

# TETRA PAK BINH DUONG FACTORY

## Company profile



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# 1. Company, Factory Profile

## 1.1 Tetra Pak Company

### 1.1.1 Tetra Pak History



Tetra Pak® is the world's leading food processing and packaging solutions company. Working closely with our customers and suppliers, we provide safe, innovative, and environmentally sound products that each day meets the need of hundreds of millions of people in more than 175 countries around the world. With more than 24,100 employees based in over 85 countries, we believe in responsible industry leadership and a sustainable approach to business. Our motto, “PROTECTS WHAT’S GOOD™,” reflects our vision to make food safe and available, everywhere.

Figure 1.1 – Company Logo

Founded on Ruben Rausing’s business idea that “A package should save more than it costs”, Tetra Pak began its journey in the early 1950s, as one of the first packaging companies for liquid milk. Since then, it has become one of the world’s largest suppliers of packaging systems for milk, fruit juices and drinks, and many other products. The company’s name is derived from the shape of its first carton with tetrahedral shape, now known as Tetra Classic.



**“A Package should save more than it costs”**

Dr. Ruben Rausing

Figure 1.2 – Founder Ruben Rausing and First machine delivered.

### 1.1.2 Tetra Pak Business Foundation

Tetra Pak has been the pioneer in Aseptic Processing Technology, which has been identified as “the most important food science advancement of the 20th century” by the Institute of Food Technologists, with three businesses: processing, packaging, and service solutions, maintaining the highest standards of food safety, operational performance, and sustainability. (Figure 1.3)



Figure 1.3 End to End solution

### 1.1.3 Tetra Pak Vision, Mission, and Strategy



#### Our Vision

We commit to making food safe and available, everywhere.

#### Our Mission

We work for and with our customers to provide preferred processing and packaging solutions for food. We apply our commitment to innovation, our understanding of consumer needs and our relationships with suppliers to deliver these solutions, wherever and whenever food is consumed. We believe in responsible industry leadership, creating profitable growth in harmony with environmental sustainability and good corporate citizenship.

## Our Strategy

With the coming decade we have finalized strategy 2030 of deliver food safety and the best quality, lead the sustainability transformation, integrate and optimize customer cooperation, innovate for custom growth.

### 1.1.4 Tetra Pak Worldwide

Tetra Pak is a global company, organized as four clusters: Americas, E&CA, GME&A, Asia Pacific (APAC). Our product and services provided more than 160 countries, 25147 employees in worldwide. 192 billion of Tetra Pak® packages sold in 2021, Net sales in 2021 more than 11,145 € billion.



Figure 1.4 Tetra Pak Worldwide (2023)

## 1.2 Tetra Pak Asia Pacific Region (APAC)

Asia Pacific Region is one of Region in Tetra Pak with the whole capacity is 98 billion QSVs and 6700 employees.

We have 8 plants responsibility to supply Packaging material for 7 Markets.

