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Ressourcen-Revolution: «Natürliches Licht statt teuer Chemie»  
**Blue is the NEW Green**

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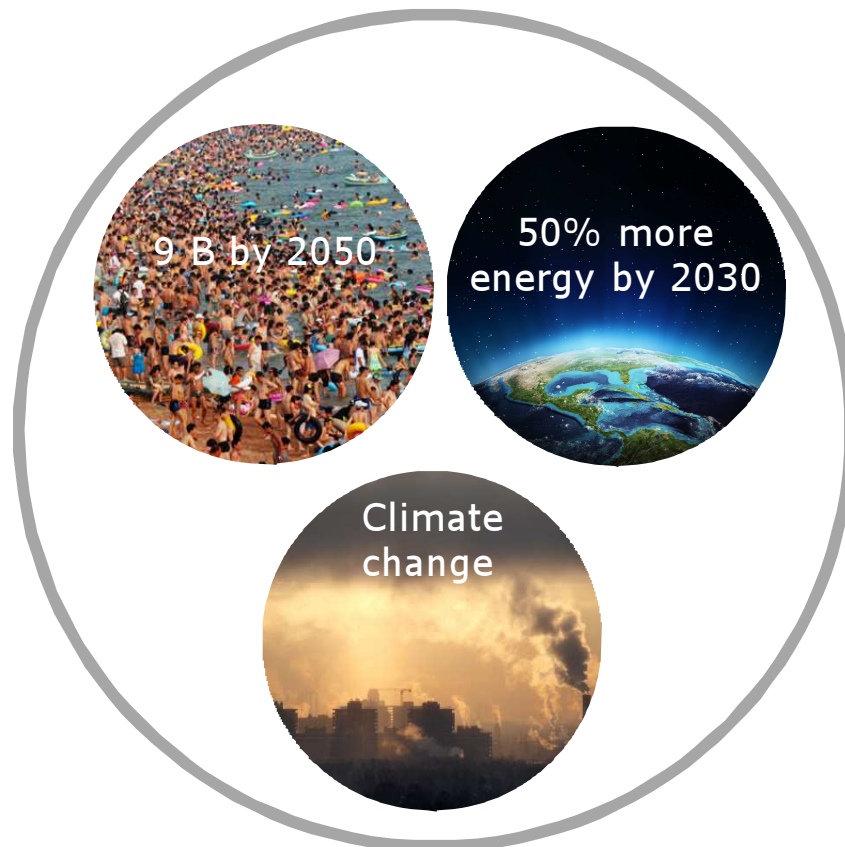
ebeam

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The greatest challenge of our generation  
There are ever more of us. We all want prosperity, but resources are limited. Technological innovation is our way forward.

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## The dilemma of our time



## Solutions



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## Time for new Concepts

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# Action Follows Money



**PULL**

**PUSH**





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## Tetra Pak – Our Innovation Partner

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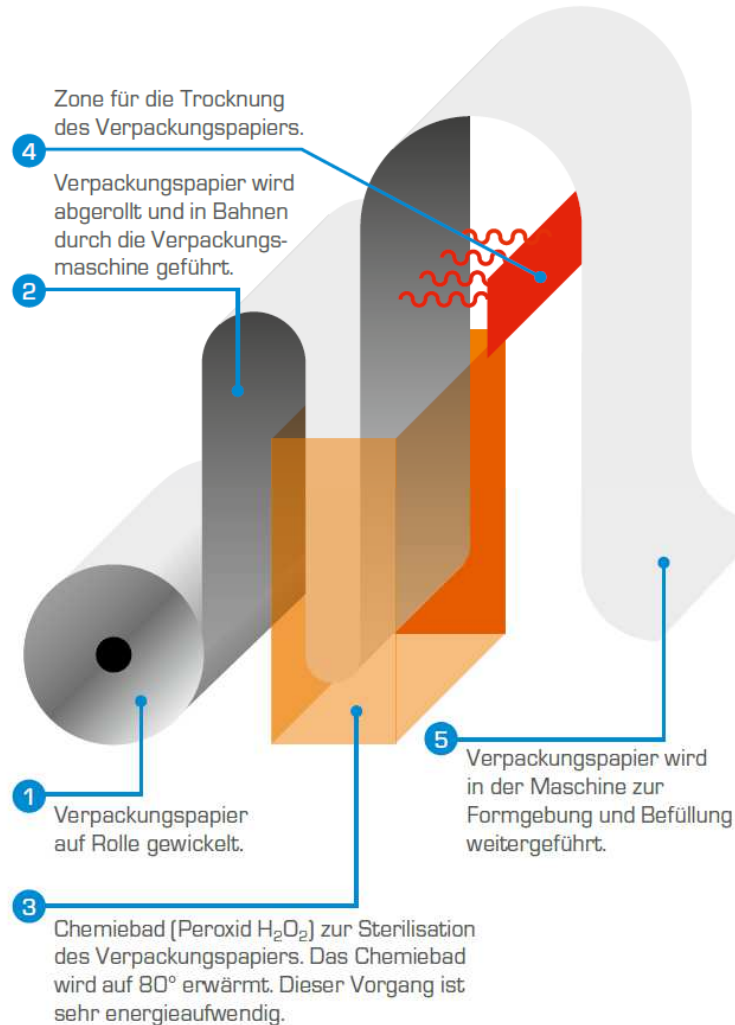
### World leader in dring package solutions

