



CANON PRODUCTION PRINTING A SUSTAINABLE PARTNER

Canon

CANON A **SUSTAINABLE** PARTNER

At Canon, we operate according to the philosophy of Kyosei – a Japanese word that means **‘living and working together for the common good’**. This philosophy shapes everything we do as a business and underpins our vision for Sustainability in Europe, Middle East and Africa (EMEA), which is to ‘grow the positive power of our imaging technology and services’. We passionately believe in the benefits Canon, its people, products and services can bring to our customers and wider society. Ensuring we continue to deliver these benefits is critical to our vision.



Our environmental commitment

In line with the Kyosei philosophy, we strive to do business while respecting planetary boundaries. We aim to create positive social change and minimize our impact on the environment in our operations including by providing innovative products and services to our customers.

LIVING AND WORKING TOGETHER FOR THE COMMON GOOD INTO THE FUTURE

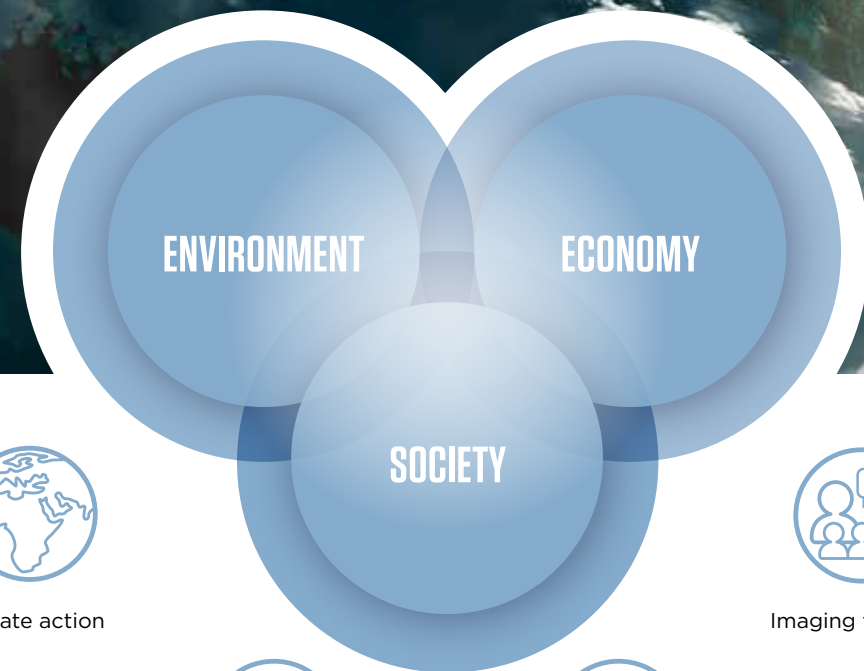
We accelerate our focus on sustainability



Product safety, chemicals & environment



Circular economy



Climate action



Imaging for good



Human rights



Diversity

Sustainability goals at Canon Production Printing

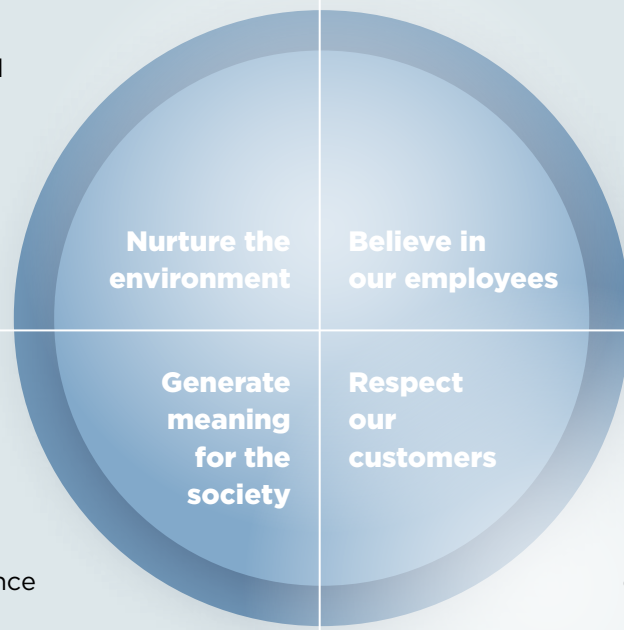
- **Zero non-compliance and non-conformities** on sustainability regulation and certification
- 100 % of suppliers surveyed on **sustainability performance**
- Establishment of the **circular economy**
- Recognized as the leading provider of **creative learning** in our sector (by 2025)
- Achieve a balanced **representation of females** in roles at each level
- **Generational thinking** incorporated into key decision-making groups

REACHING OUR SUSTAINABILITY GOALS

Key strategies

We conserve energy and resources, adhere to professional standards as applicable in our industry, we preserve biodiversity.

We support educational, cultural, charitable and local community programs. We pursue responsible procurement in compliance with legislation.



