

# ADVANCED SPECIAL AWARD FOR TPM ACHIEVEMENT

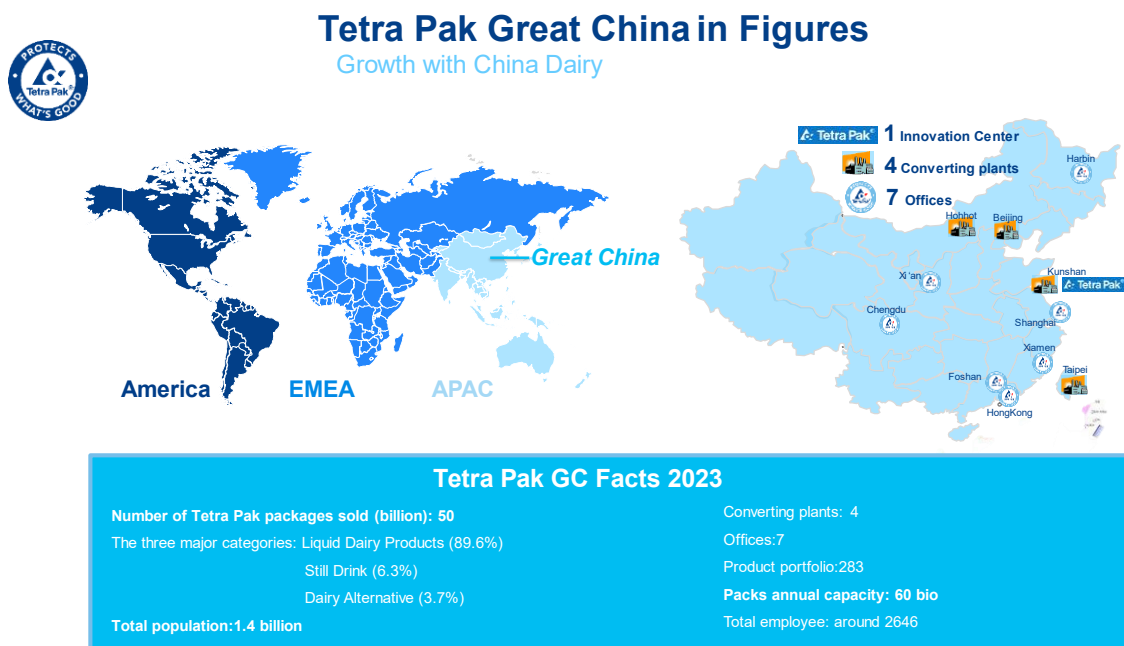
Tetra Pak (Beijing) Co., Ltd.



## 1. Company Profile

Tetra Pak is a world-leading food processing and packaging solutions company, known for its innovative and environmentally sound products. The company was founded in 1951 in Sweden and has since grown to have a global presence with more than 25,000 employees. Tetra Pak's promise, "PROTECTS WHAT'S GOOD™," reflects its commitment to making food safe and available everywhere.

Tetra Pak specializes in complete solutions for the processing, packaging, and distribution of food products, including dairy, beverages, ice cream, cheese, food, vegetables, and pet food. Environmental sustainability is a core part of Tetra Pak's business strategy. The company sets goals for continuous improvement in development, sourcing, manufacturing, and transportation activities, taking a lifecycle view to improve environmental performance.



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General

Great China is part of APAC, one of the three regions in TP global, which has 7 markets, 8 PM and AM factory, top 10 customers including Yili, Mengniu, Vietnam milk. Great China group has one innovation center, 4 converting plants and 7 sales office, annual capacity is 60 billion packs.



There are 4 converting factories within Great China Market. The position of Beijing is one of GC most important factories. There are three specialties for TetraPak Beijing. The 1<sup>st</sup> is we majorly Supply north & middle region in China; the 2<sup>nd</sup> is strategically bring in complexity to meet market demand, e.g., MF / PLH / CRAFT; the 3<sup>rd</sup> as sitting in the capital of China, we are facing the most strict Env regulation, which need us to lead the Env innovation and further share with HH and KS, since what happen in Beijing today will happen in other factories tomorrow.