2013 sales revenue [M€]	11,075
Number of employees in 2013	23,540
Number of machines in 2013	8,825
Machines delivered in 2013	580
Packs filled in 2013 [billions]	178

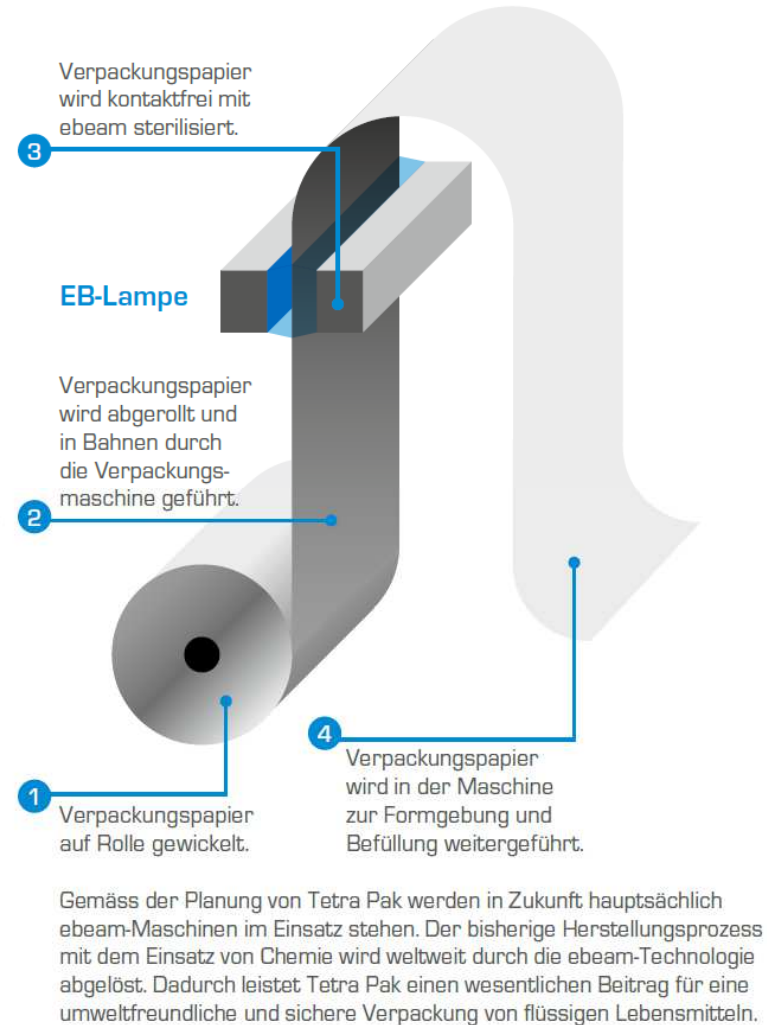


# Tetra Pak Application - Chemical-free sterilization

## Der bisherige, chemische Prozess.

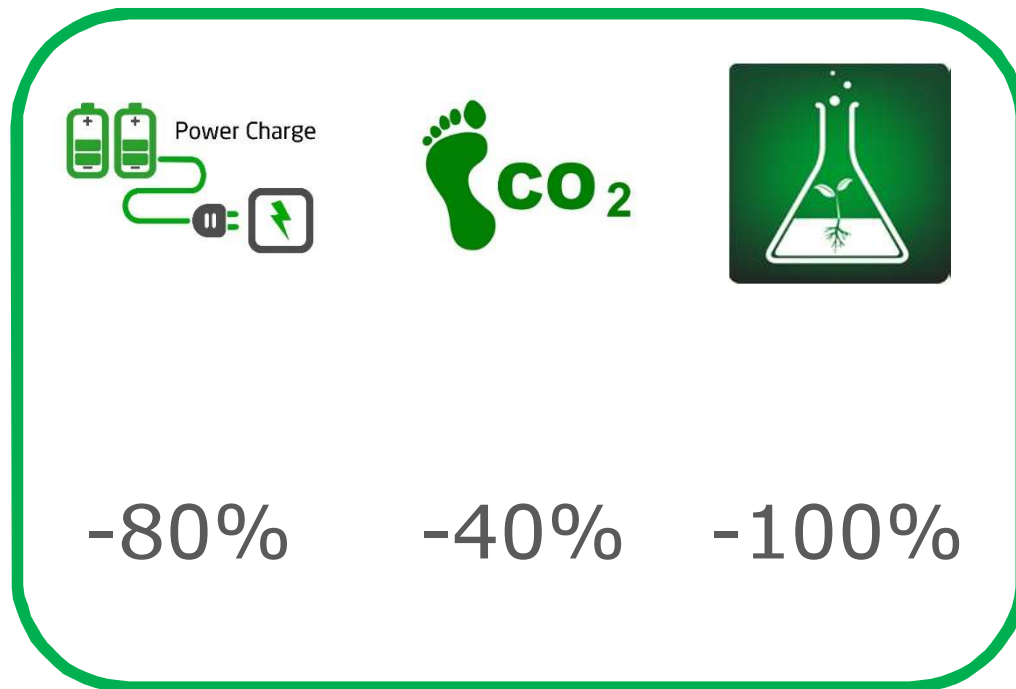


## Der zukünftige Prozess mit ebeam.





## It`s Green Technology but this is NOT enough



## Blue is the new Green – Blue creates Market Pull



-80%



