



August 2018

CAPACITY BUILDING OF LOCAL SERVICE PROVIDERS (LSP) UNDER GEF-UNIDO-BEE PROJECT IN SELECTED MSME CLUSTERS IN INDIA

LSP Mapping Report - Sikkim Dairy Cluster

Submitted to
(Prepared under GEF-UNIDO-BEE Project)



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Prepared by



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1. PROJECT BACKGROUND

Bureau of Energy Efficiency (BEE), a statutory body under Ministry of Power, Government of India, in collaboration with United Nations Industrial Development Organization (UNIDO) is executing a Global Environment Facility (GEF) funded national project “Promoting energy efficiency and renewable energy in selected MSME clusters in India”.

The overall aim of the project is to develop and promote a market environment for introducing energy efficiency and enhanced use of renewable energy technologies in process applications in 12 selected energy-intensive MSME clusters across 5 sectors in India (with expansion to more clusters later). This will enable improvement in the productivity and competitiveness of units, as well as reduce overall carbon emissions and improve the local environment.

The details of the sectors and clusters identified is as below

Table 1 : List of clusters identified

Sector	Cluster
Brass	Jamnagar, Gujarat
Ceramics	Khurja, Uttar Pradesh
	Morbi, Gujarat
	Thangadh, Gujarat
Dairy	Gujarat
	Kerala
	Sikkim
Foundry	Belgaum, Karnataka
	Coimbatore, Tamil Nadu
	Indore, Madhya Pradesh
Hand tools	Jalandhar, Punjab
	Nagaur, Rajasthan

CONFEDERATION OF INDIAN INDUSTRY – CII Sohrabji Godrej Green Business Centre has been engaged by Bureau of Energy Efficiency to carry out the assignment on “Capacity building of Local service providers (LSPs) under GEF-UNIDO-BEE project **“Promoting Energy Efficiency and Renewable energy in selected MSME clusters in India”** for the Dairy cluster of Sikkim.

2. CLUSTER SCENARIO

2.1 Indian Dairy Scenario

India has emerged over the past few years to be the largest milk producing nation in the world, with milk production of 146.4 million tonnes¹ in 2014-15 and 155.5 million tonnes respectively in 2015-16 with an annual growth of 6.27%. The National Dairy Development Board located in Anand, Gujarat acts as the premier institution for accelerating the dairy development on cooperative lines in India. During 2015-16 the sale of milk by the cooperative dairies was 32 million per day which records of growth of 2.7% over the previous year. Over the last few years there is a growing demand for milk and milk products in our country.

2.2 Sikkim Dairy Sector

Sikkim is among the lowest milk producing states in India, with a total production of 0.067 Million Tonnes² of milk in 2015-16. The graph below shows the increase of milk production during the last 5 years

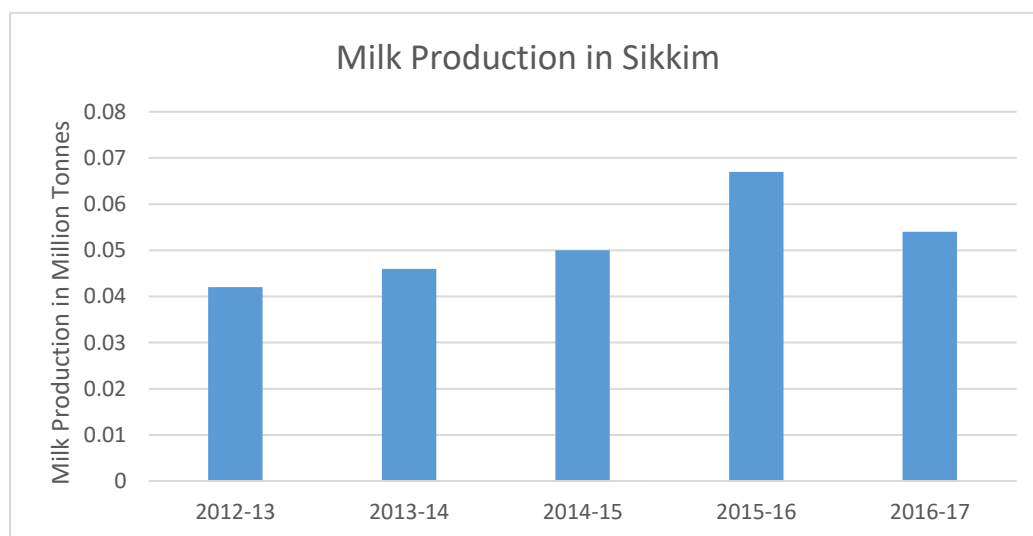


Figure 1 Annual milk production last five years

There are mainly 2 dairies in Sikkim which are located in southern and eastern part of Sikkim. These dairies are the members of Sikkim Co-operative Milk Producers Union Limited which is the nodal agency for marketing the milk products in the state.

¹ Annual Report (2016-17) – Department of Animal Husbandry, Dairying and Fisheries – Ministry of Agriculture & Farmers Welfare Government of India

² <http://nddb.coop/information/stats/milkprodstate>

2.3 Major operations & Technologies in the cluster

There are two major operations in milk processing; (I) Milk Chilling Centers (II) Dairies.

- i) **Milk Chilling Centers (MCCs):** The milk collected from different locations is first chilled in MCCs. Chilled milk is graded, weighed, sampled and dispatched in tankers for further processing. Refrigeration is the major load involved here
- ii) **Dairies:** Processing involves number of processes like pasteurization, homogenizing, refrigeration etc., Number of products are manufactured which include – High Cream Milk, Butter, Paneer, Curd, Lassi etc. Steam, Hot water, electricity and refrigeration are the major loads

Technologies Involved

Energy intensive equipment in a typical milk processing unit include,

- a) Ammonia Refrigeration system – Chilling
- b) Cooling towers - Cooling
- c) Boilers & Steam System – Heating
- d) Pasteurizer and Homogenizer – Processing
- e) Auxiliaries viz., Pumps, Fans, Motors, Compressor