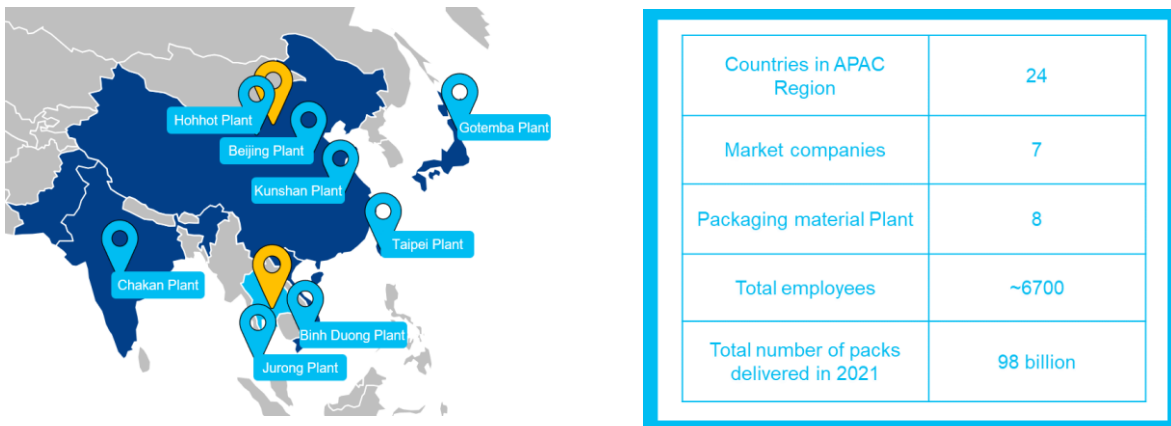


Figure 1.5 Tetra Pak Asia Pacific (2021)

### 1.3 Tetra Pak Vietnam Market Company

In 1993, Tetra Pak Vietnam become one of the first foreign company who registered and operated in Vietnam.

In last 30 years, go along with our mission of “Protect what’s good”, Tetra Pak Vietnam has a sustain growing trend on sales of packaging.

