

**Automotive Component Manufacturers Association of India** 

Vol. 16 No. 3

December, 2023

### **MSME Programs**

**Strengthening Entire Supply Chain** 











**POWERTRAIN** 



**BRAKING SYSTEMS** 



DRIVETRAIN



SAFETY



**EV DRIVESHAFTS** 





## **IMPACT**

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### **Chairman's Message**

ACMA - Technology and Industrial Competitiveness



Dear Reader,

I am happy to share with you the Volume 16 - Issue 3 of IMPACT, "ACMA MSME Programs - Strengthening Entire Supply Chain". This is the first time, I am having the opportunity of sharing some thought with you as the Chairman of Pillar - 3, Technology and Industrial Competitiveness.

In last few decades, Indian Automotive Industry has grown very strongly and today it stands as the third largest manufacturer of Automobiles in the world behind China and US. The automobile industry accounts for 7.1% of India's GDP and 49% of its manufacturing GDP. The automobile industry contributes significantly to the country's export, contributing 8% of the country's total export and accounting for 2.3% of India's GDP. The Indian automotive industry has a significant presence of MSMEs, contributing to various aspects of the supply chain, including manufacturing of components, parts, and accessories. MSMEs in the automotive sector play a crucial role in supporting larger original equipment manufacturers (OEMs), innovation and technology development, diversity and specialization, being adaptable and flexible to ever changing market demands, entrepreneurship and business growth, export contribution and employment generation.

It is often said that "The strength of a chain lies in its weakest link". This is exceptionally true, when it comes to Indian Auto component MSMEs. Tier-1, automotive component manufacturer are better equipped to face the ever changing market scenario but it is the MSMEs, who, in spite of its immensely useful contribution, Automotive MSMEs are always stressed out for – financial resources, technological obsolescence, quality standardization and adequate certification against global markets, market access for export, competition from unorganized sector, raw material shortage and transportation issues, economic downturn, skilled labor shortage, various regulation and compliances including environment. Whereas Indian government is trying to address these challenges at their level through various initiatives, incentives and schemes, ACMA is also championing the cause of MSME's at various forums by being their voice.

Acknowledging the above-mentioned challenges faced by MSMEs, ACMA technology and industrial competitiveness pillar, has joined hands with ministry of MSME and Quality Council of India, to strengthen the Indian Automotive MSMEs for technology adoption, skilling its labor, training and guidance through government of India "MSME Competitive Lean Scheme (MCLS). The main objective is to enhance the manufacturing competitiveness of the MSME sector, through application of various Lean techniques, such as Total Productive Maintenance (TPM), 5S, Visual Control, Standard Operating Procedures, Just in Time, Kanban System, Cellular Layout, Poka Yoke, and others, are employed to identify and eliminate waste, streamline the system and ensure the smooth running of the entire process, rather than just specific processes. More details are available in the magazine.

ACMA Centre of Excellence, which has shifted to a new location—at the premises of SRM University, is striving for new programs—both in physical and virtual mode. Various program conducted by the team are very well received by Automotive component industry. Especially sought after training programs are—ESG certification, Zero Defect, Mechatronics, Net Zero Carbon and EV program. Apart from it, ACoE's highly competent team is always on look-out to engage with international knowledge partners, to design new programs for the industry. Just concluded ACMA-SINADE program for skill development is a testament to the success story. Programs like—SINADE-2, Technical Seminar on "Innovative Technologies in Automotive Industry", Sustainability, will be launched very soon. (Training Calendar attached for the 1st Quarter of 2024). I am sure that you will avail these opportunities and train, skill, re-skill, upskill your team members and be a part of the learning curve with ACMA Centre of Excellence.

Dear Reader, with this issue, I wish you all a happy 2024 — wishing for each one of you — happiness, prosperity, joy, safety and hope for overall peace and growth. I wish you all a safe and happy learning and look forward to receiving your feedback on our publication to improve it further.

Best Wishes Vikrampati Singhania

### **Boosting MSME Competitiveness**

A Closer Look at the MSME Competitiveness Lean Scheme by the Government of India



Aniket Khasnis
Asst. Principal Counselor
ACMA

Introduction: The Micro, Small, and Medium Enterprises (MSMEs) form the backbone of India's economy, contributing significantly to employment generation, industrial output, and overall economic growth. Recognizing the importance of enhancing

the competitiveness of MSMEs, the Government of India has introduced various schemes and initiatives. One such noteworthy initiative is the MSME Competitiveness Lean Scheme, aimed at empowering small businesses to thrive in the global market.



Overview of the MSME Competitiveness Lean Scheme: The MSME Competitiveness Lean Scheme is a strategic program launched by the Government of India to provide targeted support to MSMEs in improving their competitiveness on both domestic and international fronts. The scheme, administered by the Ministry of Micro, Small, and Medium Enterprises, guided and monitored by the Quality Council of India and executed by ACMA, focuses on empowering MSMEs through a range of interventions aimed at enhancing their capabilities, market access, and overall sustainability.

### Key Features of the Scheme:

- Lean Organizations: Under the MSME Competitiveness Lean Scheme, lean organizations, often industry associations or consortia with proven expertise in specific sectors, are identified. These lean organizations play a pivotal role in driving the competitiveness of MSMEs within their respective domains.e.g.
  - JK Fenner has initiated this activity for their Hyderabad, Madurai and Chennai based suppliers.
  - IP Rings has identified a few Chennai based suppliers among their vast supplier base.
  - One of the Nasik-based well-known organizations expressed keen interest in taking this activity forward for their local suppliers.



 Strategic Interventions: The scheme encompasses a variety of strategic interventions designed to address the specific challenges faced by MSMEs. These interventions may include technology adoption, skill development, market diversification, quality improvement, and other measures aimed at enhancing overall competitiveness.

### **Boosting MSME Competitiveness**

A Closer Look at the MSME Competitiveness Lean Scheme by the Government of India

- Capacity Building: Capacity building lies at the core of the scheme. MSMEs are provided with opportunities for skill development, training, and access to knowledge resources. This ensures that they are equipped with the necessary tools and expertise to navigate a rapidly evolving business landscape.
- Market Access and Export Promotion:
   Recognizing the importance of global markets, the MSME Competitiveness Lean Scheme places a strong emphasis on export promotion.

