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CAPACITY BUILDING OF LOCAL SERVICE PROVIDERS (LSP) UNDER GEF-UNIDO-BEE PROJECT “PROMOTING EE/RE IN SELECTED MSME CLUSTERS IN INDIA”

Workshop Proceedings Report- Gujarat Dairy Cluster

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



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List of Abbreviations

BEE	Bureau of Energy Efficiency
BMC	Bulk Milk Cooler
DPR	Detailed Project Report
EE	Energy Efficiency
EESL	Energy Efficiency Services Limited
GEF	Global Environmental Facility
IBT	Ice Bank Tank
LSP	Local Service Provider
MSME	Micro and Medium Scale Industries
OEM	Original Equipment Manufacturer
RE	Renewable Energy
UNIDO	United Nations Industrial Development Organization
VFD	Variable Frequency Drive
WHR	Waste Heat Recovery

1. EXECUTIVE SUMMARY

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.

Key activities involved in the project are shown below

- Detailed Mapping of LSPs in the cluster
- Preparation of 10 Bankable DPRs
- Development of 5 customized training materials
- Conduct 4 training programs in the cluster for the capacity building of local service providers
- Facilitation of LSPs in becoming local dealers of OEMs

The report summarizes the four training programs conducted in Gujarat Dairy Cluster to train the local service providers and dairy units on Energy Efficiency/Renewable Energy. The objective of the workshop is to create an awareness on the concept of EE so as to fill the knowledge gaps and assist in creating an enabling environment for implementation of energy efficient measures in Gujarat Dairy Cluster. In this workshop, lectures and presentation were delivered by representatives of major OEMs, Dairy Units, UNIDO, and CII. The proceedings of these workshops are discussed in this report.

2. WORKSHOP PROCEEDINGS

One day training programs were organized at four different cities in Gujarat dairy cluster to train the local service providers and dairy units on best operating practices, latest technologies/innovations and to create awareness on importance of energy efficiency and renewable energy. The workshops provided a platform to interact with 150+ stakeholders in the cluster.

The venue and agenda for each workshop was decided based on the training need assessment done in the cluster. At each event, CII introduced the workshop, followed by UNIDO providing more details about the workshop. This was followed by presentations from technology suppliers on energy efficient technologies and services available in the market with open Q & A sessions after each presentation. Each workshop was attended by different stakeholders such as MSMEs, consultants, association, technology suppliers and subject experts.

The following table shows the summary of workshops completed at Gujarat Dairy cluster

Table 1: Workshop summary

Dates	Location	Workshop Theme	No of LSPs/OEMs	Total No of Participants
9-Apr-18	Rajkot	Electrical & Utilities, Thermal Utilities, Refrigeration System & Renewable	70	192
19-Apr-18	Surat			
26-Apr-18	Banas			
30-Apr-18	Ahmedabad			

2.1 First Training Program, Rajkot

The first training program was organized on 09th April 2018 at Hotel Platinum, Rajkot which had a participation of 36 people including local service providers, OEMs and representation from Rajkot, Bhavnagar and Sarhad Dairies.

The program started with a detailed presentation on the project objectives and deliverables by Mr. Vishnu P, Associate Counsellor, CII-GBC. Thereafter Mr. Falgun Pandya, Cluster Leader, BEE gave a session on UNIDO’s activities in Gujarat dairy cluster. During the opening session the participants were briefed on the key project elements such as technology feasibility studies for the preparation of DPR and different models for engaging the LSPs with OEMs to promote EE/RE in the cluster.



Figure 1: Glimpse of Rajkot workshop

Forenoon technical sessions started with presentation by Mr. Jasbir Singh, Associate Counsellor, CII Godrej GBC on best operating and energy efficient practices in Electrical System and Utilities which covered energy efficient motors, pumps, compressor power factor and harmonics. He also highlighted about the ESCO model implementation of energy efficient motors by EESL. This was followed by session on Boiler and Steam System by Mr. Prateek Vyas, Thermax. He introduced a new concept called Dew Therm Condenser where up to 99% boiler efficiency can be achieved for gas fired boilers.



Figure 2: CII explaining about EE motors

Post lunch session started with presentation by Mr. Ashwin K P, Promethean Energy on Waste Heat Recovery System, he explained about WHR application in dairy processes and also shared some case studies related to heat recovery from chiller compressor. The second presentation was by Mr. Yogesh Khairnar, IDMC on Industrial Refrigeration specific to dairy sector. He explained about energy efficient practices in industrial refrigeration and also about the safety aspects that need to be considered for efficient operation of refrigeration system. This was followed by presentation from Mr. Saurabh, BAC on evaporative condensers. He highlighted about the various advantages of replacing existing shell and tube condensers with evaporative condensers and also shared case studies on installations done by BAC in Gujarat Dairy Cluster. The last technical session was on Process Optimization in Dairy Sector by Mr. Abhijeet, Akxatech. He explained about process loop control and shared his experiences on some of the control loop modifications done in Gujarat dairy cluster



