



सूक्ष्म, लघु एवं मध्यम उद्यम

Guidelines

For the Implementation of
Lean Manufacturing Competitiveness Scheme
Under
National Manufacturing Competitiveness Programme



सत्यमेव जयते

Office of the
Development Commissioner,
Micro Small and Medium Enterprises,
Ministry of Micro, Small and Medium Enterprises,
Government of India

List of Abbreviations

CMTI	Central Manufacturing Technology Institute
CPs	Condition Precedents
DC (MSME)	Development Commissioner (MSME)
DGFASLI	Director General Factory Advice Service & Labour Institutes
GOI	Government of India
GDP	Gross Domestic Product
IA	Implementing Agency
ILO	International Labour Organisation
IFW	Integrated Finance Wing
LMC	Lean Manufacturing Consultant
LMS	Lean Manufacturing Scheme
MSME	Micro, Small and Medium Enterprises
MSME - DI	MSME-Development Institute
MC	Mini-Cluster
NMCC	National Manufacturing Competitiveness Council
NMCP	National Manufacturing Competitiveness Programme
NMIU	National Monitoring and Implementing Unit
SSC	Screening and Steering Committee
SPV	Special Purpose Vehicle
T & C	Terms and Conditions
TAC	Technical Advisory Committee

1.0 Introduction

The Development Commissioner, Ministry of Micro, Small & Medium Enterprises (DC-MSME), Government of India will implement the Lean Manufacturing Scheme (the Scheme), for the benefit of Micro, Small and Medium Enterprises (MSMEs) during the 11th Plan Period. The objective of the Scheme is to enhance the manufacturing competitiveness of MSMEs through the application

of various Lean Manufacturing (LM) techniques. The general approach involves engagement of Lean Manufacturing Consultants (LMC) to work with selected MSME's in the chosen clusters with financial support by the Government. A maximum of 80% of the project cost for each cluster will be borne by the Government. The assistance would be limited to the first year, of the Scheme, which would cover 100 Mini Clusters (approximately 10 MSMEs per cluster), spread all over the country.

2.0 Overview

- 2.1 Manufacturing has been recognized as the main engine for growth of the economy. It has been estimated that in order to achieve a GDP growth rate of 9% per annum, the manufacturing sector has to grow at 12% per annum. The MSME sector, comprising of 114 lakh units has been a significant contributor to manufacturing by accounting for nearly 40% of the total industrial production.
- 2.2 To achieve a sustained rate of growth, the manufacturing sector needs to build and maintain competitiveness needed to face the challenges posed by globalization.
- 2.3 Under the Scheme, MSMEs will be assisted in reducing their manufacturing costs, through proper personnel management, better space utilization, scientific inventory management, improved process flows, reduced engineering time and so on with the application of LM techniques. The Scheme is basically a business initiative to reduce "waste" in manufacturing. The Scheme envisages improvement in the quality of products and lowering of cost, which is essential for competing in national and international markets.
- 2.4 The Scheme will be implemented under the overall superintendence, control and direction of DC (MSME) by Special Purpose Vehicles (SPVs). A SPV will be formed in each cluster. It is expected that once MSMEs are introduced to the benefits and

savings that accrue from LM techniques, they would themselves continue the Scheme from the second year onwards at their own expense. A three tier implementing structure will be in place with a group of ten or so with MSMEs at the lowest local-tier and a Lean Manufacturing Screening and Steering Committee (SSC) under DC(MSME) at the highest tier.

