



Livona
PRINT

**Environmental
Sustainability
Report 2021**

About Livonia Print

Our mission. Our team of motivated professionals puts the ideas of book publishers into practice, ensuring an efficient book production process, continuous improvement and taking care of the environment and society.

Our vision. To be one of the leading book producers in Europe, working on the principles of ethical trade and environmental sustainability, being respected and trusted by customers, suppliers and competitors.

Our fundamental values

Employees. We value the professionalism and competence of our employees. We support and invest in the long-term career development and well-being of our employees.

Communication. We believe in the timely and transparent exchange of information. We respect each individual and are open to any suggestion for finding the best solution.

The pursuit of excellence. Through continuous research and development, we strive to exceed the expectations of our stakeholders. We take a step further to add value to everything we do.

Responsibility. We do business responsibly towards our employees, society and our planet.

Team work. We are convinced that the best results can only be achieved by working as a team.

Livonia Print in 2021



105

Is the number 105 in the TOP 500 company list in Latvia (in 2020 – 126)



696

We worked with 696 customers from 23 countries



14 810

We processed 14 810 orders (in 2020 – 13 889)



47,4M

We produced 47,4 million copies of books (in 2020 – 41,3 M)

Dear All,

This report will look back at another challenging and successful year 2021. Although it did not free us from the pandemic, we invested our time and efforts in reorganization of our production, improved process flow and quality management which includes also quality of our environmental activities - environmental risk assessment, supplier evaluation, waste management, green book project promotion and becoming a Climate Neutral Company. We have fulfilled our 2021 targets and gone a step further in our goals for 2025. We are grateful to our employees, their families and our customers who have supported us in this process thus showing that all of us DO care about our planet.

The year 2022 has brought us new unexpected conditions - the war in Ukraine which will have a long and devastating impact on the environment - the shelling of industrial facilities with chemical and fuel spills, heavy metals, millions of tons of rubble which leads to contamination of land, water and air. Just recently the UN Environmental Assembly has raised concerns over the triple threat of the climate crisis on humanity, loss of biodiversity and pollution as the grimmest effects of the current war.

Our employees' children have shown their hopes and understanding of a clean Planet in their drawings. Let us put all our efforts together to fulfill our children's future with clear skies and peace over the land!

Yours sincerely
Janina Blūma
Deputy Managing Director



What are your eco-friendly habits?

Nora Pudriķe, bookbinding machine operator:

“Every day I save electricity and water, sort my waste and use public transport or ride my bike to get to work. I have LED light bulbs at home and I also grow some of my food.

I think that I have more work to do to become even more environmentally friendly. For example, I believe that I should work on reducing the amount of package waste by shopping in zero-waste stores or choosing goods with recyclable or reusable packaging”.

Laura Vidze, personnel specialist:

“I have bought a water purification filter for my home and I advise everyone to do the same! I do not need to buy still water in plastic bottles ever again”.

Mārtiņš Gailis, offset printing operator:

“Environmentally friendly habits I have are planning : my time and routes, saving resources, using LED light bulbs. And even something as simple but yet important as not disposing of chemicals in waste, but in the specially designated place or containers. I also like growing my food at home and using a reusable water bottle”.

Anete Arāja, office administrator:

“I choose to eat fewer or smaller portions of meat, especially red meat, which has the greatest environmental impact. I also try to choose fresh, seasonal produce that is grown locally to help to reduce the carbon emissions from transportation. But one of my latest achievements has become reducing and replacing plastic with more sustainable and environmentally friendly packaging.

What I suggest, and not just to others, but to myself as well, is to be more mindful of the repercussions of one’s own actions. And let’s just all agree that we must be thriftier with given resources (water, electricity, gas etc.) so the next generations could enjoy this planet as we do it now”.



Environmental targets set forth for year 2021

To switch to 100% green electricity

To reduce water consumption by 3%

To encourage our customers to use only Book Chain Project 3 or 5 star graded papers

To increase the number of "green" book projects

Use of water resources

By the end of the year, we managed to reach our target and even exceed it decreasing water consumption by 10% compared to 2020.