-40%



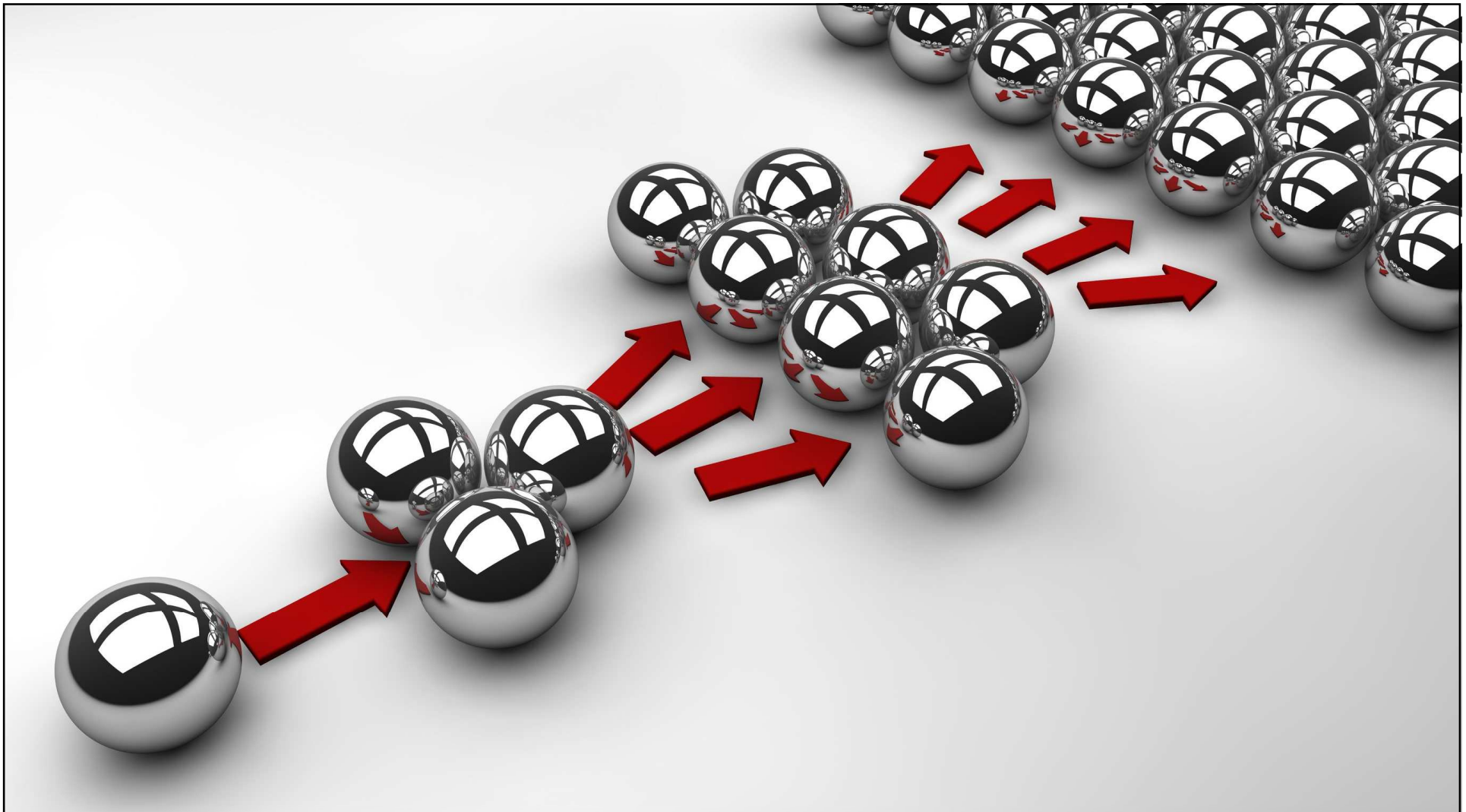
-100%



+165%



-30%



10`000 Filling Machines per  
Year in Operation





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## COMET at a Glance

**Business is based on 3 Technologies** (RF, X-ray & ebeam)

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Leading global provider of high-quality systems, components and services in industrial x-ray, radio frequency and ebeam technologies.