3.0 The Scheme Concept

3.1 Need for Lean Manufacturing :

Ever changing globalised environment has been posing challenges of competitiveness and survival to all the constituents of the economy. It has been more so for MSME units in the manufacturing sector. It has been noticed that units are so engaged in the day to day management issues that they don't have time and resources to dedicate for a strategic understanding of the need and acquiring means of various techniques which would help them in enhancing their productivity and hence being competitive in the world. Lean Manufacturing is a set of techniques, which have evolved over a long period and are based on various minor to major breakthroughs that help in reducing cost and hence increase productivity. A list of main LM techniques with brief description of each is given below:

1. **5S System:** The 5 S systems is a workplace organization which helps in getting the "junk" out of the work area and set of procedures to keep it that way. 5S stands for Sort, Set in order, Shine, Standardize & Sustain.
2. **Visual Control:** Visual controls such as cartoons, charts, light signals, Lane marking on floor, Safety instructions, Warning signs, Poka-Yoke instructions etc. can be displayed all over the work place.
3. **Standard Operating Procedures (SOPs):** All verbal instructions should be converted to SOPs to remove

dependency on skilled personnel in achieving required product quality level, consistency, effectiveness and efficiency.

4. **Just in Time (JIT):** It's a Japanese manufacturing philosophy to make the right product in right quantity at the right time. This almost results in zero inventory and shortest possible cycle time.
5. **KANBAN System:** In this, components are pulled by assembly or subsequent work centers and the containers are replenished with the right quantities by the previous work center, which reduces the inventory of unwanted components.
6. **Cellular Layout:** In this improved manufacturing system, family wise component completion is aimed at within the smaller self contained cell, which is a part of a big factory, as compared to operation wise completion in traditional functional layout.
7. **Value Stream Mapping:** It covers all activities, both value added and non-value added, and helps in arriving at best layout of all resources required for making the product.
8. **Poka Yoke or Mistake Proofing:** It is again a Japanese technique used to prevent errors occurring at their source of origin, and it finally leads to a 'Zero Defect' situation.
9. **Single Minutes Exchange of Dies or Quick Changeover (SMED):** Applying ingenious methods, set up time is minimized and brought to less than ten minutes; there by smaller batches as required by the customer can be taken up for manufacturing.
10. **TPM (Total Productive Maintenance):** TPM involves operators, maintenance staff and management working together to improve overall operation of any equipment. Operators, who first identify noisy or vibrating motors, oil or air leaks, can be trained

to make simple repairs to prevent major and costly break downs.

11. Kaizen Blitz or Rapid Improvement Process: It is an intense management programme, which results in immediate change and bottom line improvement. Both management staff and workers are involved in this.

4.0 Objectives of Lean Manufacturing Scheme :

The objectives of Scheme are to increase the competitiveness of the MSME sector through the adoption of L M techniques with the objective of :

- Reducing waste;
- Increasing productivity;
- Introducing innovative practices for improving overall competitiveness;
- Inculcating good management systems; and
- Imbibing a culture of continuous improvement.

5.0 DC(MSME):

Office of the DC (MSME) has been, since inception, working with the MSME units and industry associations for their advancement. It will now assist MSME units to implement the L M techniques for reducing their manufacturing costs through proper personnel management, better space utilization, scientific inventory management, improved process flows, reduced engineering time etc. Such LM techniques also help in improving the quality of the final product. Large enterprises are capable of taking initiative on their own which essentially involves engaging the services of LMCs. Since the services are time consuming and involved in nature, MSMEs find it difficult to incur cost on LM techniques. Hence the Scheme proposes to provide assistance to MSMEs for implementation of the LM techniques.

6.0 Implementation Structure:

The Scheme will be implemented in clusters spread all over the country. Initially in the Pilot phase, it would be implemented in 100 mini clusters and depending on success achieved; it would be extended to more clusters in the future. A three tier structure has been proposed in the Scheme as follows.

Mini cluster (MC)

A Mini Cluster would be formed at the lowest local tier. The units desirous of taking advantage of the Scheme would incorporate a SPV for the purpose of engaging a LMC. The units would work with the assigned LMC to implement the specific LM techniques.

National Monitoring and Implementing Unit (NMIU)

The next higher level tier, National Monitoring and Implementing Unit (NMIU) will be responsible for facilitating implementation and monitoring of the Scheme. For the Pilot phase of 100 mini clusters, it is envisaged that NPC (National Productivity Council) will function as NMIU. LMCs and SPVs of Mini Clusters will report regularly to NMIU. NMIU would report to the Screening and Steering Committee (SSC).