2020

14 455 m³

2021

13 072 m³ ↓



Use of electricity

Green electricity.

It is important to mention, that as of March 2021 Livonia Print has been using 100% green electricity, which means that it comes from renewable sources such as wind and hydro.

Comparing the overall data of the two previous years, electricity consumption in 2021 has increased by almost 15% and that can be explained by the 2 main reasons:

increase in turnover by 14%	17% more processed sheets of paper
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Electricity consumption

2020	2021
10 449 094 kWh	11 950 932 kWh

At the same time, we have managed to decrease electricity consumption per ton of produced books:

2020	2021
477,41 kWh/ton of produced books	458,99 kWh/ton of produced books

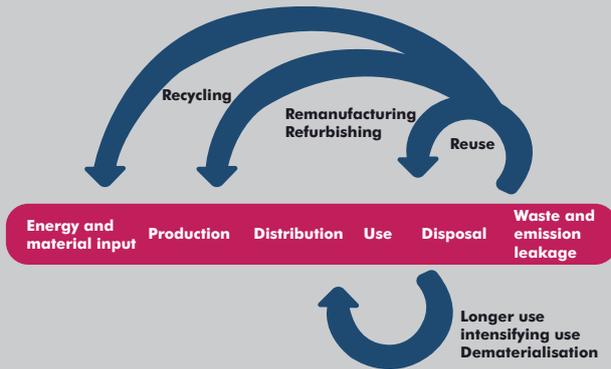
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Waste management

Circular economy
creates value from waste

Circular economy is a systemic approach, that involves leasing, sharing, repairing, reusing, refurbishing and recycling existing materials and products as long as possible. With circular economic activity, waste is reduced to a minimum because everything produced is used and transferred somewhere else.

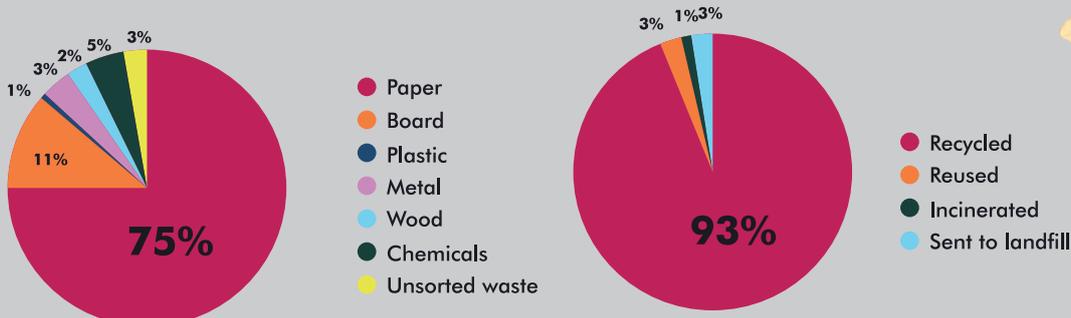


In 2021 our target was to make an assessment of our waste from the perspective of circular economy. We have identified all the waste groups that are generated in the company and have concluded that materials that are valuable as raw materials can still be found.

We have been sending all cardboard waste to recycling before, but as we focused on environmentally friendly plastic material alternatives in 2021, we found a company that was interested in cardboard reels from laminate and film rolls - cardboard waste that is of no use for us. Nonetheless, for this company, the reels are a raw material to wrap the produced film on.

In 2021 Livonia Print generated almost 9400 t of waste in total. Proportionally 93,65% of waste generated was recycled, 2,65% reused and only 3,70% - sent to the landfill or incinerated.

Total waste materials generated



Although the total amount of waste has increased by 13%, compared with 2020, we have managed to increase the amount of recycled waste:

2020

Waste recycled from the total 93,11%

2021

Waste recycled from the total 93,65%

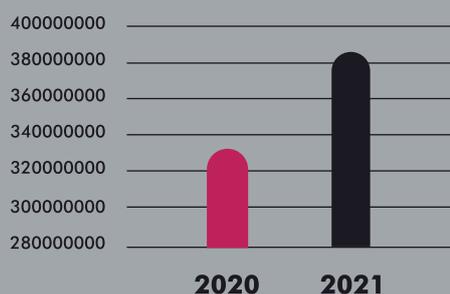
With the production growth the number of printed sheets increased by 17%, which means that the amount of generated paper waste has increased as well, however, it has only increased by 13%.