China market used to be the most rapid growth market before, around every 3 years increase 10 billion, 2021 reached the new volume height 53.2 billion. But since combine with COVID impact, with the economy declining new market dynamics had formed, GC is entering a period of market volatility. Consumption is not likely to recover in short time.



## Our Machinery

Pilot for portfolio expansion to support market growth



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General

Tetra Pak Beijing Factory is two-standard-line factory, equipped with advance format capability, including, PLH, MF, craft, non-foil product. With the advance technology, we are continuous adding more value to customer, in prepress, with non-solvent plate, we committed 4 hours lead time, which support 100% of rush order production. in Printing, we are facing AOS drop rapidly which is nearly decreased to 26.6 KM, manage well under high complexity; our Lam is GC PLH plant, we target to be the best performance PLH factory; slitting with 12-web capability for the T2TD slitter; palletizing is our bottle neck, we are studying AGV solution to increase the productivity in fishing area



## Beijing Factory Products Evolution

### 6 new products in 2024:

- 3 Done: TBA 200 mid; TPA 200 edge; TPA 250 edge digital printing
- 3 On-going: TBA 200 slim ; TPA 250 edge new spec; TBA 1000 edge new spec;

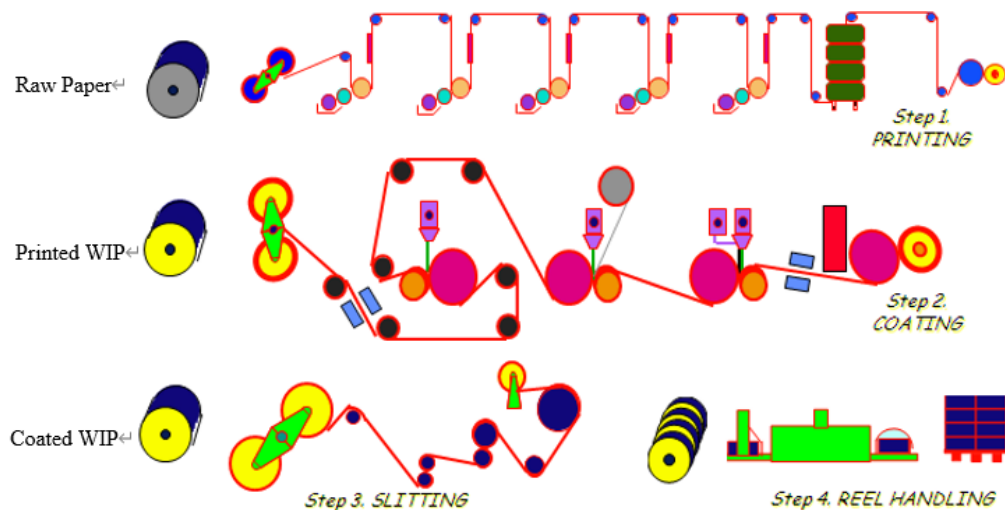


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General

So far totally 234 QSV is approved and can be produced in Beijing factory. Some niche and unique products we called Tetra Artistry, such as Reflect, Craft and other new products can be only produced in Beijing to support market growth and export worldwide.

The product category is increasing a lot year by year with the strong growth and consumption upgrade in Greater China Market, which brings in huge complexity and negative impact on factory performance.

Our production process consists of 4 main steps: step 1, printing on the raw paper, creasing to form the package folding line; step 2, coating PE and aluminium foil onto the printed paper; step 3: slitting the whole roll into single webs on slitters; step 4: conveyor and reel handling system will pack the finished goods before the product is sent to the warehouse.



## 2. Milestone on the Journey to Manufacturing Excellence

Tetra Pak Beijing factory was built up in 2004, started first commercial production in September. At same time, factory re-launched WCM activity.

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*We call TPM as WCM internally; WCM standards for World Class Manufacturing, which is mandatory implemented in all Tetra Pak converting factories, since 1999.*  
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In January 2007, factory has achieved JIPM excellence award, passed JIPM consistency award final audit in Dec 2009, and passed JIPM special award final audit in Dec 2011.

After 2011, since the volume change was rapidly, Tetra Pak Beijing Factory faced challenges from capacity and quality. Due to continuous changes, we decided to re-shape our internal WCM way of working with Change Management and stopped TPM Awards Applications.

