

PT. WAHANA DUTA JAYA RUCIKA LEMAH ABANG PLANT

Company Profile



TOTAL PRODUCTIVE MAINTENANCE

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TOTAL PRODUCTIVE MAINTENANCE

COMPANY PROFILE

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1. COMPANY, PLANT/FACTORY PROFILE

1.1 Company Profile

1.1.1 History of Wahana Duta Jaya Rucika

PT. Wahana Duta Jaya Rucika (PT. WDJR) is a subsidiary of PT. Wahana Nusantara Rucika (PT. WNR). Formerly known as PT. Wavin Duta Jaya, the company was established in 1973. All of the company's operations are licensed by Wavin BV Holland, one of the largest PVC pipe manufacturers in the world with production sites located throughout Europe. Experience for more than 50 years, we have consistently produced excellent product quality.

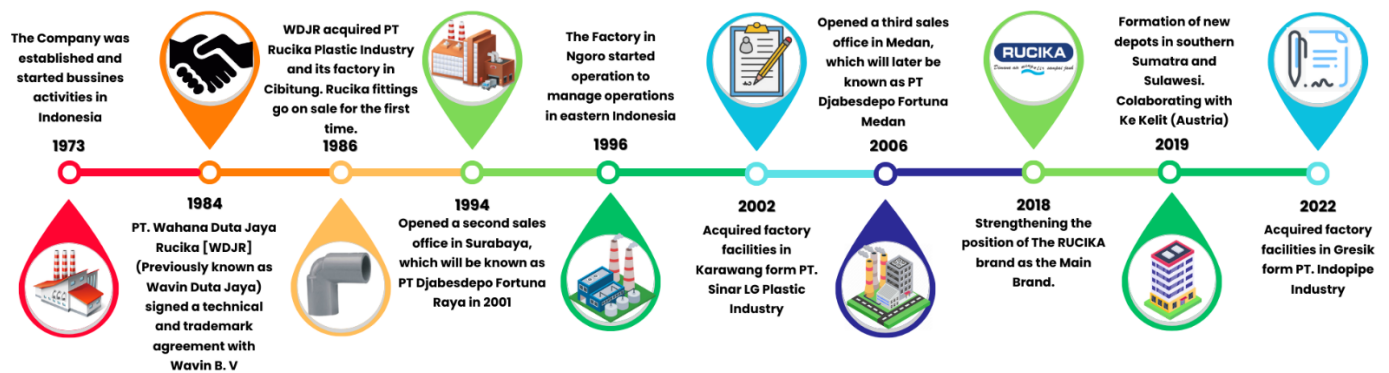


Figure 1. 1 History of Wahana Duta Jaya Rucika

PT. WDJR has 5 plants located in :

1. Cibitung, Karawang, and Lemah Abang – West Java;
2. Ngoro and Gresik – East Java

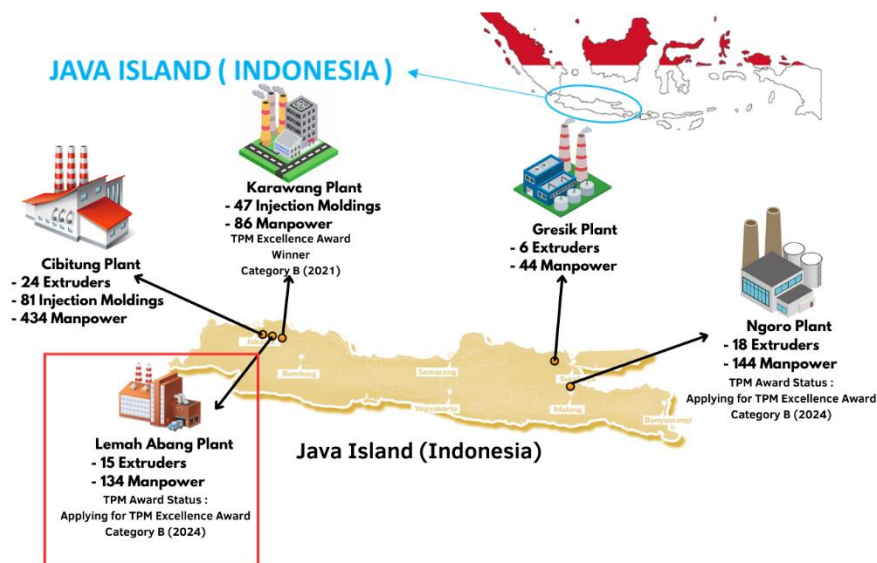


Figure 1. 2 PT. WDJR Location

1.1.2 Company Value, Vision and Mission

Growing to become a pioneer involves embarking on a series of extraordinary journeys to establish trust with the Indonesian people. This is a core value for our company as it expands its vision and mission.

INSPIRED TO EXCEED



Exemplary Leadership

Leading by example in an attitude of humility, sincerity and integrity to achieve optimal results.



Excellence

Always looking for ways to exceed existing standards with continuous improvement and innovation.



Dedication to Market

Sensitive to market intuition that can anticipate and meet customer expectations.



Continuing Partnership

Forging long-term mutually beneficial relationships with business partners to build a trusted company image.



Empowerment

Empowerment by building human resources, systems and governance for business continuity.

Figure 1. 4 Company Vision and Mission



Figure 1. 3 Company Vision and Mission

1.1.3 Innovation

It is our ongoing endeavor to advance as a world-class innovating manufacturer. Within our organization, we create new products annually as part of our innovative approach to achieving a **“TOTAL SOLUTION”**. We strengthen our commitment to innovation through **“COLLABOACTION,”** a collaborative effort with competent and trusted foreign partners to produce innovative products and provide total piping system solutions.



One of them is MAEZAWA. A well-known company in Japan that is renowned to be the leading piping system, producing thousands of innovative products.



An innovation was carried out by RUCIKA together with KE KELIT, a well-known piping manufacturer from Austria. In order to reach functions, comfort and daily necessities of life. Such as the need for the use of a special series of piping systems for hot and cold pressurized water.

HIGHEST APPRECIATION FOR AN INNOVATION



Figure 1. 5 Awards Received by the Company

We have established a strong foundation of community trust, driving our ongoing commitment to enhance our performance.

Our hard work and innovation have earned us two prestigious awards, including Top Brand since 2011 and Digital Popular Brand since 2016, which we have maintained for more than five consecutive years.

That appreciation motivates us to be more productive and innovative with the best human resources; we always make superior-quality products with proof that we have trust and gratitude for continuing to grow and develop.

CERTIFICATION FOR COMPLIANCE TO REGULATION

PT. WNR also got certification for Quality Management System, Environment Management System, Safety Management System and Green Product



Figure 1. 6 Certification for Compliance to Regulation

1.1.4 History of PT. WDJR Lemah Abang Plant



Figure 1. 7 History of Lemah Abang Plant

PT. The WDJR Lemah Abang Plant was established in February 2015 to accommodate retail pipe demand with one mixer and three extruder machines, and started operations in September 2016. In 2017, we installed seven extruder machines, and in 2018, we installed a mixing machine and three extruder machines. With consistent operations at the Lemah Abang Plant, a single extruder machine was added in both 2019 and 2020.