Typical energy use pattern is as shown,

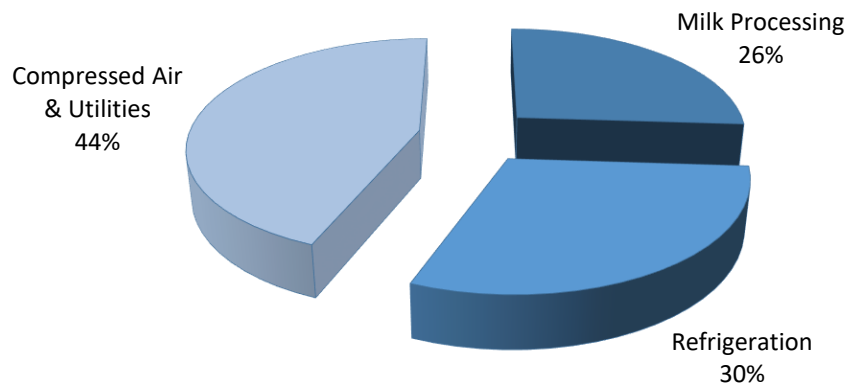


Figure 2 Typical Energy Use Pattern in Dairy Sector

Typical Process Flow in Dairy Plant

Milk Production

The processes taking place at a typical milk plant after receiving and filtration of milk from the chilling units includes:

Separation: After being held in storage tanks at the processing site, raw milk is heated to separation temperature in the regeneration zone of the pasteurizer. The milk (now hot) is standardized and homogenized by sending it to a centrifugal separator where the cream fraction is removed. The skim is then usually blended back together with the cream at predefined ratios so that the end product has the desired fat content. Surplus hot cream is cooled and usually processed in a separate pasteurizer ready for bulk storage and transportation to a cream packing plant.

Pasteurization is a process of heating milk to 72°C for 16 seconds then quickly cooling it to 4°. This process slows spoilage caused by microbial growth in the food. Unlike sterilization, pasteurization is not intended to kill all micro-organisms in the food. Instead, it aims to reduce the number of viable pathogens so they are unlikely to cause disease.

Homogenization (if required): Milk must then be homogenized. Without homogenization, the milk fat would separate from the milk and rise to the top. Milk fat is what gives milk its rich and creamy taste. Homogenization makes sure that the fat is spread out evenly in the milk so that every sip of milk has the same delicious flavor and creamy texture. Milk is transferred to a piece of equipment called a homogenizer. In this machine the milk fat is forced, under high pressure, through tiny holes that break the fat cells up in to tiny particles, 1/8 their original size. Protein, contained in the milk, quickly forms around each particle and this prevents the fat from rejoining. The milk fat cells then stay suspended evenly throughout the milk

Deodorization may be carried out if required.

Packaging and storage: Milk is pumped through automatic filling machines direct into bags, cartons and jugs. The machines are carefully sanitized and packages are filled and sealed without human hands. This keeps outside bacteria out of the milk which helps keep the milk stay fresh. During the entire time that milk is at the dairy, it is kept at 1°-2°C. This prevents the development of extra bacteria and keeps the milk fresh. Typical process occurring at a milk plant is given below