In 2022, after a successfully turn-around from the Change Management, and several years of internal WCM hyper-care by Tetra Pak APAC Region and Global, we re-started to challenge TPM Awards and got the TPM Special Awards recognition from TPM Office again.

In 2023, we internally upgrade our WCM maturity from Silver Band to Gold Band; in 2024, we have passed the Tetra Pak Greenlight Audit to apply for TPM Advanced Special Awards in 2025.

We plan to challenge World Class level in 2028.







### 3. Benefits Achieved

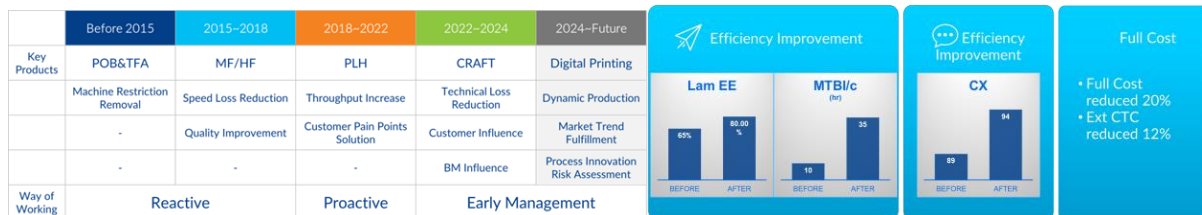
After we got JIPM Special award in 2022, we continue WCM (TPM) activities and make improvement in terms of PQCDSM as before. Besides key factory performance improvement, we also achieved intangible benefits.

1. Improved Customer perception and Company image. TPM increases our Competitiveness on the market and helps to win customer loyalty and secure future growth.
2. Increased speed of result improvement in multiple areas. TPM is coaching us on how to attack problems in best and fastest way and make sure that improvements are well maintained in the future. Constant “training” in problem eradication makes us prepared for the future challenges!
3. People development and talent retention. TPM contributes to professional growth of employees making it a continuous personal development and training cycle. As result we achieve continuous improvement of production culture, attitude and commitment from the employees.
4. Cost related improvements, we grow Full Cost mindset instead of only focusing on factory related cost reduction, we find every opportunity to collaborate with other functions like Integrated Supply Chain, Marketing Operations and Base Material Management Teams, to achieve competitive cost for both business successes, and customer value adding.
5. Delivery On Time is critical for customers to value Tetra Pak Beijing service level. We have shorter the lead time by higher our internal capacity, and also, we work with Integrated Supply Chain to together select the best cargo. In 2023 we have opened a Makigami Team, and the lead time shortened 5 days for our MSPI market customers.
6. For Safety, we continued to develop IAR which not only includes the normal operation, but also include abnormal operation under situations that operators need to have rapid reactions. Safety leadership and culture is built within Beijing factory. Even we have just had a safety case at the year end of 2024, we quickly came up with countermeasures aiming to eliminate the risks and have 3rd party with more professional safety risk view, to help us eliminate the risks that we couldn't recognized.
7. In the meanwhile, zero loss mindset help us to challenge ourselves to excellent performance, but also contribute to social responsibilities, such as carbon footprint improvement, zero emission and carbon neutrality.

Last but not the least, we managed to have people competence improving along with WCM activities, our employees

## 4. Key to our Manufacturing Excellence

Steering Committee drive implementation of WCM and make sure WCM become a part of daily work for all levels of people in the factory. With support from WCM mindset, the way of our working developed from reactive to proactive. After we got WCM special award, we continuously expand from proactive to early management. More and more creative activities came from technical loss reduction, customer influence improvement and so on.



For example, MF&HF product is our key product which amount is 20% of our total volume 2024. We met two main challenges: high frequency of stops due to film splice failure and décor imprint. As we mentioned before, zero loss mindset help us to challenge ourselves to excellent performance. We launched MF Speed increase PM analysis team, Semi Spec increase Kaizen team and deeper studied MF&HF film bouncing technology. Based on this serious hard work, we revise global film BM spec. And Global team revised global laminator process spec based on BJ team output. Current, we are the global MF&HF product benchmark position.