By 2023, the Lemah Abang Plant already have two mixers, 15 extruders and a total installed production capacity of 7.8 tonnes per hour. As part of the journey towards World Class Manufacturing, the management is committed to implementing TPM by conducting a kick-off, launching five pillars in 2019 and submitting a TPM Award in 2024.

1.2 Organization and Business Process

1.2.1 Organization Structure PT WDJR Lemah Abang Plant

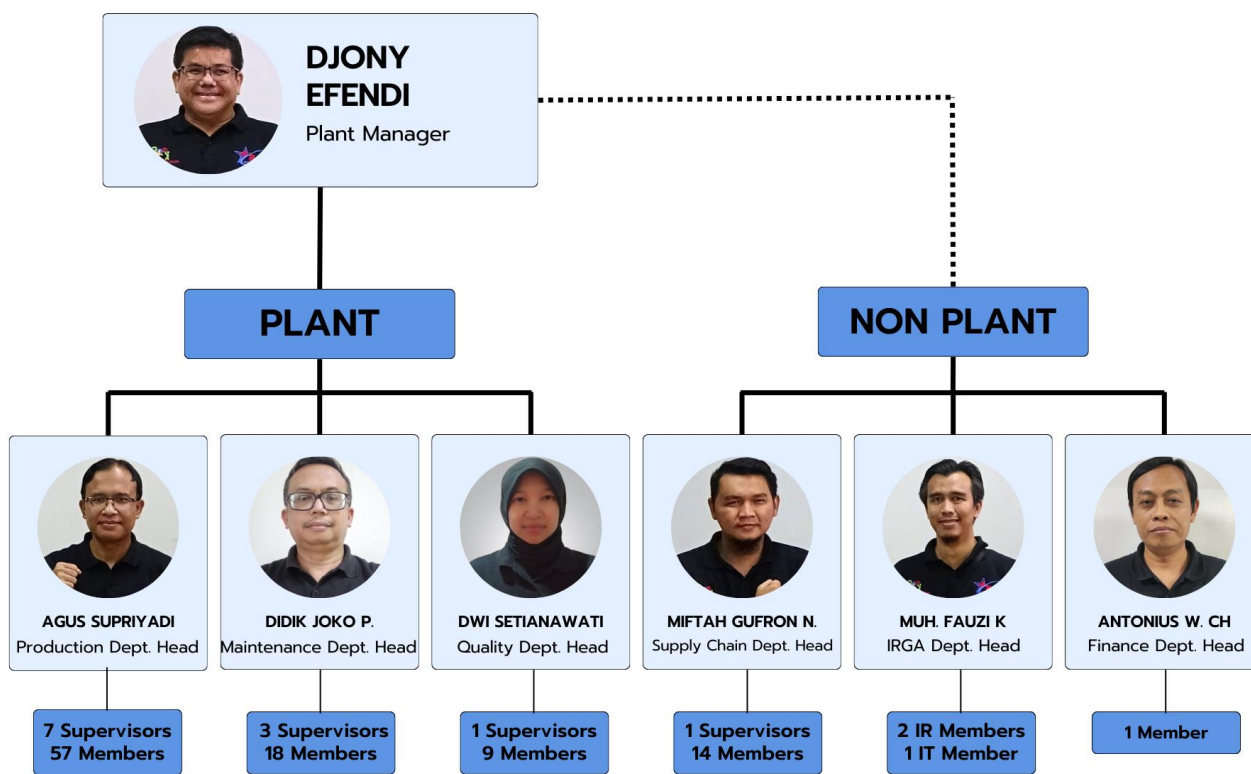


Figure 1. 8 Organization Structure at Lemah Abang Plant

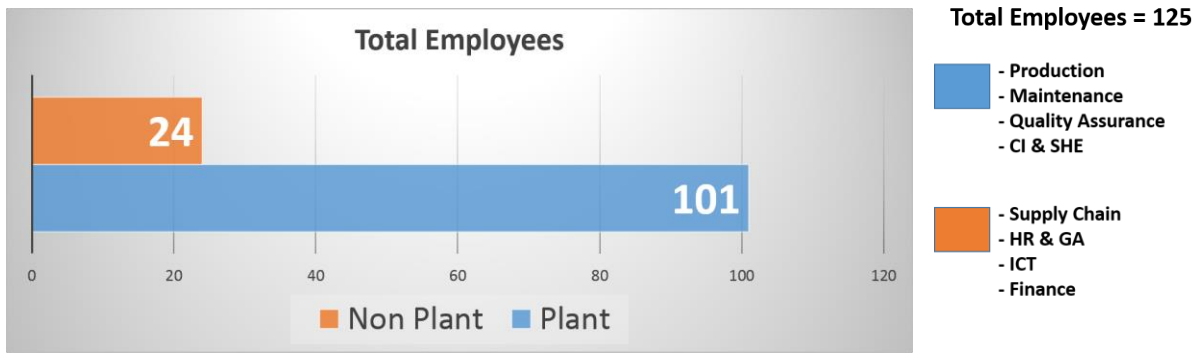
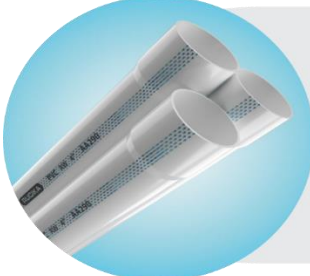


Figure 1. 9 Graph of Total Employees

1.2.2 Main Product PT WDJR Lemah Abang Plant

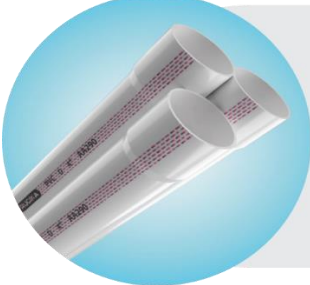
RUCIKA STANDARD is a UPVC pipe designed for pressurized and waste water networks. It is manufactured from uPVC (unplasticized polyvinyl chloride), which has many advantages over other polymeric materials, such as: the presence of calcium-zinc (no lead), corrosion resistance, strength, light weight, easy to connect and maintain. Produced according to both JIS and ISO standards and certified with the ISO 9001:2015 quality management system, RUCIKA STANDARD is a reliable and efficient choice for all your piping needs.



RUCIKA
Standard

- AW class-

AW class RUCIKA STANDARD PVC pipe, for pressurized clean water up to a working pressure of 10 kg/cm² with 14 different diameter sizes from 1/2" to 12".



RUCIKA
Standard

- D class-

D class RUCIKA STANDARD PVC pipe, for drains and waste with 11 different diameter sizes from 1-1/4" to 12".

Figure 1. 10 Main Product at Lemah Abang Plant

1.2.3 Production System PT WDJR Lemah Abang Plant

Currently, PT WDJR Lemah Abang Plant has World-Class production facilities with production capacity that can fulfill the needs of the retail, private and infrastructure sectors.