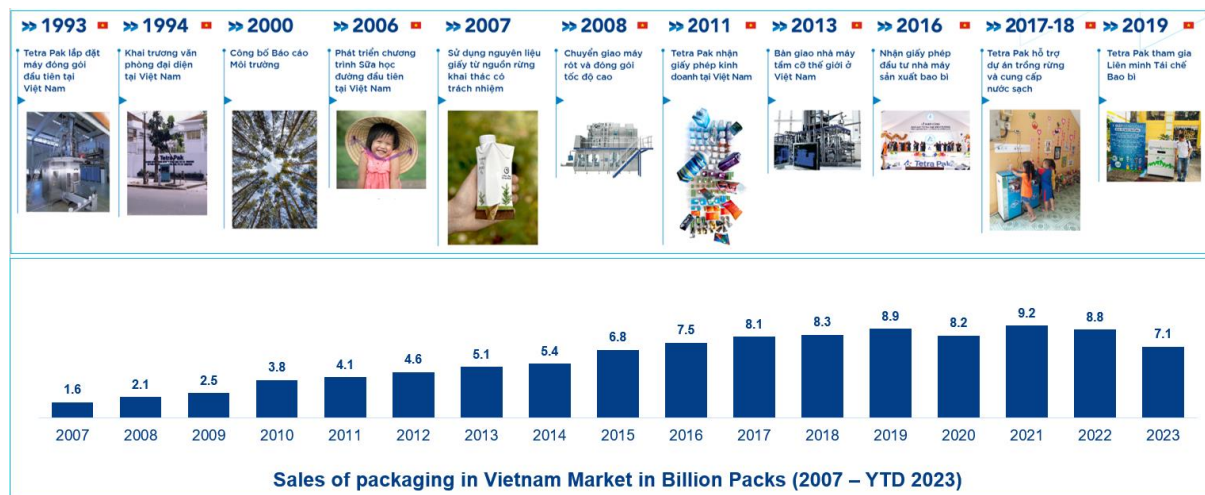


Figure 1.6 Tetra Pak Vietnam sales of packaging trend

### 1.4 Tetra Pak Binh Duong Factory

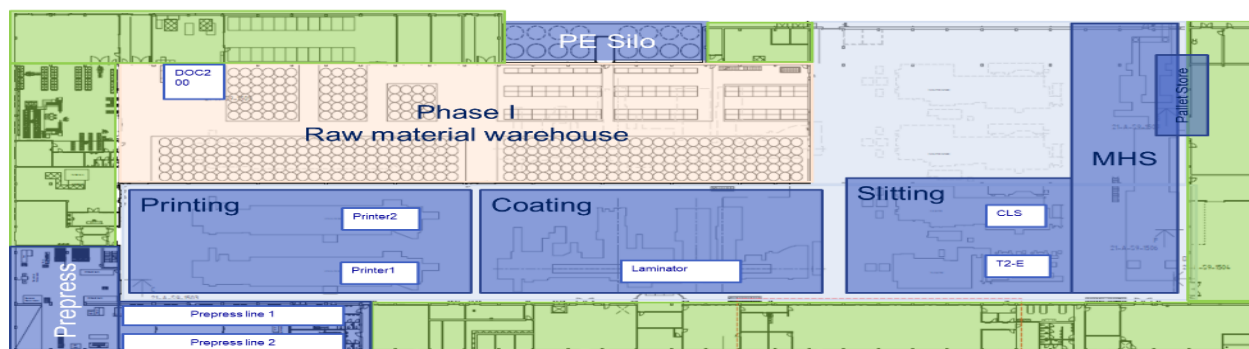
#### 1.4.1 Binh Duong Factory Overview





To support for fast growing of Vietnam and APAC market, Tetra Pak Binh Duong Project was launched in 2016. Tetra Pak Binh Duong factory is putted into operation in May 2019, with world-class technical equipment, management system, energy saving and environmental protection, Factory area: 100,000 square meters; construction area: 36,000 square meters. Our factory proud to be the first one got certified for LEED Ver.4 Gold in Vietnam.

Right after production start in 2019, we were certified for 3 ISO system include: Safety, Environment, Quality and BRC. Not only achieve those standards, but we are also doing good job of maintaining, especially, for BRC, we proud to be the first factory in Vietnam who achieved BRC level AA+ in November 2022.

#### 1.4.2 Factory layout and our equipment

Tetra Pak Binh Duong is one line factory with 2 Printers, 1 Laminator and 2 Slitters.



Prepress	Printing	Coating	Slitting
			
<p><b>Prepress: 2 Lines</b></p> <ul style="list-style-type: none"> <li>• Dupont machine</li> <li>• Easy design platform</li> </ul>	<p><b>Printers: VT Flex 175 ES (2018)</b></p> <ul style="list-style-type: none"> <li>• IVFC (Ink Viscosity and Flow control)</li> <li>• Unwinder Splicing system</li> <li>• Futec to ISRA for print inspection</li> <li>• Rewinder safety fencing</li> </ul>	<p><b>Laminator: VT LAM 650/6 (2018)</b></p> <ul style="list-style-type: none"> <li>• Rew: Electrical Braking roller and Electrical shaft extractor</li> <li>• Improved Fume exhaust system</li> <li>• Ready for ALIA</li> </ul>	<p><b>Slitter T2E (2018)</b></p> <ul style="list-style-type: none"> <li>• All operations Electrical (No Hydraulics)</li> <li>• Safety bar for lifting table</li> <li>• Software improvements</li> </ul> <p><b>CLS Slitter (2018)</b></p> <ul style="list-style-type: none"> <li>• Melt glue for rewinder core</li> <li>• Rew gear lubrication system</li> </ul>

### 1.4.3 Factory capacity

Factory designed for capacity 5.5 million Standards pack/ year.

Current capacity: 4.4 million standards pack/ year

### 1.4.4 Product Portfolio

We have two main products are TBA and TFA, accounted 95% in total volume. In 2021 we developed new product as PoMF and TBA Slim Leaf. In 2023, based on demand of customer, we developed TCA.



Figure 1.11 Product Portfolio

### 1.4.5 Our People

The important part to driving our factory is Our People, we have 74% of blue collar, 9% of female, more than 80% of population is Diploma and Bachelor. We have very young people who are directly driving factory operation and willing to take the business challenge.

Our factory located in a high developing industrial zone where the labour market is very dynamic.