How that was achieved:

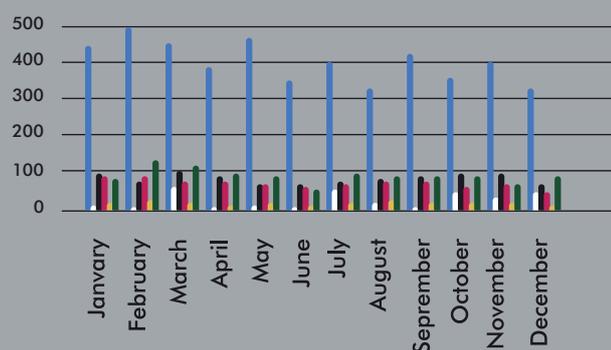
standardization of paper sheet sizes

optimized make-ready process

Number of printed sheets



Waste paper (t), 2021



5S and waste sorting

Implementation of 5S has improved our waste sorting system. Each type of waste has marked containers and their locations.

- Waste paper in press-station
- White paper
- Sheets on pallets
- Books
- Laminated paper
- Grey board



Green book projects

One of our targets for year 2021 was to increase the number of “green” book projects by 5%. Comparing 2021 data with 2020, the total number of projects has increased by 2,3%.

At the same time the 21% increase in the number of “green” book projects in 2021 shows our customers’ awareness of the importance to choose the right materials.

	2020	2021
Total projects	13 889	14 215
Green book projects	9 112	11 023
(FSC, PEFC, EU Ecolabel, Nordic Swan Ecolabel)	65%	77%



Printing Company
3041 0893



Promoting Sustainable
Forest Management
www.pefc.org



The mark of
responsible forestry

ClimateCalc

The Book Chain Project

PREPS paper list

The Book Chain Project exists to help publishers and book printing companies make informed buying decisions by tracking manufacturing processes and building supply chains. The Project is based on 3 perspectives - forest sourcing, chemicals and materials, labor and environment.

According to the Book Chain Project PREPS list, each paper mill's forest source is inspected and awarded a 1 to 5 stars rating.

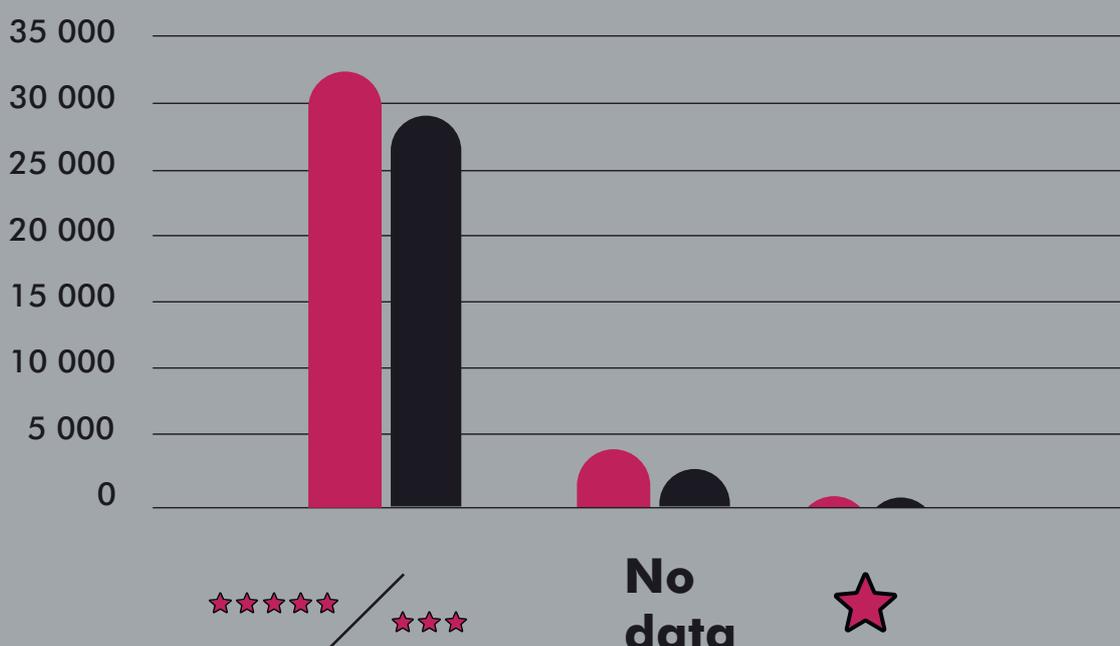
A 5-star rating means that the forest source is recycled or certified by FSC or PEFC.