Pipe Business System

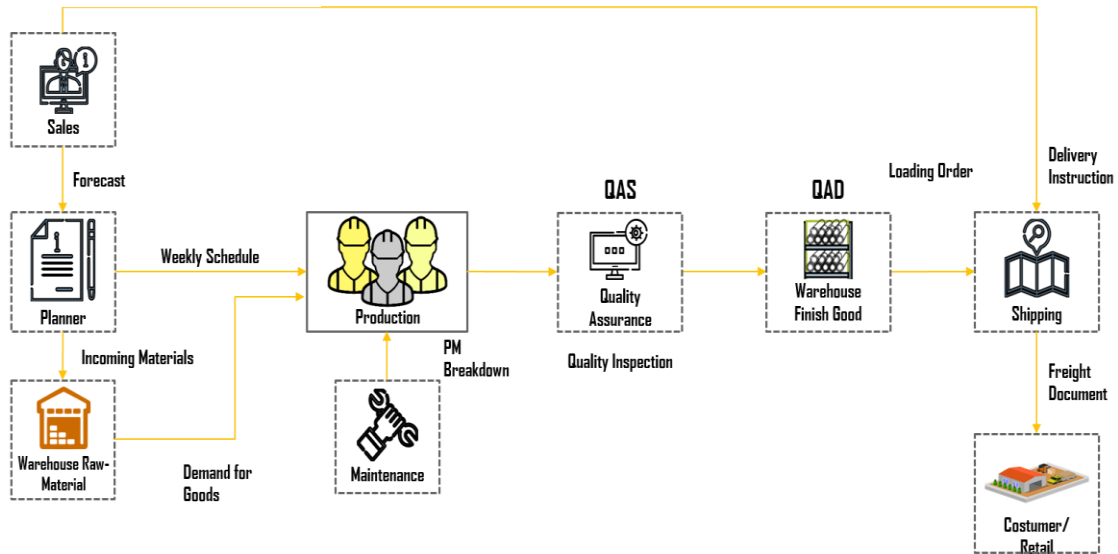


Figure 1. 11 Pipe Business System

Flow Production Process

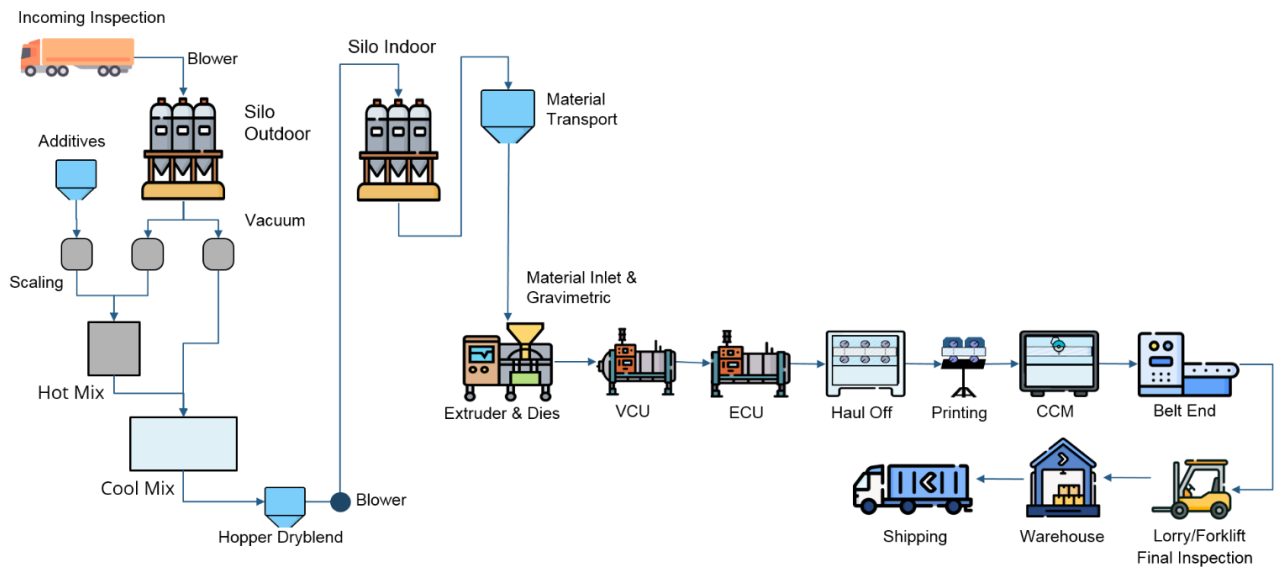


Figure 1. 12 Flow Production Process

2. MILESTONE ON THE JOURNEY OF MANUFACTURING EXCELLENCE

2.1 Why Choose TPM

PT. WDJR has a huge reason while applying for the TPM Award, both from external and internal factors insist to be the World Class Company, so it needs a World Class Effective Business Tools as TPM.

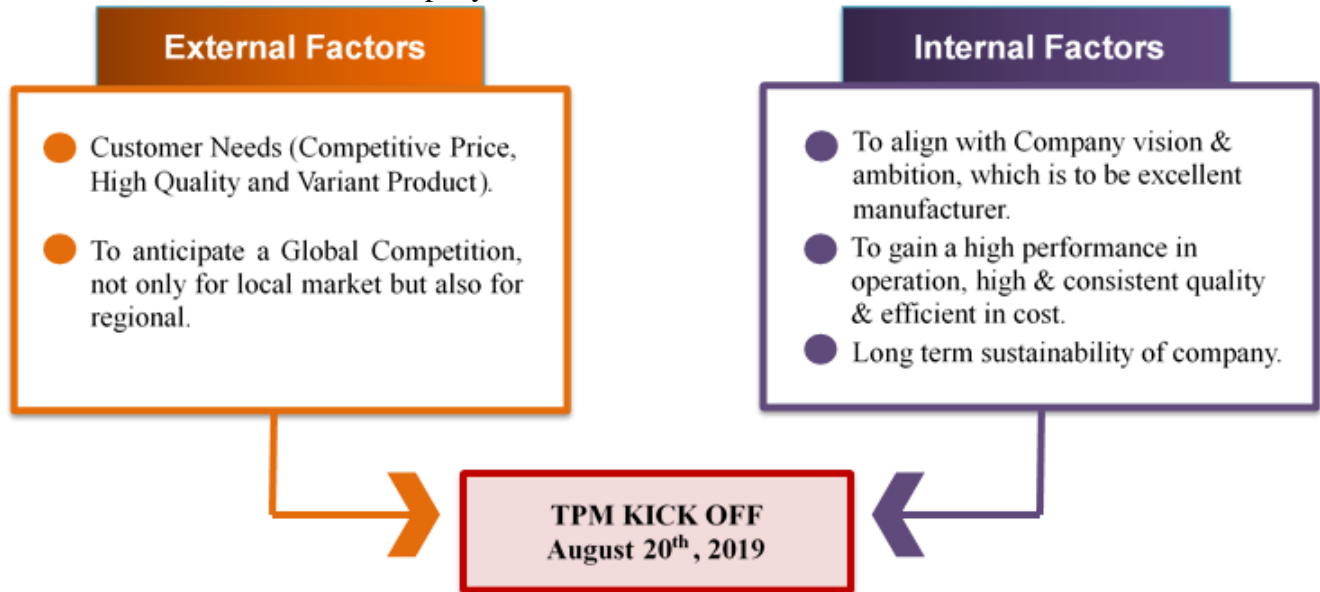


Figure 2. 1 Supporting factors of TPM

In the Company Strategic Framework, Management has a strongly believe that Manufacturing Excellence become a key foundation to achieve the Vision of the Company. Therefore Management commits to implement of TPM as way of working in Manufacturing.