   Lean organizations work towards facilitating market access, forging international partnerships, and guiding MSMEs in navigating the complexities of international trade.
- **Financial Assistance:** The scheme provides financial assistance to MSMEs for implementing competitiveness-enhancing initiatives. This financial support may come in the form of grants, subsidies, or low-interest loans, ensuring that cost constraints do not hinder the implementation of crucial interventions.



• Technology Upgradation: In an era of rapid technological advancement, the scheme encourages MSMEs to embrace modern technologies. This includes support for adopting Industry 4.0 practices, upgrading manufacturing processes, and integrating digital solutions to enhance efficiency and productivity.

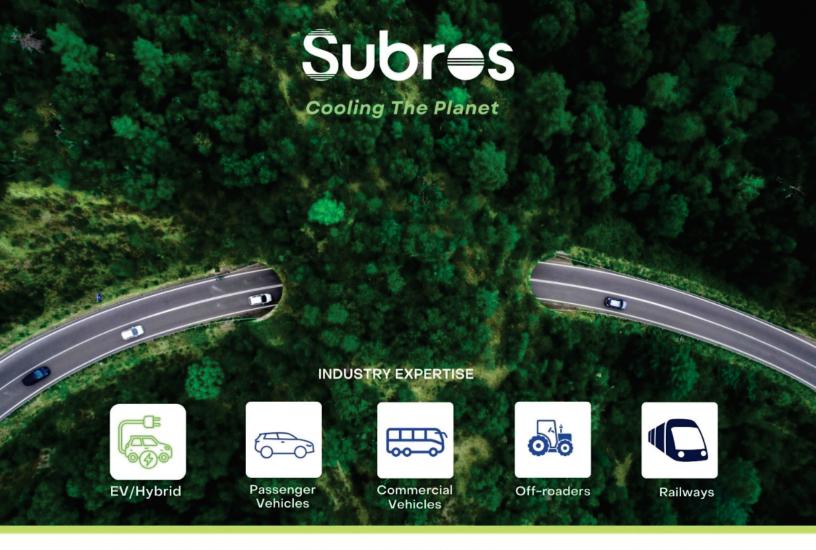
 Monitoring and Evaluation: A robust monitoring and evaluation mechanism is in place to track the impact of the scheme. This ensures that interventions are effective and that the program remains adaptive to the evolving needs of MSMEs.



Benefits and Impact: The MSME Competitiveness Lean Scheme has demonstrated tangible benefits for participating MSMEs. These include improved product quality, increased market share, enhanced export capabilities, and a strengthened position in global supply chains. Additionally, the scheme has contributed to job creation and economic growth, further solidifying the role of MSMEs in India's economic landscape.

Conclusion: The MSME Competitiveness Lean Scheme stands as a testament to the government's commitment to fostering a competitive and resilient MSME sector. By addressing key challenges and empowering MSMEs with the tools needed to thrive in today's dynamic business environment, the scheme plays a pivotal role in unlocking the full potential of small and medium enterprises, contributing to India's economic prosperity. As the scheme evolves, it is poised to continue catalyzing positive change and driving the competitiveness of MSMEs to new heights.

"Small Steps, Big Dreams: Empowering MSMEs, Transforming India."



### THERMAL SOLUTIONS FOR SUSTAINABILIT

Subros Limited, founded in 1985 as a public limited company with a joint venture between the Suri Family of India, DENSO Corporation, Japan, and Suzuki Motor Corporation, Japan, is the leading manufacturer of thermal products for automotive & non-automotive applications, in technical collaboration with DENSO, Japan.

### Thermal Management Solutions



CONDENSERS







**BUS AC** 



RS-EVAPORATOR







MAKE IN INDIA **DESIGN IN INDIA** 



A Joint Venture Between

**DENSO** 





### The New MSME Competitive Lean Scheme





Aniket Khasnis Asst. Principal Counselor ACMA

#### Objective of Scheme:

To enhance the domestic and global competitiveness of MSMEs through the application of various lean tools and techniques.

The MSME Competitive Lean Scheme (MCLS) will be implemented in two phases-

- Phase 1 Manufacturing MSMEs
- Phase 2 Service Sector MSMEs

### Coverage & Eligibility -

- All MSMEs registered with UDYAM our scope as ACMA
- Micro & Small Enterprises Cluster Development Program (MSE-CDP) Schemes.
- Units under SFURTI (Scheme of Fund for Regeneration of Traditional Industries) clusters.

### MSME Competitive (Lean) Scheme Levels -

MSME Competitive (Lean) Scheme can be attained in THREE Levels after registering and taking the Lean Pledge:

- Level 1 Basic
- Level 2 Intermediate
- Level 3 Advanced

### Implementing Agency -



### Implementation of different levels -

	Basic	Intermediate	Advanced		
Participation	Individual MSMEs	Group of Enterprise (GoE)	Group of Enterprise (GoE)		
Nature of group	-	Heterogenous/Homogenous	Heterogenous/Homogenous		
Duration	0 – 3 weeks	Starting from 4 <sup>th</sup> week – 4 Starting from 5 <sup>th</sup> Mon Months 12 Months			
	Self Learning E-modules and examination	1. DSR and Action Plan (1 months)	1. DSR and Action Plan (2 months)		
Phases		2. Implementation Phase (2 months)	2. Implementation Phase (3 months)		
		3. Final Phase (1 months)	3. Final Phase (3 months)		
Certification	After Completion of each stage				
Onsite Holding	-	Min. 08 man days	Min. 16 man days		

#### Financials -

	Basic Level	Intermediate level	Advance Level
Implementation Cost (Max. per unit)	Free	₹ 1,20,000 + Taxes	₹ 2,40,000 + Taxes
Beneficiary Contribution per Unit	-	10% of Total Cost of Implementation i.e. ₹ 12,000+ Taxes per unit (Max.)	10% of Total Cost of Implementation i.e. ₹ 24,000 + Taxes per unit (Max.)
GOI Contribution	-	₹ 1,08,000 + Taxes (max.)	₹ 2,16,000 + Taxes (max.)