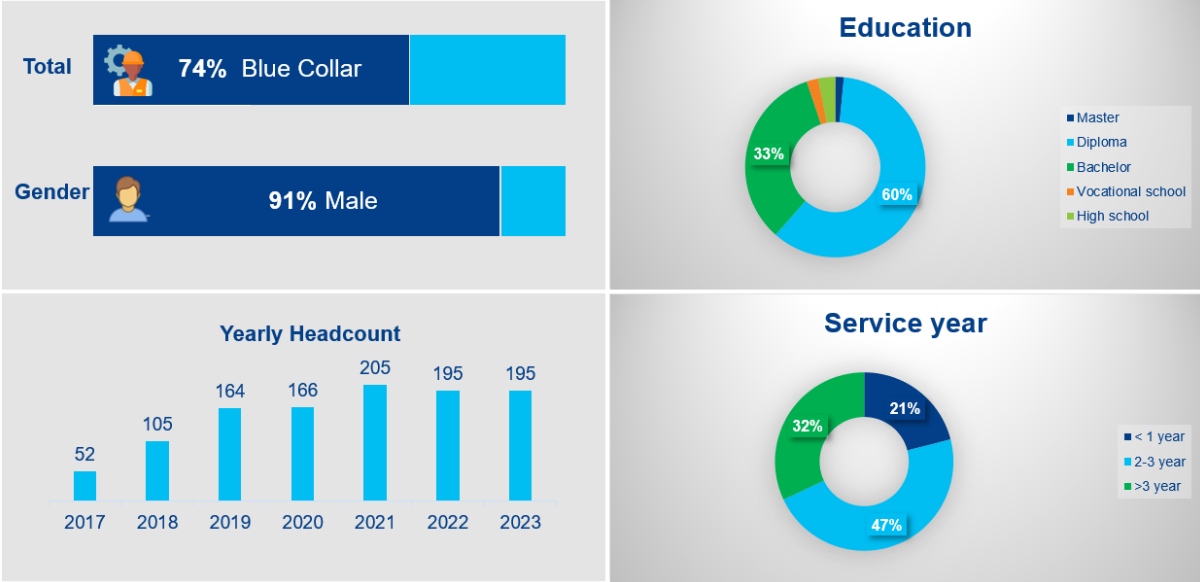


Figure 1.12 Our People



## 2 Milestone of Manufacturing excellence

WCM (TPM) is defined globally as our way of working, that is the reason why Binh Duong Factory kicked off WCM activity from day one. From 2020, all 10 WCM Pillars were built up and day by day improve our factory performance.