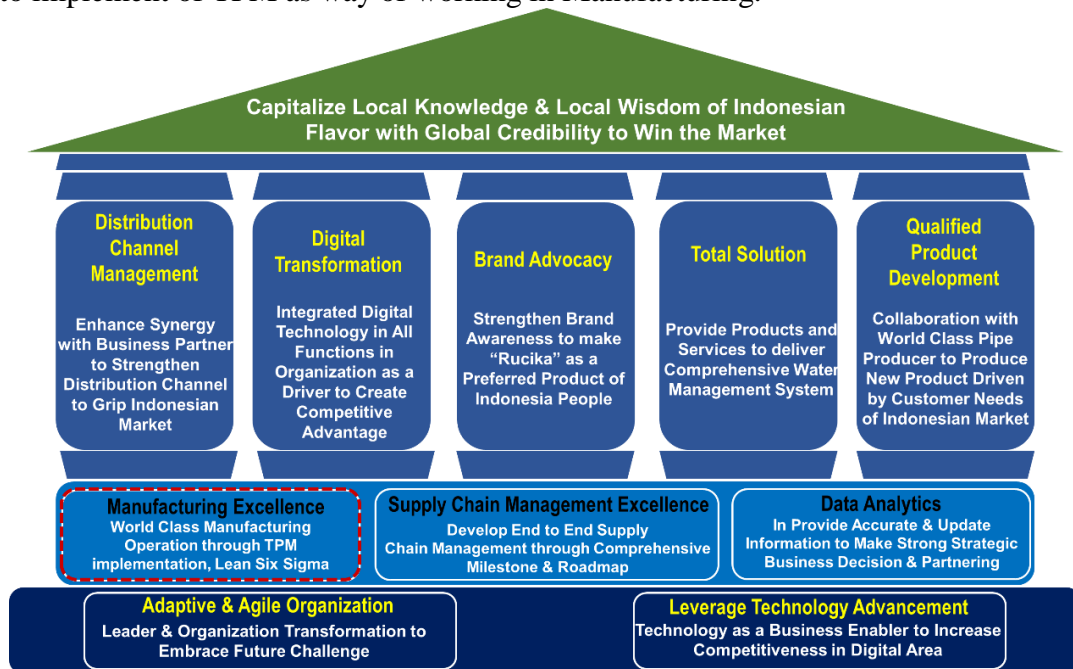


Figure 2. 2 Company Strategic Framework

Company Strategy Map

Implementing the Strategic Framework, Management maps its strategy in a Balanced Scorecard Strategy Maps which is annually reviewed.

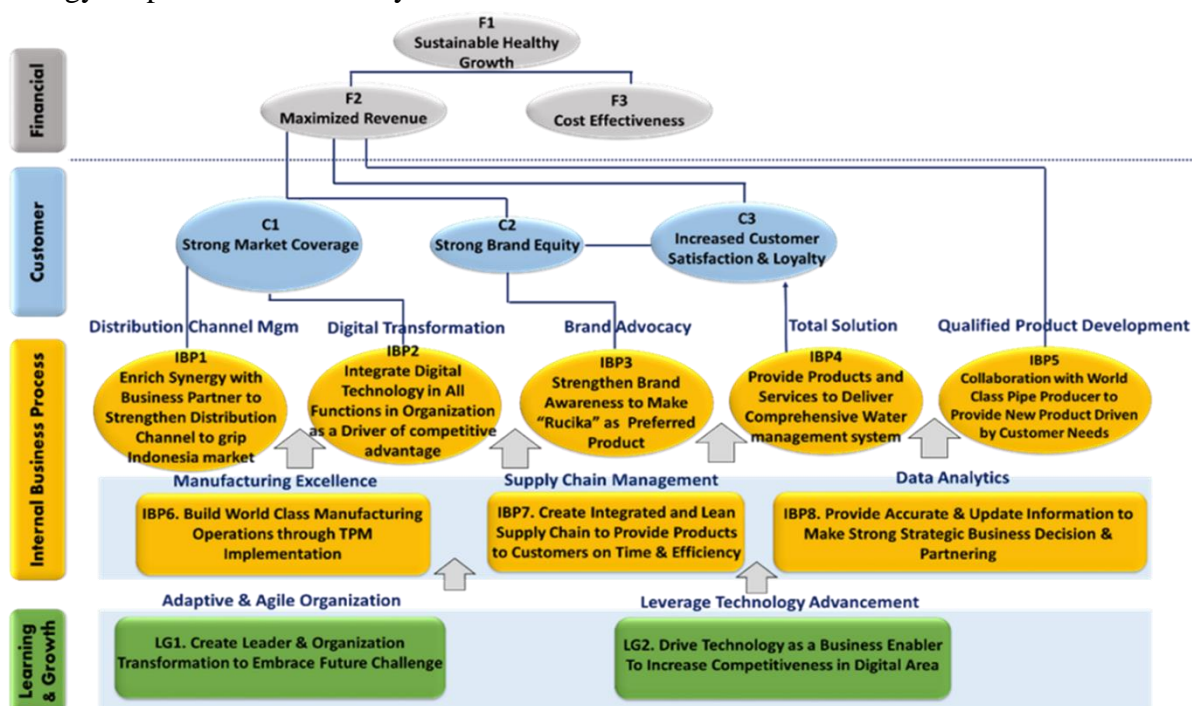


Figure 2. 3 Company Strategy Map

We made TPM policies to align with company vision. PT WDJR has implemented the TPM policies as a main management commitment by adapting the value of TPM Implementation.

TPM POLICIES

1. PT Wahana Duta Jaya Rucika implements TPM to support company's vision to grow and sustain long term business
2. TPM is our way to increase efficiency, quality performance, machine performance, productivity performance and other efficiencies
3. TPM is carried out in all plants and involves all employee
4. Strongly integrate all TPM pillars with functional division to attack losses and improve performance

Sarjuni Rahmat
 Chief of Supply Chain &
 Operational Excellence Officer

Figure 2. 4 TPM Policies in PT WDJR

TPM was introduced in 2019 with the aim of reducing losses and increasing efficiency and profitability. Initially, the pillars implemented were Autonomous Maintenance and Planned Maintenance, followed closely by Focused Improvement, Education and Training, and Safety, Health and Environment. All these pillars cooperate to support the company's goals as TPM Vision and Mission. As a part of the management commitment to TPM implementation, TPM is now becoming part of the company policy.

Company TPM Vision Mission



Figure 2. 5 Company TPM Vision and Mission

2.2 Company's TPM Organization Structure

TPM Steering Committee in PT. WDJR consists of Top Management (Board of Directors) who has a strong commitment to deploy the policy for each TPM Pillars, and also monitors and leads TPM Pillar Leaders' activities.