- 14 subsidiaries worldwide
- CHF 288m sales (2014)
- 99% of sales from outside Switzerland
- SIX SWISS Exchange



> 1050  
employees

Headquarters in Flamatt (CH)



1948  
foundation

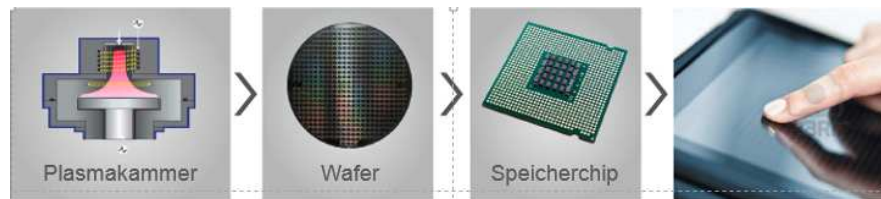
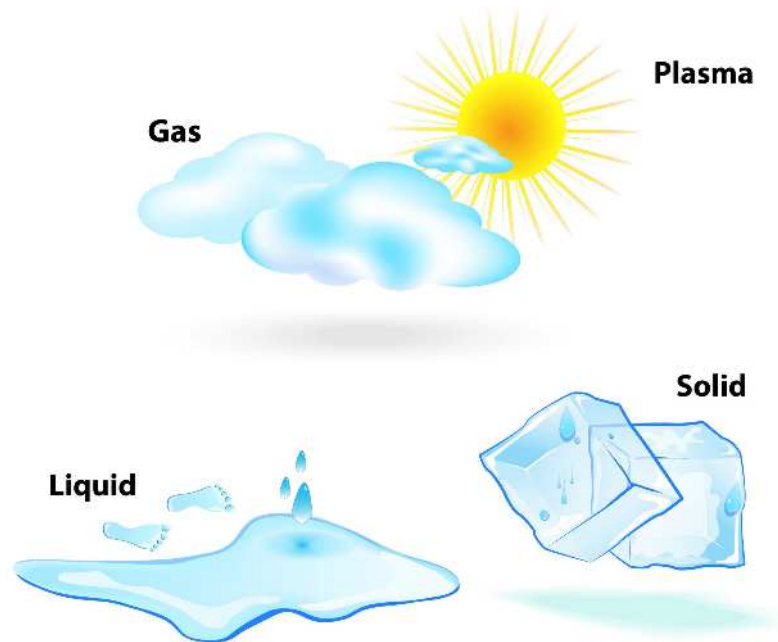
ebeam