3-star rating – forest source is known and responsible, for example, the forest is made up of 100% pre-consumer waste or is covered by a valid FSC Controlled Wood or PEFC Controlled Source license.

1-star rating – forest source is unknown or unwanted (the forest source is from a high risk or high trans-shipment risk country).

Last year Livonia Print set a target to use as much 3 or 5-star rated paper as possible. We have been offering our clients paper options that would suit their books best and be environmentally and socially acceptable at the same time.

In 2021, compared with 2020 our mutual efforts have resulted in 10% increase in 3 or 5-star rated paper consumption (t).



2021

2020

ClimateCalc in details

ClimateCalc is a calculation tool based on the European graphic industry standard for carbon calculation defined by the European graphic trade association Intergraf.

ClimateCalc calculation tool is in compliance with ISO 14064-1, ISO 16759 and the international Green House Gas Protocol. It includes 13 main parameters in any calculation of CO₂ emissions of a printing site or a printed product.

According to the GHG Protocol the emissions of greenhouse gas must be divided into three scopes:

Scope 1

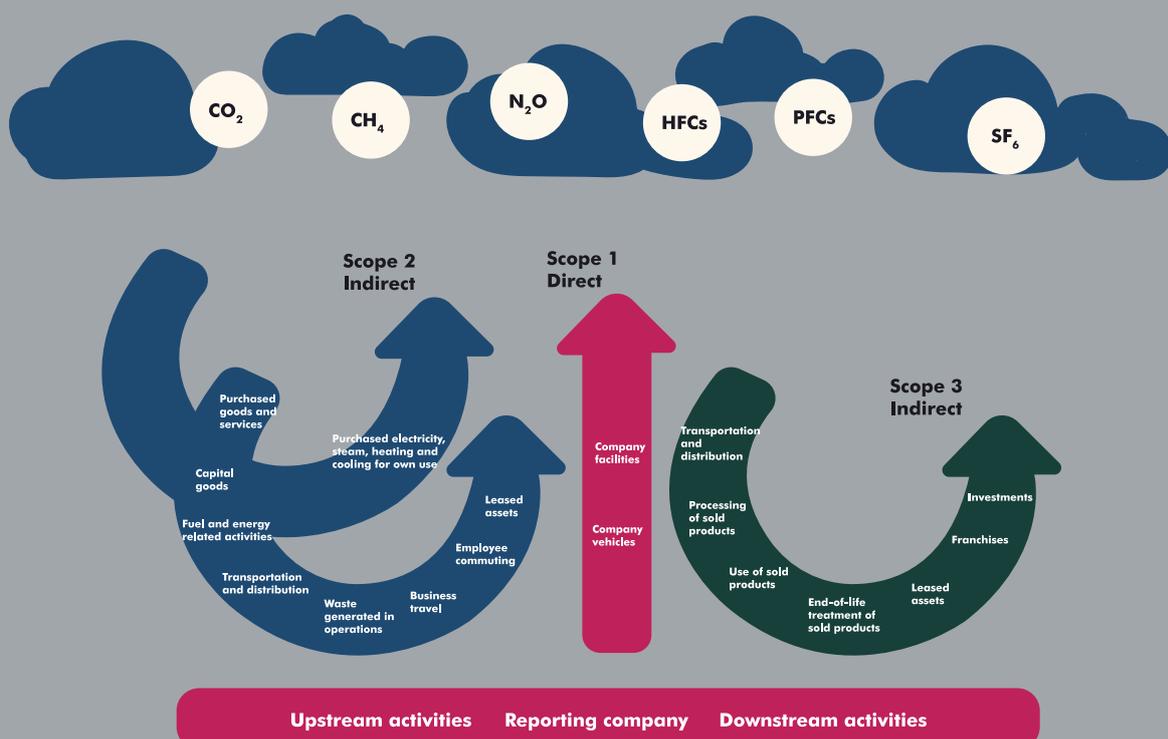
Direct emissions of greenhouse gases from the company (e.g., burning of oil or gas in own boilers or vehicles).