Screening and Steering Committee

At the highest level, SSC will provide overall direction to the Scheme and will be headed by the Development Commissioner (MSME), with representatives of the government departments concerned, industries associations, technical institutions, professional bodies and other stake-holders.

7.0 Financial Assistance:

The financial assistance from Government of India under the Scheme is envisaged towards the cost of conducting awareness programme, and implementation of LM techniques. The contribution from beneficiary units will also be required as explained in section 12.0.

8.0 Coverage and Eligibility

The Scheme is open to all the units through out the country which qualify as Micro, Small or Medium as per the definition of the MSME Act. (The Micro, Small and Medium Enterprises Development Act, 2006.)

The units are required to form a MC of 10 or so units by signing among themselves a Memorandum of Understanding (MoU) to participate in the Scheme. MCs are required to formalize their association by forming a SPV, whose form could be any of the following:-

- (a) "Trust" as per the Indian Trust Act, 1882 or any similar Trust Act or
- (b) A private limited company incorporated as per Indian Companies Act, 1956 or
- (c) A "society" under The Societies Registration Act, 1860 (including any of its State equivalent) or
- (d) Any similar entity as approved by SSC from time to time.

9.0 Implementation Framework

As described above, a three-tier structure is being proposed for the implementation of the Scheme. The details of constitution, roles and responsibilities etc of each tier, has been given below.

9.1 Unit Level

Constitution

The units falling under MSME category according to MSME Act, 2006 are eligible for assistance in this Scheme.

Documentation

Interested and willing units which are eligible under the Scheme are required to form a Mini Cluster and submit the Application in the required format as given in **Annexure 1** to NMIU.

Responsibility

Units are expected to assess the suitability of forming a mini cluster by exploiting the benefits of synergy, collective bargaining and economies of scale.

A group of 10 or so (+/- 2 units) has been considered as a viable group to form a mini cluster. However, in exceptional cases, a mini cluster of more or less number of units may be considered, as deemed fit by SSC on case to case basis.

9.2 Cluster Level

Constitution

The units are required to form a mini cluster in the form of a SPV. Various forms of the SPV, which have been considered acceptable are listed in para 8.

Documentation

The units would be required to sign a MoU among themselves. MoU should, inter alia, cover the following points:

- (a) Collective and joint responsibility of units;
- (b) Formation of a SPV upon receipt of sanction of grant from the NMIU;
- (c) Undertaking to adhere to Terms and Conditions of the Scheme;
- (d) Undertaking to co-operate and work in collaboration with LMC;
- (e) Undertaking to work with Scheme for at least 2 years;
- (f) Undertaking for periodic reporting on progress to NMIU; and
- (g) Appointment of a nodal officer to be the authorized signatory and single point of contact

Responsibility

Such a cluster would be assisted by the branch/local office of NMIU to form a SPV. At SPV level, a nodal officer would be identified to be a point of contact for all requirements of the Scheme. He would also be authorised signatory on behalf of the mini cluster and a

Power of Attorney would be signed to that effect, as per the format given at **Annexure 2**.

9.3 NMIU Level

Constitution

National Productivity Council (NPC) as NMIU, will report to the SSC. NMIU will also function through its regional offices all over the country as well as local offices near the clusters.

Responsibility

NMIU would receive the applications from the SPV and it would put it up for the consideration of the SSC along with its recommendations. It would act as a single point of contact for the DC(MSME).

NMIU could co-opt industry experts on NMIU's appraising team.

NMIU would also invite proposals from LMCs, assess them and submit an Empanelled list of LMCs for the approval of SSC.

NMIU would be responsible for maintaining a separate account of funds of the Scheme. It would release the funds directly to the SPV against the reports on the basis of progress of implementation of the LM techniques and on the satisfactory performance of the respective LMCs. NMIU will submit necessary Utilization Certificates (UC) in prescribed format to the office of DC(MSME).