# RF-Technology-COMET ermöglicht dünnste Schichten





# COMET Matchbox triggert und steuert das Plasma



COMET Matchbox

## X-ray Technology-COMET macht die Welt ein Stück sicherer

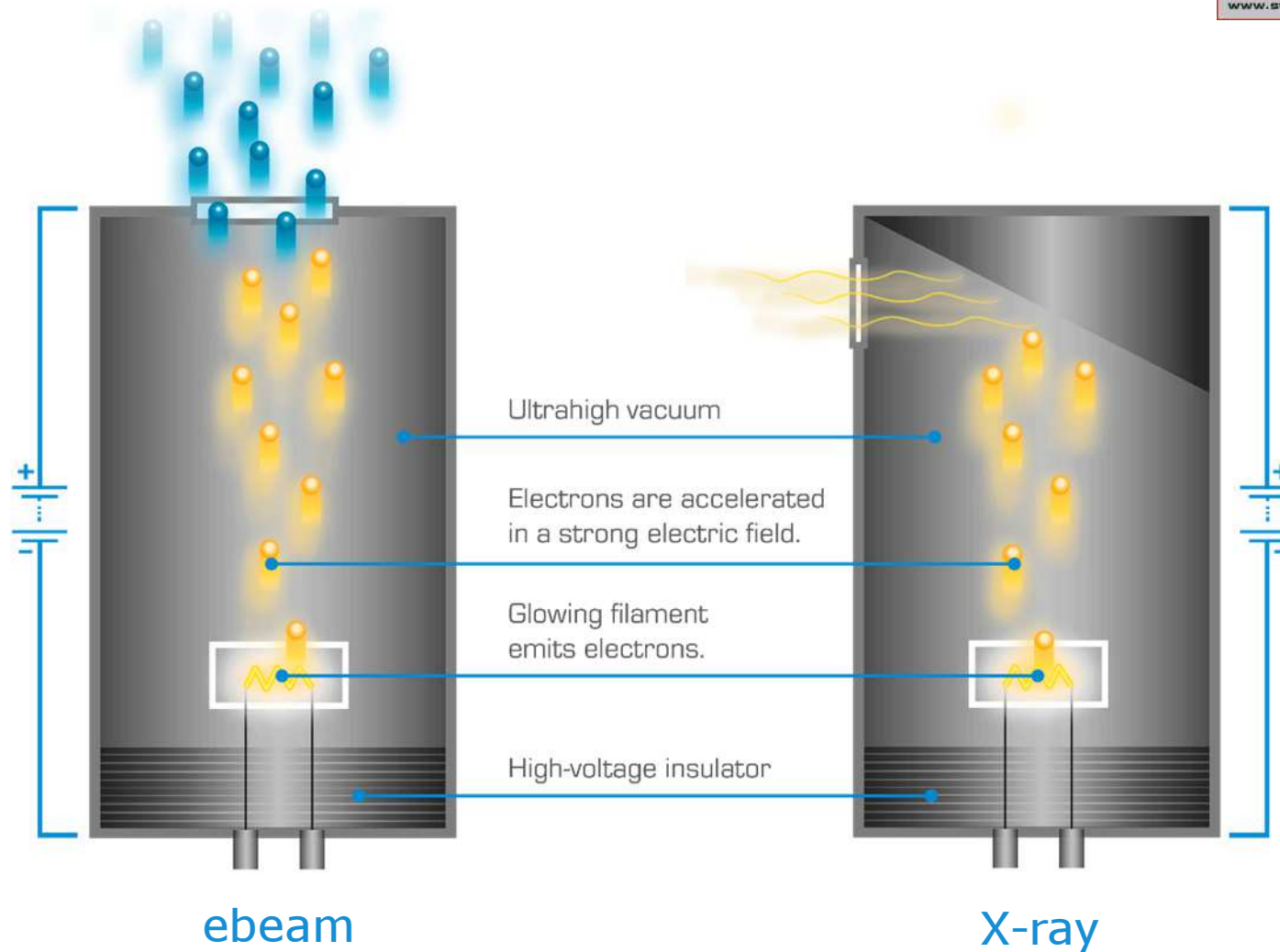




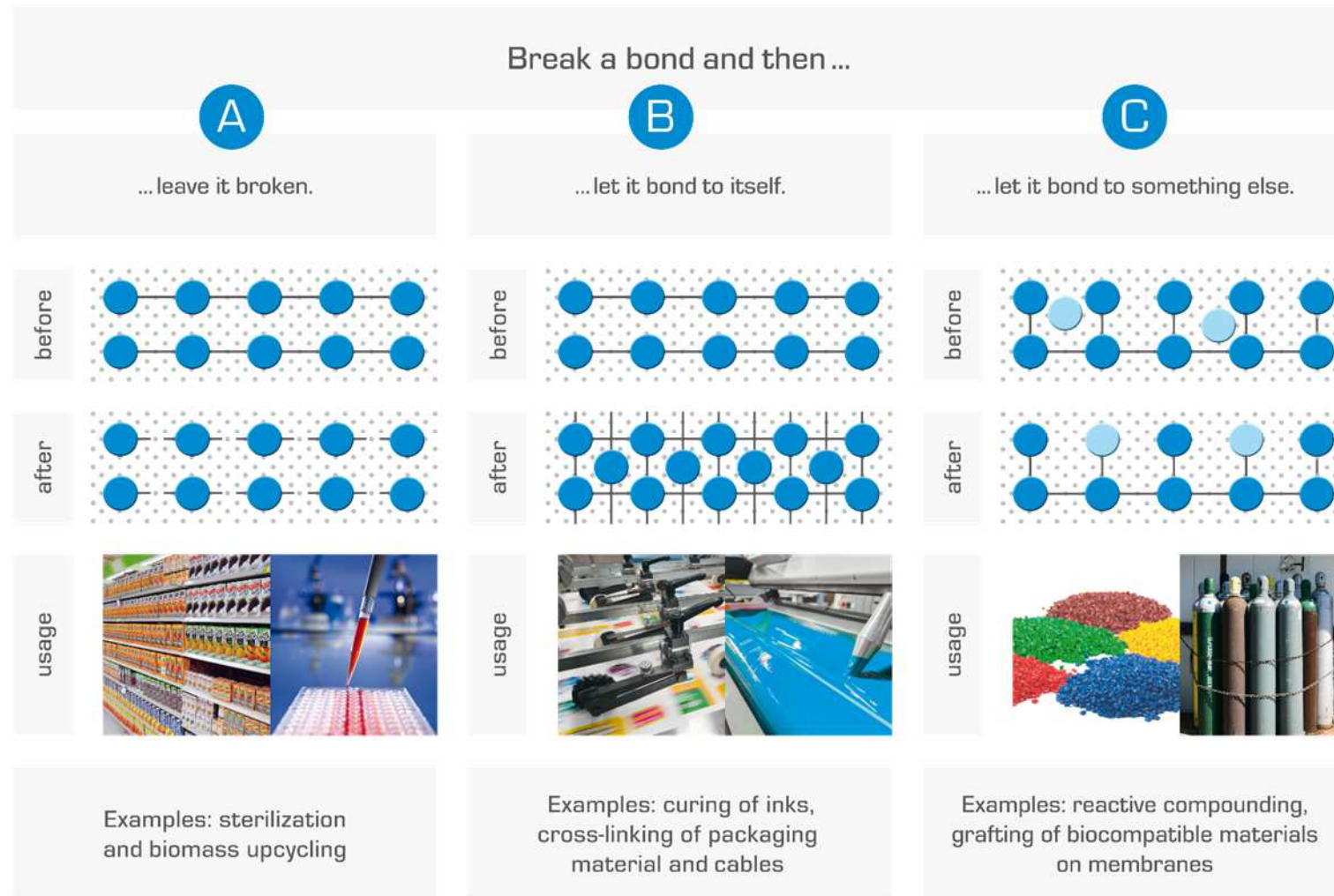
# COMET Röntgenquellen liefern zuverlässige Informationen



# Working Principle



# 3 fundamental Effects



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## Benefits for customers AND the planet

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### Energize

ebeam reduces energy consumption in certain industrial processes by 50-80%.



