



efi[®]

Changing the rules
of ceramic decoration



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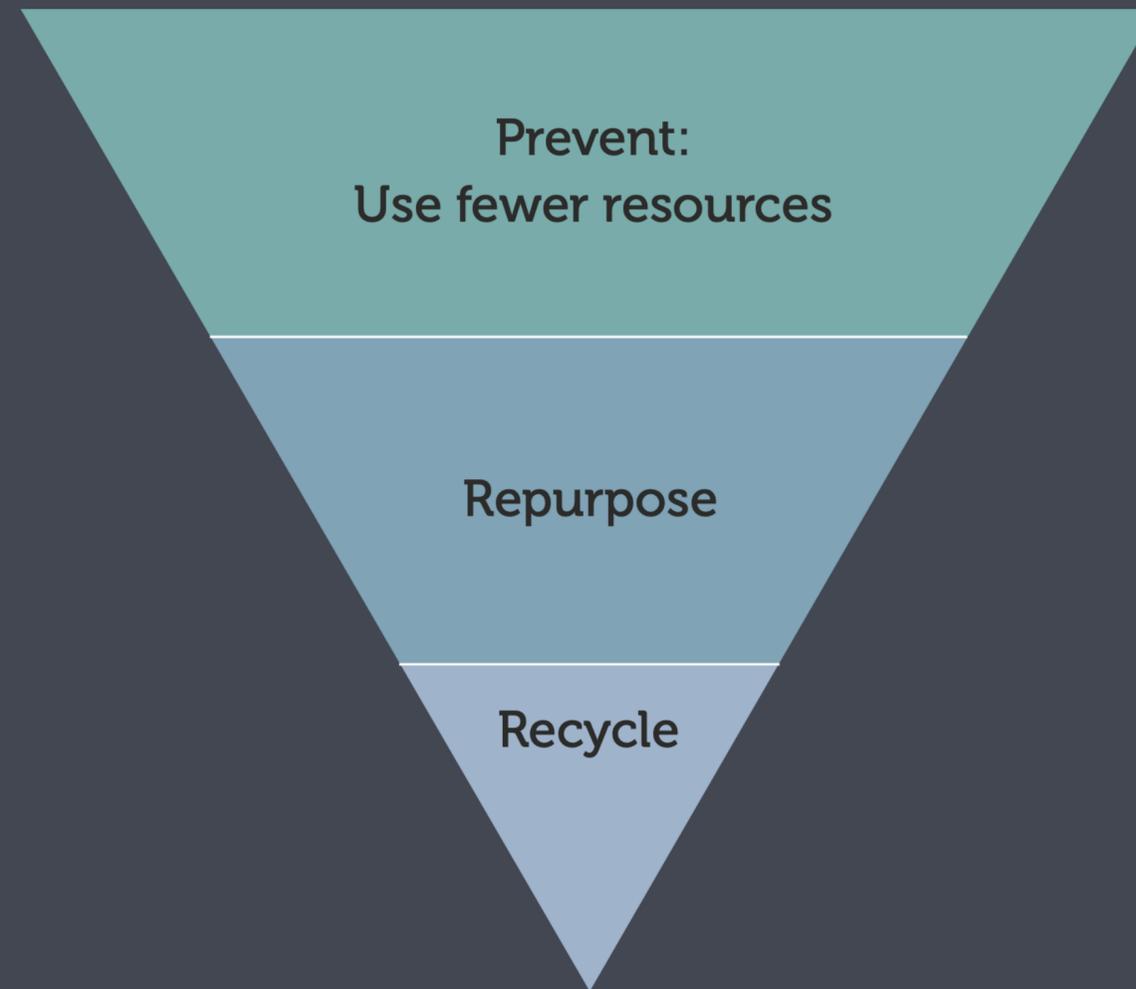
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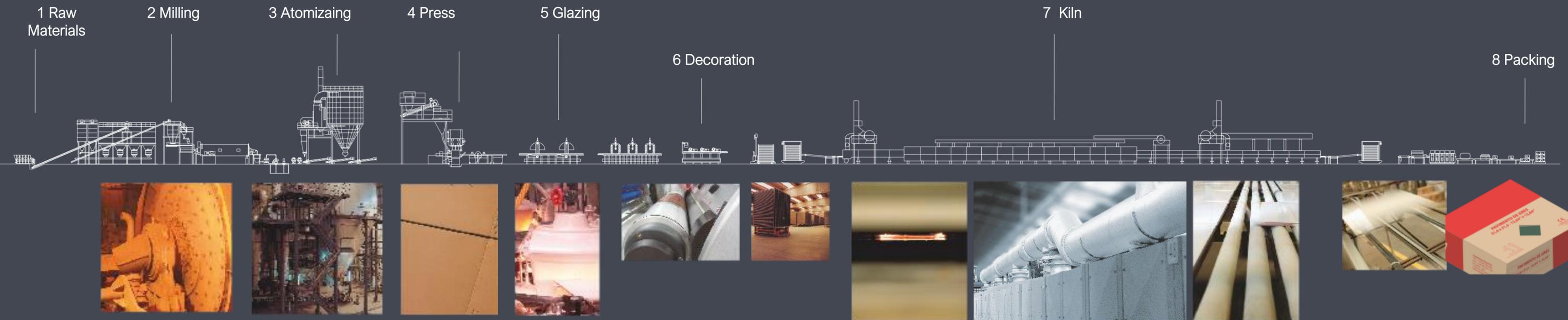
Environmental impact of ceramic inkjet printing technology