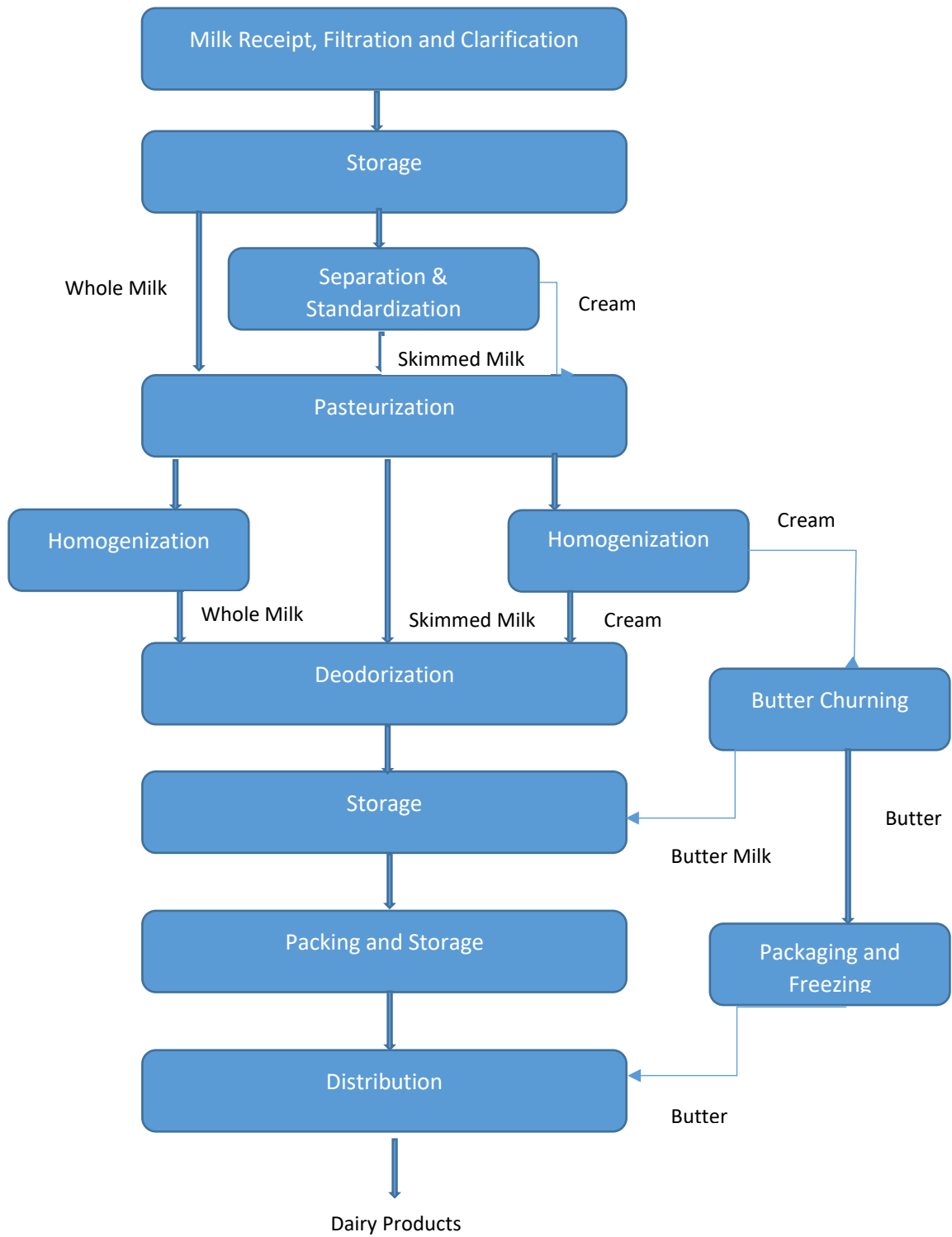


Figure 3 : Typical process flow diagram of milk manufacturing

3. MAPPING OF LOCAL SERVICE PROVIDERS

3.1 LSPs Operation in Sikkim Dairy Cluster and their influence on Energy Efficiency

Local Service Providers are instrumental in influencing industrial unit's journey towards sustained growth. LSP can be a firm or an individual providing the services to the units in order to run their operation smoothly and effectively. The services provided by the LSP can be a consultancy services, operation, repair & maintenance services, new installation and commissioning services. These services have a significant role in energy consumption of equipment as they are major energy guzzlers and most of the energy cost of industries is due to these equipment & utilities. So LSPs should have better knowledge in terms of best industrial practices for energy use optimization and applications of renewable energy technologies. A well trained LSP will perform the job efficiently that would help industry to reduce their cost and increase competitiveness. Equipment life will also increase without degrading the quality of the product

In Sikkim dairy cluster, dairy units are mainly dependent upon OEMS and service providers that are located in different parts of the country. However for small repair and maintenance activities the dairy union have hired some local contractors to undergo the regular service and operation. Since only two dairy plants are in the cluster, all the major Original Equipment Manufacturers (OEMs) and service providers are reluctant to establish their office in Sikkim due to lack of business opportunity. The LSPs can be categorized as follows :-

- All major OEMS directly provide services to dairy units which
- Local technicians and operators who do the repair and maintenance activities

3.2 Objective of Mapping

The objective of the mapping is to identify the LSPs based on the demand and supply needs local industries against available local service providers in the cluster and nearest locations. The LSPs were identified based on the major process and operations involved in the dairy units.

The figure below shows the process wise mapping of LSPs in a dairy unit

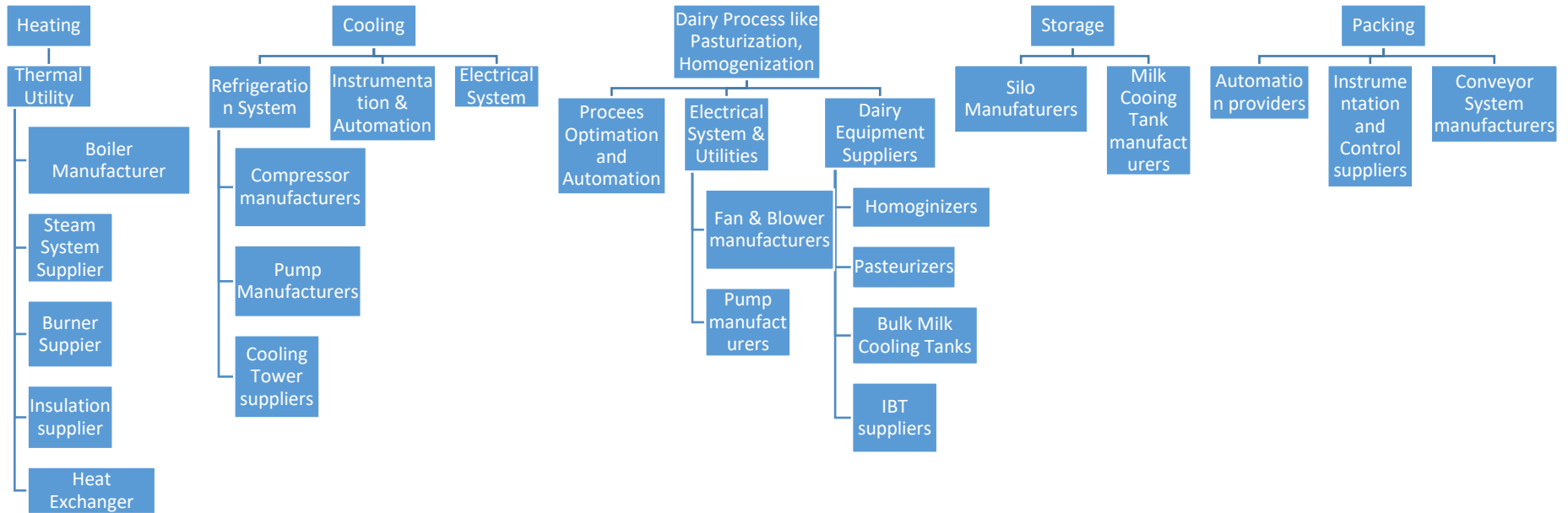


Figure 4: Process Wise Mapping

A two tier approach is adopted here for mapping the LSPs:-

- Tier 1 Category (Major OEMS): It includes the major OEMs and service providers in the cluster, viz. Thermax, Atlas Copco, and Ingersoll Rand, Frick India etc.
- Tier 2 Category (Service and maintenance people) :It includes local equipment manufacturers, fabricators, technicians etc, who do the repair and maintenance activities.

Only the Tier 1 category benefit from international linkages (adoption of new and innovative technologies) and global OEM contracts based on their capabilities. Currently all the LSPs which are falling in the Tier 2 category are not updated with the recent technological developments and best operating practices as their exposure to global market and R&D is limited.

The major reasons for this are

LSP Mapping Report

- Lack of operational competitiveness
- Huge gap on the existing skill set of employees
- Poor sustainable market linkage and gap in supply chain
- Competition from others providing same technology/service
- Lack of awareness of the latest technologies on EE/RE

The main purpose of mapping is to create a data base for the existing LSPs in the cluster, to do a gap analysis in terms of technology and skills and to identify for newer LSPs.