### Benefits -

Units successfully completing MSME Competitive (LEAN) scheme get benefits in terms of:

- Exemption in parameters of The MSME Sustainable (ZED) Certification; and
- Subsidy attached with MSME Digital Scheme.

#### **LEAN Tools to be implemented -** [Based on the requirement as per DSR]

	ACMA S	pecial Roadmap	on Enhancing MSME Compe	titiveness through Lean Techniques	
	Topics	Basic Level	Intermediate Level	Advance Level	Deliverables
1 2 3 4 5 6 7 8 9 10	Product-Process Matrix Product-Quantity Analysis Takt Time Cycle Time - VA/NVA Analysis Flow Mfg - Line Balancing to takt time Single piece flow layout (WIP) No of stations) Process Stability - Quantity Quality Concept of Inventory Management - Star Diagram SMED (Single Minute Exchage of Die) Poka Yoke (Mistake Proofing) FIFO (First In First Out)			<b>Advance</b> (Cultural Development)	Selection of Product for Value Stream Mapping Study Selection of Product for Value Stream Mapping Study Understanding the Customer Demand Understanding the Current Process Meeting Customer Demand Reduction in variation in Hourly Production & Quality Reduction in variation in Hourly Establish material flow and handling system Uptime Improvement Defect-free Workstations Quality defect reduction
1 2 3 4 5 6 7 8 9	Standard Operating Procedure (SOP) Basic S5 - S5 Pleadge Undesirable Habits Undesirable Practices Must be Facilities - Audit Checksheet Daily Work Management - Level 1 Daily Work Management - Level 2 Daily Work Management - Level 3 8 Types of Waste Identification and Elimination 7QC Tools / QCC Employee Appreciation and Recognition Methodology Team Building/Team Working (coffee with Manager)			Management Commitment Self analysis toward adopting improvements Establish Desired culture to adopt improvements Employee Care Quick Response by Line Manager to the issues raised Quick Response by MoD to the issues raised by Line I Quick Response by management to the issues raised Cost Reduction Total Employee Engagement and Involvement Employee Motivation	Manager
1 2 3 4 5 6 7 8	Understanding the Concept of Basic 5S Basic Concept of Lean Understanding the Concept of Kaizen Understanding the Concept of Suggestion Difference Between Suggestion and Kaizen Visual Control - Visual Management Intruduction to Safety Management System & its elements Introduction to Value Stream Mapping	Basic (Key to Better Future)	Joyful Shopfloor / 5S Audit Score Learning to See Understanding the role of Management St Total Employee Involvement Improvement Culture Promotion Visual Company Safe Workplace, Zero accident at workplac Clarity on concept of Value Stream Mapple	aff	

### Newly Launched Schemes Under RAMP Program



Ravindra R. Phatak Expert - Project Manager ACMA

On 20th December 2023, Union Minister for MSME Shri Narayan Rane launched three sub-schemes under the RAMP (Raising & Accelerating MSME performance Programme).

1. MSME Green Investment and Financing for Transformation Scheme (MSME GIFT Scheme) – The

objective of this scheme is to help MSMEs adopt green technology with interest subvention and credit guarantee support.

2. MSME Scheme for Promotion and Investment in Circular Economy (MSME SPICE Scheme) - First ever scheme in the Government to support circular economy projects which will be done through credit subsidy and

will lead to realizing the dream of MSME sector towards zero emissions by 2070.

**3.** MSME Scheme for Online Dispute Resolution for Delayed Payments (ODR) - First of its kind scheme to synergise legal support with modern IT tools and Artificial Intelligence to address the incidences of delayed payments for Micro and Small Enterprises.

Government also announced that the **ZED Scheme** made completely free for women led MSMEs. The government guarantees payment of 100 percent financial support for the certification cost.

SIDBI will be the implementation partner for GIFT and SPICE scheme and NICSI is the implementation partner for the ODR scheme.

Scheme details will be available on the RAMP portal which is under development.

ACMA

"Transforming shop floor to precision hubs with Zero Defect Quality."

ZDQ (Zero Defect Quality) Cluster Program (18 Months) The main objective of this cluster program is to strengthen the quality in the organization and control the defects at the source itself and make a defect free product line. This program also integrates deskilling at the shop floor to make the process, independent of skilled manpower.

### **Key Highlights**

- Keep House In Order
- Introduction to ZDQ
- ZDQ Tools
- Deskilling
- Deliver Zero Defect Quality
- Holding Gains



### Abilities India Pistons & Rings Ltd.

Quality | Engagement | Innovation

**PISTONS & RINGS** 



### **Supporting MSMEs in Sustainability Adoption**



Sustainability has been on the agenda of automobile manufacturers for quite some time now, pressure is increasing from customers, business partners and shareholders who demand positive action. Component manufacturers are increasingly under pressure to identify and act on the

size of their carbon footprint, along with other sustainability issues. In India, a number of supply chain partners are small, unlisted firms. It is projected that MSMEs contribute roughly 70 percent to the industrial pollution. These sectors are usually dominant in industries by relatively high resources and emission intensity.

It is difficult for such companies to track and report on a large number of sustainability metrics. The critical barriers to decision-making on climate action are lack of climate information, limited knowledge, the low capacity of actors and institutions and institutional weaknesses.

### The top three challenges faced by MSMEs are:

- Availability of technical know-how (88%),
- Capital (81%) and
- Internal willingness to change (51%).

### Other challenges include:

Cost of implementing Sustainability initiatives,

- Assessing return on investment,
- Measuring the success of sustainable manufacturing projects,
- Implementing Sustainability frameworks and solutions,
- Ensuring compliance with policies and obtaining sufficient funding.

It is these challenges which inhibit SMEs in embracing Sustainability.

To create a sustainable and inclusive future, these small and medium enterprises must be supported to help them adopt sustainable manufacturing practices. Anyone wishing to do so will have to address these issues of sustainability through the following approach:

- Creating awareness among all employees of such companies about climate change, impacts and actions. Conducting workshops, fairs, competitions to promote awareness about sustainable environment friendly practices.
- Building capacity of managers as well as workers in these companies on the sustainable manufacturing tools so as to assist them to implement the practices on their own. The ultimate goal being to establish practices on sustainable manufacturing as part of company culture.
- Assisting MSMEs in developing a management as well as monitoring system that enables them to



### **Supporting MSMEs in Sustainability Adoption**

collect data regarding key performance indicators related to sustainability (eg. Scope - 1,2,3 emissions) on their own and monitor their performance on a regular basis.

