

## ebeam Environmental Policy

*"By mastering the small electron, we and our partners create big changes: refined and new materials, cleaner processes, greater resource efficiency."*

### ebeam Technologies

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## Introduction

ebeam Technologies (ebeam), the COMET Group's newest brand, realizes that the strains on the environment are continuously growing and recognizes the detrimental future impact on the environment if today's environmental challenges remain unaddressed. The COMET Group has a firm foundation in excellence and quality. The ebeam Environmental Policy builds upon this and takes it to the next level. This policy is the foundation on which our environmental and sustainability objectives are based. As with our quality goals, our environmental goals are to be auditable and measurable, and shall be in line with our Mission, Vision and Values. In everything we do, ebeam works towards long term value and in the interests of all its stakeholders: from customer, to shareholder, employee, community, society, and to the planet.

From concept phase, through the supply chain and the manufacturing process, and even extending to our partners' processes, ebeam takes responsibility, wherever possible, for the complete life-cycle of its products to ensure minimal environmental impact. The life-cycle includes integration into our customers' processes and the operation of ebeam products, both for OEM customers and end-users. We work together with our partners to monitor environmental impact; for example: recording energy savings over previous methods of operation, as well as savings and reduction in the burden on the environment enabled by the elimination of chemicals.

ebeam not only commits to conform with the environmental laws of the countries in which we operate, but also commits to go beyond conventional regulations and traditional sustainability programs. This is demonstrated in sections II - IV.

## The First Level – Internal implementation

All products at ebeam are to be produced with minimal environmental impact. We work with suppliers and distributors with equal or greater environmental standards, and audit suppliers and distributors accordingly. Employees at ebeam are responsible for ensuring the integrity of the environmental policy is maintained and that the production of ebeam products remains environmentally sound. To this end, the ebeam Environmental Policy is part of the onboarding process for all new employees. Furthermore, ebeam provides training and resources as needed to ensure that the environmental competence remains at the mandatory target level.

As stated in our Quality Vision, wherever possible, we make our objectives, procedures and performance measurable and thus auditable. Through both internal and external audits of our environmental outputs, ebeam maintains an open door policy to ensure transparency. We will review data collected internally and externally and provide reports to all stakeholders. Changes or developments deemed necessary from the conclusion of a report will be implemented to ensure the highest environmental standard.

ebeam commits to being ISO 14001 certified.

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## The Second Level – External Implementation:

*External implementation: the users of ebeam equipment and the products produced on ebeam-equipped machinery*

As a high-tech innovation firm, we believe that new technologies are the key to drive significant change. As such, we support, invest in, and develop technologies which improve environmental sustainability within our fields of applications. Additionally, we do not knowingly participate in projects which may adversely affect the environment.

Products manufactured by ebeam are not only produced in a sustainable manner, but additionally, the products themselves allow our partners and clients to improve their environmental scorecard through the elimination of chemicals and the exceptional reduction of energy consumption, creating the second level of increased environmental sustainability.

Wherever possible, ebeam will track the reduction in environmental impact of the users of ebeam-equipped machinery. For example: energy saved, reduction in scrap, reduction of toxins, and the effect on the environment due to the reduction of toxins.

## The Third Level – The Consumer

A food product will have a much longer shelf-life when its package has been sterilized and/or when the product itself has gone through an inactivation step to reduce the bioburden on the product. Other inactivation technologies have their limitations and can not be used universally. They work on some food products, not on others. ebeam is the most versatile inactivation technology and thus can be used almost universally. As a result, ebeam increases the number of food products which are candidates for an inactivation step, and thus increases the shelf-life of all those ebeamed products.

Retailers and consumers who purchase such products will dramatically reduce the volume of food they have to throw out due to spoilage. This reduces their environmental impact.

In a second example, ebeam can be used to increase the utility and functionality of materials. Products made with these materials will have a longer life. Some will be reusable. All will have a higher value and thus a higher chance of being collected and recycled or better yet, UPcycled. Consumer products produced using ebeam in the manufacturing process will replace existing low-grade, single-use consumables.

As in the first example, retailers and consumers who purchase such products will reduce their environmental impact.

Wherever possible and measurable, ebeam will track and publish a transparent report with the financial and environmental turnaround of ebeam-produced products. If contradictions should arise from the data, it will be assessed and plans will be outlined and implemented for corrective action. This process will be communicated transparently to all stakeholders.

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#### **IV. The Fourth Dimension - Counteraction of the Backfire Effect**

Through the benefits stated in sections I, II, III, ebeam provides an alternative solution for industries which leads to savings in energy consumption and the possibility to eliminate the need of certain chemicals in the manufacturing process, which ultimately creates overall cleaner production processes. The potential environmental benefits of sections I, II, III are clear. The resulting end products are cheaper consumable goods for the producer, which increases consumer demand and therefore increase production of goods. Thus, the environmental impact could be negative; exactly the opposite of what we had intended. If the product mix of the end-users includes more take-away, single-use products, the positive effect of lower cost and higher demand also comes with a negative side-effect of an increase in product which does not make it into the proper waste stream. This unwarranted result is defined as the Backfire Effect or the Rebound Effect.

Consumable goods and packaging, especially single-use packaging, is a top application field for ebeam, and therefore this improved production cycle can result in increased waste accumulation. As such, ebeam acknowledges that not all of these end products will be disposed of in the correct waste channels after use. Through the Counteraction of the Backfire Effect, ebeam will focus on trash-offset, which is defined as the compensation for impacts associated with waste increase due to enhanced economic development. Trash offset activities which are supported directly and indirectly by ebeam, include but are not limited to:

- a) brand-owners using ebeam to create packaging with higher value,
- b) direct hands-on activities to remove waste from the environment,
- c) supporting organizations in the field of waste management, and
- d) directly engaging in and supporting behavior-change activities to promote responsible consumption.

One of the value pillars of ebeam is partnership. As such, ebeam will work with its partners in industries which produce consumables and packaging to take part in the trash-offset programs listed above as is best suited for their industry and company.

ebeam intends to create a trash-offset standard. Companies meeting the standard can obtain a certificate of compliance from accredited auditing organizations the same way they would with ISO 9001 and ISO 14001.

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