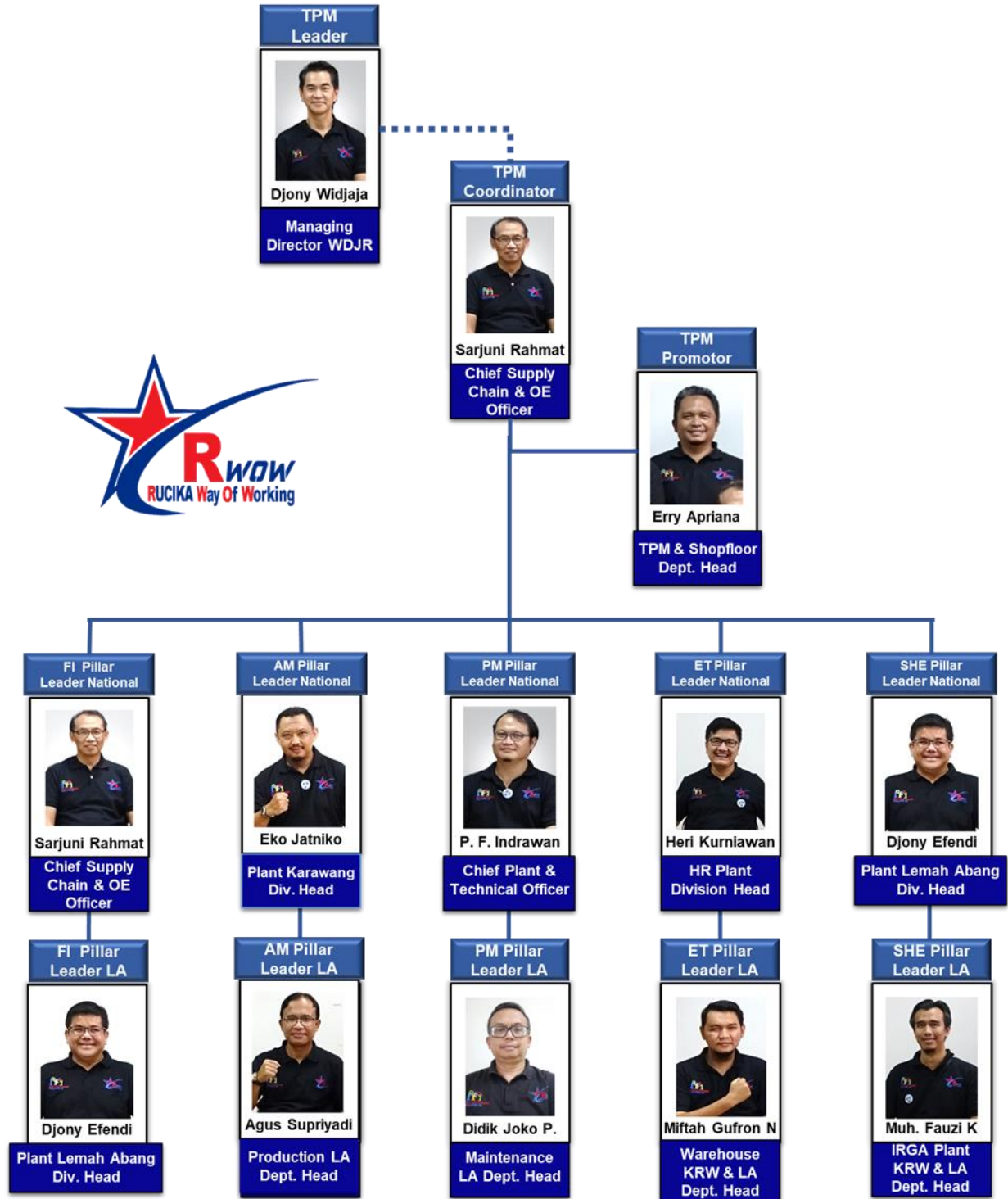


Figure 2. 6 PT.WDJR TPM Organization Structure

2.3 TPM Master Plan

The following is the TPM master plan for Plant LA from 2019-2027.

Fase JIPM	Step	Duration	2019	2020	2021	2022	2023												2024	2025	2026	2027						
			S1	S2	S1	S2	S1	S2	S1	S2	1	2	3	4	5	6	7	8	9	10	11	12	S1	S2	S1	S2	S1	S2
Fase 0 : Pre-Planning for machine/model line	1. Management statement the scrolling TPM	1 Day	➔																									
	2. Training and Campaign the scrolling TPM	6 Months	➔																									
	2.1 Training for AM Pilot Models	6 Months	➔																									
Fase 1 : Pilot Lines Activity	3. Forming TPM Promotion Organization and Improvement Line Model	9 Months	➔																									
	3.1 Determine and Implement AM Pilot Models	1.5 Years	➔																									
	4. Determining TPM Policies and Objectives	1 Day	➔																									
	5. Formulating and Improving Master Plan for TPM Implementation and Roll Out Preparation in PT WDJR Lemah Abang Plant	4 Months	➔																									
Fase 2 : Planning for TPM Master Plan	6. Kick-off TPM Project	1 Day	➔																									
	7. Line/Machine Model recovery																											
	7.1 AM Step 1 - 3 Fulfillment	3.5 Years	➔																									
	7.2 PM Step 1-4 Activity Fulfillment	1 Year	➔																									
	8. Basic Operation & 5R Activity Assurance	6 Months	➔																									
	8.1 FI Pillar Initial Activity																											
	8.1.1 FI Pillar Launching	1 Year	➔																									
	8.2 AM Pillar Initial Activity	1 Year	➔																									
	8.3 PM Pillar Initial Activity	1 Year	➔																									
	8.3.1 Assess Equipment and Understand Current Status	1.5 Years	➔																									
	8.4 ET Pillar Initial Activity	1 Year	➔																									
	8.5 SHE Pillar Initial Activity	1 Year	➔																									
8.5.1 Identify Safety Priorities & Restore, Achieve Basic Condition	1 Year	➔																										

Fase JIPM	Step	Duration	2019		2020		2021		2022		2023												2024		2025		2026		2027	
			S1	S2	S1	S2	S1	S2	S1	S2	1	2	3	4	5	6	7	8	9	10	11	12	S1	S2	S1	S2	S1	S2	S1	S2
Fase 3 : Roll Out	9. Effectiveness improvement for each machine	3 Years																												
	9.1 Running Focused Improvement activity	3 Years																												
	9.1.1 Driving to Business Result (Manufacturing Focused)	5 Years																												
	9.1.2 Driving to Business Result (Manufacturing & Supply Chain Focused)	3.5 Years																												
	9.2 Running Autonomous Maintenance activity	3 Years																												
	9.2.1 Rollout AM Team (Step 1, 2, 3) & HE	3.5 Years																												
	9.2.2 Rollout AM Team (Step 4)	3 Years																												
	9.3 Implementing Planned Maintenance program	3 Years																												
	9.3.1 Restore Deterioration and Improve Weakness	4.5 Years																												
	9.3.2 Build Up and Information Management System	4 Years																												
	9.3.3 Build Up a Periodical Maintenance System	4 Years																												
	9.3.4 Build Up a Predictive Maintenance System	2 Years																												
	9.4 Running Training for Operation and Maintenance Skill	3 Years																												
	9.4.1 Implementing Basic Continuous Improvement, Soft Skill & TPM Training	5.5 Years																												
	9.4.2 Strengthen Technical Competency Management at Shopfloor & Develop SME	7 Years																												

