Challenges of cheese packaging for the circular economy
Our Brands

**CRYOVAC**
Materials, sustainable solutions, equipment, and technology to maintain food quality and safety, and minimize waste

**BubbleWrap**
Materials and equipment for items requiring blocking, bracing, cushioning, void fill, or surface protection throughout the shipping process

**Sealed Air**
Engineered protective packaging solutions that enable products to ship faster and arrive safer

**Autobag**
Automated mailer systems, cartooning systems, and bagging equipment designed for high-productivity packaging

**liquibox**
Materials, dispensers, filling equipment, and sustainable solutions to preserve the integrity of liquid products

**prismiq**
Design, printing and connected packaging services that drive business performance for brand owners

**SEE Automation**
Productivity and workforce efficiencies through automated packaging solutions

**SEE Services**
Technical support, on-site expertise, and precision maintenance programs
SEE® at a Glance

- ~17,300 Employees
- 114 Manufacturing Facilities
- 39 Customer Packaging Design Centers
- 9 Equipment Design Centers
- 9 Innovation Centers
- Virtual Graphic and Package Design Studios
- Virtual MySEE Order Entry and Customer Service
- > 30 B Packages Sold
  Including Liquibox

2022 Sales by End Market

- Proteins & Other Foods * 55%
- Liquids, Fluids 4%, now > 10% with Liquibox
- Medical, Healthcare 6%
- Industrials, Transportation, Electronics 22%
- e-Commerce Retail & Logistics 13%

2022 Sales by Region

- Americas 66%
- Europe, Middle East, Africa 20%
- Asia Pacific 14%

$6.0B
Pro forma incl. Liquibox

* Other Foods includes frozen foods, produce, pantry items, meal kits and plant-based proteins
We Are Where You Are

Our digitally connected global network reaches 120 countries/territories.

Through our wired and physical operations, SEE® serves customers around the world, meeting their local needs 24/7.
Solving Customer Challenges

Our partnership enables our customers to succeed, because we have one goal: their goal. We solve their most critical packaging challenges and deliver solutions in these areas:

- Proteins
- Consumer Ready
- Fluids and Liquids
- Protective Packaging
Consumer Ready

Our capabilities in automation, digital, and innovative packaging design result in consumer-ready food solutions that protect, perform, and promote brand awareness, enabling customers to deliver safe and convenient experiential packaging with unmatched shelf presence.

Branded Shrink Packaging

Case-Ready Automation

Custom Package Design
Automation

We are transforming our customers’ operations with automation that improves efficiency, eliminates waste, simplifies processes, and creates a safer working environment.
Reinventing Packaging

Our new name—SEE®—reflects not only who we are today but what we’ll be tomorrow and how we're reinventing the future of packaging.

Consumer Ready and Proteins
Automated, digital, and solutions for sustainability

Fluids and Liquids
Disrupting rigid containers

Automated Protective Solutions
Broadening and optimizing to solutions portfolio
Challenges of cheese packaging for the circular economy

Cryovac® brand Autowrap Lite

- BDF – A different approach
- BDF & Vacuum – A new state of the art packaging solution
BDF – A different approach
THE BEST WASTE IS THE WASTE THAT IS NOT GENERATED


1. Waste Prevention
   'prevention' means measures taken before a substance, material or product has become waste, that reduce the quantity of waste, the adverse impacts of the generated waste on the environment and human health, or the content of harmful substances in materials and products;

2. Preparing for re-use
   'preparing for re-use' means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing;

3. Recycling
   'recycling' means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations;

4. Material recovery
   'material recovery' means any recovery operation, other than energy recovery and the reprocessing into materials that are to be used as fuels or other means to generate energy. It includes, inter alia, preparing for re-use, recycling and backfilling.

5. Disposal
   'disposal' means any operation which is not recovery even where the operation has as a secondary consequence the reclamation of substances or energy.

