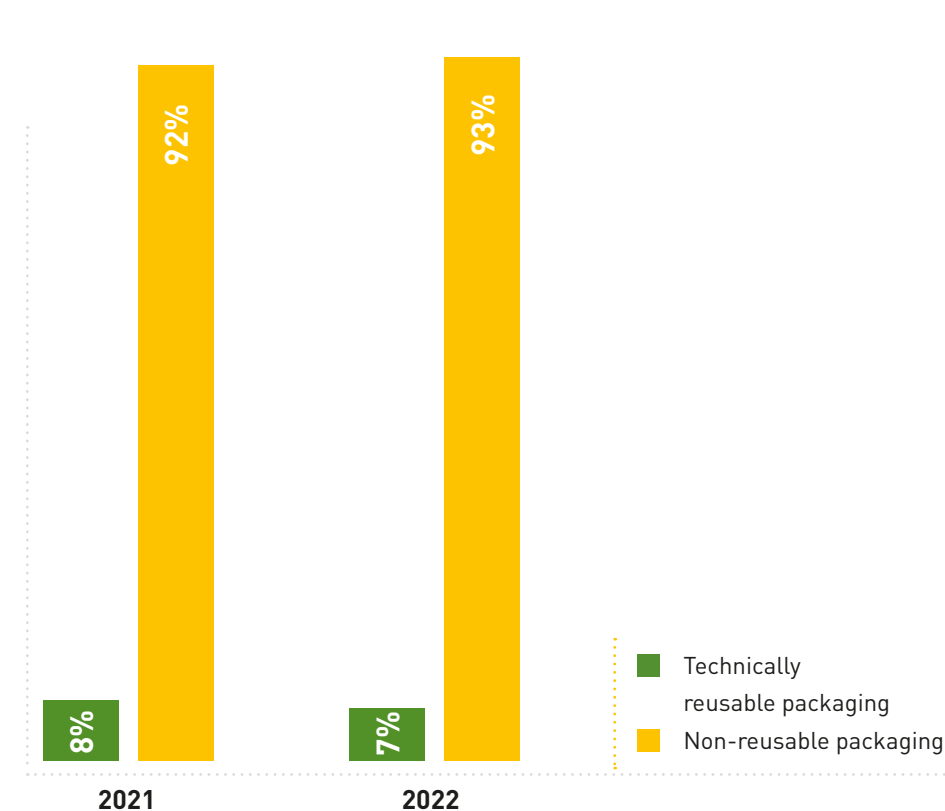
A distinction has been made between 'non-reusable packaging', 'technically reusable packaging' and 'packaging that is actually reused': packaging purchased for reuse.

Almost 4 million pcs of packaging distributed in 2022 are categorised as technically reusable, of which 1% is actually reused in LC Packaging's [WorldBag reuse programme](#) (representing 2% of turnover from technically reusable packaging).

> Distributed packaging that is reusable



> % of turnover from reusable packaging



d. Recyclable packaging

Explanation

Throughout the years, LC Packaging's definition of recyclable packaging has evolved multiple times, which explains the increase of non-recyclable packaging over the years.

For 2022 data, the strict classification from 2021 has been maintained.

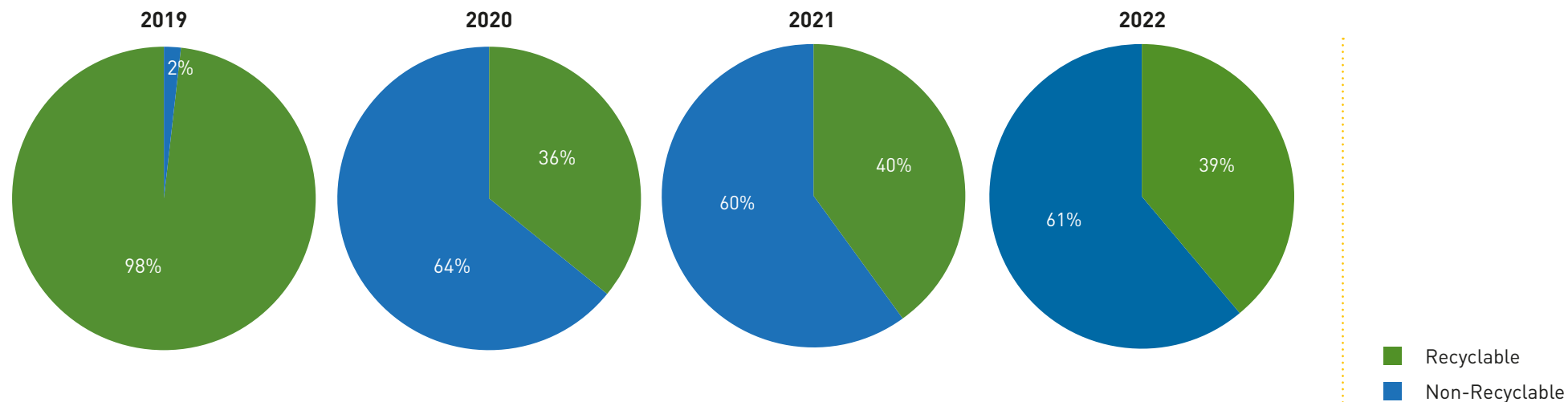
Evolution in recyclability classification:

- 2019: Almost all types of packaging were considered (theoretically) recyclable.
- 2020: The definition was adjusted based on knowledge gained through LC Packaging's partnership with resource management company Veolia.
- 2021: The classification became stricter based on a deep-dive analysis of our packaging portfolio in cooperation with the [Netherlands Institute for Sustainable Packaging \(KIDV\)](#).

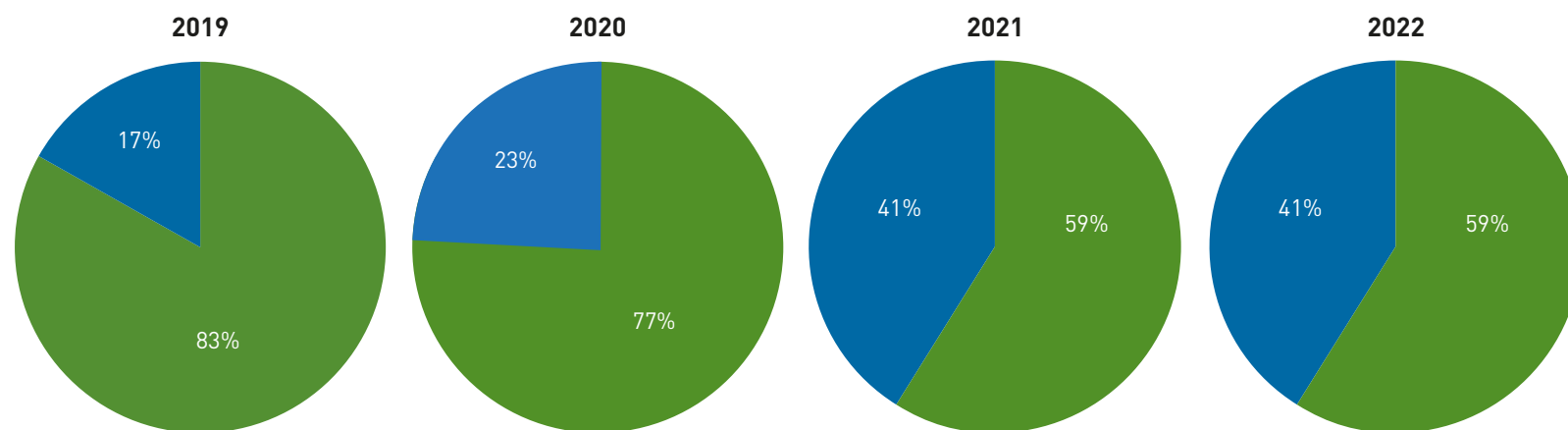
Today, packaging types that are considered recyclable are: Jute bags without a PP/PE strip, WPP bags without BOPP liners or other added materials, FIBCs Type A and B, without liners, and cardboard packaging without PE.

Packaging types for which LC Packaging has no knowledge whether it is actually recycled, and/or for which recycling is not a common market practice, for example, due to extra handling costs (costs vs benefits) or insufficient recycling infrastructure available on locations where the bag ends up after use, are categorised as 'non-recyclable' in this report.