Figure 3: Promethean Energy speaking on WHR

The following table shows the summary of 1st LSP workshop at Rajkot

Table 2: Summary of 1st Workshop

1 st LSP Workshop , Hotel Platinum, Rajkot	
Total no of Participants	36
No of technical sessions	6
No of LSP's attended	12
No of Dairy Units attended	3
Outcomes	<p>Increased capacity building of LSPs and other stake holders</p> <ul style="list-style-type: none"> • Facilitated discussion between LSPs and OEMs • Training for LSPs to consider EE as an important parameter in their services (Electrical vendors, compressor dealer etc.) • Facilitated B2B meeting between IDMC and Akxatech with an objective of Akxatech becoming service provider for IDMC on process and control and loop monitoring.

<ul style="list-style-type: none">• Training given on EE measures such as<ol style="list-style-type: none">1. WHR in chiller compressor2. Best operating practices in boiler and steam system3. EE in electrical system4. Energy saving opportunities in Industrial Refrigeration• Training given on the operational and safety aspects to be followed for ammonia refrigeration system <p>Supplier Unit Engagement</p> <ul style="list-style-type: none">• Discussion on feasibility of WHR at Rajkot Dairy with Promethean Energy• Discussion on installation solar roof top at Sarhad Dairy with the solar service provider• Facilitation of Akxatech’s visit to Rajkot dairy for assessment of process control loops <p>Introduction of new technology/services</p> <ul style="list-style-type: none">• Introduced the concept of condensing economizer which can be installed in gas fired boilers• Control loop modification for process optimization in dairy units.
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2.2 Second Training Program, Surat

The second training program was organized on 19th April 2018 at Hotel Lords Plaza, Surat which had a participation of 50 people that includes local service providers, OEMs and representation from Sumul and Valsad dairies. The program started with a detailed presentation on the project objectives and deliverables by Mr. Vishnu P, Associate Counsellor, and CII-GBC. Thereafter Mr. Falgun Pandya, Cluster Leader, BEE gave a session on UNIDO’s activities in Gujarat dairy cluster. During the opening session the participants were briefed on the key project elements such as technology feasibility studies for the preparation of DPR and different models for engaging the LSPs with OEMs to promote EE/RE in the cluster.



Figure 4: UNIDO explaining about cluster activities

Forenoon technical sessions started with presentation by Mr. Jasbir Singh, Associate Counsellor, and CII Godrej GBC on best operating and energy efficient practices in Electrical System which



Figure 5: Glimpse of Surat workshop

covered energy efficient motors, power factor and harmonics. He also highlighted about the ESCO model implementation of energy efficient motors by EESL. This was followed by session Compressed Air System by Mr. Chintan, Godrej and Boyce. He introduced a new concept called Demand Side Controller where compressed air consumption at distribution side can be reduced using intermediate controller thus reducing power consumption. The session was followed by technical

presentation from Thermax on boiler and steam system by Mr. Jainak Patel and on cooling solutions for dairy sector by Mr. Amit Rana. Thermax discussed about applications of Chiller Heater and 1deg Glycol free absorption chiller in dairy industries.

Post lunch session started with presentation by Thermax on Online Condenser Cleaning system for shell and tube condensers. This was followed by session from Mr. Rajat Agarwal, Promethean Energy on Waste Heat Recovery System. The workshop concluded with a presentation on different models on solar roof top by Mr. Parshwah Shah, Waree Solar. The speaker also covered in detail about the investment and cash flow through projects and highlighted the economic returns and environment benefits possible through renewable energy interventions.



Figure 6: Waree Solar presenting about different models of solar rooftop

The following table shows the summary of 2nd LSP workshop at Surat

Table 3: Summary of 2nd Workshop

2 nd LSP Workshop , Hotel Lords Plaza, Surat	
Total no of Participants	51
No of technical sessions	6
No of LSP's attended	25
No of Dairy Units attended	2
Outcomes	<p>Increased capacity building of LSP's and other stake holders</p> <ul style="list-style-type: none"> • Facilitated discussion between LSPs and OEMs • Training for LSPs to consider EE as an important parameter in their services (Electrical vendors, compressor dealer etc.) • Training given on EE measures such as <ol style="list-style-type: none"> 1. WHR in chiller compressor 2. Best operating practices in boiler and steam system 3. EE in electrical system 4. Energy saving opportunities in compressed air system 5. Various operational models of Solar roof top <p>Supplier Unit Engagement</p> <ul style="list-style-type: none"> • Facilitated the visit of Thermax Ltd to Surat Dairy for doing the feasibility study of installation of Solar Roof top • Facilitated the visit of Godrej and Boyce to Surat Dairy for compressor network study and doing the feasibility of Demand Side Controller • Facilitated the visit of Waree Solar to Surat Dairy for doing the feasibility study of installation of Solar Roof top <p>Introduction of new technology/services</p> <ul style="list-style-type: none"> • Introduced the concept of condensing economizer and low temperature VAM

	<ul style="list-style-type: none">• Introduced the concept of Demand Side Controller for energy savings in compressed air system
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2.3 Third Training Program, Banas Dairy

The third training program was organized on 26th April 2018 at Conference Hall, Banas Dairy which had a participation of 43 people that includes local service providers, OEMs and representation from Banas and Doodhsagar Dairy.