Define your packaging strategy at the product creation stage to prevent waste and reduce environmental taxes and fees.
The weight of plastic for a 200g pack is approximately ...

- Thermoformed rigid film - MAP packaging
  - ~12g

- Thermoformed flexible film - vacuum packaging
  - ~6g

- HFFS laminated films – MAP packaging
  - ~5g

- Vacuum shrink bags
  - ~3g

60% less plastic compared to standard laminates on the market

CRYOVAC® - Brand BDF

*Packing weight for one pack size 100mm W x 135mm L x 25mm H
CRYOVAC® Brand BDF® Film

CHEESE MARKET

Before and after images showing the vacuum thermoformed plastic reduction:

**Before:** 6.3g

**After:** 2.3g

Plastic Weight Reduction: 63.5%

Portion: 300g
Sealed Air’s journey to sustainability

CRYOVAC® Brand BDF® Films: the responsible packaging

Sustainability gains

**REDUCED PLASTIC**

65%*

Less plastic used vs. Vacuum THF pack*

**RE-USED**

30%

Circular economy

Contains 30% recycled resin from post-consumer recycling by mass balance approach, ISCC certified

**RECYCLABILITY**

Mechanical & chemical recycling

Recyclable within LDPE streams. In line with major local industry standards. CCR ready

*SEE calculation based on samples collected @retailers

*Degree of recyclability depends on the specific product configuration or components intended for recycling and the scope and availability of appropriate local recycling facilities.

Based on results achieved for Sealed Air deliverables. All facilities and systems are different, so results may vary.
Closed-loop Collaboration

A proven concept by

TESCO  PLASTIC ENERGY  Sabic  Sealed Air  Bradburys
Why GOING VACUUM?
CRYOVAC® Brand Recycle Ready Barrier Display Films

**BDF20M, rBDF20M***

- **BARRIER**: Medium
- **APPLICATION**: MEAT, FISH, POULTRY
- **THICKNESS**: 20 microns

*Designed for recycling* (compatibility with LDPE stream) – Positively tested according to APR/PRE testing protocols in SEE labs

- Aligned with CEFLEX and COTREP D4R guidelines
- Tested and Certified by CYCLOS
- Compliant with OPRL guidelines (UK)

*Contains 30% CCR by mass balance approach

**BDF21**

- **BARRIER**: Standard
- **APPLICATION**: READY MEALS, CHEESE, SMOKED & PROCESSED MEAT
- **THICKNESS**: 21 microns

*Designed for recycling* (compatibility with LDPE stream) – Positively tested according to APR/PRE testing protocols in SEE labs

- Aligned with COTREP designed for recycling guidelines
- Tested and certified by CYCLOS
There are 9 good reasons for this new approach:

1. **BDF - Packaging design** well accepted by most EU retailers
2. **Significant reduction in plastic** consumption compared to other systems
3. **Recyclable films** (LDPE stream) and contains **recyclate** (from chemical recycling)
4. **No need to use gas** - assured deliverability & cost saving
5. **Automation** - only 1 person needed to supervise system operation
6. **Increased operational efficiency**: 60 ppm (1 kg) to 90 pm (200 g cheese pieces)
7. Easy and quick changeover applies **reduced downtimes**
8. **Quick restart** – Automatic Start & Stop function, buffer conveyer, continuous motion and two-reel holders for jumbo rolls
9. Shelf-life same as Vacuum bags and Thermoforming
CRYOVAC® brand
AutoWrap Lite
Prototype line
Why CRYOVAC® brand AutoWrap Lite
Full Line Concept and existing offer

Palletizing Robot  
(e.g. by Cobot)

Boxing Robot, Cardboard closing, Metal detector

Labler/Printer option

EZO unit (optional)

Vacuum unit
Trim Collector Vacuum Pump

Shrink unit
Hot Air

HFFS Loader

Pick & Place  
(With Interface to cutting line / cutting line)

Product flow
Thank you very much for your attention!

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