> Distributed packaging that is recyclable



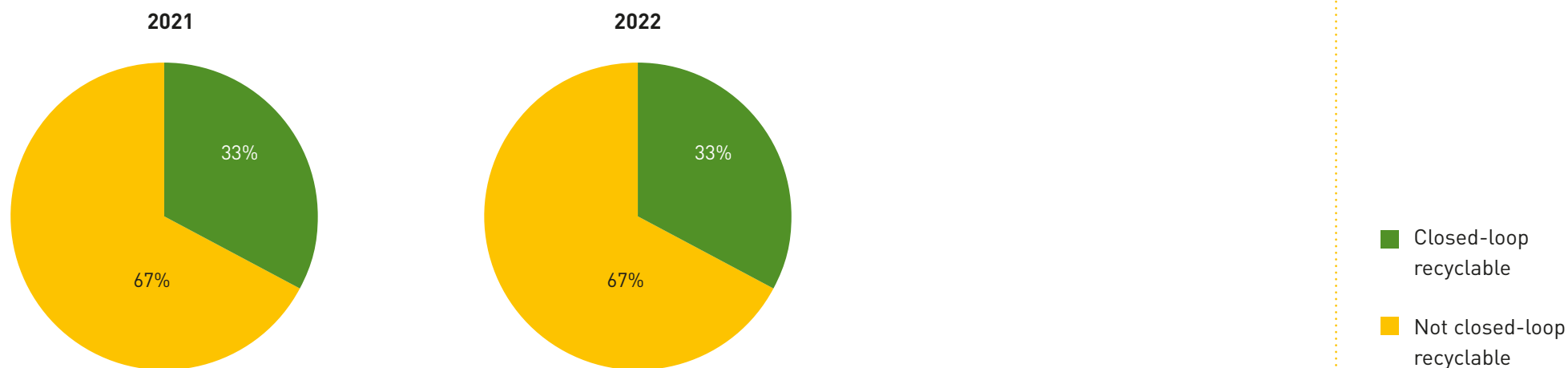
> % of turnover from recyclable packaging



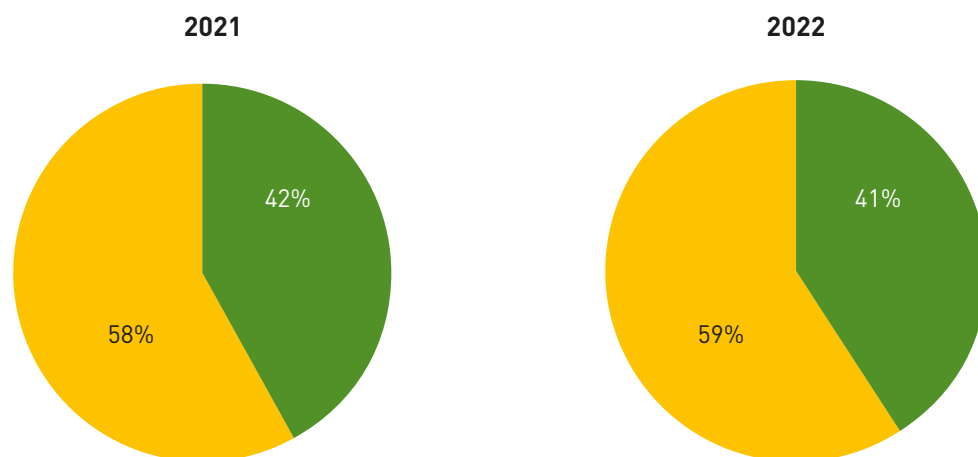
Closed-loop recyclable

For closed-loop recycling, the [Draft] EFIBCA/Euro Jute Design for Recycling Standard has been used for the classification of FIBCs (big bags) and WPP bags. Additionally, cardboard packaging that has been classified as 'recyclable' is also classified as 'closed-loop recyclable'.