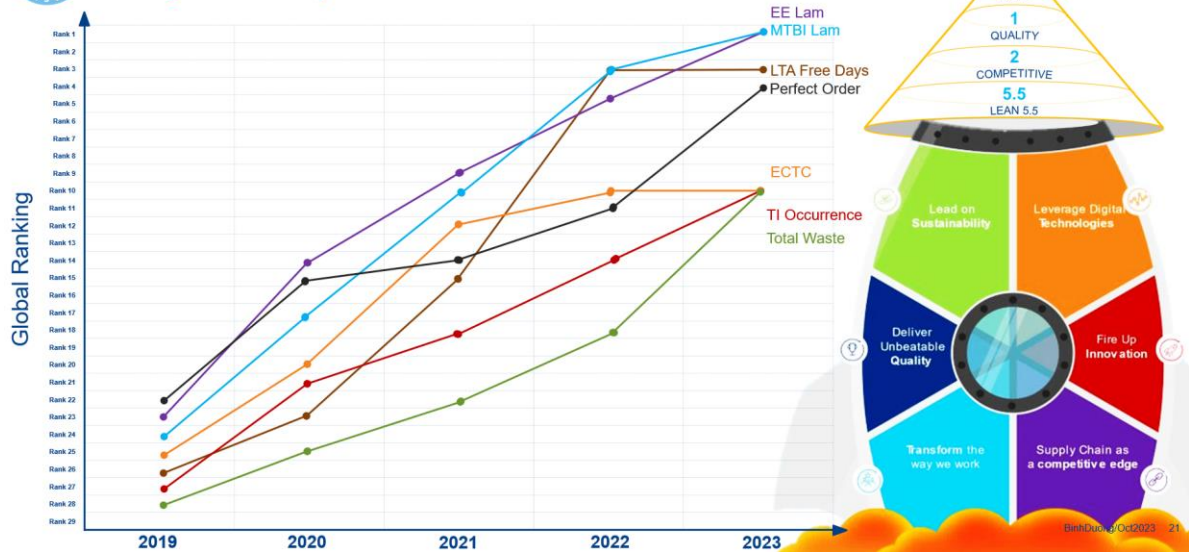


Figure 2.1 Milestone of Manufacturing Excellence

In within last 3 years, we were successfully moving from Foundation level to Silver level follow our internal assessment and this is the first time we apply for JiPM award. As the main supplier of packaging material for several big FMCG company in Vietnam and Asian, we are frequently sharing our good practice of manufacturing management to our customers via their onsite visit. That will be our honour to share our TPM results also to all customers as the certified JiPM Excellence Award Plant.



## Binh Duong 4 Years Evolution Significant improvement towards World Class



In 2019, Tetra Pak Binh Duong's KPI were performing in the bottom tier. But through the dedicated implementation of WCM principles over the past four years, we've achieved a remarkable turnaround, propelling ourselves to the top spot in the global rankings in EE Laminating and MTBI Laminating process

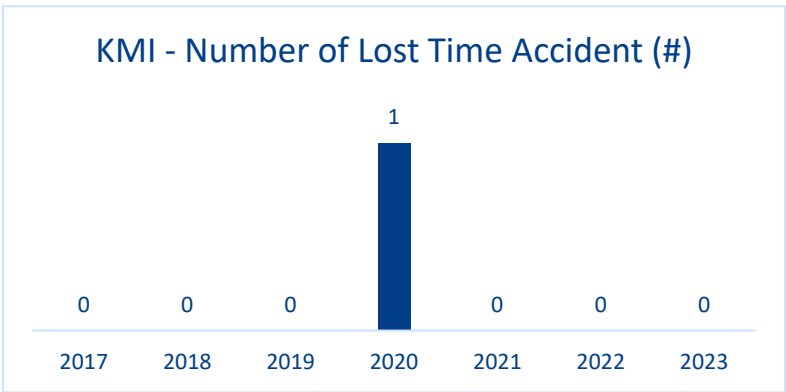
### 3 Benefit Achieved

Since the implementation of TPM, we managed to improve our performance in both of Tangible and Intangible. The way of working was improved to increase our capability of Loss eradication.

#### 3.1 Tangible business result improved day by day

Here is the summary of our performance:

- 1) More than 1435 days without accident



- 2) Customer Experience Score was improved 37 points from 2019.