It would submit monthly reports to SSC on overall progress of the Scheme. It would also raise exception reports, if any, as regards to any non-responsive behaviour or non-satisfactory performance of any of the SPVs or LMCs.

NMIU will undertake awareness generation programmes for the Units and would encourage them to participate in the Scheme, and also to form SPV.

9.4 Technical Advisory Committee (TAC) within NMIU

NMIU would be required to deal with a number of SPVs/units from entire country, dealing with issues and taking decisions on the matters of productivity. Further, there would be a need to take decision while taking wider perspectives of various stakeholders into account. To this end, a Technical Advisory Committee(TAC) would be constituted, within NMIU, which would be empowered to take the decisions on productivity related issues.

The TAC would comprise of at least 3-4 productivity consultants having multi-sector experience covering all relevant sectors identified as amenable for cluster development through LM interventions. There would also be a representative from office of DC(MSME).

NMIU including its TAC would be empowered to take decisions on the following matters:

- (a) Appraisal of the applications received from MCs and giving recommendations on the same to SSC;
- (b) Cross-Checking the implementation of the LM milestones at the unit level, against the LMC's periodic report and accordingly approving the acceptance of claims of the units;
- (c) Conducting field visits along with representatives of SPVs at units participating in the Scheme;
- (d) Conducting Orientation /Meets for LMCs at periodic intervals;
- (e) Maintaining a central data base and reference library for the participating units and LMCs; and
- (f) Conducting periodic workshops and meets for participating units

9.5 SSC Level:

SSC would be the apex body in the implementation structure. It would be headed by DC-MSME and would have wide representation from various stakeholders, industry experts, nominees of bodies like, Central Manufacturing Technology

Institute (CMTI), NMCC, ILO, DGFASLI, and SPVs concerned, NMIU and a representative of the Finance Wing of MSME.

SSC will have overall responsibility for policy formulation, Scheme implementation and monitoring. It will be empowered to take all key decisions related to the Scheme. SSC would deliberate on the issues put up by NMIU. It would lay down the detailed implementation strategy for the NMIU. It would also consider the recommendations of NMIU on each application.

9.6 Lean Manufacturing Consultants

An Individual or a Consultancy Firm duly registered with or certified by a reputed certification agency in the field of manufacturing technology, quality control etc would be an eligible entity to participate in the Scheme as a LMC. SSC would reserve the right of considering reputed consultants with requisite qualification and exemplary track record in the field of LM consultancy as an eligible entity.

Empanelment

Based on the eligibility criterion, NMIU would prepare a list of empanelled LMCs. Units/MCs would be free to choose the LMC from such a list.

A LMC may be required to undergo Orientation Programme/ Meet organized under the guidance of the NMIU. NMIU would organize the Orientation Programme for the benefit of empanelled LMCs. Such programmes may also be organized by NMIU upon specific request by beneficiary units/SPVs/LMCs. The list of LMCs so trained shall be circulated to prospective SPVs which shall identify a suitable LMC so empanelled by NMIU to undertake the Scheme at a specific MC. NMIU in consultation with SSC would give approval for appointing a particular LMC from a panel to be prepared on the basis of suitability of consultants for the respective

MCs and the fees demanded. As indicated above LMCs would be required to sign a tripartite agreement with NMIU/ and SPV.

Once appointed, LMC would be responsible for tasks given below:

- (a) Assess the existing system at each member unit of the concerned MC;
- (b) Stipulate detailed step by step procedures and schedules for implementation of the LM techniques (pre-defined milestones);
- (c) Identify the end targets in quantified parameters to be achieved by each unit at the end of the Scheme;
- (d) Work in close co-operation with each of the units to assess and then achieve the LM techniques implementation; and
- (e) Respond to specific queries raised by SPV or NMIU on its performance.