The program started with a detailed presentation on the project objectives and deliverables by Mr. Jasbir Singh, Associate Counsellor, and CII-GBC. Thereafter Mr. Niranjana Rao Devela, National Project Manager, UNIDO gave a brief talk on UNIDO's activities in Gujarat dairy cluster. During the opening session the participants were briefed on the key project elements such as technology feasibility studies for the preparation of DPR and different models for engaging the LSPs with OEMs to promote EE/RE in the cluster.



Figure 7: UNIDO explaining about UNIDO's cluster activities

Forenoon technical sessions started with presentation by Mr. Anil Agarwal, Omega Ice Chill on Falling Film Chillers and its application in dairy industry. He explained about which all applications FFC can be installed and also shared case studies of installation with cost economic analysis.



Figure 8: Omega Ice Chill delivering session on Falling Film Chiller

The second session was on VFDs selection and operation specific to dairy sector by Mr. Himanshu, Danfoss India. He explained about the importance of VFDs and different types of VFDs available for continuous process industries. He also briefed about the different parameters that should be considered for selection of drives for any centrifugal equipment. This was followed by session on Electrical System by Mr. Jasbir Singh, Associate Counsellor, and CII Godrej GBC which covered during the session are energy efficient motors, power factor and harmonics.

Proceedings of Training Program

Post lunch session started with presentation by Mr. Jasbir Singh on best operating practices in compressed air system. During his presentation he discussed about various case studies and energy saving opportunities in compressed air system with the help practical examples which made the session really interactive. The last presentation was on boiler and steam system from Mr. Jainak Patel, Thermax. He discussed on maintenance schedule which should be followed for boiler and its auxiliaries for efficient operation. It was followed by a brief session on steam traps and its selection and monitoring. The workshop concluded with an open house discussion on issues related with power quality and electrical safety.



Figure 9: Glimpse of Banas workshop

The following table shows the summary of 3rd LSP workshop at Banas

Table 4: Summary of 3rd Workshop

3 rd LSP Workshop , Conference Hall, Banas Dairy	
Total no of Participants	43
No of technical sessions	5
No of LSPs attended	7
No of dairy Units attended	2
Outcomes	<p>Increased capacity building of LSP's and other stake holders</p> <ul style="list-style-type: none"> • Facilitated discussion between LSPs and OEMs • Training for LSPs to consider EE as an important parameter in their services (Electrical vendors, compressor dealer etc.) • Training given on EE measures <ol style="list-style-type: none"> 1. Application of VFD in dairy industry 2. Best operating practices in steam traps 3. EE in electrical system 4. Energy saving opportunities in compressed air system 5. Falling film chiller in refrigeration system <p>Supplier Unit Engagement</p> <ul style="list-style-type: none"> • Facilitated the discussion between Banas Dairy and Omega Ice Chill on implementation of Falling Film Chiller • Discussion on feasibility of WHR at Doodhsagar Dairy with Promethean Energy <p>Introduction of new technology/services</p> <ul style="list-style-type: none"> • Introduced the concept of automatic condensing cleaning system for shell and tube exchanger • Introduced the concept of Demand Side Controller for energy savings in compressed air system • Introduced the concept of Falling Film Chiller for energy savings in refrigeration system

2.4 Fourth Training Program, Ahmedabad

The fourth training program was organized on 30th April 2018 at EDII, Ahmedabad which had a participation of 51 people including local service providers, OEMs and representation from Mother Dairy, Amul Anand, Sabar Dairy and Madhur Dairy

The program started with a detailed presentation on the project objectives and deliverables by Mr. Vishnu P, Associate Counsellor, and CII-GBC. Thereafter Mr. Falgun Pandya, Cluster Leader, BEE gave a session on UNIDO's activities in Gujarat dairy cluster. During the opening session the participants were briefed on the key project elements such as technology feasibility studies for the preparation of DPR and different models for engaging the LSPs with OEMs to promote EE/RE in the cluster. It was followed by presentation from Mr. P K Sarkar, OSD, Amul Dairy on the role of LSPs in EE/RE capacity building. He briefed about how LSPs are crucial in day to day activities of dairy units and how effectively they can be utilized in promoting the concept of EE/RE in the cluster.



Figure 10: Mr P K Sarkar highlighting the role of LSPs in EE



Figure 11: Glimpse of Ahmedabad workshop

Forenoon technical sessions started with presentation by Mr. Hasan Mydin, an independent consultant for harmonics and power quality issues. He discussed on the harmful effects of harmonics and power quality issues with the help of an animation which was really appreciated by the participants. The second session was on VFD selection and operational practices by Mr. Himanshu from Danfoss India. This was followed by presentation from Thermax Ltd on Boiler and Steam System. Based on the interest from participants major focus was given on best operating practices in steam system (steam trap selection and monitoring) which made the session interactive. The last session before lunch was delivered by Mr. Alaric Dsouza from Turbotech, he explained about the application of Microturbine dairy industry.