A typical mapping process adopted in Gujarat Dairy cluster is shown below:

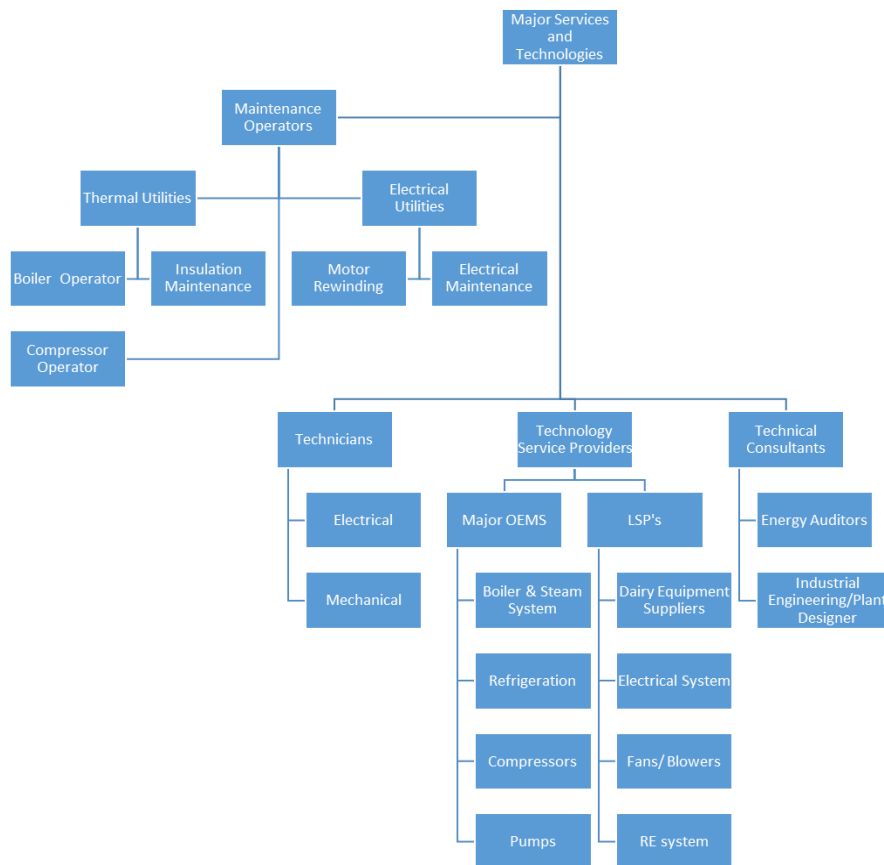


Figure 5 : LSP Mapping Tree

3.3 Role of LSPs in Sikkim Dairy Cluster

Table 2: Role of LSPs in Sikkim Cluster

	Category List	Role of LSPs	List of LSPs
Plant Level	Energy Audit Agencies	Conduct energy efficiency studies and recommend ECON measures	<ul style="list-style-type: none"> • Bicon Consultants, Kolkata • Verde Consulting Pvt Ltd, Kolkata
	Plant Designers	Provide project management services to design and build up dairy which include fabrications, erection of plant, equipments etc	<ul style="list-style-type: none"> • Ashtavinayaka Technocrafts Private Ltd, Ahmedabad • Flavi Dairy Technical Services, Ahmedabad
Process Level	Homogenization, Pasturization, Cleaning	Provides complete process solutions which govern the quality of products manufactured which includes automation, process loop modification etc	<ul style="list-style-type: none"> • IDMC, Gandhinagar • Dairy Tech India, Pune • Akxa Tech Pvt Ltd, Kohlapur • Tetra Pak India Pvt Ltd, Pune
Equipment Level	Electrical and Utility <ul style="list-style-type: none"> • Compressor • APFC • DG Set • Refrigeration System • Motors 	Provide regular repair & maintenance service of equipments, health check up, introducing new energy efficient technologies to cluster with respect to equipment.	<ul style="list-style-type: none"> • Trinity Tradex Pvt Ltd, Kolkata • Frick India Ltd , Faridabad • Sambhu Sarkar, Gangtok • KC Diesel Services, Singtam • Globe Solutions, Ranchi
	Thermal Utilities <ul style="list-style-type: none"> • Boilers • Insulation • Burners 	Provide regular repair & maintenance service of equipments, health check up, introducing new energy efficient technologies to cluster with respect to equipment	<ul style="list-style-type: none"> • Energy Solutions, Kolkata • Pyron Engineers, Ahmedabad
Operator Level	<ul style="list-style-type: none"> • Welding • Fabrication 	To provide basic engineering services like welding , fabrication, fitting etc with respect to equipment and sub equipments like tanks, silos, pipelines etc.	<ul style="list-style-type: none"> • Jain Enterprises, Silguri • Nagendra Singha, Gangtok • Premise Instrumentation and Services, Gangtok

3.4 Approach and Methodology

Local service providers in dairy cluster majorly comprises of maintenance operators, technicians, fabricators, energy auditors, engineering consultants, plant design engineers and other people who frequently provide their services to dairy plants.

CII has adopted following approaches to collect the information and understand the need and requirements of local service providers:

1. Inception meeting with the “Sikkim Co-operative Milk Producers Union Limited” members

CII had conducted an inception meeting at Sikkim Milk Union Ltd on 08th December 2017 with Ragul K, Managing Director of Milk Union, Mr. Vishal Tewari, Deputy General Manager, other members and LSPs to explain the various activities of the project and create awareness about the project among various stake holders and to understand about the various challenges of the cluster. We have received a positive response from the association president for supporting all our activities to promote energy efficiency and renewable energy in the cluster.

2. Questionnaire

A questionnaire to collect basic information including the area of service and their strength and weakness has been developed by CII. During field visits LSPs were interviewed and necessary details were captured for mapping.

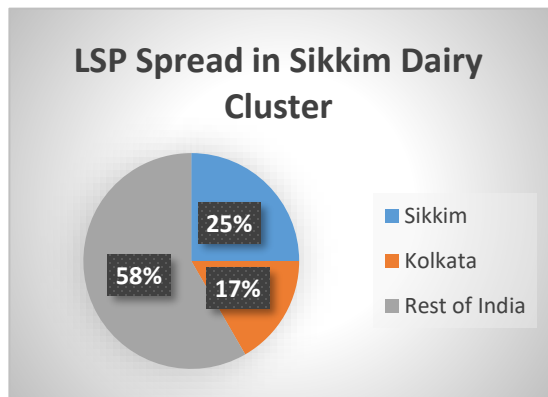
Filled in data collection form obtained from field visits is attached in annexure 1.