### Detox

ebeam replaces toxic chemicals in industrial processes.



### Feed

ebeam increases the world`s food supply by extending its shelf life.



### Synthesize

ebeam increases the world`s food supply by extending its shelf life.



## Big Bang at Anuga Food Tec & Fispal

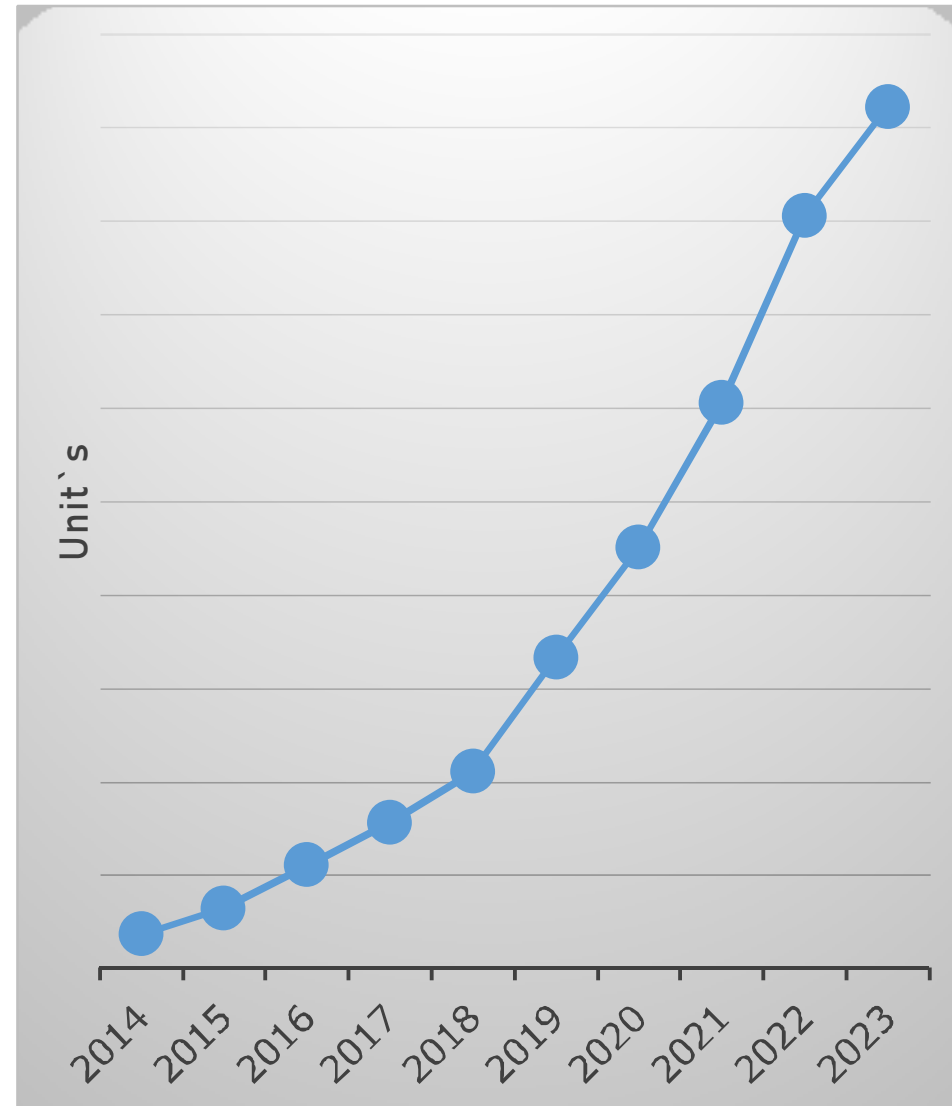


Tetra Pak approach for the rollout

- ebeam will be the standard
- ebeam will be implemented in the main product platform first

- 1 Controlled rollout
- 2 Implementation A3 Speed (2cl – 2l)
- 3 Implementation C3 Flex and others

ebeam



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How do we get best out of ebeam?

We focus on Tetra Pak rollout & we push new applications!