Post lunch session started with presentations on Refrigeration System. Mr. Saurin from BAC presented on Evaporative Condensers and also shared case studies on installations done by BAC in Gujarat Dairy Cluster. This was followed by presentation from Mr. Mohan, Frick India on Industrial refrigeration specific to dairy sector. He explained about the various energy saving opportunities in Ammonia Refrigeration System at the generation side and distribution side. The participants asked questions about the various safety aspects such as leakage of ammonia and ways to arrest the leakage. The next session was on Falling Film Chiller by Mr. Abhishek Jindal, Omega Ice Chill, he explained about the application of FFC in dairy process and how it can reduce the load on existing refrigeration system.



Figure 12: Frick India explaining about EE opportunities in Industrial Refrigeration

Evening session started with the presentation by Ms. Nitya, Windstream Technologies on Solar Wind Hybrid System. She explained about the technological and commercial aspects on installing Wind hybrid solution. She also gave a cost benefit analysis during her presentation which helped in making the presentation more interactive. The workshop concluded with presentation by Mr. Rohit, Grundfos India on best operating practices in pumping system. With the help of case studies he presented topics like selection of pump, installation of drives in pumps and on energy efficient pumps. This helped the participants to understand about some basics aspects for operating a pump in an energy efficient manner.

The following table shows the summary of 4th LSP workshop at Ahmedabad

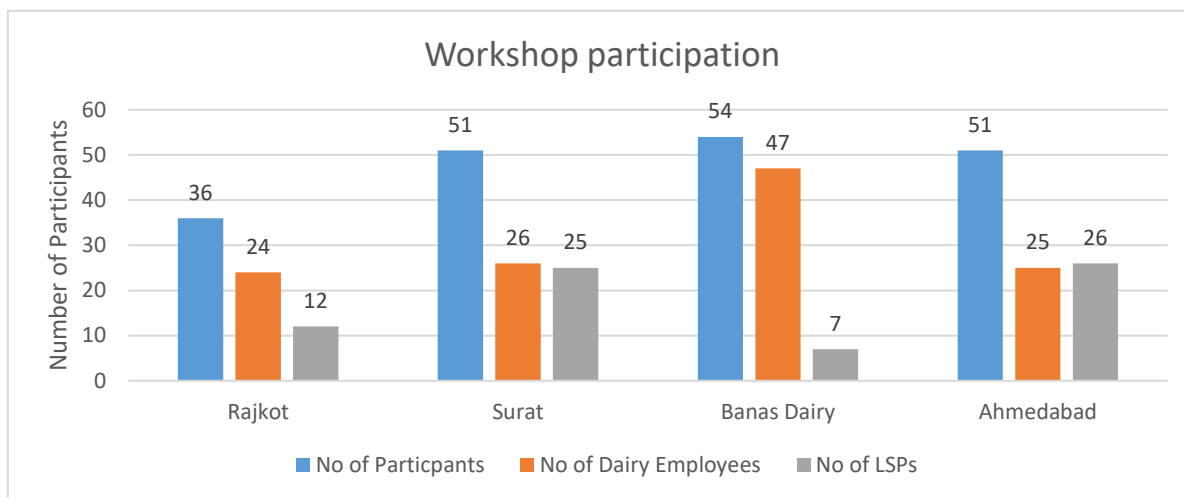
Table 5: Summary of 4th Workshop

4 th LSP Workshop , EDII, Ahmedabad	
Total no of Participants	51
No of technical sessions	10
No of LSP's attended	26
No of Dairy Units attended	4
Outcomes	<p>Increased capacity building of LSPs and other stake holders</p> <ul style="list-style-type: none"> • Facilitated discussion between LSPs and OEMs • Training for LSPs to consider EE as an important parameter in their services (Electrical vendors, compressor dealer etc.) • Training given on EE measures such as <ol style="list-style-type: none"> 1. Application of micro turbine in steam line 2. Best operating practices in boiler and steam system 3. EE in electrical system 4. Application of VFD in dairy process 5. Falling film chiller in refrigeration system 6. Evaporative condenser in place of shell and tube heat exchanger 7. Solar wind hybrid system 8. Best operating practices in pumping system • Training given on the operational and safety aspects to be followed for ammonia refrigeration system <p>Supplier Unit Engagement</p> <ul style="list-style-type: none"> • Facilitated the visit of Turbotech to Amul dairy for mictortubime installation • Facilitated the visit of Windstream technologies to Amul dairy for Wind hybrid • Facilitated discussion between Grundfos and Amul Dairy for the replacement of pumps with energy efficient pumps

	<p>Introduction of new technology/services</p> <ul style="list-style-type: none">• Introduced the concept of Solar Wind Hybrid• Introduced the concept of Falling Film Chiller in refrigeration system• Introduced the concept of condensing economizer which can be installed in gas fired boilers.
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3. CONCLUSION

The four training programs organized in Gujarat Dairy Cluster helped in the capacity building of all the stake holders in Gujarat Dairy cluster which include service providers, OEMs and dairy units. All the workshops had several discussions among the participants focusing on various energy efficient technologies, various technical challenges faced in implementing a new technology in the cluster and also on availability of local service providers for any technology. The graph below shows the workshop participation in Gujarat dairy cluster...