4. OUTCOME OF LSP MAPPING

Comprehensive LSP data was collected through meeting with service providers and through various interaction during stakeholder workshops. The survey helped in analyzing various aspects of LSPs like:

- Existing skill sets
- Employee Strength
- Years of service
- Areas in which LSP need training

Geographic Location



Under Sikkim Milk Union Ltd only two dairies are there in the cluster ie in Gangtok and Jorethang. Union have hired few contractors for doing the regular repair and maintenance activities. But majority of the major LSPs are located in different parts of the country.

Figure 6: LSP spread in Sikkim Dairy Cluster

During the mapping process only 6 LSPs were interviewed in Gangtok and Jorethang . Most of the LSPs are single owned or maximum 3 to 4 employees. The educational and skill set of these LSPs are poor as they are small contractor working for these two plants over the last 5 to 10 years. These LSPs are unaware of the latest trends and developments in EE/RE technologies. All the major overhauling and maintenance activities of critical and major equipment’s in process and utility are carried out by service engineers from all over India for different technologies.

Technology wise mapping of LSPs identified in the cluster is given below.

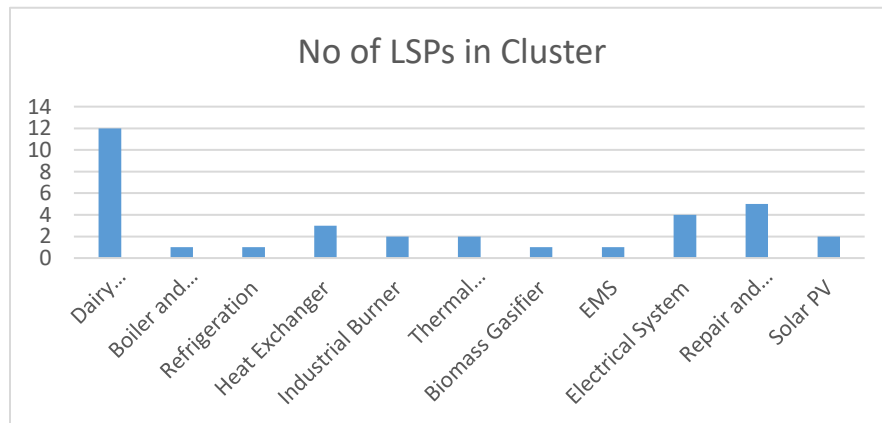


Figure 7: No of LSPs of Sikkim Dairy Cluster

Based on the LSP data, strength and weakness of service providers were analyzed and also what are the opportunities and threats for them in the cluster were identified during the mapping process SWOT analysis was also done based on the demand supply need of the services in the cluster.

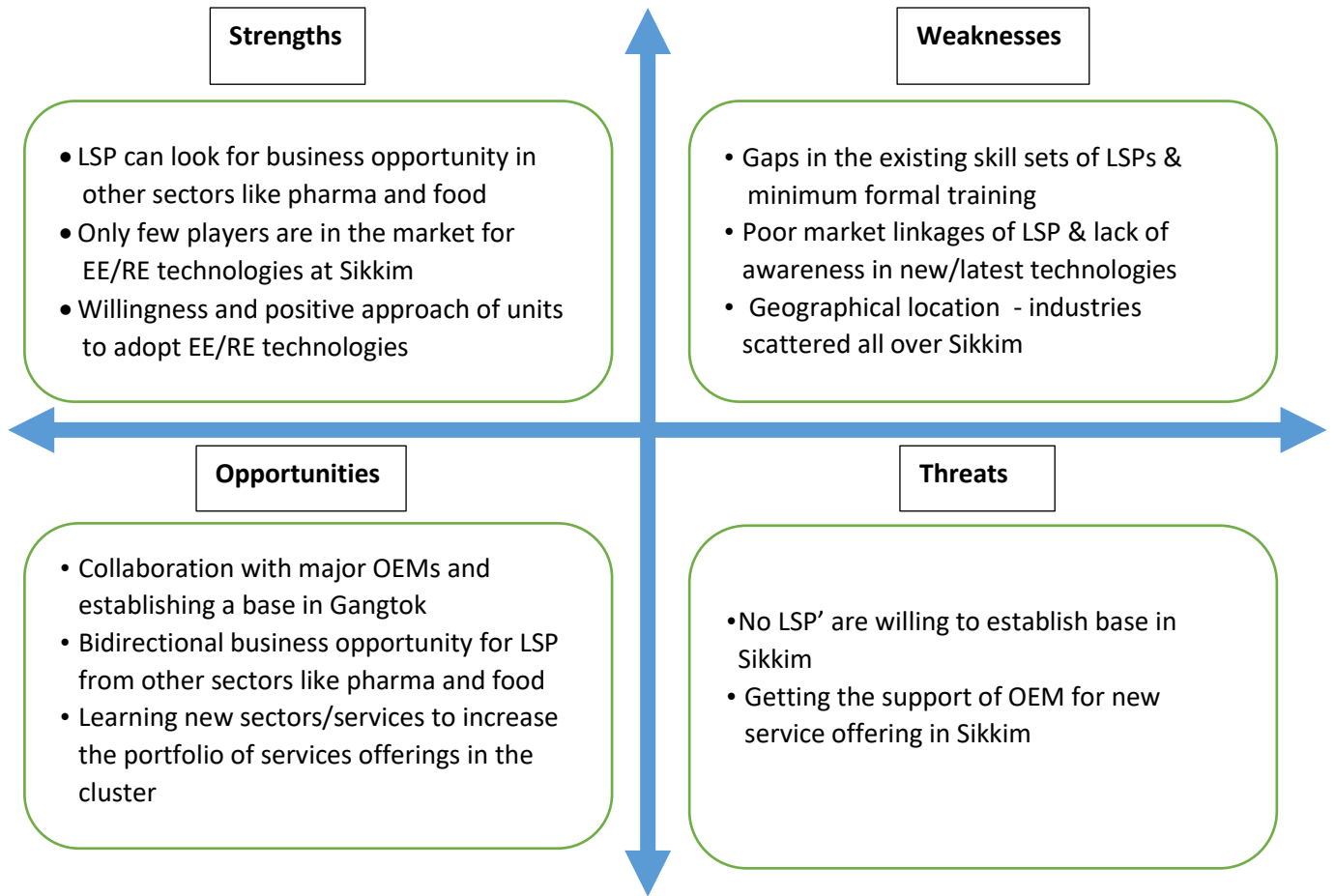
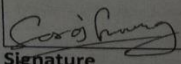
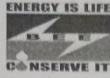