 Looking more into innovation components, as sustained long-term growth is based on technological change and such change has its roots in various kinds of innovation, including product, process, organizational and marketing innovation at company level.



ACMA, as the apex body representing the auto component manufacturers, always looks forward to come up with an array of services for its members that will be commensurate with their evolving needs. The ACMA-MSME Sustainable Manufacturing Program (AMSMP), over a program period of 12 months, was designed to usher transitions to a cleaner and sustainable future through the conservation and efficient use of energy and other resources, and innovations in processes and materials to minimise waste. The ACMA-MSME sustainable manufacturing program aims to:

- Drive top down with top management support.
- Help formulate sustainability policy and strategy.

- Build competence and capabilities on the technical know-how front.
- Ensure a buy-in from all stakeholders thus addressing resistance.
- Create awareness about availability and accessibility of the climate finance.
- Provide awareness and guidance to comply with regulations.
- Establish sustainability KPIs and link them with performance measures.
- Calculate GHG emissions under scope-1, scope-2 and scope-3.
- Measure and monitor the benefits from sustainability projects continuously and
- Measure gains in monetary terms, Rol.



In a world increasingly attuned to sustainability concerns, the traditional metrics of competitive advantage are no longer sufficient. The globalisation of trade and the growing influence of conscientious consumers are steering global customers toward a heightened focus on Sustainability compliance from their suppliers. India's MSME sector stands at a crossroads, facing the imperative of embracing Sustainability as a competitive advantage in the global market. The shift from traditional competitive factors to a more holistic view of business sustainability is not only necessary but also inevitable.

### ACMA Supply Chain Management Program for Lucas-TVS Ltd, Pantnagar (Culmination)

### **Project Team**







Mr. Pankaj Mathur Expert Cluster Program ACMA

At the onset, I would like to thank Mr V. K. Sharma and Mr Pankaj Mathur for their continued support and guidance during the entire stretch of our Project.

The team has stepped up to the challenges put to them and a systematic approach has helped us to rake in good cost reductions about 2 Cr as well as maintaining effective inventory turn-over ratio.

The team has benefitted with the vast experience of ACMA and the approach to problem solving and resolution has been more analytical and target oriented. I once again thank ACMA and Mr V K Sharma for their support and look forward to their guidance in future.

V. S. Rana Plant Head

### **Achievements of ASCMP**

#	Description	Saving / Benefit
1	Reduction in Stockout	82%
2	Reduction in Line Hour losses due to Stockouts	85%
3	Reduction in Manhour Losses due to Stockouts	85%
4	Inventory Reduction (Rs. in Lacs)	73
5	Cost Saving (Rs. in Lacs)	200

### **Overall Savings Rs. 2 Cr**



### **Stockouts Reduction**



### **Overall Feedback**

#	Particulars	Score Out of 10
1	Counselor Visits	10
2	Inputs Received	10
3	Relevance of Inputs	10
4	Delivery as per plan	10
5	Learning from Training & Inputs	09
	Total score (out of 50)	49
	Score in %	98%









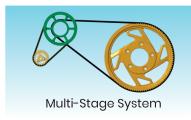
Powered by innovation, Driven by excellence

# Towards Greener



### **2 WHEELERS**

### **Belt Drive System**





### **Motors & Controllers**







### 3/4 WHEELERS

### Independent E-Axle



Rigid E-Axle



#### **JKF Evolve Limited**



Factory: Sipcot Industrial Complex, Nilakottai, Pallapatty, Nilakottai, Nilakottai Industrial Park, Dindigul, Tamilnadu 624 201.

Registered Office: 3, Madurai-Melakkal Road, Kochadai, Madurai = 625 016.

### **ACMA Machine & Mould Maintenance Program - Sundaram Auto Components Ltd, Hosur & Chennai (Culmination)**

### **Cluster Team**



Mr. V. K. Sharma Mentor - Clusters & Projects **ACMA** 



Mr. Pankaj Mathur Expert Cluster Program **ACMA** 



Mr. Bhavanisankar K Operations Head SACL

3

OEE



Plant Head SACL, Hosur

Description

Reduction in Machine Breakdowns

Sales Capacity Generated (Rs. in Cr)

After

Reduction in Mould Breakdowns

Cost Savings (Rs. in Cr)



Plant Head SACL, Chennai

Chennai

74%

66%

73%

0.25

3,12

Hosur

53%

24%

91%

1.76

4.1



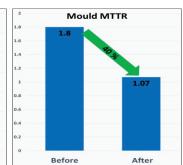
Director & CEO, SACL

The ACMA MMM program was well-organised and executed. Through this program, we have ensured that our equipment and machinery are functioning and operating efficiently.

I appreciate the teams commitment in providing the solutions that was

aligned to our business goals and objectives. Looking forward in achieving sustained results by ensuring practices and procedures established in our factory are followed rigorously.

**Machine MTTR** 



Mr. Rajesh Oommen



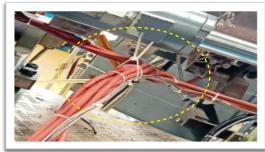


Heater cables hanging



Before

Elimination of heater and TC short circuit



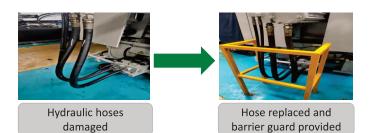


Routed with cable tray

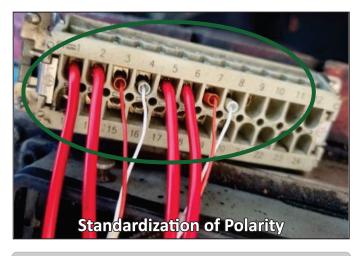
### ACMA Machine & Mould Maintenance Program - Sundaram Auto Components Ltd, Hosur & Chennai (Culmination)

### **Major Achievements**

- Zero oil leakage in Moulds
- Machine Breakdown Time Reduced
- Mould Breakdown Time Reduced
- Machine MTTR Reduced
- Oil Leakage eliminated on 45 machines
- Polarity issues eliminated by Standardization of HRS Polarity
- OEE is improved



Waiting for Mould Temperature due to Polarity Issues was one of the biggest cause of downtime. Standardization eliminated this issue.