Use more sustainable actions



Environmental impact of ceramic inkjet printing technology

Consider the product's full life cycle (LCA)



Environmental impact (LCA)



Technical benefits

Applications

More homogeneous
and controlled
glazing application
which is mandatory
for slab
manufacturing

Industry 4.0

Helps introducing
Industry 4.0
solutions being a
digital process

Eliminate defects

Combined with
water-based inks,
reduces
hidro-repellence
phenomena and
eliminates the
associated defects

Economic benefits: source of cost savings

They derive from an integral solution for tile decoration:



Printers



Printers: New features implemented to operate with aqueous fluids

Digital glazing

Water-based inks

EFI Cretaprint Hybrid Ceramic Ecosystem



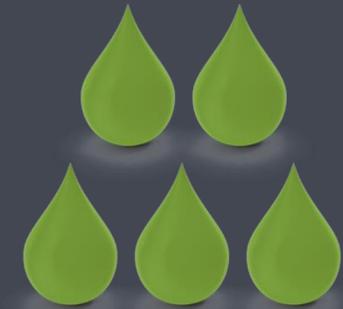
EFI Cretaprint Hybrid



EFI Cretaprint Shield



Aqueous inks and glazes



Eco-solvent inks



Integrated ecosystem



Boosting 5th Generation Smart Printers



EFI Cretaprint e·Q5 and e·G5 hybrid printheads



IDS, clean system and electronics specific for hybrid

EFI Cretaprint Hybrid Printers



- Smart Printers
- Versatile
- Non-obsolete technology
- Running
- Competitive

EFI Cretaprint Hybrid Printers



01

Able to work with water-friendly inks as well as current eco-solvent based inks

02

Improved ink delivery system, cleaning and electronics to keep humidity and prevent sedimentation

03

A cleaning protocol and a quick software update will allow you to move to water-based technology at the time you decide

Printhead	e-Q5	e-G5
Printhead width (mm)	108.3	108.3
Number of nozzle	1536	1536
Native resolution (dpi)	360	360
Drop size (pL)	13 - 98 pl	25-225
Grayscale levels	Up to 8	Up to 41
gr/m2 (25 m/min)	Up to 45	Up to 80 per bar

EFI Cretaprint Shields

For digital applications



- 01** Standalone printer (has its own interface)
- 02** IDS high discharge
- 03** It is possible to synchronize with other printers
- 04** Bulk ink tanks option
- 05** Size: 3200 mm length x 3210 mm width
- 06** e·G5 printhead

EFI Cretaprint Shield Video



Video

EFI Cretaprint Ceramic Inks



Aqueous inks and glazes

Water-based inks integrate better with the rest of your tile manufacturing processes. They also reduce carbon and volatile organic compound (VOC) emissions into the atmosphere.



Eco-solvent inks

These inks are formulated with solvents of a vegetable origin, without hydrocarbons and esters. They are a superior option because of their high performance and stability, so they don't dry out in printheads.