Figure 8: SWOT ANALYSIS

5. ANNEXURE

Annexure 1 – LSP Data Collection Format

LSP Data Collection Format for Sikkim Dairy Cluster	
Name of the Local Service Provider(LSP)	Saroj Gurung
Address	Jorethang Kachefar Sikkim Milk
Contact Person Name	
Designation	Electrician
Mobile No	9617853547
Email ID	
No of years in existence	(5) five years
No of Employees currently working	1
Technology/ Service Provided	Boiler operation D.G set operation Compressor operation
Name of the Units served by the LSP	Jorethang Unit
Existing Skills of the employee	I.T.I.
Areas in which training is required	Boiler operation D.G set operation Compressor operation
Signature	



LSP Data Collection Format for Sikkim Dairy Cluster

Name of the Local Service Provider(LSP)	Hussain
Address	Haring bloy, Gangtok
Contact Person Name	Hussain
Designation	-
Mobile No	7584972918
Email ID	-
No of years in existence	7
No of Employees currently working	1
Technology/ Service Provided	<ul style="list-style-type: none"> - boiler pipeline fixing - welding for joints - cum & table fixing
Name of the Units served by the LSP	SMU HW unit Gangtok
Existing Skills of the employee	<p>Maintenance</p> <ul style="list-style-type: none"> - steam & welding
Areas in which training is required	<ul style="list-style-type: none"> → boiler function → steam pipeline → Application in Dairy cluster

Signature

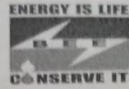


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LSP Data Collection Format for Sikkim Dairy Cluster

Name of the Local Service Provider(LSP)	Napendra Singh
Address	Housing Colony, Gangtok
Contact Person Name	Napendra Singh
Designation	-
Mobile No	9932351015
Email ID	-
No of years in existence	30
No of Employees currently working	1
Technology/ Service Provided	<ul style="list-style-type: none"> → Boiler pipeline fixing → welding for joints → Cement & tile fixing.
Name of the Units served by the LSP	SMU HO unit Gangtok
Existing Skills of the employee	maintenance
Areas in which training is required	<ul style="list-style-type: none"> → welding → steam system & boiler

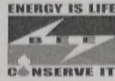
Signature



LSP Data Collection Format for Sikkim Dairy Cluster

Name of the Local Service Provider(LSP)	Dilip Singh
Address	Karfector, Jorethang South Sikkim
Contact Person Name	
Designation	Sr. Fitter
Mobile No	9593988382
Email ID	
No of years in existence	(12) Twelve years
No of Employees currently working	1
Technology/ Service Provided	Boiler operation D.G set operation Ammonia Compressor
Name of the Units served by the LSP	Jorethang Karfector Sikkim Milk Union
Existing Skills of the employee	Based on Experience
Areas in which training is required	Boiler Operation D.G Set Operation Ammonia Compressor Operation

Signature



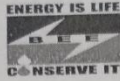
LSP Data Collection Format for Sikkim Dairy Cluster

Name of the Local Service Provider(LSP)	Shambhu Shambhu Sarkar
Address	Tadlong, Gangtok
Contact Person Name	Shambhu Sarkar
Designation	—
Mobile No	9851282828
Email ID	—
No of years in existence	24 years
No of Employees currently working	1
Technology/ Service Provided	→ Motor Rewinding → Electrical wiring → Maintenance
Name of the Units served by the LSP	SNU, private units
Existing Skills of the employee	→ Motor Rewinding → Electrical wiring } Based on experience
Areas in which training is required	→ Motor Rewinding + Alternator → VFD maintenance

Signature

Shambhu Sarkar

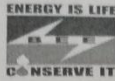
22/11/2019



LSP Data Collection Format for Sikkim Dairy Cluster

Name of the Local Service Provider(LSP)	Krishna mandal
Address	Tadong, Gangtok
Contact Person Name	Krishna Mandal
Designation	-
Mobile No	9434410064
Email ID	-
No of years in existence	30
No of Employees currently working	1
Technology/ Service Provided	→ DG set maintenance → Mechanical vehicle maintenance
Name of the Units served by the LSP	SMU HO unit Gangtok
Existing Skills of the employee	→ maintenance
Areas in which training is required	→ DG engine set