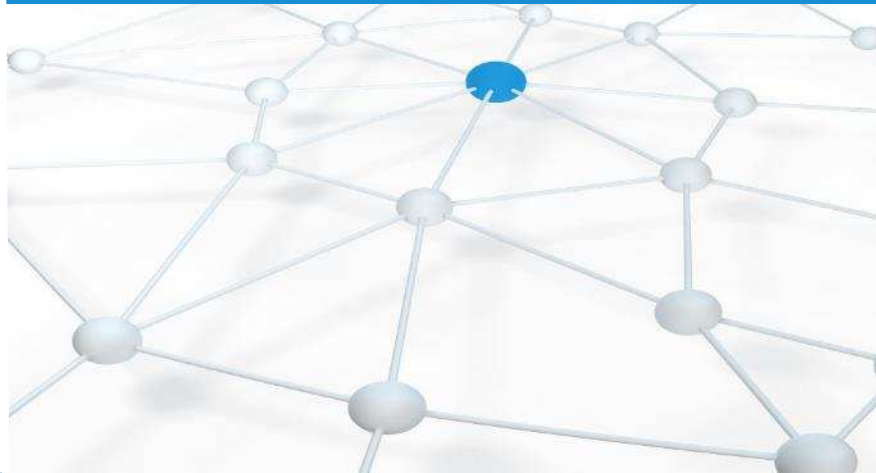
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## Rollout Tetra Pak



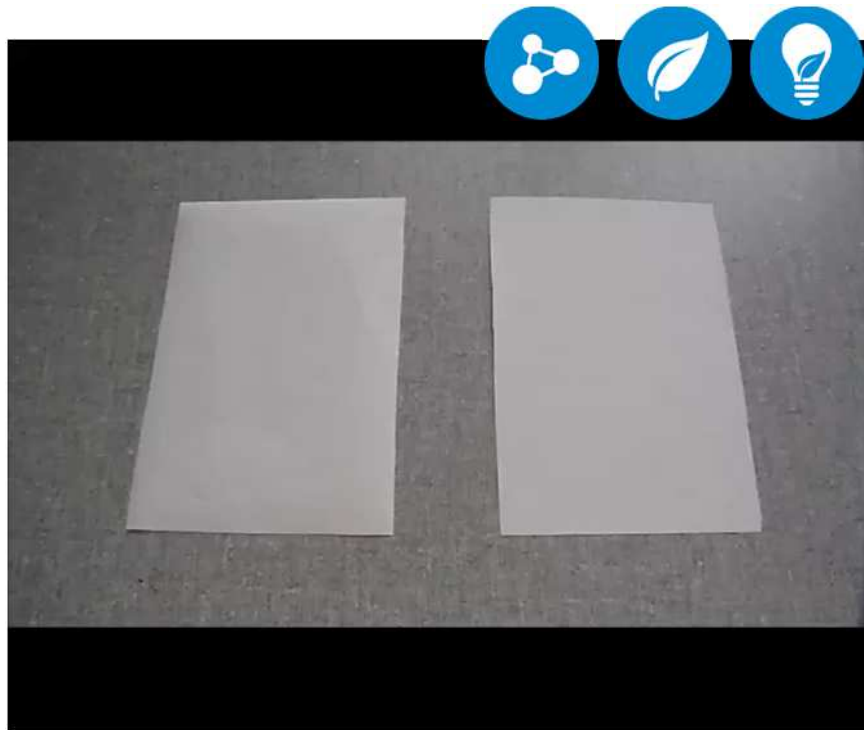
- Technology implementation on Tetra Pak system platforms
- Industrialization and preparation for volumes

## New Applications



- Screen for new applications
- Partner up with key customers
- Application development and validation

## FutureLab : Water Filtration Membranes



### ■ Imagine ...

- ... reducing energy consumption for water filtration & increase life time.

### ■ The need

- Polymer Membranes are more sturdy and can be cleaned easy, but clogg up because they are water repellant

### ■ The innovation

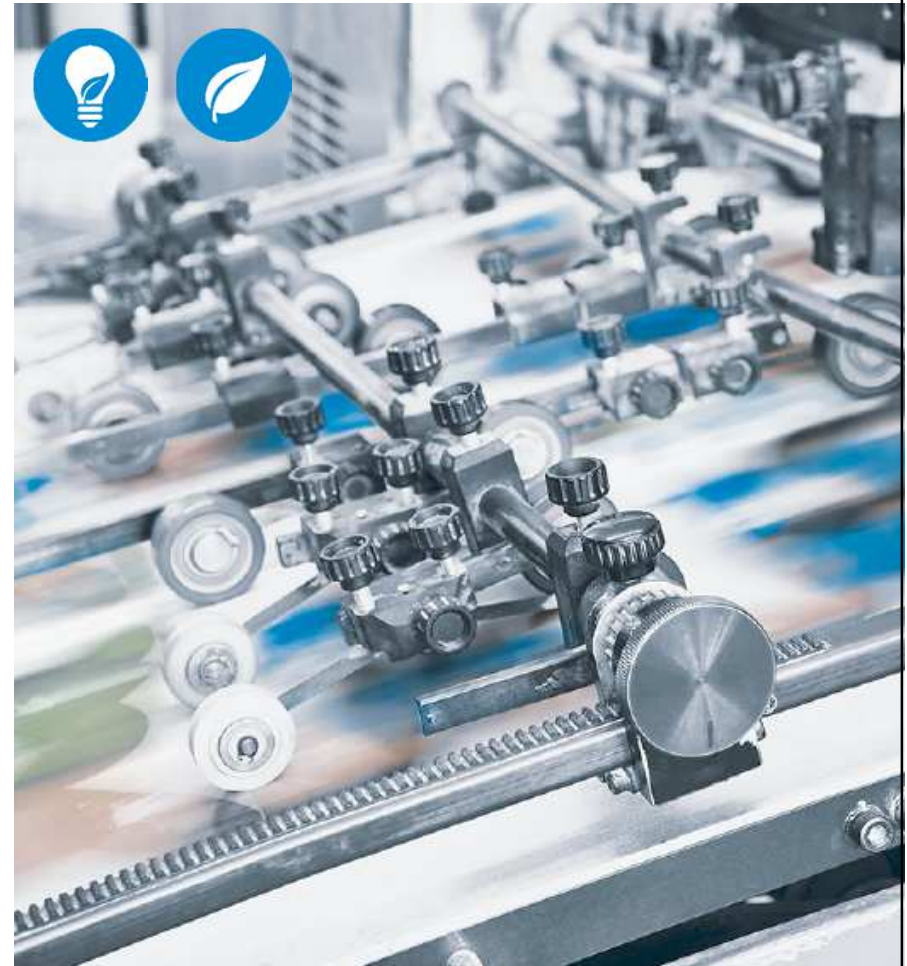
- ebeam enables anchored (grafted) coatings to render them hydrophilic at the surface. A negligible amount of material is used.