Following are some of the key highlights of the workshop:-

- 192 stakeholders trained through four workshops which include 120 people from 11 dairy units and 72 LSPs associated with the dairy cluster.
 - LSP includes local fabricators and technicians associated with dairy units, solar consultants, dealers for boiler and refrigeration, DG set suppliers, electrical system service providers, pump and compressor dealers etc.
- 15 technical topics covered during the four training programs in which several new technologies like demand side controller for compressor, falling film chiller, kVAR energy compensator, condensing economiser, solar wind hybrid etc were introduced to the cluster
- Training given by major OEMs such as Thermax, Frick India, Godrej and Boyce, Grundfos and Danfoss India for the service providers and dealers associated with the dairy cluster.
- Facilitated B2B meeting between IDMC and Akxatech with an objective of Akxatech becoming service provider for IDMC on process and control and loop monitoring.

4. ANNEXURE

4.1 Agenda for training programs



Capacity Building of Local Service Providers – Gujarat Dairy

Cluster

Training Workshop

Date: 09th April 2018 | **Venue:** Hotel Platinum, Rajkot

Agenda

0915 hrs	Registration	
0930 hrs – 1130 hrs: Opening Session & Electrical Utilities		
0930 hrs	Introduction to workshop	CI- Godrej GBC
0945 hrs	About the project	UNIDO/BEE
1000 hrs	Best Operating Practices in Electrical System	CI – Godrej GBC
1045 hrs	Energy Conservation in Compressed Air System	CI – Godrej GBC
1130 hrs	Health Break	
1145 hrs – 1305 hrs: Presentation on Thermal System		
1145 hrs	Boiler and Steam Systems	Themax, Ltd
1245 hrs	Applications of Waste Heat Recovery in Dairy Plant	Promethean Energy
1305 hrs	Lunch Break	
1345 hrs – 1500 hrs: Presentation on Refrigeration System		
1345 hrs	Evaporative Condenser	BAC System
1415 hrs	Industrial Refrigeration System	IDMC
1500 hrs	Health Break	
1515 hrs – 1625 hrs: Presentation on Utilities and Renewable		
1515 hrs	Solar PV – O&M and Different Models	Mec Power Sol
1535 hrs	Process Optimization in Dairy Industry	Akxa Tech
1600 hrs	Best Operating Practices in Pumping System	CI Godrej GBC
1630 hrs	End of Day	



**Capacity Building of Local Service Providers – Gujarat Dairy
Cluster
Training Workshop**

Date: 19th April 2018 | **Venue:** Hotel Lords Plaza, Surat

Agenda

0915 hrs Registration

0930 hrs – 1130 hrs: Opening Session & Electrical Utilities

0930 hrs	Introduction to workshop	CII- Godrej GBC
0945 hrs	About the project	UNIDO/BEE
1000 hrs	Best Operating Practices in Electrical System	CII – Godrej GBC
1045 hrs	Energy Conservation in Compressed Air System	Godrej & Boyce
1130 hrs	Health Break	

1145 hrs – 1305 hrs: Presentation on Thermal System

1145 hrs	Boiler and Steam Systems	Thermax, Ltd
1245 hrs	Applications of Waste Heat Recovery in Dairy Plant	Promethean Energy
1305 hrs	Lunch Break	

1345 hrs – 1500 hrs: Presentation on Refrigeration System

1345 hrs	Refrigeration System - VAM	Thermax Ltd
1430 hrs	Automatic Condenser Cleaning System	Thermax Ltd
1500 hrs	Health Break	

1515 hrs – 1600 hrs: Presentation on Utilities and Renewable

1515 hrs	Solar PV – O&M and Different Models	Mec Power Sol
1535 hrs	Best Operating Practices in Pumping System	CII Godrej GBC
1600 hrs	End of Day	



**Capacity Building of Local Service Providers – Gujarat Dairy
Cluster
Training Workshop**

Date: 26th April 2018 | **Venue:** Conference Hall ,Banas Dairy

Agenda

0915 hrs **Registration**

0930 hrs – 1130 hrs: Opening Session & Electrical Utilities

0930 hrs	Introduction to workshop	CII- Godrej GBC
0945 hrs	About the project	UNIDO/BEE
1000 hrs	Falling Film Chiller	Omega Ice Chill
1030 hrs	Compressed Air System	Godrej & Boyce
1115 hrs	Health Break	
1130 hrs	VFD– Selection and Operational Practices	Danfoss India