Figure 3.2 Customer Experience Score

3) Extend Converting Transformation Cost was reduced 41%

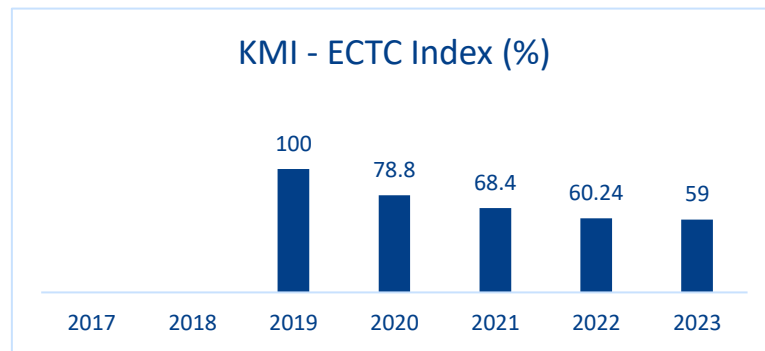


Figure 3.3 ECTC Index

4) Production volume was increased 338.5%

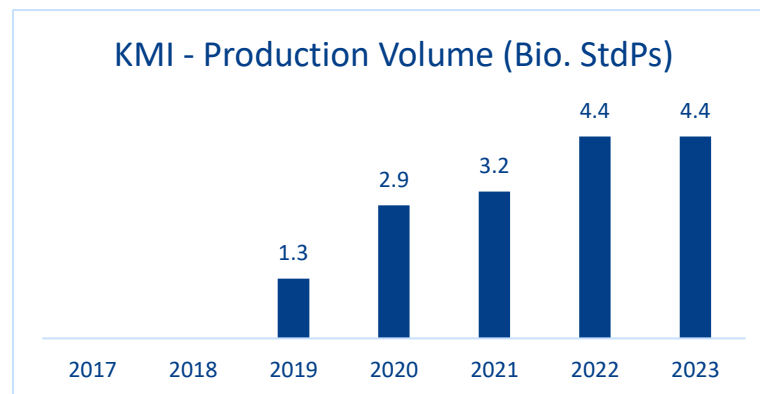


Figure 3.4 Production volume

### 3.2 Intangible Result is positive trend.

The proactive way of developing our people. Started from the beginning of our Factory, we have developed our people with very strong skill matrix of functional and TPM. Everyone is involving in daily WCM activities: Kaizen, Suggestion, AM, Team improvement.

As the result our Employee Engagement score was increased 30 points.

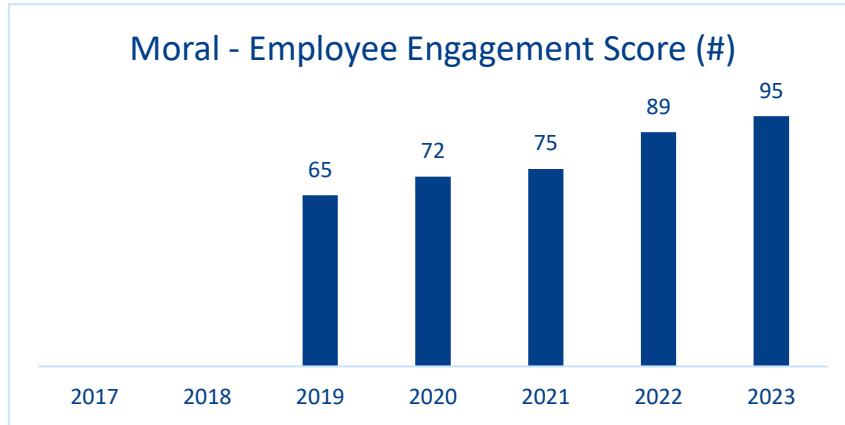


Figure 3.5 Employee Engagement Score

## 4 Key of Our Manufacturing Excellence

We always start our Manufacturing Excellence with global strategy 2030 together with our SCO strategy. Besides, input from Market company and Voice from Customer are these key inputs for us to define our strategy.

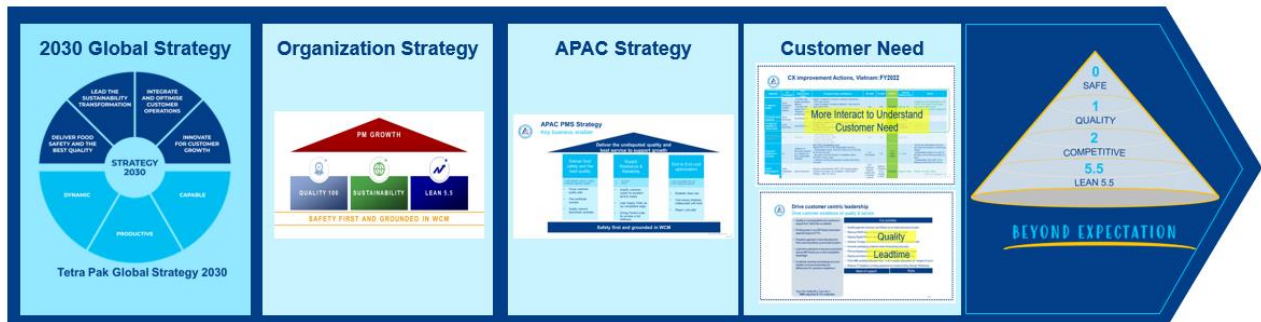


Figure 4.1 Strategy define with link to global strategy

Alignment and Communication in Whole factory is the approach we bring our Strategy from Highest level to the Shopfloor people, who are day by day driving our Manufacturing Excellence



Figure 4.2 Our communication program

Base on the Factory Strategy we define the KMIs, KPIs, and the KAIs to achieve our result.