Fase JIPM	Step	Duration	2019	2020	2021	2022	2023												2024	2025	2026	2027						
			S1	S2	S1	S2	S1	S2	1	2	3	4	5	6	7	8	9	10	11	12	S1	S2	S1	S2	S1	S2	S1	S2
Fase 3 : Roll Out	9.4.3 Strengthen Pillar, PM & AM Competencies	6 Years																										
	9.5 Running Safety, Health and Environment Activity																											
	9.5.1 Safety Awareness	7 Years																										
	9.5.2 SMK3 Certification	7 Years																										
	9.5.3 Systematically Analyse Accidents & Incidents	6 Years																										
	9.5.4 Hazard Identification & Risk Management	5 Years																										
Fase 4 : Fully Implemented and Upgraded	10. Develop OSHE system	7 Years																										
	10.1 Focus On People Via Safety Competencies, Culture and Behaviours	7 Years																										
	10.2 Use the Safety System Established to Further Improve Safety	7 Years																										
	11. Develop FMEA	1 Year																										
	12. Improve resource saturation at Micro Level	4 Years																										
	13. Fulfill 100% AM Step 4 All Area	2 Years																										
	14. Assess the Planned Maintenance System	5 Years																										
	15. Sustain ET Pillar Activity	4 Years																										
Fase 5 : TPM Award Year	15. Continue the implementation and improvement of TPM Achievement Level	2 Years																										
	16. TPM Award	1 Year																										

Table 2. 1 TPM Master Plan

2.4 TPM Road Map

The TPM roadmap in PT WDJR has begun since 2016. To ensure that the implementation we did is on track and successful, we submit for the TPM Award by JIPM in stages for each plants.



Figure 2. 7 TPM Roadmap at PT. WDJR

3. BENEFITS ACHIEVED

3.1 Tangible Results

There are five Tangible Results that we obtained in implementing TPM, those are Cost Saving, Increase Extruder Assets, Increase Output and Reduce Loss Cost.

A. Increasing-OEE

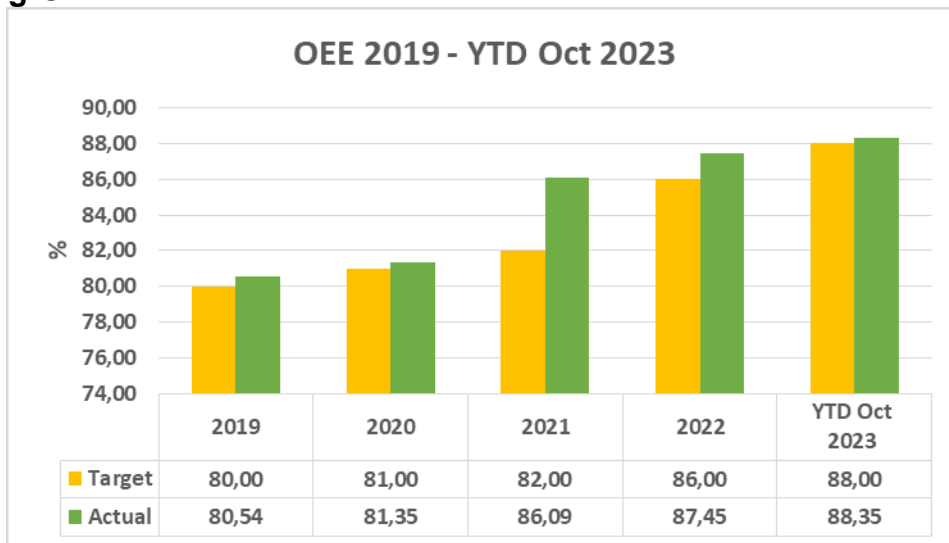


Figure 3. 1 Graph of OEE 2019-YTD Oct 2023

B. Generate Cost Saving

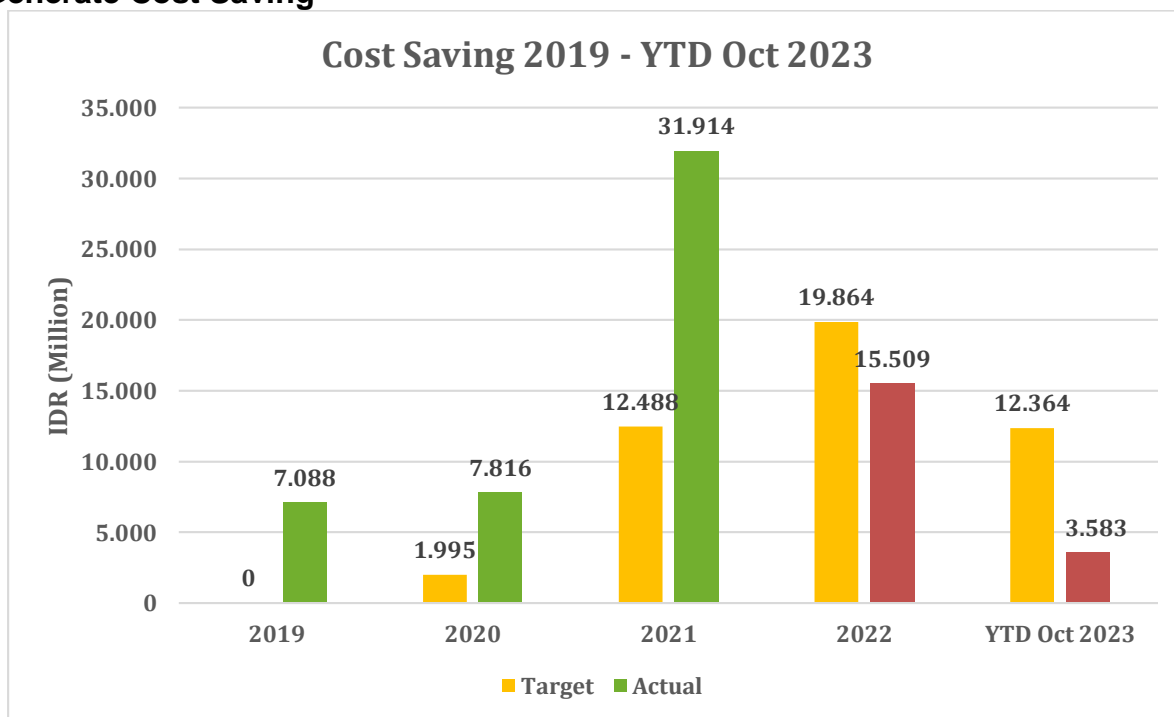


Figure 3. 2 Graph of Cost Saving 2019-YTD Oct 2023

Note: Before 2019, the structure of cost deployment target and the effort to reach it was not firm yet.