### ACMA Rudimentary Framework Program for Amalgamations Repco Limited, Chennai (Culmination)

### **Project Team**



**ACMA** 





Mr. Aniket Khasnis
Asst. Principal Counselor

Mr. M Devarajan Whole Time Director, AMREP

This journey being conducted by ACMA. Asst. Principal Counselor Mr. Aniket Khasnis is well received by our organisation and well received by our members. We have already started getting the benefits originally intended for the program. It is very practical and interactive and with result-oriented topics. The savings in terms of space and optimum utilisation of infrastructure avoiding capital expenses are key achievements of this journey so far. I really thank Mr. Aniket and ACMA in our journey of doubling our turnover in a short period.

**Mr. M Devarajan** Whole Time, Director Amalgamations Repco Limited, Chennai

### **Feedback on Lean Implementation Project**

Sr No	Particulars	Score * (on a scale of 10)
1	Counselor Visits	10
2	Inputs Received	09
3	Relevance of Inputs	09
4	Delivery as per plan (roadmap)	09
5	Learning from Trainings	09
	Total score (out of 50)	46
	Score in % ( Out of 100 )	92

Total Savings 321 Lakhs
ROI 18 Times
Payback 45 Days

### **Breakthroughs Achievement**

- State—of—the—Art RMS and FPS Stores
- Pallet-free stores Removed 150 nos
- Space Saving of 220 Sq. Ft in the office area
- Space Saving of 1490 Sq. Ft in the FPS area
- Space Saving of 720 Sq. Ft in the RMS area
- Shop floor space saving of 4250 Sq. Ft
- Overall space savings of 6680 Sq. Ft
- Savings of 40 lacs in the capex.
- Inventory reduction from 14.39 Cr to 12.42 Cr
- Kaizen
- 1S, 2S score improved from 65% to 77 %.
- Cultural change through best practices in DWM.
- Poka Yoke opportunities identified 40 and implemented 30
- MTTR is improved by 45% and MTBF is improved by 41%
- Implementation of SMED at one workstation.
   Change over time is reduced from 25 mins to 5 mins.
- Re-layout in, resulting in a reduction in travel distance from 1384 mtr. to 877.5 mtr.





**Before** 

**After** 

### ACMA Rudimentary Framework Program for Amalgamations Repco Limited, Chennai (Culmination)

### **Pride Improvements**

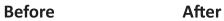








Before After











Before After

Before After









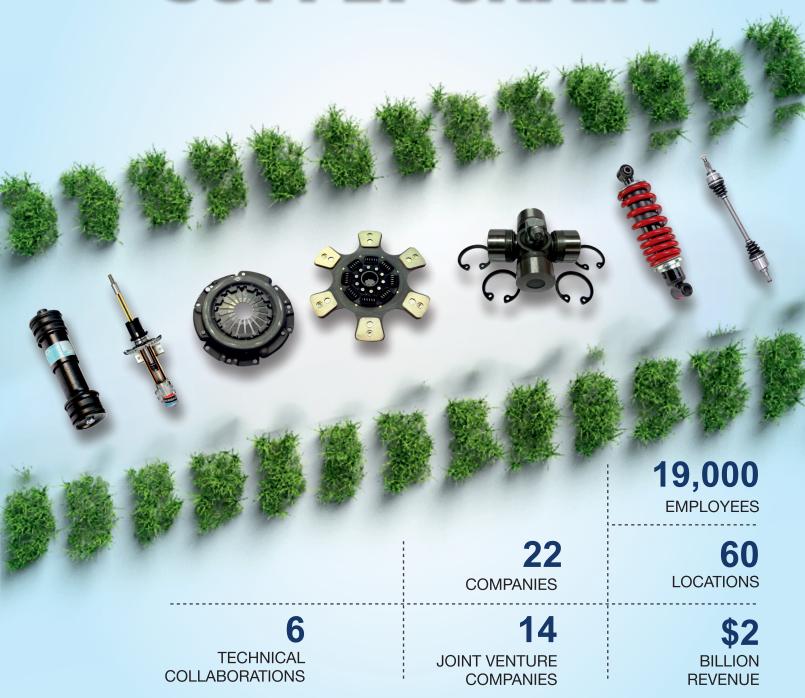
Before After

Before After



### Building a more sustainable

### SUPPLY CHAIN

































### DRIVING THE FUTURE OF INNOVATION AND EXCELLENCE



# DRIVING the VEV/TECHNOLOGY

### **Personalized**



Wireless Chargers, Logo Projectors, CAN-enabled Switch & Heat-cool Seat

### **Autonomous**



Camera, Ultrasonic Sensors & ADAS

### **Connected**



**Telematics Control** Unit & IoT Platform

### **Electrified**



More than 12+ EV Specific 2W & 3W Products

### **GLOBAL LEADERS IN AUTO COMPONENTS AND SYSTEMS MANUFACTURING**

Uno Minda Limited (Formerly known as Minda Industries Limited) Corporate Office: Village Nawada Fatehpur, P.O. Sikanderpur Badda, Manesar Distt, Gurugram, Haryana-122004, India



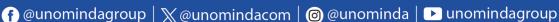
www.unominda.com











### ACMA Zero Defect Quality (ZDQ) Program at M/S DANA INDIA PRIVATE LIMITED, PUNE (Culmination)

### Project Team







Mr. Arup Kumar Basu Expert Cluster Program, ACMA, (Counselor)



Mr. Anil Bansal Corporate Quality Head Dana India Private Limited

### Feedback on ACT ZDQ program

S.No.	Particulars	Score * (on a scale of 10)
1	Counselor Visits	10
2	Inputs Received	10
3	Relevance of Inputs	10
4	Delivery as per plan (roadmap)	9
5	Learning from model company visits	9
	Total score (out of 50)	48
	Score in % ( Out of 100 )	96%

### Audit rating summary

Area	From (%)	То (%)	% improvement
Undesirable habits	42	98	130
Undesirable Practice	18	99	400
1S of Machine	61.5	98	60

#### **DRVME** status -

Total nos of action plan decided based on DRVME = 201

Average actions per DRVME = 10

Total nos of action implemented = 190

Number of DRVME to be revisited = 03

Number of DRVME revisited = 03

Number of new action identified = 50

Number of new action implemented = 38

% compliance = 94.52%





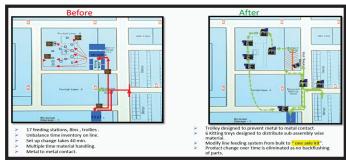
By Single Kitting we have eliminated the 45-holding station on the assembly line.