Key Results	KMIs	Representative KPI
Safety	Number of Lost Time Accident (LTA)	0 LTA
Quality	Customer Experience Score (CX score)	1 Billion StdPack/TI
Cost	ECTC	2% of Total waste
Productivity	Lean 5.5* *Coating TEE	5.5 Billion StdPack capacity
Moral	Employee Engagement Score	

Figure 4.3 Key Management Indicator developing

To be able to achieve those KMIs, our TPM system focus on 3 must win battles: Must win all teams/improvement project; Must maintain all basic condition; Must engage everyone every day.

With the right implementation of TPM tool, TPM is enabling us to stay competitive within Tetra Pak group as well as competitors. People development, zero loss system and governance

are the pillars for world class results. Of course, 100% involvement and engagement are the foundation. TPM mindset develops an environment that encourages people to think in unusual.

# 5 Achievement Record

With high engagement and full alignment of all employees, TPM tool and mindset help us to drive all our indicators go in right track.

Below figure show you clearly the positive trend of all our indicators:

- Safety: We maintain zero lost time accident in last 3 years
- Quality: Number of standard packs/ customer claim increase year by years
- Cost: Total waste is key drive for cost also reduce significantly
- Productivity: Our volume produce increase significantly year by year



Figure 5.1 Achievement record



### TPM Award Assessment Achievement Sheet

<b>Company &amp; plant name</b>	Tetra Pak Binh Duong Joint Stock Company
<b>TPM Slogan/Objectives</b>	Beyond Expectation

▼ Please fill in the range of data you are collecting ▼

Category	Index	Unit	BM (TPM Started or last time awarded)	Actual Status	Target
Enter the year →			2019 *start 19May2019	2023	2023
S	Number of work-related accidents requiring days off work	Cases/ year	0	0	0
S	Number of work-related accidents not requiring days off work	Cases/ year	1	0	0
P	Productivity for main products	1000 Standard packs/ employee	485	1905	2102
P	OEE (or Overall Plant Efficiency)	%	51.20 (Coating machine)	75.70 (Coating machine)	78.07 (Coating machine)
P	Availability	%	65.60 (Coating machine)	79.87 (Coating machine)	84.6 (Coating machine)
P	Performance Rate	%	80.20 (Coating machine)	95.22 (Coating machine)	92.7 (Coating machine)
P	Quality Products Rate	%	97.30 (Coating machine)	99.53 (Coating machine)	99.55 (Coating machine)
P	Number of breakdowns	Breakdowns/ year	261	143	220
P	MTBF	Hour	12.51 (Coating machine)	160 (Coating machine)	42.00 (Coating machine)
P	MTTR	Hour	2.60	1.41	1.70
Q	Number of customer complaints	Number/year	74	28	31
Q	In-line defect rate (scrap)	%	6.37	2.91	2.90
Q	In-line defect rate (rework)	%	24.34	21.20	19.00
C	Cost index	Eur/ Million Standard Pack	12.93	8.62	7.20
D	Production Lead time	Days	7.80	3.80	4.00
D	Delivery performance	%	58.40	92.60	80.00
S	Frequency rate	Number of occupational accidents with leave for 1 000 000 worked hours	1.23	0.00	0.00
M	Number of Employee Suggestions	Number/year	46	621	600

\* The data is Full Year of 2023

\* Bottleneck machine: Coating machine