An individual LMC is expected to work with not more than 2/3 SPVs in and around the same location. Whereas a Consultancy Firm participating in the Scheme would allocate maximum 2 MCs per eligible personnel operating from office located in and around the same location. This is to ensure effective implementation at the unit level. There should be dedicated resource reserved for each SPV. However, looking at the shortage of LMCs at a particular location the requirement could be relaxed by the competent authority (SSC).

Orientation/Meet of LMCs:

Once a particular MC is approved by SSC for participation in the Scheme, the concerned LMC may have to attend the orientation / meet conducted by NMIU. After this phase LMCs would work with the units under the Scheme.

NMIU would conduct an orientation / meet for eligible LMCs. At such workshops LMCs can raise the issues they are facing in the implementation of LM practices at the unit level. NMIU would appreciate the concern and try to resolve to best of its ability and

authority. If required, NMIU may seek SSC's specific approval on certain matters.

Depending on the progress of implementation of Scheme and assessment of the situation, NMIU may require LMCs to undergo re-orientation programme. This will facilitate LMCs to share their experiences with peers and also to update LMCs with the developments in the field. LMCs would be expected to undergo such re-orientation programmes.

LMCs would be required to attend the workshop at their own cost. The cost of conducting workshops would be borne by NMIU and no cost of travel or boarding would be payable to LMCs.

10.0 Implementation Time Line

It is expected that once the application for participation by SPVs is approved under the Scheme, it would take one year for full roll out of LM techniques at the units under the SPV. However, it is required that these units to follow the techniques for another one full year with periodic reporting to higher tiers.

Initially, it is expected that the Scheme would benefit about 100 Mini-clusters on 10 units or so in a MC in a period of one year. However, based on the evaluation of the Scheme at the end of first year, the Scheme may be extended in subsequent years to cover a large number of Mini Clusters.

Approval Process

If SSC finds a particular application as suitable it would give "in-principle approval", which would be subject to compliance with certain Conditions Precedent (CP). This decision of the SSC shall be recorded in the Minutes of the Meeting and the same would be conveyed in the form of an Approval Memo issued to SPV by NMIU.

SPV would then comply with the CPs stipulated in Approval Memo and submit documentary evidence to that effect to NMIU. NMIU would undertake due diligence on compliance of the CPs. Once NMIU is satisfied that the CPs are complied with and it receives proper response to any further queries raised (if any), it would issue the Sanction Memo under information to the SSC.

Having obtained sanction for its project, SPV shall proceed with the selection of the LMC and finalise the terms of his engagement in consultation with the NMIU. SPV shall thereafter provide the details of the terms to NMIU who would issue an Approval for Signing Memo, which would enable the SPV to sign a Tri-Partite agreement with LMC and NMIU.

12.0 Modalities of Fund Transfer

LMC would raise the bill for the services rendered to the SPV. The first tranche of 20% fee to LMC will be contributed by the SPV. The subsequent tranches will be contributed first by the SPV and reimbursed by NMIU. If the SPV wants an advance, a bank guarantee as per GFR provisions, will be required from the SPV. The UCs as per GFR provision will be submitted by NMIU, the grantee institute in this case.

Fund Transfer to NMIU:

For facilitating the smooth and faster roll out of the Scheme at a National Level, the total amount of grant envisaged under the Scheme would be periodically transferred to NMIU to be kept in a separate account to be opened by NMIU. NMIU could take the funds out of this account against compliance of pre-defined conditions. NMIU would keep and periodically report on the fund status to SSC. NMIU will also submit necessary utilization certificates to the office of DC (MSME).

Fund Transfer to SPV:

NMIU would transfer the funds to SPV into their separate account opened for the project. This transfer of funds will be towards the amount of the fees paid by SPV to LMC for achieving a particular milestone, after cross checking with a report for the achievement of same milestone and of satisfactory performance of the LMC. NMIU would seek documentary evidence in the form of a certificate of the Authorised Signatory of the SPV, which would also form part of the Progress Report.