75 % of improvement

Contribute to improve product quality.

- Avoid Material mix up at line. (Reduce 13 incidents to 6 & last 2 months zero)
- Avoid metal to metal contact
- Backflushing of material not required . No mix-up parts
- Avoid part mixing in stores.

### **Star Diagram**



Star diagram is used to capture Work In Progress (WIP) at each station and used to identify defects caused due to WIP, Trans shipment and Waiting time.

No. of storage points reduced from 60 to 15.

### **Cognitive Ergonomics for ZDQ at Model line**

Description	Nos
Nos of process /operators covered	28
Nos of OFI identified	28
Nos of actions decided	25
Nos of actions implemented	20

### **Benefits**

Manpower availability improved from 93% to 97%

- Operator fatigue reduced
- Productivity improved in terms of no of parts produced

### ACMA Zero Defect Quality (ZDQ) Program at M/S DANA INDIA PRIVATE LIMITED, PUNE (Culmination)

### **DRMVE**



- 1. Issue: Cover Faceseal Parallelism checked with Dial gauge at 3 points
- 2. Consistency and Repeatability for Cover Face seal Parallelism not ok



- 1. Issue: Application of Loctite on Shoulder face with Roller
- 2. Uneven Application of Loctite on the shoulder face



#### Action:

- 1. Cover Faceseal Parallelism checked with Digital LVDT Gauge
- 2.Consistency and Repeatability for Face seal Parallelism found ok



#### Action:

- 1. Loctite Application with Pneumatic gun
- 2. Even Application of Loctite on the Shoulder, results in Zero Leakage for Shoulder Joint face

### Pride of deskilling



Previously operator had to ensure circlip presence by marking operation.



Now Circlip presence gauge introduced for same and interlinked with MES

### Sustainable Mobility in India: Beyond Batteries (Part 2) Combating Pollution and Oil Dependency for a Greener Future



Abhinav Rastogi Dy. Director ACMA

As we embark on the second part of our journey into the future of sustainable mobility in India, we shift our focus from the buzzing world of batteries to explore alternative energy solutions that promise to revolutionize how we move. In the previous part, we delved into the heart of electric vehicle

(EV) technology and the batteries propelling India towards a cleaner automotive landscape. Now, let's journey beyond the realm of batteries, unveiling the innovations that include biofuels, hydrogen as a fuel, and the electrifying potential of E-highways. Here we will discuss about the non-battery options that hold the key to a greener, more sustainable future for mobility in India.

In a groundbreaking move, India is set to transform its fuel landscape, reducing dependence on traditional petrol and diesel. The journey towards cleaner alternatives is not only crucial for environmental sustainability but also aligns with global efforts to combat climate change.

#### **Ethanol: A Step Towards Greener Petrol**

In the near future, a significant shift will occur at select petrol pumps across India. The introduction of petrol blended with 20% ethanol is the beginning of a nationwide initiative to reduce oil import dependency. Oil Minister Mr. Hardeep Puri has set an ambitious goal — by 2025, one-fifth of India's petrol will consist of ethanol.



Derived from sources like sugarcane, corn, or grains such as barley, ethanol brings a plethora of benefits. This move will not only save significant foreign exchange but also enhance energy security, reduce carbon emissions, improve air quality, promote self-reliance, provide better utilization of damaged food grains, boost farmers' incomes, and open avenues for increased investment.

### **Biodiesel: Greening Diesel Engines**

Parallelly, biodiesel is emerging as a promising replacement for conventional diesel. Often blended with petroleum-based diesel, biodiesel is versatile and compatible with standard diesel engines. Originally experimented with by the inventor of the diesel engine, Rudolf Diesel, in the late 1800s, biodiesel can be derived from various sources, including vegetable oils, animal fats, palm stearin, and used restaurant grease.



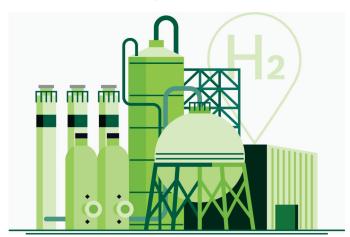
The advantages of biodiesel extend beyond its renewable origin. It significantly reduces particulate matter and hydrocarbon emissions, contributing to a cleaner environment. Moreover, its production process significantly lowers wastewater and hazardous waste.

### **Green Hydrogen: A Clean Fuel Revolution**

Hydrogen, a clean fuel, is making waves globally. India is exploring its potential, produced from resources like natural gas, nuclear power, biomass, solar, and wind. Hydrogen's clean combustion, producing only water when consumed in a fuel cell, positions it as a frontrunner in sustainable transportation and electricity generation.

### Sustainable Mobility in India: Beyond Batteries (Part 2) Combating Pollution and Oil Dependency for a Greener Future

Fuel cell electric vehicles (FCEVs) powered by hydrogen are among the cleanest modes of transportation, emitting only water vapor and warm



air, leaving no harmful tailpipe emissions.

### Hydrogen in IC Engines: A Clean Drive Forward

Hydrogen, a clean and abundant fuel, holds the potential to breathe new life into IC engines. Unlike conventional fuels, burning hydrogen produces only water vapor and warm air, eliminating harmful emissions. This clean combustion aligns with environmental sustainability goals and addresses concerns related to air quality and climate change.

### Advantages of Hydrogen in IC Engines:

Zero Emissions: Hydrogen-powered IC engines produce zero tailpipe emissions, reducing the environmental impact associated with traditional fuels.