1200 hrs – 1300 hrs: Presentation on Thermal System

1200 hrs	Boiler and Condensing Economizer	Thermax, Ltd
1230 hrs	Steam System	Thermax, Ltd
1300 hrs	Lunch Break	

1345 hrs – 1500 hrs: Presentation on Refrigeration System

1345 hrs	Industrial Refrigeration System	IDMC
1430 hrs	Automatic Condenser Cleaning System	Thermax Ltd
1500 hrs	Health Break	

1515 hrs – 1615 hrs: Presentation on Electrical System

1515 hrs	Best Operating Practices in Electrical System	CII Godrej GBC
1545 hrs	Best Operating Practices in Pumping System	CII Godrej GBC
1615 hrs	End of Day	



Confederation of Indian Industry

Capacity Building of Local Service Providers – Gujarat Dairy Cluster

Training Workshop

Date: 30th April 2018 | **Venue:** EDII, Ahmedabad

Agenda

0915 hrs Registration

0930 hrs – 1120 hrs: Opening Session & Electrical System

0930 hrs	Welcome Remarks	Mr Vishnu P, Associate Counsellor, CII Godrej GBC
0940 hrs	Key Note Address	Mr Anil Bayati, GM , Amulfed
1000 hrs	Role of LSP In EE/RE Capacity Building	Mr P K Sarkar, OSD, Amulfed
1030 hrs	Harmonics & Mitigation Techniques	Mr. Hasan Mydin, Consultant
1100 hrs	VFD – Selection and Operational Practices	Danfoss India
1120 hrs	Health Break	

1130 hrs – 1300 hrs: Presentation on Thermal System

1130 hrs	Boiler and Condensing Economizer	Thermax, Ltd
1210 hrs	Automatic Condenser Cleaning System	Thermax Ltd
1230 hrs	Micro turbine	Turbotech Ltd
1300 hrs	Lunch Break	

1345 hrs – 1515 hrs: Presentation on Refrigeration System

1345 hrs	Evaporative Condenser	BAC
1405 hrs	Falling Film Chiller	Omega Ice Chill
1430 hrs	Refrigeration System for Dairy Sector	Frick India Ltd
1515 hrs	Health Break	

1530 hrs – 1645 hrs: Presentation on Utilities/Renewable

1530 hrs	Solar Wind Hybrid	WindStream Technologies
1550 hrs	Best Operating Practices In Pumping System	Grundfos India
1615 hrs	Miscellaneous Energy Saving Ideas	CII Godrej GBC
1645 hrs	End of Day	

4.2 Attendance sheet for training programs



Capacity Building of Local Service Providers – Gujarat Dairy Cluster

First Training Program

Date: 09th April 2018 | Venue: Hotel Platinum , Rajkot

List of Participants					
S.N O	Name	Company/Plant	Email Id	Mobile No.	Sign.
1	Falgun Pandya	GEF-UNIDO-BFD	falgun.pandya@gmail.com	9925791741	[Signature]
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3	Ketan J. Kataria	Rajkot Dairy	Ketan.Kataria@rajkotdairy.com	9111607272	[Signature]
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12	Suresh. D. Prajapat	" "	suresh23185@gmail.com	8980036013	[Signature]
13	Vinay C. Pokiya	" "	pokiyavinay@gmail.com	8980036882	[Signature]
14	M.H. Shaikh	" "	ishak.shaikh1969@gmail.com	8980036837	[Signature]
15	Shweta Savaliya	" "	shweta.savaliya@gmail.com	9428865766	[Signature]
16	Jorabha Khachar	" "	jorabhak7@gmail.com	9727770778	[Signature]
17	R. B. Vazee	" "	rbvazee@yahoo.com	9896423290	[Signature]
18	Jyotsna P. Shivnani	" "	jyotsna.pshivnani@gmail.com	967978849	[Signature]
19	Ravesh Mondapara	" "	mondapara.ravesh@gmail.com	9904255805	[Signature]
20	Mohit P. Gondaliya	" "	gondaliya.mohit@gmail.com	706908078	[Signature]
21	Kanishk P. Dhankiya	" "	kanishkdhankiya@gmail.com	9727770829	[Signature]
22	Bhavan P. Savaliya	" "	savaliyabhavan@gmail.com	9725941696	[Signature]
23	Ravi R. Pambhus	" "	pambhus.ravi@yahoo.com	9524596612	[Signature]
24	Nagaji Jhri Sahani	Sarhad Dairy	Nagaji1991@gmail.com	9774766721	[Signature]
25	Lalit Chaudhari	Sarhad Dairy	lalitchaudhari@gmail.com	9687655930	[Signature]