The LMCs will be implementing LM techniques in accordance with pre-defined milestone schedule to be divided in 5 stages. The payment to LMC by SPV would be on a milestone basis in 5 tranches of 20% each. After the achievement of first stage, the SPV will pay to the LMC their contribution. For achieving subsequent milestones the GOI share will be transferred by NMIU to SPV who will make payment for the corresponding fees to the LMC.

Annexure 1: Format for Application by MCs/SPV

**Application format for participation in
Lean Manufacturing Competitiveness Scheme of
O/o Development Commissioner (MSME),
M/o MSME, Nirman Bhawan, New Delhi-110108**

Date: _____

Name and address of the unit

Telephone No. Factory & Office

E-mail & Fax

Subject: Application for Participation in the Lean Manufacturing
Competitiveness Scheme

Sir,

We, the undersigned wish to avail the benefits of the Lean Manufacturing Competitiveness Scheme to enhance our competitiveness. We have gone through the guidelines of the Scheme. The details of industries interested are as follows:

Sr. No.	Company Name	Address with telephone number, e-mail and fax	Product	E.M. No., Date of issue, issued by (copy enclosed)
1				
2				
3				
4				
5				
6				
7				
8				

9				
10				
11				
12				

We have made an assessment of Product Manufacturing at our premises, and we feel that we can achieve efficiency by following Lean Manufacturing techniques.

In pursuance of the Scheme, we wish to incorporate a Special Purpose Vehicle named _____ incorporated under the _____ Act, Year. A memorandum of Understanding to this regard has been signed between the units, and the units have jointly nominated the undersigned with the Power of Attorney to communicate on their behalf for the purpose of the implementation of the Scheme. A copy of the MoU and the Power of Attorney are attached herewith for your kind perusal.

Yours Sincerely,

(Signature)

Name of the Authorized Signatory

Enclosures:

1. Memorandum of Agreement
2. Power of Attorney

Annexure 2: Power of Attorney
(By MC to its Authorised Signatory)

(On a Stamp Paper of relevant value)

Power of Attorney

Whereas the Office of the DC(MSME), Ministry of Micro, Small and Medium Enterprises, Government of India, has announced a Scheme for implementation of Lean Manufacturing Competitiveness Scheme for Micro, Small and Medium Enterprises.

Whereas, the industry units are interested in forming a Mini-cluster as required in the Scheme for taking benefits of the Scheme, and adopt Lean Manufacturing techniques in their industries, in accordance with the terms and conditions of the Scheme and other related documents in respect of the Scheme, and

Whereas, it is necessary as per the Guidelines of the Scheme for the members of the Mini-cluster to appoint a Nodal Officer with all necessary power and authority to do for and on behalf of the units, all acts, deeds and things as may be necessary in connection with the Mini Cluster's proposal for the implementation of Scheme who, acting jointly, would have all necessary power and authority to do all acts, deeds and things on behalf of the Mini Cluster, as may be necessary in connection with the Mini Cluster's application for the Scheme.

NOW THIS POWER OF ATTORNEY WITNESSETH THAT;

We, M/s. _____,
_____,
_____,
_____,
_____, do
hereby designate Mr/ Ms. _____ as the nodal

officer for the Mini Cluster, to do on behalf of the Mini Cluster, all or any of the acts, deeds or things necessary or incidental to the Mini Cluster's proposal for the Scheme, including submission of application/proposal, participating in conferences, responding to queries, submission of information/ documents and generally to represent the Mini Cluster in all its dealings with the Screening and Steering Committee (SSC), National Monitoring and Implementing Unit (NMIU), Lean Manufacturing Consultant (LMC), Office of the DC(MSME), Ministry of Micro, Small and Medium Enterprises, or any other Government Agency or any person, in connection with the Scheme .

We hereby agree to ratify all acts, deeds and things lawfully done by the Nodal Officer, our said attorney pursuant to this Power of Attorney and that all acts deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this the XXth day of XXXXX 2009

(Executants)

(To be executed by all the members of the Consortium)