Scope 2

Indirect emissions of greenhouse gases from production of purchased energy such as electricity and district heating.

Scope 3

Other indirect emissions of greenhouse gases (e.g., from production of raw materials, purchased (outsourced) transportation services, and the employees' commuting to and from work).



Overview of GHG Protocol scopes and emissions across the value chain
(Source: Corporate Value Chain (Scope 3) Accounting and Reporting Standard)

ClimateCalc at Livonia Print

According to ClimateCalc calculation for the whole company, with the accounting period 01.01.2021 – 31.12.2021, our total CO₂ emissions from economic activities are 49 718 t CO₂ eq.

In 2021 we had more than 200 CO₂ calculation requests from our customers for specific book projects and part of them have been compensated thus becoming climate compensated products.

Company:	LIVONIA PRINT	Accounting period:	01-01-2021 - 31-12-2021	
Address:	Jurkalnes iela 15/25	Basic year:	2018	
City:	LV-1046 RIGA	Responsible for the account:	Zane OZOLA	
Country:	LATVIA	Certificate number:	CC-000090/LV	
The account includes:	Sheetfed/ Web heatset/ Digital Printing			
Total quantity of delivered printed matters:	27563 t	Waste paper:	23%	
Total emissions of greenhouse gases (Scope 1+2+3):	49718 t CO ₂ eq	Key figures:	1804 kg CO ₂ eq/t	
Total energy consumption (Scope 1+2):	67091 GJ	Key figures:	2434 MJ/t	
Emissions from activities				
	Company related	Product related	Total emissions	
Burning of fuel in stationary burning units at the company	1290 t CO ₂ eq		1290 t CO ₂ eq	3%
Burning of fuel in own or leased vehicles	35 t CO ₂ eq	5	41 t CO ₂ eq	0%
Direct emissions (Scope 1)	1325 t CO₂ eq	5 t CO₂ eq	1331 t CO₂ eq	3%
Purchase of electricity	2091 t CO ₂ eq		2091 t CO ₂ eq	4%
Purchase of district heating	0 t CO ₂ eq		0 t CO ₂ eq	0%
Energy indirect emissions (Scope 2)	2091 t CO₂ eq		2091 t CO₂ eq	4%
Production of paper and other substrate		25797 t CO ₂ eq	25797 t CO ₂ eq	52%
Transportation of paper and other substrate (incl. upstream)		3532 t CO ₂ eq	3532 t CO ₂ eq	7%
Production of printing ink and varnish		1133 t CO ₂ eq	1133 t CO ₂ eq	2%
Production of PE- and cardboard packing		181 t CO ₂ eq	181 t CO ₂ eq	0%
Transportation of products to and from subsupplier		0 t CO ₂ eq	0 t CO ₂ eq	0%
Transportation of products to the customer		11254 t CO ₂ eq	11254 t CO ₂ eq	23%
Production of fountain solution and cleaning agents	85 t CO ₂ eq		85 t CO ₂ eq	0%
Production of plates and cylinders	3603 t CO ₂ eq		3603 t CO ₂ eq	7%
Employee's commuting to and from work (incl. upstream)	393 t CO ₂ eq		393 t CO ₂ eq	1%
Emissions from production of purchased fuel	317 t CO ₂ eq	1 t CO ₂ eq	318 t CO ₂ eq	1%
Other indirect emissions (Scope 3)	4398 t CO₂ eq	41899 t CO₂ eq	46296 t CO₂ eq	93%
Total (Scope 1+ 2+3)	7814 t CO₂ eq	41904 t CO₂ eq	49718 t CO₂ eq	100%



Becoming a Climate Neutral Company

In 2021 we took an important step towards mitigating climate change by becoming climate neutral company in accordance with PAS 2060.