Energy Efficiency: Hydrogen combustion in IC engines is highly efficient, offering a cleaner and more sustainable alternative to conventional fuels.

#### **Future Outlook: A Green Drive Ahead**

As the automotive industry continues to explore alternative fuels, hydrogen's role in IC engines emerges as a frontrunner. The shift towards hydrogen-powered IC engines not only signifies a cleaner drive but also contributes to a future where sustainable transportation takes center stage. The journey has begun, and hydrogen-powered IC engines are steering us toward a greener and more environmentally conscious automotive era.

### Electric Highways (E-Highways): Paving the Way for the Future

E-highways represent a futuristic and energy-efficient option where roads provide electricity to moving vehicles through overhead power lines. The government's plan to build an E-highway on the 1300 km Delhi-Mumbai expressway is a testament to India's commitment to reducing dependence on fossil fuels. This innovation is not just about efficient transportation; it aligns with India's climate sustainability goals.



### Conclusion: A Greener, Atmanirbhar India

In conclusion, the trajectory is clear — India envisions a future with limited reliance on fossil fuels. The current carbon emission scenario necessitates a reevaluation of our fuel strategies. Prime Minister Narendra Modi's commitment at COP 26 to achieve net-zero carbon emissions by 2070 is a testament to India's dedication to global environmental goals.

As India moves towards a net-zero emission future, it has the potential to not only lead the way in green technology but also transform from being one of the largest fuel importers to becoming a major fuel exporter. The roadmap is set, and the journey promises a cleaner, greener, and self-reliant India on the global stage.



### MORE TORQUE PER GRAM





## **ACMA Robotics and Automation Program**

- Utilisation
- Optimisation
- Maintainability
  - Opportunities

### **Topics covered**

- Total Employee Involvement
- Basics / Utilization of Robotics & Automation
- Optimization of Robotics & Automation
- New Scope for Robotics & Automation
- Re-Training



Today, robots have become an integral part of manufacturing industries. Robots are used in industries to perform various operations like material handling, processing operations, assembly and inspection. Also, these robots has made our work easy and efficient – resulting in improved Productivity & Quality. ACMA brings an entirely new and 1st of its kind program for maximum utilization, optimization and maintainability for the industrial automation and robots in the automotive industry.

**Program duration - 24 Months** 

### **ACMA Centre of Excellence (ACoE) Training Calender (Jan - Mar 2024)**

SI. No.	Date From	Date To	Days	Program Head	Program Title	Key Deliverables	Mode of Program	Who Should Attend?
Janua	ry 2024:							
1	16-Jan-24	19-Jan-24	4	Automation	Advance PLC	PLCs, Programming fundamentals, Hands- on exercises	Physical @ACoE - Sonipat	Maintenance Personnel, Managers, Engineers, Technicians, Quality Control Experts, Production Managers
2	30-Jan-24	31-Jan-24	2	Automation	Indusrial Robotics	Interactive sessions led by industry experts. Hands-on experience with state-of-the-art robotic simulation tools. Practical exercises and real-world case studies. Group projects to apply your knowledge. Networking opportunities with fellow enthusiasts. Certificate of participation upon successful completion of the workshop.	Physical @ACoE - Sonipat	Maintenance Personnel, Managers, Engineers, Technicians, Quality Control Experts, Production Managers
3	31-Jan-24	31-Jan-24	1 hrs	Safey	Workplace Safety Best Practices	Safety protocols, Hazard identification, Safety culture development	Online on Webex	Safety Officers, Managers
Februa	ary 2024:							
1	7-Feb-24	8-Feb-24	2	Industry 4.0	Advanced Concepts in Industry 4.0	Deep dive into Industry 4.0 technologies, Applications, Challenges and Opportunities	Physical @ACoE - Sonipat	Maintenance Personnel, Managers, Engineers, Technicians, Quality Control Experts, Production Managers
2	15-Feb-24	16-Feb-24	(Pahse - I) 2 days	Sustainability	Sustainable Manufacturing Practices	Principles of sustainability, Implementing sustainable practices, Industry case studies	Physical @ACoE - Sonipat	Manufacturers, Environmental enthusiasts
3	20-Feb-24	23-Feb-24	4	Automation	PLC Programming for Mechatronics	Advanced PLC programming, Mechatronic applications	Physical @ACoE - Sonipat	Engineers, Technologists
4	22-Feb-24	23-Feb-23	4	Zero Defect	Defect Free Manufecturing	Highly effective presentations with large case studies     Interactive sessions demonstrating the process to initiate a Zero Defect Quality Culture     Highly qualified faculty     Workshops, project selection, and followup sessions	Physical @ACoE - Sonipat	Senior/Middle-Level Management, Production, Quality, Engineering, and Change Management Teams
5	28-Feb-24	28-Feb-24	1 hr	Safety	Workplace Safety Best Practices	Safety protocols, Hazard identification, Safety culture development	Online on Webex	Safety Officers, Managers
Marc	h 2024:							
1	Dates to Be confrimed		2	EV	Future Trends in Electric Vehicles	Emerging trends, Technologies in EVs, Market dynamics	Physical @ACoE - Sonipat	Engineers, EV enthusiasts
2	11-Mar-24	13-Mar-24	(Pahse - II) 3 Days	Sustainability	Sustainable Manufacturing Practices	Principles of sustainability, Implementing sustainable practices, Industry case studies	Physical @ACoE - Sonipat	Manufacturers, Environmental enthusiasts
3	20-Mar-24	21-Mar-24	2	Automation	Indusrial Robotics	Interactive sessions led by industry experts. Hands-on experience with state-of-the-art robotic simulation tools. Practical exercises and real-world case studies. Group projects to apply your knowledge. Networking opportunities with fellow enthusiasts. Certificate of participation upon successful completion of the workshop.	Physical @ACoE - Sonipat	Maintenance Personnel, Managers, Engineers, Technicians, Quality Control Experts, Production Managers

For more details please contact: Mr. Rakesh Kumar- rakesh.kumar@acma.in- 9050415286

### **ACMA Programs on Offer 2024**

### ■ Futuristic / Upcoming Programs ■ List of Programs / Projects

- Industry 4.0 / Al
- Customer Relation Ship Management
- Enhancing Innovation
- Electric Vehicle Support Program