### ■ This is more than just a dream.

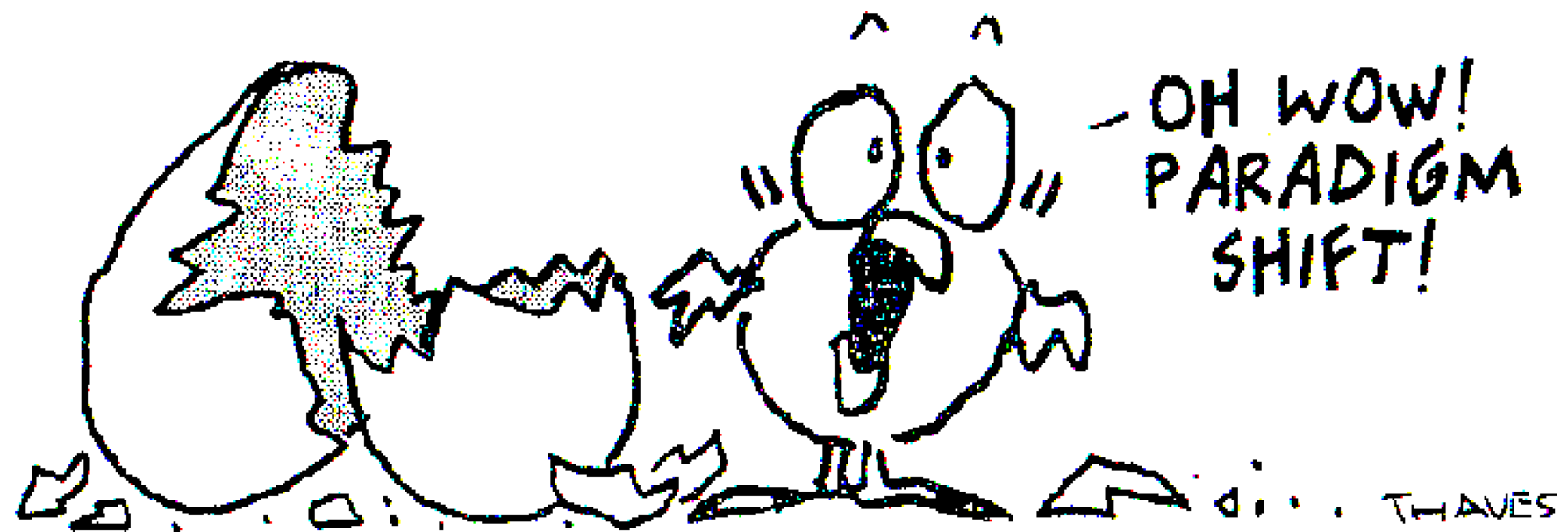
- Some manufacturers apply this technology already
- **UPCycling** : Higher Value after ebeam than before, without impeding recycling

## FutureLab 2: Food purity

- **Imagine ...**
  - ... full confidence in packaged food.
- **The need**
  - Packaging without toxic chemicals that migrate into the food. Standard inks and coatings in the food packaging industry
  - use solvents and photoinitiators. Traditional curing processes often provide an incomplete cure, allowing these toxins to migrate into the food.
- **The innovation**
  - ebeam-curable inks and coatings contain no solvents or photoinitiators. Ebeam provides an instant and complete cure while using < 1/5th of the energy.
- **This is more than just a dream.**
  - ebeam is already the preferred way to cure inks and coatings.







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ebeam mantra

*Don't fight in rubber boats, widen the sea*



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[www.comet-ebeam.com](http://www.comet-ebeam.com)