### MF&HF Improvements

#### AM&PM+FI

#### EE Increase for MF & HF



TPA250Edge with PLH is our star product. This QSV run 7webs for all global factories. 7 webs QSV is not only impact our output, but also give negative impact to our customer order size and delivery. With kaizen improvement mindset, we didn't satisfy current condition. BJ team study the technical limited for whole process and run EM team to increase TPA250Edge from 7 webs to 8 webs. Our productivity increased 14.3% and service level exceed customer expectation.

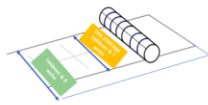


## PLH Improvements

### QM+EM

#### Throughput Improvement: TPA250E Web Increase from 7 to 8

##### Challenges



- Narrow web width with 1248mm with lowest throughput and nom to std ratio

##### Improvement Activities

- UA5000 condition optimization
- NNC Nip roller study
- Creasing tool un-centralized production test
- Extrusion capability study
- BM switch planning

##### Kaizen Team & Methodology

- TPA250E Web Increase EM Team\_EPM
- Web Increase taskforce with D&T

##### Results

- VSU 100% Achievement
- 0 Quality issue caused by web increase
- Productivity increased 14.3%



Global Benchmark

We have many good examples from proactive and Early management. We are so proud of our good result with so complexity demand from internal and external. In the future, we know that our market will be more volatility, uncertainty, complexity and ambiguity. We believe that we must rely on WCM management system to reach excellent result such as:

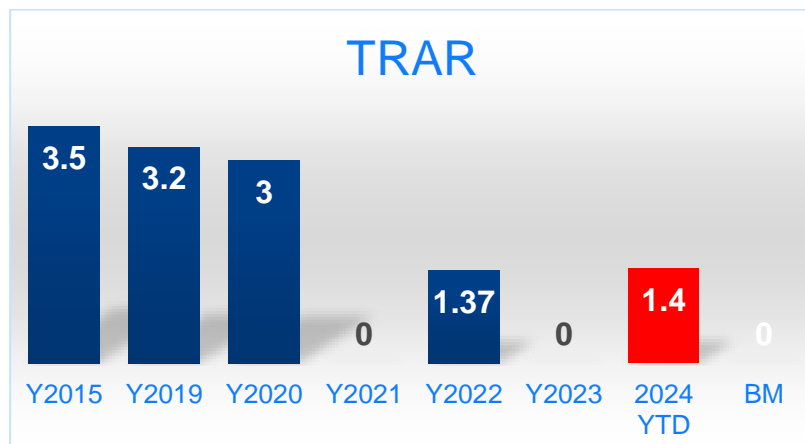
- 1, Team work from different function even involve our supplier and customer
- 2, 0 mindset to support our breakthrough improvement

## 5. Achievement Record

Compared with the year of 2022 when we got the Special Awards, improvements have happened with ambition to further reduce losses in 2025.

Category	Index	Unit	BM (TPM Started or last time awarded)	Actual Status	Target
Enter the year →			2022	2024 Actual Status (Nov YTD)	2025
S	Number of work-related accidents requiring days off work	Cases/ year	1	1	0
S	Number of work-related accidents not requiring days off work	Cases/ year	1	1	0
P	Productivity for main products	Mstd/HC	1.927	1.930	2.109
P	Bottleneck OEE	%	65.18%	68.14%	70.24%
P	Bottleneck EE	%	77.28%	80.16%	81.60%
P	Quality Products Rate	%	96.85%	96.92%	97.10%
P	Number of breakdowns	Breakdowns/ year	408	279	288
P	MTBF	Hour	108	137	145
P	MTTR	Hour	1.26	1.1	0.99
Q	Number of customer complaints	Number/year	19	10	10
Q	In-line defect rate (scrap)	%	0.66	0.65	0.6
Q	In-line defect rate (rework)	%	19	19.6	19.6
C	Cost index	Cost/Unit Cost/Kilogram	100	81.7	78.2
D	Production Lead time	Days	13	11	11
D	Delivery performance	%	81	83	84.5
S	Frequency rate	Number of occupational accidents with leave for 1 000 000 worked hours	1	1	0
M	Number of Employee Suggestions/tags	Number/year	4848	7524	8820

For safety Index, Tetra Pak follow up TRAR, which means Total Recordable Accident Rate. The past years, we have achieved the following results.



At the year of 2024, we have encountered a safety accident. Detailed analysis is shared in the separate sharing files.