### List of Assessment Programs

- Productivity
- Manufacturing Excellence
- Safety
- Energy efficiency
- Sustainability
- Digitization/ Industry 4.0
- Skill

### List of Clusters Programs

- ACMA Program on Environment, Social and Governance
- Sustainable Manufacturing Cluster -Carbon Footprint eduction
- Zero Defect Quality Cluster
- Zero Defect Plus Cluster Zero defect in NPD process
- Beyond Zero Defect
- Engineering Excellence Cluster
- Advance Cluster Lean Manufacturing
- New Product Development Foundation Cluster
- New Product Development Design Cluster
- Tool Engineering Cluster
- Skill Development Cluster
- Low Cost Automation Cluster
- Rudimentary Framework Program
- Human Resource Cluster
- Special Program on Robotics & Automation-maintainability & Optimization

- Wow Effect complete turn around project
- Bottleneck Management
- Deskilling of Manufacturing Activities
- ACMA Equipment Maintenance & Optimization Program
- Special Lean Process Engineering for Plastic Industries
- Special Lean Process Engineering for Forging Industries
- Special Lean Process Engineering for Foundry Industries
- Special Lean Process Engineering for Fabrication Industries
- Daily Work Management Program
- Uptime Improvement
- Lean Implementation Program
- Special Projects on Zero Defect
- Asset Turn Ratio Improvement Project
- Productivity Improvement Project
- Quality Adherence Project
- Breakeven Point Reduction Program
- New Plant Initiation Project
- Material Flow Cost Accounting MFCAprogram
- Management By Objective -Improvement Project
- Paint Shop Optimization & Modernization Project
- Through Put Rate Improvements Project - Bottleneck Management
- Working Capital Improvement Project
- Performance Enhancement Project
- Employee Participation, Involvement and Engagement Project
- Manufacturing and Process Engineering Project
- Safe Working Culture development program
- Engineering Improvement Project
- Inventory Improvement Project



ACMA understands the challenges you face and is committed to empowering your organization with a strategic approach that can transform the way you operate. Total Productive Maintenance (TPM) is more than a methodology; it's a philosophy that empowers organizations to achieve the highest level of operational efficiency by involving all employees in the continuous improvement of equipment, processes, and systems. By systematically eliminating losses and downtime, TPM drives productivity, quality enhancement, and overall profitability.

### **Special Program for**



Practices Implementation



### **Topics Include:**

- **■** Employee Involvement and Routine Management
- Autonomous Maintenance
- Planned Maintenance
- **■** Kobetsu Kaizen (Focused Improvement)
- Quality Maintenance
- Re Training

Program Duration: 18 Months (Split into two parts of Nine months each)

**ACMA Special Program for TPM Implementation** offers several valuable benefits for individuals and organizations in the automotive and manufacturing industries. This program focuses on equipping participants with essential tools and methodologies to enhance operational efficiency, quality, and competitiveness.

### For details please contact

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JOIN NOW

### **New ACMA Program Launches**



Launch of ACMA ESG Program at Sellowrap Industries, Ranipet and Gurugram on 12.09.2023



Launch of ACMA TPM Practices Implementation
Program at Windals Precision Pvt. Ltd., on 12.09.2023



Launch of ACMA Advance Lean Program at New Swan Auto, Ahmedabad on 07.09.2023



ACMA Lean Implementation Program at Nutech Auto Pvt. Ltd., Jamshedpur on 21.09.2023



Launch of ACMA Lean Implementation Program at Aditya Auto, Pune on 04.10.2023



Launch of ACMA Lean Implementation Program at JK Files, Chiplun on 26.10.2023

### **New ACMA Program Launches**



Launch of ACMA New Plant Initiatiation Program at BAPL Rototech, Jamshedpur on 11.092023



Launch of ACMA Staff Development Program at Sellowrap, Ranipet on 11.10.2023



Launch of ACMA Special Program for Engineering Excellence & Automation at Vikrant Auto Suspension, Panchmahal on 14.10.2023



Launch of ACMA Special Program on TPM Practices Implementation at Meenakshi Polymers Ltd., Dadri on 28.10.2023



Launch of ACMA Lean Implementation Program at Victor Reinz, Navlakhumbre on 01.11.2023



Launch of ACMA Lean Implementation Program at Alankar Automotive, Sanand on 04.11.2023

### **New ACMA Program Launches**





Launch of ACMA TPM Practices Implementation Program at Mega Rubber, Vasai on 03.01.2024



Launch of ACMA Lean Implementation Program at Mubea Automotive, Pune on 08.12.2023



Launch of ACMA Engineering Excellence Cluster at Ghaziabad Precisions, Ghaziabad on 06.12.2024



Launch of ACMA New Plant Initiation Program at Right Tight Fasteners, Pantnagar on 06.12.2023



# PROGRAM ON ES G

**Program Duration: 24 Months** 

### Topics to be covered

- **Understanding ESG**
- **Environment Stewardship**
- Energy Management
- Water Management
- Safe and Joyful workplace
- **Human Capital**
- Societal Stewardship
- Governance
- Sustenance

**ESG** stands for Environmental, Social, and Governance. Investors and **Customers (including automotive OEMs)** are increasingly applying these factors as part of their analysis process to identify material risks and growth opportunities.





#### Environmental

- Quantification of Scope 1, 2 & 3 Emissions
- **Energy Efficiency**
- Primary & Secondary materials efficiency
- Process Waste Reduce, Reuse, Recycle
- Zero liquid Discharge
- Zero waste to landfill
- Water neutral
- Carbon Footprint Reduction
- Specific energy consumption reduction
- Material waste reduction
- Other waste reduction, recycling



- Safety **Ergonomics**
- Employee Engagement & Development
- **Gender Diversity**
- Community connect
- Carbon Offsetting Afforestation, Water harvesting
- Renewable Energy
- Zero accidents
- Improved employee productivity Reduced energy costs Brand building



- **ESG Policy**
- Actions for Sustainability
- **Business Ethics**
- Supplier Code of Conduct
- Employees' Code of Conduct
- Performance reporting
- **Board composition**
- Clear structure with defined roles & processes
- Improved Decision Making
- Greater shareholder value, better P/E