What is climate neutrality? Our planet has a natural balance between emitting carbon and absorbing it from the atmosphere in carbon sinks - systems that absorb more carbon than

they emit (forests, soil, oceans). Human activities have disturbed this balance and excess CO₂ is added to the atmosphere faster than the planet can absorb and store it.

Along with the planet's natural processes, there is another way to pursue carbon neutrality – offset emissions that are made in one sector by reducing them somewhere else.

Measure. Livonia Print has made a complete inventory of its greenhouse gas emissions and has measured and reported emissions according to the Greenhouse Gas Protocol.

In 2020, which is our base year, we have emitted 47 291 metric tons of carbon dioxide equivalent (t CO₂ eq). This calculation includes Scope 1, 2 and 3 emissions meaning that we measure carbon impact of books from the moment they are produced to the moment they enter the client's warehouse.

Reduce. Regarding climate issues, our goal was to go further, therefore we have taken steps to become a climate-neutral company in accordance with PAS 2060.

PAS 2060 has been developed by the British Standards Institute and is currently the strictest and most comprehensive standard for climate neutrality. We have set ambitious climate targets in line with Science-Based Targets and developed an emission reduction plan. For example, one of the largest emission sources in the base year 2020 for our company was electricity purchase in Scope 2 (3 408 t CO₂ eq).

We have also taken several key actions to reduce our emissions, most notably in March 2021 when Livonia Print switched to 100% renewable electricity.

Offset. While not all emissions can be avoided completely yet, in addition to reductions, we aim to balance the rest of our emissions, therefore carbon offsetting is one of the steps we take. We are investing in certified and third-party verified emission reduction projects in cooperation with South Pole – the world's leading developer of projects for voluntary carbon offsetting.

Our current offsetting portfolio focuses on the transition of renewable energy in developing countries, where carbon reductions are easier and more cost-efficient to achieve than in Europe. The offsetting is being done through the UN registered CDM project Nam Chien Hydropower in Vietnam and the Gold Standard registered project Prony Windfarm in New Caledonia.



Prony Windfarm in New Caledonia

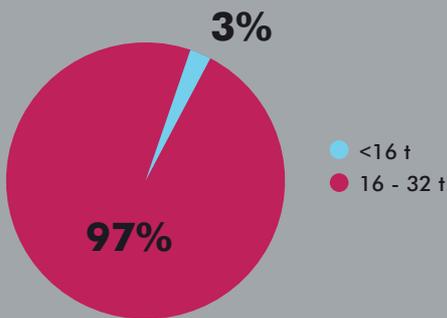


Nam Chien Hydropower in Vietnam

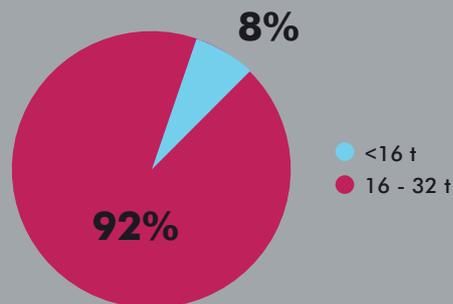
CO₂ emissions and transport

Transport accounts for the second largest share of total CO₂ emissions in Livonia Print. 92% of all our produced books have been transported in trucks with load weight category > 16 tons and that is 8,9% more in t than in 2020. The smaller capacity truck section also shows changes due to the fact that the last year we have transported almost 3 times more books in t comparing with 2020. Moreover, the distribution has changed due to the extended list of delivery countries.