C. Increase in Asset of Extruder Machines

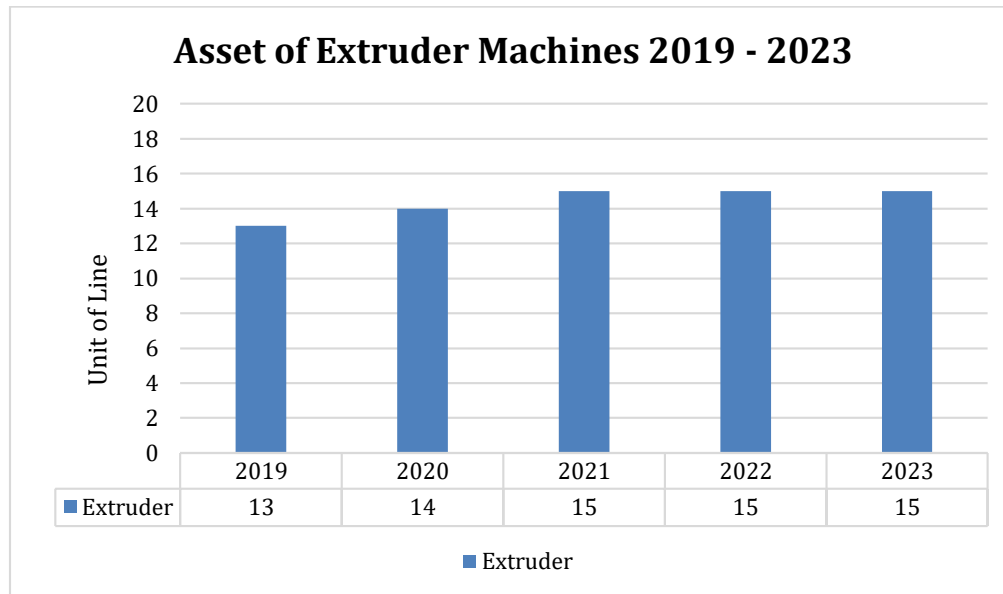


Figure 3. 3 Graph of Increase in Asset 2019-2023

D. Increasing-Output

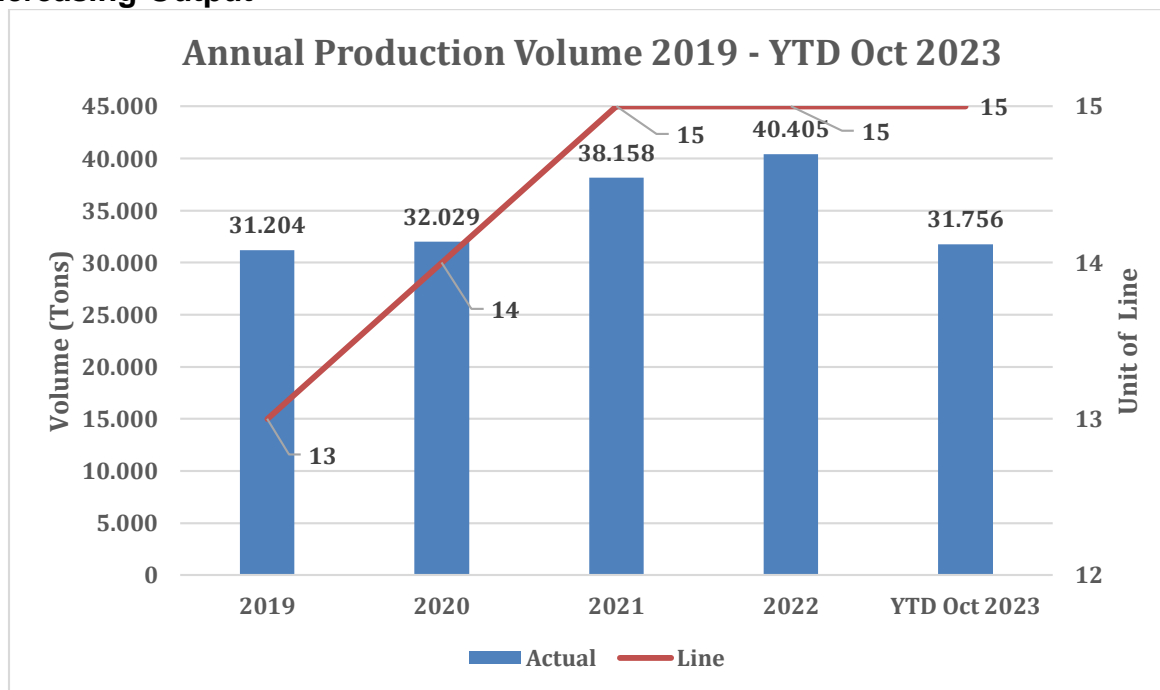


Figure 3. 4 Graph of Annual Production Volume 2019-YTD Oct 2023

E. Decreasing-Loss Cost



Figure 3. 5 Graph of Loss Cost 2019-YTD Oct 2023

3.2 Intangible Results

Through TPM implementation, it is clearly to explain how TPM gives a huge positive impact for all employees in the company not only to achieve the KPI target, some impacts and results are also captured to prove how TPM consists of tools for Company Operation.



Figure 3. 6 Intangible Results for Company

4. KEY OF OUR MANUFACTURING EXCELLENCE

PT. WDJR has 4 key points for success implementing TPM as operational excellence.

- Roll Out Strategy
- TPM Campaign
- Internal Competition
- Daily Management System (DMS)

4.1 Roll Out Strategy

TPM Roll out conducted in 3 steps:

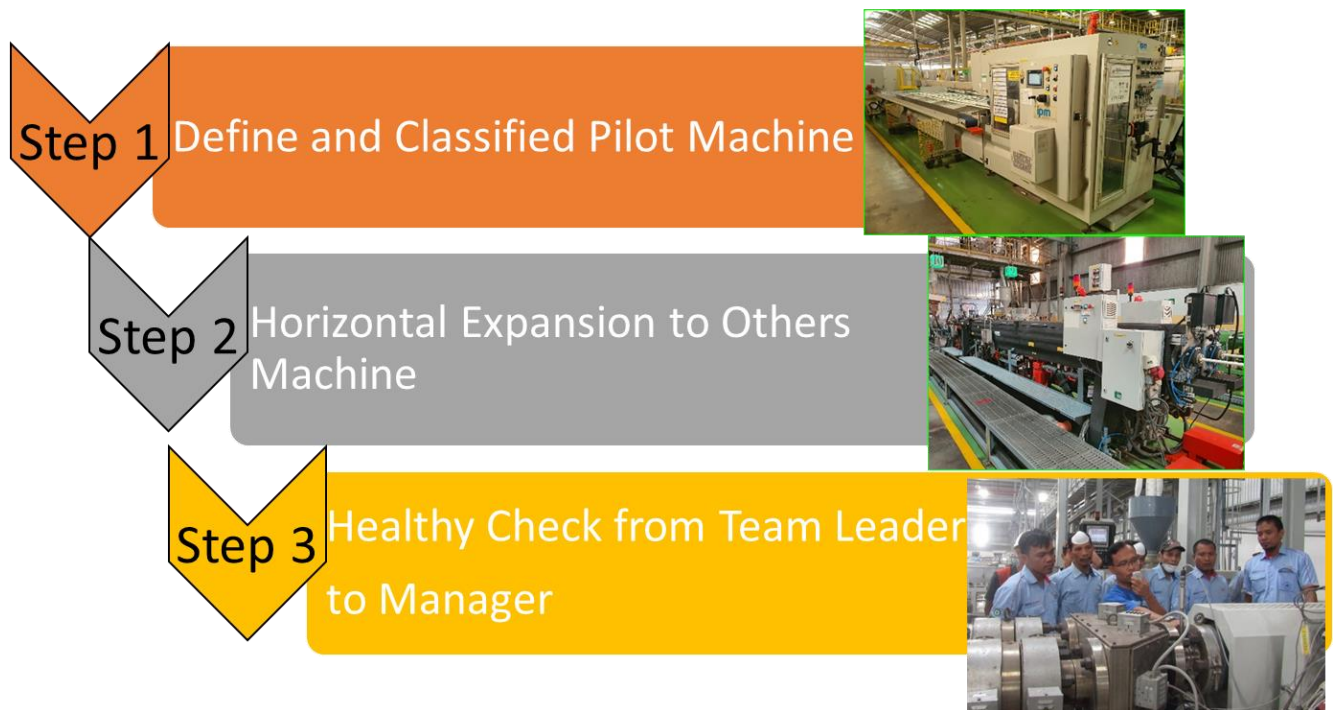


Figure 4. 1 TPM Roll Out Strategy

4.2 TPM Campaign

As a tool for TPM system promotion, we created a kick-off TPM as a campaign for TPM activities, sharing issues and achievements. And the objectives of this activity are to encourage and increase the spirit and motivation of all employees involved in TPM implementation.



Figure 4. 2 Kick-Off TPM Award

And we created shopfloor campaign activity to reach TPM goals sense from Top to Bottom by involving operators (AM, Safety dan 5S).

EMASS (Evaluasi Monitoring AM, Safety & 5S)



Figure 4. 3 EMASS at Shopfloor

Our TPM Culture



Figure 4. 4 Our TPM Culture



Figure 4. 5 Weekly AM and Safety Meeting

4.3 Internal Competition

These events were held for a program that allows employees to get recognition for their efforts and achievements for activities and improvements related to TPM sense, there's routine improvement activity like Small Group Activity, Kaizen and Convention.

CONTINUOUS IMPROVEMENT ACTIVITY



Figure 4. 6 Continuous Improvement Activity

And to keep in good spirits, we established area competition among the employee across departments with some criteria, such as safety standards, group performance system to motivate others to be the best group and 5S (Seiri, Seiton, Seiso, Seiketsu, and Shitsuke) or we called it 5R implementation in their area.



Figure 4. 7 Internal Competition

4.4 Benchmark to other Companies

We benchmarked with other companies to enhance our knowledge and learn about TPM implementation. These companies are British American Tobacco (BAT), Komatsu Indonesia (KI), Multi Bintang Indonesia (MBI), Kalbe Morinaga Indonesia (KMI), Komatsu Undercarriage Indonesia (KUI), Akebono Brake Astra Indonesia, and Kalbe Nutritionals (PT. Sanghiang Perkasa).



Figure 4. 8 Benchmark to Other Companies

From the benchmark results, we developed action plans for each pillar, the progress of which was discussed and monitored at the Steering Committee meeting.



Figure 4. 9 Steering Committee TPM Meeting

4.4 Daily Management System (DMS)

PT. WDJR also has policies to review TPM with Daily Management System (DMS).

Meeting	Item Discuss	Attendance	Duration	Time	Tools
Monthly Division Head	KPI	DIC, Manager	Full day	Monthly	Point Control Sheet (<i>Lembar Control Poin - LCP</i>)
Monthly Department Head	KPI	DIC, Manager, Department Head	Full day	Monthly	Point Control Sheet (<i>Lembar Control Poin - LCP</i>)
Monthly Section (Supervisor)	KPI	Manager, Department Head, Supervisor	2 Hours	Monthly	Point Control Sheet (<i>Lembar Control Poin - LCP</i>)
One Point Report	Safety, Tagging, Planning, KPI Group	Manager, Department Head, Supervisor, Quality Assurance & Engineering	1 hour	Weekly	Dashboard KPI
Daily Control System	Safety, Tagging, Planning, KPI Group	Manager, Department Head, Quality Assurance & Engineering	30 Minutes	Daily (09:00 - 09:30)	Dashboard KPI
Briefing & Shift Handover	Attendance & Next Process	Team Leader, Foreman, Operator	10 Minutes	08:00 - 08:10 16:00 - 16:10 00:00 - 00:10	Hand Book

Figure 4. 10 Daily Management System

5. ACHIEVEMENT RECORD

Company & plant name	PT. Wahana Duta Jaya Rucika Lemah Abang Plant
TPM Slogan/Objectives	To be world class manufacturing through TPM implementation

Category	Index (Calculation Formula)	Unit	Kick off/ TPM Started (2019)	Actual Status 2023 (YTD Oct '23)	Target 2024
S	Number of work-related accidents requiring days off work	Cases/ year	0	0	0
S	Number of work-related accidents <u>not</u> requiring days off work	Cases/ year	0	1	0
P	Productivity for main products	Ton/FTE	22,70	29,37	34,00
P	OEE (or Overall Plant Efficiency)	%	80,54	88,39	90,00
P	Availability	%	94,36	97,11	98,30
P	Performance Rate	%	87,09	92,67	93,00
P	Quality Rate	%	98,01	98,22	98,50
P	Number of breakdowns	Breakdowns/ year	205	241	240
P	MTBF	Hour	333,90	394,30	340,00
P	MTTR	Hour	6,90	7,03	6,00
Q	Number of Customer Complaints	CpM (Complaints per Million)	0,53	0,47	0,45
Q	Reject Rate	%	2,10	1,72	1,70
C	Maintenance cost	Rp/ Kg	196,30	208,40	200,00
C	Energy Consumption	kWh/ Kg	0,36	0,35	0,34
D	Delivery Service Level	%	83,00	95,50	96,00
M	Culture Event	Number/ year	24	36	24

Other	<p><Specify achievements not expressible in numerical terms></p> <ol style="list-style-type: none"> 1. Do you have a program where all employees can participate in TPM? Yes 2. Do you have a program allowing employees to be recognized for their achievements? Yes 3. Are top management involved in the audit/verification of completion of TPM pillar steps? Yes <p>Are all pillar activity boards displayed and reviewed by top management? Yes</p>
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Note: Have the indices covered all important items related to PQCDMS measures being undertaken in the entirety of the subject to be assessed. Note all indices in the TPM Activity Report. Where your specific indices vary from those above attach relevant data.

Table 5. 1 Achievement Record at Lemah Abang Plant