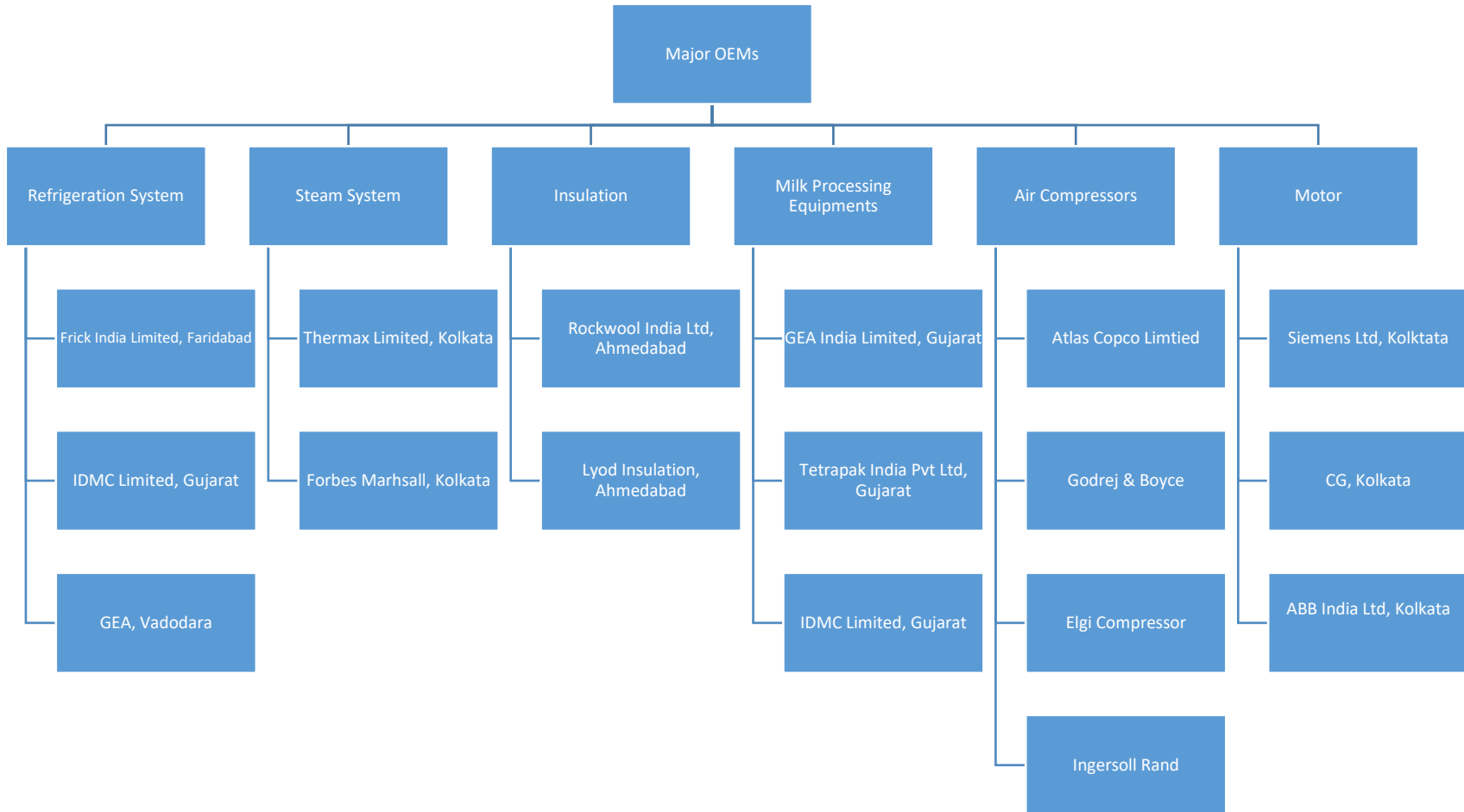
Signature Krishna



LSP Data Collection Format for Sikkim Dairy Cluster

Name of the Local Service Provider(LSP)	Ashish Rai
Address	Sikkim Milk Karkatae
Contact Person Name	
Designation	Jr. Technical Supervisor
Mobile No	9593988382
Email ID	asis.rai.smo@gmail.com
No of years in existence	(7) Seven years
No of Employees currently working	1
Technology/ Service Provided	Boiler Operation DG set operation Compressor operation and all Technical related works
Name of the Units served by the LSP	Jasethang Unit
Existing Skills of the employee	① I.T.I ② Electrical Diploma
Areas in which training is required	Operations and Maintenance
Signature	

Annexure 2 – List of Major OEMs in the cluster



Annexure 3 – List of LSPs Sikkim Dairy Cluster

Sl No	Name of LSP (Dairy Equipment)	Phone No	Website	Location	Services Provided	Year of Establishment	No of Employees
1	Preyog Equipments Pvt. Ltd	09831005354	https://www.indiamart.com/preyog-equipments-ltd/	Shop No. 29, Bombay Market, Near Raj Talkies, Raipur, Chattisgarh	Dairy Plant Equipment, Filling Machines	2010	15
2	Micron Industries Pvt Ltd	09821283669	http://www.micronind.com/company.htm#	R-710, T.T.C Industrial area, MIDC, Rabale, Navi Mumbai 400701 Maharashtra	Ice-cream cup and cone filling machine, yogurt and dahi cup filling machine & homogenizer	2008	
3	Goma Engineering Pvt Ltd	9427950517	www.tajsigma.com	L.B.S. Marg, Majiwada, Thane	Homogeniser, Pasteuriser, Beverages Homogenizer, Beverage Pasteurizer, Beverage Tubular Pasteurizer	1982	50
6	Ice Make Refrigeration Pvt Ltd	9727762421	http://www.icemakeindia.co.in/	226, Dantali Industrial Estate, Gota – Vadsar Road, Gandhinagar – Gujarat	Cold Room or Cold Storage Room, Refrigeration Unit, Chillers or Chilling Plants, Milk Cooler	1989	200
7	Dairy Tech India	9474001515	www.dairytechindia.net	EL-31/5, J-Block, MIDC Bhosari, Pune – 411026	cheese making equipment, butter making equipment, milk	2006	25

					processing equipments, ice cream making equipment, milk storage equipment		
8	Tetra Pak India Pvt Ltd	8800722599	www.tetra pak.com	Plot No : B-53, MIDC, Chakan – Phase II Village Vasuli, Taluka Khed, Pune	Major Dairy Equipments	1951	More than 300
9	SS Engineers and Consultants	0883325666 3	https://w ww.ssdair yequipme nts.com	Plot No. 11-49/2, Morumpudi Junction, Rajahmundry	dairy equipment, cleaning equipment, storage equipment, process equipment, crate cleaning equipment, material handling equipment,	2008	20
10	IDMC Limited	9934360635	http://idm c.com	Plot No. 124-128, GIDC Estate, Vitthal Udyognagar – 388121, Anand, Gujarat	Major Dairy Equipments	1978	More than 300
11	NVS Industries	9431496614	http://ww w.nvs- industries. com	Plot No. 171, Bari Industrial Estate, Sonapat, Haryana	MCC, Churning Machines, Storage Tank, BMC etc	2006	70
12	Indian Dairy Equipment	9246651059	idef.in/con tact.html	Plot No. 261, Auto Nagar, Rajahmundry	Storage Tanks, Conveyors, Dairy equipments		

	and Fabricators			Andhra Pradesh,			
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Sl No	Name of LSP (Boiler & Steam System)	Phone No	Website	Location	Services Provided	Year of Establishment	No of Employees
1	Energy Solutions	9831005354	https://www.tradeindia.com/Seller-2382995-Energy-Solutions/	231, Rashbehari Avenue, Kolkatta	Boiler, Thermic Fluid Heater, Hot Air Generator, Boiler Accessories, Burner, Heat Exchanger		20