> Distributed packaging that is closed-loop recyclable



> % of turnover from closed-loop recyclable packaging

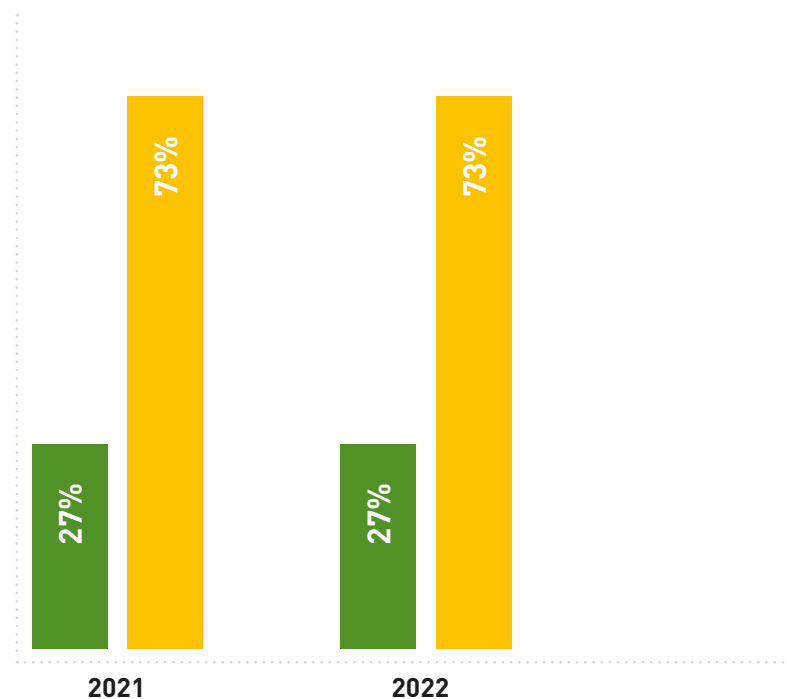


e. Compostable packaging

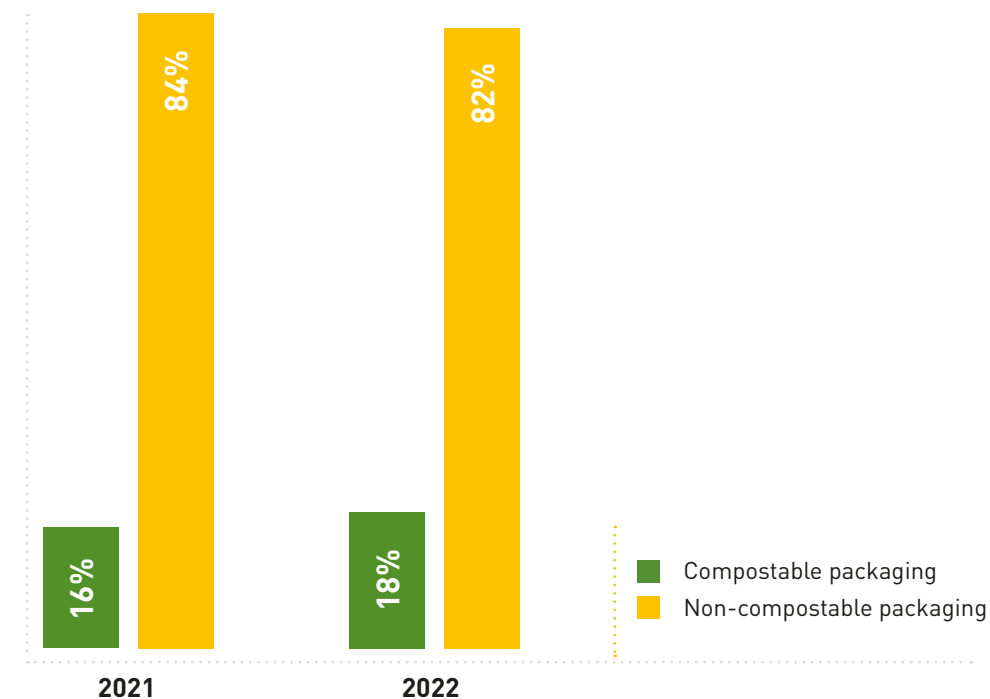
Explanation

In this report, home-compostable packaging is considered 'compostable', unlike industrial compostable. Plain jute bags and plain cardboard boxes are identified as home-compostable: made of components and materials that fully decompose into the soil.

> Distributed packaging that is compostable



> % of turnover from compostable packaging





worldwide

LC Packaging International BV

Otto Matseweg 9
2742 JW Waddinxveen
The Netherlands
+31 (0) 180 39 38 37

info@lcpackaging.com
www.lcpackaging.com



Our sustainability efforts have been rewarded with a Platinum CSR rating. We are among the top 1% assessed companies with the highest score.