Confederation of Indian Industry

Capacity Building of Local Service Providers - Gujarat Dairy Cluster

First Training Program

Date: 09th April 2018 | Venue: Hotel Platinum , Rajkot

List of Participants					
S.N O	Name	Company/Plant	Email Id	Mobile No.	Sign.
26	Hemesh Prajapati	Sunbhad dairy	hemesh22@gmail.com	9601577052	Res
27	Mihesh M. Bhatt	Dangalkar Ind.	miheshbhatt@prneda.com	76965 99939	M.B.
28	YOGESH KATHRECHA	INTECTECH	ykathrecha@gmail.com	982512052	YK
29	Shilpa Sapna	JIPV colay	Sapna@jipv.colay.com	9904609008	SAPNA
30	Mital Jashi	JIPV Solaz	mitaljashi21@gmail.com	8511122473	M.J.
31	RAJESH JASHI	" "	rajesh@jipvsol.com	9904821073	RJ
32	RAJENDR KATHIRIA	" "	KATHIRIA	9099187235	RK
33	Sauvin Dave	Baltimore Air	sauvin@vimi.com	9723012111	S.A.Dave
34	Ashwin	Promethean	ashwin.k@prometheanenergy.com	9167516898	Ashwin
35	Parshva Melts	Thermo Ltd	parshva.melts@thermo.com	926073762	P.M.
36	Prateek Vyoo	Thermo Ltd	prateek.vyoo@thermo.com	7203000225	P.V.
37	Abhijeet M. Kankate	AKXATECH	abhijeet.k@akxatech.com	9481258607	A.B.



Capacity Building of Local Service Providers – Gujarat Dairy Cluster

Second Training Program

Date: 19th April 2018 | Venue: Hotel Lords Plaza, Surat

List of Participants					
S.NO	Name	Company/Plant	Email Id	Mobile No.	Sign.
1	Satish T. Rathod	Sumul Dairy, Surat	st21@sumul.coop	8980010379	[Signature]
2	Hardik Desai	"	htd@sumul.coop	8980010327	[Signature]
3	Jignesh D. Patel	"	jigneshkate1732@gmail.com	7600024800	[Signature]
4	Harshik P. Gomit	"	hpg@sumul.coop	9879413701	[Signature]
5	Ranraj R. Gomit	Sumul Dairy Surat	RRG@sumul.coop	9879254906	[Signature]
6	Kush M. Shah	"	Shahkush40@gmail.com	7574069206	[Signature]
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8	Manan V. Desai	Sumul Dairy	dmanan1@gmail.com	9227578777	[Signature]
9	Vivek S. Patiyapal	Torblla Steer. Ind.	tsurend@gmail.com	8980026888	[Signature]
10	Kamlesh M. Patel	Sumul Dairy	KMP1@sumul.coop	9687688907	[Signature]
11	Milind Karsaniwal	Sumul Dairy	milind.karsaniwal@gmail.com	8690504040	[Signature]
12	Yatin G. Patel	Sumul Dairy	YGP@sumul.coop	999855147	[Signature]
13	Anklesh G. Mahida	Sumul Dairy	mahida@sumul.coop	992530014	[Signature]
14	Shivans D. Chhaviyag	SUMUL DAIRY	shivanschhaviyag@gmail.com	9925477806	[Signature]
15	Gaurav J. Dhimmar	SUMUL DAIRY	Gauravdhimmar@gmail.com	7567780703	[Signature]
16	Sundip A. Vasera	SUMUL DAIRY	seiv@sumul.coop	8980010384	[Signature]
17	Pooja D. Wiser B	Sumul Dairy	nbp@sumul.coop	8980010381	[Signature]
18	VITAJ K. TARSADIA	"	vkt@sumul.coop	8980010377	[Signature]
19	Anil C Patel	Sumul Dairy	acp@sumul.coop	8980010382	[Signature]
20	Rakesh D. Patel	"	rdp@sumul.coop	8990010379	[Signature]
21	Kadom Gohil	"	gohilkadom104@gmail.com	9726418877	[Signature]
22	Divraj Rajput	Tirupati A.T.LD	divrajput002@gmail.com	9726770990	[Signature]
23	Rajat Agarwal	Promethcan F	rajata@promethcan.com	9833743772	[Signature]
24	Aspok R. Sondhara	Valand Dairy	mnc@valanduniv.com	7524802084	[Signature]
25	Divy K. Maheshwari	Valand Dairy	mcc.pi@valanduniv.com	9375484861	[Signature]