EFI Cretaprint Aqueous Inks and glazes

The formulation of water-based ceramic inks reduces to a minimum the solvent used in its composition.

			Blue*	Magenta*	Yellow*	Black*
Carbon emissions	% Carbon in the ink (weight)	Solvent-based	47%	43%	43%	51%
		Water-based	10%	12%	13%	15%
	Carbon emission (comparison)	Water-based	-79%	-72%	-71%	-70%
% of water in the solvents		Water-based inks	71%	59%	59%	53%

* Equivalent chromatic coordinates

Environmental advantages:

- The lower amount of organic components in the ink formulas results in the elimination of over 90% of VOC emissions into the atmosphere.
- An average reduction of 73% of carbon emissions.
- Reduction of chemical solvents used for cleaning, leading to a more sustainable manufacturing process.

Technical advantages:

- Less ink drying time.
- Greater integration with the remaining ceramics processes in the plant and elimination of water repellency phenomena.
- Better print quality thanks to better image definitions compared to solvent-based inks.
- New added value for the ceramic product.

EFI Cretaprint digital glazing

Digital glazing applies just the right amount of glaze and does so in a controlled manner.

	Analogical glazing methods	Digital glazing
Base glaze	600-700 gr/m ²	65-80 gr/m ²
Glaze coating	450-550 gr/m ²	40-70 gr/m ²

Environmental advantages:

- The lower volume of material applied results in a reduction equivalent to 10 times the impact of the associated shipping costs, as well as the consumption of containers, labels and other conditioning elements.
- The amount of water which evaporates is much lower compared to the analog process and results in less energy consumption.
- Less water in the composition of the glaze reduces vapor emissions into the atmosphere.
- Less need for cleaning means less consumption of water in the plant.
- A reduction in cleaning solvents used and an easier process of washing and extracting waste.
- It complements sectoral circular economy initiatives.

Technical advantages:

- Manufacturing large format tiles, which are the new trend in tile use, requires the glaze to be applied homogeneously.
- Digital glazing combined with water-based ceramics decoration reduces the water repellency phenomena, and, therefore, leads to a reduction in the non-quality costs that are occasionally generated after the tiles are polished.
- Plant personnel can devote their time to tasks with greater added value when the glaze is applied digitally.
- It facilitates industry 4.0 with full digital processes.

Getting greener and greener

Contributing to sustainable Development objectives



For every EFI Cretaprint printer purchased, we'll plant 17 trees to compensate for approximately 3 tons of CO₂

Getting greener and greener

Contributing to Sustainable Development Goals

- A reforestation initiative with the Project for the restoration of Iruelas Valley in Spain.
- Iruelas Valley is a natural reserve with unique ecosystems, communities and biological elements.
- In 2019, a fire that originated outside the reserve spread into the reserve, seriously damaging the wooded area.
- Bosques Sostenibles will carry out the restoration with native tree species, restoring the forest to its original diversity:



Pinus sylvestris



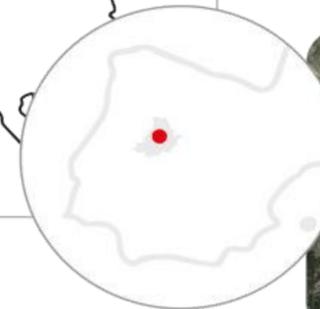
Quercus pyrenaica



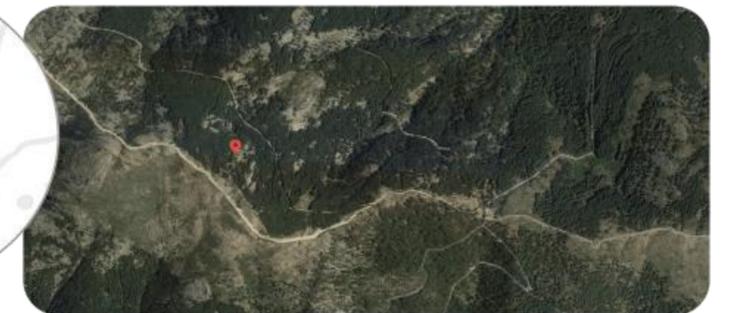
Sorbus aucuparia



Ilex aquifolium



<https://goo.gl/maps/dbkDGDPEBmtjz869>

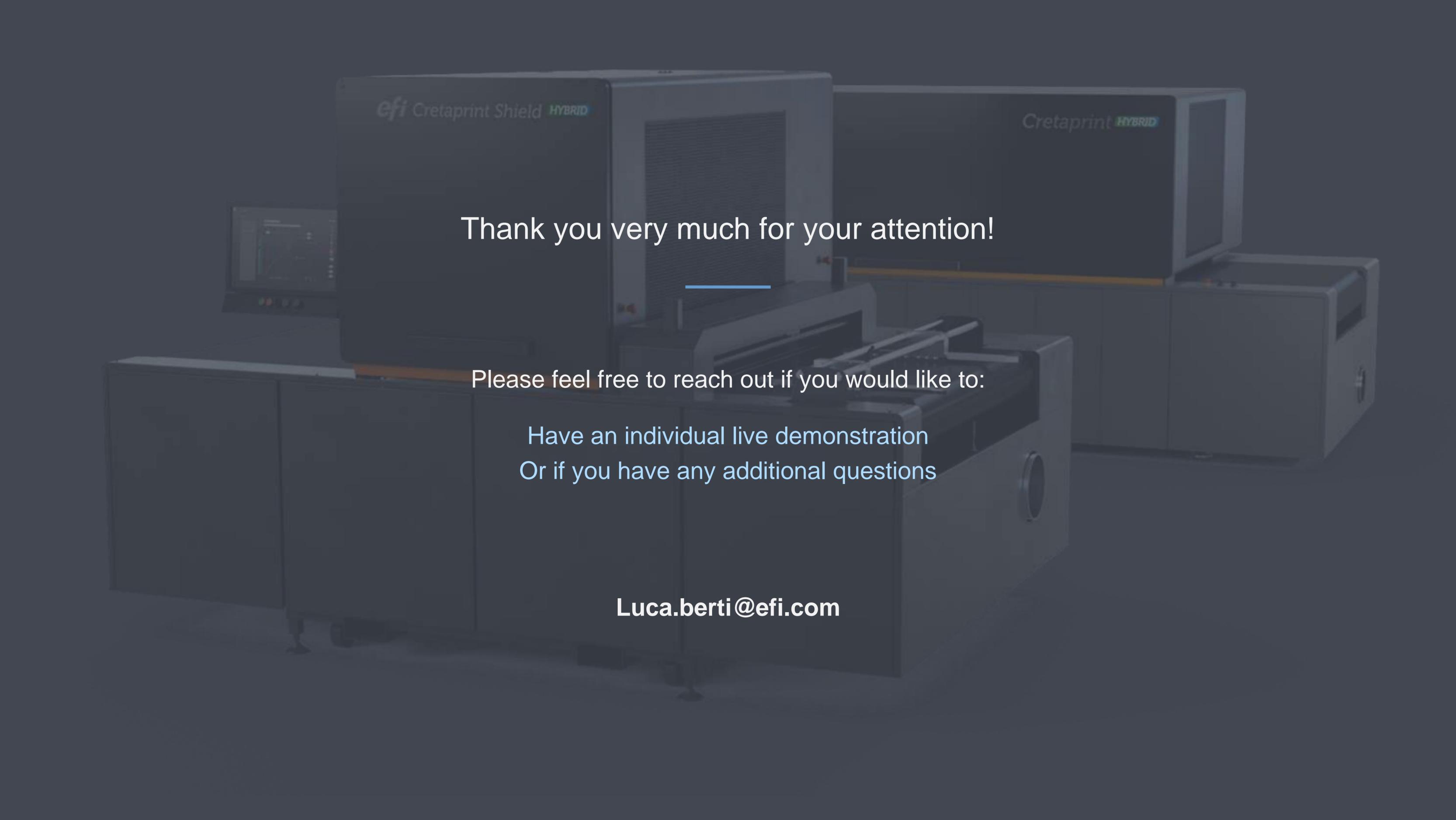


- It is aligned with the Sustainable Development Goals promoted by United Nations.
- And will generate 4,200 local workdays both in the planting and in subsequent maintenance phase.

Getting greener and greener

Join us in supporting the environment by planting trees with us!





Thank you very much for your attention!

Please feel free to reach out if you would like to:

Have an individual live demonstration
Or if you have any additional questions

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