Yearly amount of transported products (2020)



Yearly amount of transported products (2021)

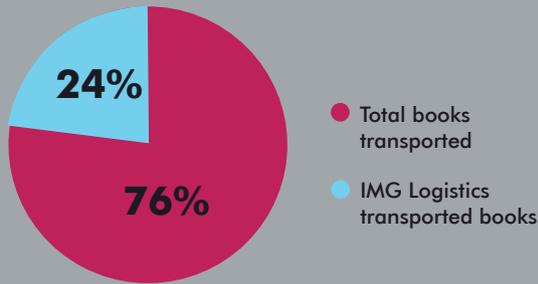


Case study – “To be the best today and better tomorrow”

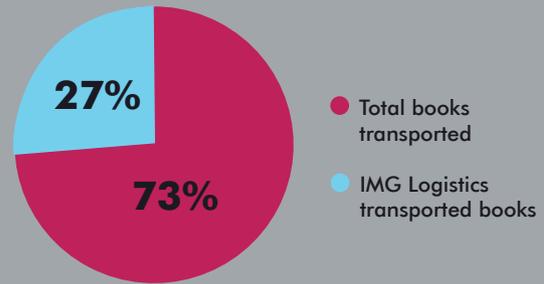
Last year we started to investigate our logistics cooperation partners and their performance on environmental issues in more details. In the last year’s environmental report, we took a closer look at IMG Logistics - a company, that has developed a greener concept of logistics. In order to be able to assess the change in the data over a two-year period, the performance of the same logistics partner is also reviewed in 2021.

From the total amount of transported books in 2021, IMG Logistics transported 27% in trucks with load weight category 16-32 tons.

Transported books in 2020



Transported books in 2021



According to IMG Logistics data, in 2021 9 780 939 kg of Livonia Print manufactured books or 20 589 pallets were transported to different destinations that is around 28% more than in 2020. For book deliveries 21 750 L of Neste MY Renewable Diesel was used that led to 60 t CO₂ eq emission reduction. It is important to highlight that thoughtful equipment and route planning efficiency has also given a result - 340 t CO₂ eq emission saving - 68% more than in 2020.

Description	2020	2021
Total number of pallets	16 407	20 589
Total brutto weight	7 632 258 kg	9 780 939 kg
Neste MY Renewable Diesel	19 500 L -> 53 t of CO ₂ emission reduction	21 750 L -> 60 t of CO ₂ emission reduction

Choose the most sustainable printing technology

There are various options when it comes to choosing the printing method for your order. And while both - offset and digital printing are practically equivalent in the printing quality, from the sustainability point of view each method can be more suitable for a specific book project.

Offset printing is considered a traditional printing method that has been around for more than a century. It is a reliable process that provides the best image quality and allows using a wider variety of inks and papers.

This printing method is perfect for high volume print jobs:

cost-effectiveness

highest possible printing quality

Pantone or Metallic inks

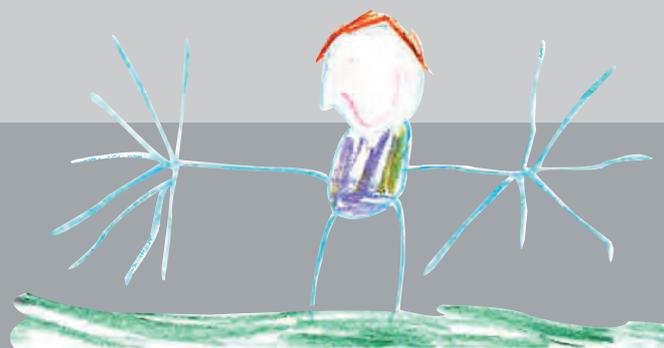
Digital printing has been a new and innovative printing technology in the printing industry for several years. This technology has developed rapidly over the last two years and is now practically equivalent to offset printing quality. Significant improvements have been made not only in the areas of production productivity and cost-effectiveness but also in terms of environmental protection and sustainability.