Sl No	Name of LSP (Refrigeration)	Phone No	Website	Location	Services Provided	Year of Establishment	No of Employees
1	Frick India Ltd	9331059182	www.frickweb.com	21.5 Km, Main Mathura Road, Faridabad – 121003 Haryana	Industrial Refrigeration	1962	700

Sl No	Name of LSP (Heat Exchanger)	Phone No	Mail ID	Location	Services Provided	Year of Establishment	No of Employees
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1	Tru Fab Engineer	94266 35250 / +91 98259 02658	info@pyron engineering .com	B-121, Silicon Valley ,Shivranjan i Cross Road, Satellite Road, Ahmedabad	Heat Exchanger, Air Receiver, Storage Tank	1985	5
2	Sondex Heat Exchangers Pvt Ltd	2667-267000	sales@sondex.in	E/1, GIDC – SAVLI, P.O. MANJUSAR 391775, TALUKA : SAVLI, DIST. VADODARA,	Plate heat exchangers, standard plate heat exchangers, semi-welded plate heat exchangers	2008	30
3	Rex Heat Exchange India Pvt LTd	997417669 3	response@rexheatexchanger.com	246-A, 2 nd Floor,Atlantis K-10 – Tower “A”, Opp. Vadodara Central mall,Sarabhai main Road, Alkapuri, Vadodara	Shell & Tube heat exchanger, U tube bundle heat exchanger, PHE, condenser		

Sl No	Name of LSP (Industrial Burner)	Phone No	Website	Location	Services Provided	Year of Establishment	No of Employees
1	Pyron Engineers Pvt Limited	092272561 21	www.pyronengineers.com	B-121, Silicon Valley ,Shivranjani Cross Road, Satellite Road, Ahmedabad	Industrial Burners, Valves and Other Products	1996	8

2	Nirmal Energy Limited	9825804927	www.nirmalenergy.com	402, ISCON Elegancem Near Jain Temple, Ahmedabad	Pumps, Burners, Heat Transfer Fluids	1999	26
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SI No	Name of LSP (Thermal Insulation)	Phone No	Website	Location	Product/Services Provided	Year of Establishment	No of Employees
1	Vardhman Insulations Pvt Ltd	7043219702		402, Kalasagar Shopping Mall, Opp. Sai ,Baba temple, Nr. Sattadhar Cross Road, Ghatlodia, Ahmedabad – 380061	Acoustic Insulation, Cold Insulation, Hot Insulation, Injectable PUF Insulation, Spray Insulation Turbine Insulation, G.I/S.S Ducting Works	2010	50
2	Gujarat Corporation Insulation	9825020726	www.gujaratinsulation.com	171, 172, 2 nd Floor, Chetan Cloth Market, Out Side Sarangpur , Gate, Ahmedabad-380001, Gujarat, India	Ceramic Wool, PUE, Rockwool insulation	1987	50+

SI No	Name of LSP (Energy Management System)	Phone No	Website	Location	Product/Services Provided	Year of Establishment	No of Employees
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1	Ecolibrium Energy	7940165151	ecolibriumenergy.com	504, Venus Atlantis, 100 ft Road, Prahlad Nagar, Ahmedabad	EMS		20
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Sl No	Name of LSP (Electrical System)	Phone No	Website	Location	Product/Services Provided	Year of Establishment	No of Employees
1	Bengal Trading Co	9434019932		187, Sevoke Road, Nanak Tower, Gr. Floor, West Bengal	Power Control Centre, Motor Control Centre, PLC Panel, Drive Control Panel,	1976	15
2	KC Diesel Services	8373086498	http://koel.kirloskar.com/content/kc-diesel-services	H.No – WEP/17/28(3). Road – Golitar, P.O. Singtam, East Sikkim	DG Services		
5	Globe Solutions	9624024196 9624067778	http://globe-solutions.in	#501, 5 th Floor, Mangal Murti Heights, Ranibagan, Harmu Road, Ranchi, Jharkhand	Drive panels, PLC panel, machine control panel, PCC, MCC, APFC, Distribution board, junction boxes, Desk panel	2007	25

Sl No	Name of LSP – Repair and Maintenance	Phone No	Email ID	Location	Product/Services Provided	No of Years in Establishment	No of Employees
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1	Sambhu Sarkar	9851282828		Tadong, Gangtok	Motor Repair and rewinding	24	
2	Nagendra Singh	993235015		Housing Colony Gangtok	Boiler pipeline fixing, Welding	30	
3	Saroj Gurung	8617853547		Jorethang Sikkim	Boiler Operation, Compressor Operation	5	
4	Krishna Mandal	9434410064		Tadong Gangtok	DG Maintenance and Mechanical Maintenance	30	
5	Hussain	7584972918		Housing Colony Gagnatok	Boiler pipeline fixing, Welding	7	

SI No	Name of LSP (Solar PV and Thermal)	Phone No	Website	Location	Product/Services Provided	Year of Establishment	No of Employees
1	Shubham Solar Solutions	0353-2525624	http://www.subhamsolar.com	1st Floor, Paul Building 83, Bidhan Road, Siliguri West Bengal	Solar Hot water system, Solar lights,	2013	45

2	Sova Solar	03340082772	http://www.sovasolar.com	DLF GALLERIA, Office No. DGK 917, 9th floor, Block No. BG-8, AA-IB New Town, Kolkata 700 156, West Bengal, India	Solar PV	2008	50
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Sl No	Name of LSP (Motor)	Phone No	Website	Location	Product/Services Provided	Year of Establishment	No of Employees
1	Crompton Greaves Ltd	033 2282 9681	http://www.cgglobal.com	50, IISCO House, Chowringhee Road, Kolkata, West Bengal	Motors all types	1937	More than 1000