



BALANCING VARIABLE CODING COMPLIANCE AND SUSTAINABILITY: STRATEGIES FOR ENVIRONMENTALLY CONSCIOUS MANUFACTURERS

GLOBAL WARMING, ENVIRONMENTAL ISSUES AND RESOURCE SUSTAINABILITY ARE ALL HEADLINE NEWS. As a result, socially and environmentally conscious customer spending behavior is now the standard and is projected to increase.¹ Customers in the US and across the globe are challenging manufacturers to prove their commitment to a safer environment and good resource stewardship. In addition, customers' brand loyalty and new regulations like the European Green Deal's Circular Economy Action Plan aim to make sustainable products the norm.

To meet these demands, companies must evaluate their operating practices while implementing sustainable solutions and practices. Advanced recycling options, bioplastic packaging and new packaging materials made from paper or food waste are some of the alternatives being considered by manufacturers. Packaging may need to shift towards reusable or refillable options to align with sustainability objectives.²

1 Shelton Group (2017) *Eco Pulse*® report (as cited in L'Officiel et al, 2018) <https://www.lofficielusa.com/wellness/millennials-more-likely-to-shop-eco-friendly-new-study-finds>

2 Packaging Digest (2023) *A Packaging Review of the Global Commitment 2022 Report*. <https://www.packagingdigest.com/sustainability/packaging-review-global-commitment-2022-report>



Large global companies are publicly marketing their environmental commitment and taking required steps towards higher environmental standards. Their efforts to reduce greenhouse gas emissions, total energy and waste usages while switching to recycled materials are now published.³

However, despite the focus on sustainability, basic packaging compliance requirements for adding variable information to products remain unchanged. Manufacturers are still required to apply lot codes, batch information and date codes onto products. For primary product marking, that means small character coding. Continuous ink jet (CIJ) technology is the preferred choice for high-speed production lines when it comes to variable coding.

Although date codes and batch codes are necessary for compliance, they are often seen as adding no value to the product; instead, they are considered a cost of doing business and so companies utilizing CIJ coding strive to keep their cost per mark as low as possible. CIJ technology typically uses solvent-based inks to create lasting marks on a variety of substrates including plastics, films, foils and papers. These inks are highly flammable and release volatile organic compounds (VOCs) into the air, raising environmental concerns. While water-based inks are more environmentally friendly, they struggle to produce the clear, durable marks on non-porous substrates, leading companies to sacrifice production efficiency for sustainability. Although some water-based inks may adhere onto packaging materials, the longer drying times (minutes compared to milliseconds) cause interruptions in high-speed production.

As manufacturers seek to reconcile their coding requirements with corporate sustainability mandates, several strategies can be employed to address these challenges:

SIMPLIFY YOUR CONSUMABLES SUPPLY WITH BLANKET ORDERS

Consider leveraging blanket orders on consumables to take advantage of lean stocking and discounts. By understanding your company's production output over a year, CIJ suppliers can extend discounts on fluids, making it easier to manage inventory burdens and maintain consistent costs throughout the year. Blanket orders also improve supply efficiencies for both you and your supplier, reducing the likelihood of extended lead times or supply issues.

REDUCE UNPLANNED DOWNTIME

Apart from tracking ink and solvent spend, companies should also consider the hidden costs of unplanned downtime and servicing. By factoring in engineering/technical service labor, travel time and lost production time, companies can better assess their overall spend. In addition, CIJ companies are shifting towards filtration modules that can be changed out by the customer, reducing the need for factory-trained technicians to service the systems. Scheduled maintenance can be performed during downtime, minimizing interruptions in production.

3 ITW (2022) *Sustainability Report*. https://www.itw.com/media/g43hzfpx/itw_2022sustainabilityreport_final.pdf



LOOK FOR FEATURES THAT ACTUALLY BENEFIT YOU

With sustainability covering various subjects, it's crucial to scrutinize a supplier's sustainability message carefully. Some marketing claims might be misleading, as seen with a recent example of a CIJ company promoting a new hybrid printer with simplified fleet management due to one printer printing both dye type and pigmented inks. However, there is no real benefit to a customer printing with dye type and pigmented inks. While it is possible to switch from dye type to pigmented inks in a single printer by replacing filters and flushing the printers (adding costs and downtime), the printers cannot print either dye OR pigmented inks once commissioned. Redesigning ink circuits reduces the CIJ manufacturers' costs but does not result in lower costs for their end users.

PAY MORE AT THE FRONT END TO SAVE ON CONSUMABLES AT THE BACK END

Many CIJ printers offer optional hardware kits that essentially capture solvent fumes and revert the fumes back to a liquid state for use in the printer. This hardware is not free and is added to the printer cost. Calculating the overall cost per mark reduction by including the hardware upfront cost is exceedingly difficult as variables include costs of solvent, temperatures that impact the solvent evaporation rate and overall run time of printing. You may not get the same solvent savings rate with two printers over the same time period in the same plant but in different locations. Even without hard savings numbers, you should consider a printer upgrade that reduces solvent usage in the long run.

BE SURE TO HAVE SAMPLES PRINTED WHEN YOU CHANGE YOUR SUBSTRATE

Before implementing changes in materials to support sustainability initiatives, it's imperative to test coding processes on new substrates. This ensures that the chosen materials work well with the coding ink or method of marking and allows manufacturers to build any additional costs into corporate sustainability projects.



CONCLUSION

To meet the challenges of reconciling variable coding compliance with sustainability mandates, it is vital to find a marking and coding supplier that not only improves your operational efficiencies but also shares your commitment to sustainability. By exploring various strategies, such as simplifying consumables supply, reducing downtime, evaluating features, investing in upgrades and testing new substrates, companies can align their coding requirements with their environmental goals.

Contact us today to learn how the Linx 8900 CIJ printer provides a solution to help manufacturers achieve their sustainability initiatives and meet their coding needs.