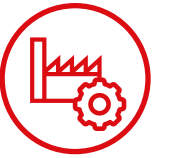
We cherish our employees in being our key asset. We support employees in developing their skills and competences. We promote employee health.

We respect our customers' wishes with a keen eye on future generations. We create customer awareness on circular economy and design sustainable products.



Optimized production

- Cost-effective production of short and medium runs
- Reduction of waste and inventories
- Fewer/no overruns
- Potential for higher utilization
- Process automation
- Faster campaign execution



Lean supply chains

- Fewer supply chain steps
- Late stage customization or changes
- Reduced turn-around times
- Production close to demand
- Application diversity



Environmental benefits of Canon production inkjet technology

Our product sustainability efforts begin in the product development stage, where we strive to create cutting-edge products that exceed our customer's needs and utilize a greater amount of sustainable and/or recycled materials in our products and services.

Beyond design, we strive to protect the environment throughout the remainder of a product's life cycle, utilizing energy-efficient manufacturing processes, developing energy-efficient products and eliminating hazardous substances from our products and services wherever possible.

The statements on environmental benefits of Canon's production inkjet technology are based on the following Canon Production Printing (CPP) sheet- and web-fed inkjet presses; **varioPRINT iX-series, ColorStream series and ProStream series.**



Digital Production Printing - Impact on the environment

Digital production printing offers many possibilities to reduce the impact of printing on the environment such as:



Direct imaging

- Less waste, maculation and obsolescence
- No need for printing plates, forms and chemicals
- Generally good de-inkability
- Fewer errors with digital workflows and proofing



Sustainable business models

- Short runs - smaller production batches matched to actual demand, print only what's needed
- On demand - first sell then print
- Dynamic - targeted content and distribution - lower page counts
- Programmatic print



INKJET TECHNOLOGY



Ultra-long life of piezo print head technology

Print heads in Canon's sheet and web-fed presses are built to last. With a lifetime of thousands of hours they have to be replaced only rarely and after years of use. The interdependency of Canon-developed inks with Kyocera print head technology minimizes maintenance cost and contributes to the stunning lifetime of the heads.



De-inkability

All CPP pigment inks contain no dyes as colorants and therefore show good deinking properties according to INGEDE method 11 when combined with appropriate substrates.



Low emissions

Water-based inkjet technologies generate no ozone, and due to air extraction systems and use of high boiling point co-solvents there is no significant exposure to the printer workplace.



Environmentally friendly water-based inks

The inks used in Canon's inkjet presses are developed and manufactured by Canon in Europe, adhering to stringent internal policies regarding their ingredients. They are water-based, emit low odours, do not carry any SVHC substances (substances of very high concern) and are free of mineral oil, aromatic hydrocarbon (MOAH) and saturated hydrocarbons (MOSH). All CPP water-based pigment inks (process colours) are listed in the Nordic Swan database of approved printing chemicals.



Responsible management of volatile organic compounds (VOCs)

Volatile organic compounds are human-made chemicals used and produced in the manufacture of paints, pharmaceuticals and refrigerants. Some VOCs may have adverse health effects. At Canon, we ensure the VOC emissions of our products remain well below levels allowed by governmental guidelines. For instance, inks used in the varioPRINT iX-series contain no VOCs, and the VOC level in the ColorGrip inline paper conditioning is far below permissible thresholds. Thanks to the very low temperature of the varioPRINT iX drying technology, ColorGrip VOC particles that enter the paper fibres are not released into the air. Accordingly, no exhaust air cleaning is required.

Alternatively, the ProStream press uses innovative Canon technology to eliminate VOC emissions. ProStream inks contain minute levels of VOCs, but these are removed using Canon's integrated exhaust air cleaning. Even when running jobs with the highest ink coverage, VOC emissions are negligible and well within health and safety guidelines.



Energy consumption

Canon's inkjet presses are designed for heavy duty 24/7 operations, featuring a low energy consumption per printed page. As the low energy consumption per printed page meets the Nordic Swan requirements, some of our customers are certified with Nordic Swan Ecolabel 041.



Minimal waste

Digital printing minimizes the carbon foot print. Its on-demand production process reduces paper waste and obsolescence. Digital does not need pre-RIP, printing plates and chemicals. Print life cycle management can further reduce the eco-foot-print by only printing what is sold without any obsolete prints.



Production automation

Automated processes are crucial for efficient and secure document production. PRISMAproduction offers a powerful graphical user interface for the design of sophisticated production workflows. Flexible production streams tailored to customer environments and integrated finishing solutions maximize output and minimize the carbon footprint.



Upgradeability and system lifetime

Longevity in the DNA of Canon's production inkjet technology. Upgradability of new features and speed enhancements within a series are a design principle. The result: all of our web-fed inkjet presses installed since 2008 are still in the market.