The concept of digital printing offers several ways to reduce the environmental impact of production, especially for low volume print jobs:

fewer chemicals are used in the process due to no need for aluminium plates

customization options – each piece can be unique

little to no paper waste due to no need for using make-ready sheets



Despite different printing methods, **Livonia Print offers the same finishing and binding solutions for all books, according to customers' creative wishes and needs.**

	Offset printing	Digital printing
Aluminium plates	X	
Water-based inks		X
Vegetable oil-based or UV inks	X	
Make-ready sheets	X	
Use of water	X	
Use of solvents for cleaning and maintenance	X	
Use of anti-set-off powder	X	
Ink residues	X	
Low paper waste		X
Short production time		X
No drying time required – can be passed on to next production process immediately	X*	X
Materials compliance with REACH Regulation and Safety of Toys	X	X

* LED and UV



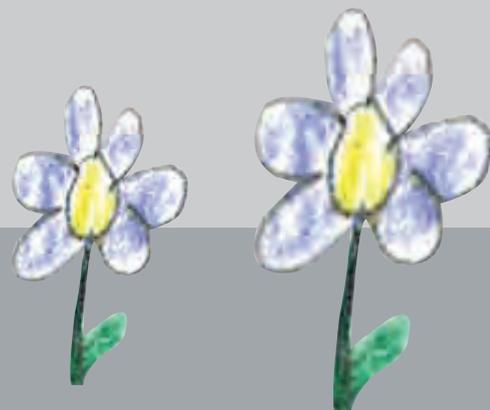
We have performed theoretical CO₂ emission calculations to show how the number of book copies influences the emissions for offset and digital printing:

	Number of copies	Number of pages	Content pages	Ink	Delivery address	Total CO ₂ emissions, t
Sheet-fed offset	500	256	Matt coated	Vegetable oil-based	Falun, Sweden	2.442
	1000					3.847
	5000					15.09
Inkjet sheet-fed	500	256	Matt coated	Water-based	Falun, Sweden	1.435
	1000					2.821

	Number of copies	Number of pages	Content pages	Ink	Delivery address	Total CO ₂ emissions, t
Web-fed offset	500	480	Uncoated cream	Vegetable oil-based	Falun, Sweden	0.504
	1000					0.809
	2000					1.416
Inkjet web feed	500	480	Uncoated cream	Water-based	Falun, Sweden	0.406
	1000					0.737
	2000					1.400

As can be observed from the data, if the project is low volume, digital printing produces less carbon dioxide. However, CO₂ emissions for offset printing do not grow at the same rate as the number of copies - this means, that even if offset printing is not sustainable for low volume print jobs, it proves to be more efficient and environmentally friendly as the volume increases.

The data shows that there is indeed a difference in carbon emissions between the two methods, and one proves to be more sustainable than another depending on the number of printed book copies. This is why it is very important to choose the most appropriate printing method to minimize the impact on the environment, so we evaluate each project and advise our customers on the best printing option for the desired purposes.



Livonia Print sustainability goals to be achieved by 2025

2020 taken as base year

Waste	Unsorted waste amount reduction	20%	↓
Recycling	Recyclable waste amount	10%	↑
Water	Water consumption	25%	↓
GHG's	Absolute Scope 1 and 2 GHG emissions	21%	↓
	Scope 3 GHG emissions per ton of produced books	30,4%	↓
Energy	Energy consumption per ton of produced books	10%	↓

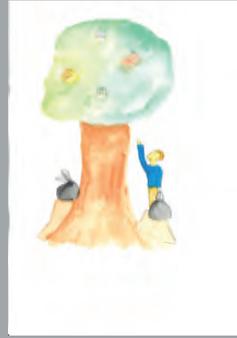




Estere Kobzeva, 12 y



Ralfs Reigass, 11 y



Hanna Ludriksone
Matisone, 11 y



Nelliņa Kobzeva, 6 y



Estere Kapteine, 8 y



Kārlis Mackēvičš, 5 y



Monta Strautmane, 6 y



Emilija Ķelle, 6 y



Emilija Gaile, 5 y



Reinis Kapteinis, 4 y



Toms Balodis, 4 y



Emīls Balodis, 9 y



Marta Ķelle, 3 y



Luīze Tērnere, 11 y

**APRIL 27TH, 2022. REPORT MADE BY : SIA "LIVONIA PRINT"
ENVIRONMENTAL MANAGER : ZANE OZOLA.
DESIGN : BEATRICE LASMANE.**

WE THANK OUR CHILDREN FOR THE MOST BEAUTIFUL DRAWINGS.