High uptime and productivity

Canon's inkjet presses are built to last. Their industrial scale design for 24/7 operation minimizes down times. Preventive maintenance concepts further maximize uptime and productivity. Customers on our most productive presses allocate up to 10 million impressions per week.



Refurbishment & recycling

Our intention is to maximize the economic life of our inkjet presses. As a result, Canon inkjet presses have a high refurbishment rate. Many installations have a second life after undergoing a refurbishment process either locally or centrally at the Canon Production Printing manufacturing hubs in Venlo (The Netherlands) and Poing (Germany). At least 80% of the parts in the presses can be recycled within industry standard recycling processes.

iX

VARIOPRINT IX-SERIES



- Compliant with the European Union's Restriction of Hazardous Substances (RoHS) directive
- No Volatile Organic Compounds (VOC) in the iX ink, very small below threshold VOCs in ColorGrip. Thanks to very low temperatures in the drying technology, particles enter the fibres and do not exhaust into the air. Hence, no integrated exhaust air cleaning needed.
- Print only what you need thanks to flexible sheetfed printing. Eliminate printing excess since prints in low

- quantities can be produced efficiently and cost-effectively
- Ability to print on a variety of recycled papers at ranges up to 100 percent PCW.
- Uses less power per A4 image than many B3 toner presses on the market.
- Releases zero ozone emissions for a friendly working environment.
- Uses water-based inks for odourless prints and no hazardous disposals for minimal environment impact – indoors and outdoors.

- No specific papers needed for good results – locally produced papers can be used to reduce environmental impact from transport
- Economic ink usage based on output profile settings
- Paper products printed with a VarioPrint iX typically achieve deinkability scores in the best category called “good deinkability” according to the European Paper Recycling Council (EPRC) Deinkability Score.

- Compliant with the European Union's Restriction of Hazardous Substances (RoHS) directive
- Lower power consumption compared to other vendors
- Ability to print on speed ramps to help reduce or eliminate paper waste while press ramps up to full speed

- Waste-free Print Pause feature helps reduce paper waste if printing operation needs to be paused in mid-print run
- Dryer operation at ideal temperatures, preventing unnecessary energy consumption
- Economic ink usage based on output profile settings



COLORSTREAM FAMILY



PROSTREAM SERIES



- Compliant with the European Union's Restriction of Hazardous Substances (RoHS) directive
- Exhaust air cleaning system to reduce VOC emissions, even with highest ink coverages.
- Power consumption per A4 is comparable or lower to other digital web-fed solutions
- Automatic sensor control keeps the dryer operating at ideal temperatures, preventing unnecessary energy consumption
- Ability to print on a variety of recycled papers at ranges up to 100 percent PCW.

- Economic ink usage based on output profile settings
- No specific papers needed for good results – locally produced papers can be used to reduce environmental impact from transport
- Paper products printed with a ProStream typically achieve deinkability scores in the best category called “good deinkability” according to the European Paper Recycling Council (EPRC) Deinkability Score.



VARIOSTREAM 4000 SERIES



- Compliant with the European Union's Restriction of Hazardous Substances (RoHS) directive
- One of the most effective printers in its class with more than 90% of the toner ending up where it is supposed to be – on the printed page
- The dry toner technology is known for a very low paper waste. The VarioStream 4000 takes the consumption one step further, being able to print on the first page without any waste during job adjustments
- State-of-the-art paper handling and toner transfer system enable printing on recycled papers up to 100 percent PCW
- Empty toner bottles are being reused to collect waste toner and developer. The bottles are coded for recycling and can be recycled at local facilities
- Dry toner doesn't penetrate deeply into the paper fibres, which makes it highly deinkable, thus achieving maximum recyclability



THE RIGHT SOLUTION FOR EVERY BUSINESS CASE



	varioPRINT iX-series	ColorStream family	ProStream series	VarioStream series
Technology	Inkjet	Inkjet	Inkjet	Toner
Print volume*	1-10 million DINA4	5-70 million DINA4	5-58 million DINA4	1-36 million DINA4
Media	Sheetfed flexibility on uncoated and coated media	Efficient versatility for sustainable production on uncoated media	Superior print quality and media choice	Efficient monochrome production on a wide range of media
Transaction	+	+		+
User Instructions	-	+	-	-
Direct mail	+	+	+	+
Books	+	+	+	+
Collaterals	+		+	
Catalogues	+	+	+	
Magazines	+		+	

*Monthly print volume

⊕ very suitable ⊖ suitable



In autumn 2019, Canon Production Printing Germany installed 4,842 solar modules on the roofs of their manufacturing plant. A total area of 32,500 square meters has been installed to support the Canon sustainability targets to further reduce carbon emissions by using renewable resources.

Canon Production Printing Germany is home to the R&D and manufacturing facilities for Canon web-fed inkjet and toner presses.

Image © StMWi/E. Neureuther:
Solar panels on the roof of the
Canon Production Printing
Germany manufacturing facility





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