Capacity Building of Local Service Providers – Gujarat Dairy Cluster

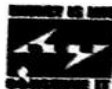
Second Training Program

Date: 19th April 2018 | Venue: Hotel Lords Plaza, Surat

List of Participants

S.NO	Name	Company/Plant	Email Id	Mobile No.	Sign.
1	Chintan Patel	Godrej & Boyce	chintanp1511@gmail.com	988360079	Ch
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3	Bhuvik Patel	Shah Enterprise	shahgroup@gmail.com	9825207102	BH
4	Hemendra Chav.	Shah Enterprise	compserstahent@gmail.com	9925833676	HCH
5	Devidas B. Vasava	Sumul Dairy Nizad	devidas.vasava@gmail.com	9913030402	DV
6	Mojie N. Vasava	Sumul Dairy Uchchhal	mjvasava2783@gmail.com	81110714530	MV
7	Bhavesh Patel	USHADI ELECTRIC	bhaveshpatel1985@gmail.com	9924729885	B
8	VIPUL G. OLVA	SUMUL DAIRY	vqu@sumul.coop	9140913939	VO
9	Jayram B. Bhand	Rudrashatti	ssses@rediffmail.com		J
10	Shashikant Km	Sahayam Dairy	shahayamdatech@gmail.com		SK
11	Mehul B. Chaudhari	Sumul Dairy, Surat	mbg@sumul.coop	9929888160	MC
12	Nikesh	Tirupati Sata	Nikesh.Surat@gmail.com	9758856880	N
13	Sanjay Patel	Waarce	varizone.surat@gmail.com	9925080240	SP
14	Sandesh Karkhanis	SANSU Aquatek	info@aquatek.in	9920588746	S
15	Ankit Patel	SANSU Aquatek	info@aquatek.in	9555406645	AP
16	Jainik Patel	Thermux Ltd.	jainik.patel@thermux.com	986464977	J
17	Rajal Boghani	Thermux	rajalkumari.boghani@thermux.com	9860441032	R

12
13
14



Confederation of Indian Industry

Capacity Building of Local Service Providers – Gujarat Dairy Cluster

Second Training Program

Date: 19th April 2018 | Venue: Hotel Lords Plaza, Surat

List of Participants					
S.NO	Name	Company/Plant	Email Id	Mobile No.	Sign.
18.	Amit Kumar	Thermose Ltd.	Amid.kumar@thermose.com	9725701509	
19	Atul Trilok	Atul m/c of Power	atulis19@gmail.com	9825120010	
20	Ramesh Babu	Comptech LED	rameshbabu@gmail.com	992880436	
21	Nakkar Shal	Nakkar bat & Power Fixing	nakkar21@gmail.com	9825188061	
22	Deval Dwigan	Hitech Ele.	devaldwigan@hitech.com	9899221690	
23	Mameej	meepso/John	meeepowersol@gmail.com	9824037149	
24.	Sitaram	Fog fuyi Comp.	fuyicom@gmail.com	9227948615	
25	Falyan bhadra	bee GEF-UNIDO BEE	falyan.bee@gmail.com	992519036	
26	Santosh kulkarni	Shree Shivam Enterprises	shivamentprises@gmail.com	7825124235	

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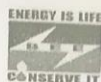
Capacity Building of Local Service Providers – Gujarat Dairy Cluster

Third Training Program

Date: 26th April 2018 | Venue: Conference Hall, Banas Dairy

List of Participants

S.NO	Name	Company/Plant	Email Id <small>Emp No</small>	Mobile No.	Sign.
1	Patel Pijabhai K	60 TPD	15002785	9429407185	<i>[Signature]</i>
2	S. R. chandhary	60 TPD	15002824	9429407383	<i>[Signature]</i>
3	Bhasat C. Patel	Icecream	bhasate@banasdairyloop	9429403275	<i>[Signature]</i>
4	Mamvar dhagann	Utility	15005380	9586031171	<i>[Signature]</i>
5	Jignesh Mevada	Utility	-	9429194044	<i>[Signature]</i>
6	Solanki Vikram C	LMP-1	15005474	9909531236	<i>[Signature]</i>
7	V.H. chandhary	CFP- Katurva	15006097	9428183947	<i>[Signature]</i>
8	P.M. Mevada	Cattle feed Katurva	cf2pm@banasdairyloop	9408701162	<i>[Signature]</i>
9	Vipul M. Prajapati	New cheese	vipulprajapati@bmsdairy.coop	9276204314	<i>[Signature]</i>
10	Samir M. Mehta	Automation	samir@banasdairy	9429407294	<i>[Signature]</i>
11	Bhujji Ramesh V.	20 TPD Pucking	- 2855	9898329923	<i>[Signature]</i>
12	Charithra Bhasat H.	30 TPD	- 2859	9737669531	<i>[Signature]</i>
13	Patel Ranjith K.	"	8231	9408012052	<i>[Signature]</i>
14	Chandhary Kulkarni J.	20 TPD	15004023	9429308543	<i>[Signature]</i>
15	MOR. Ashok Kumar J	LMP-1	15003225	9428306614	<i>[Signature]</i>
16	V.S. Rathod	Engg	2553	9722170150	<i>[Signature]</i>
17	D.N. Chandhary	Engg.	3222	987211003	<i>[Signature]</i>
18	Dave Harsh S	eng - IAFBC	6579	9511071708	<i>[Signature]</i>
19	P. G. Patel	100 T.P.D.	4294	9426318878	<i>[Signature]</i>
20	H. P. Raval	100 TPD	4293	9978445609	<i>[Signature]</i>
21	Vijay S. Prajapati	100 TPD	2876	9825509668	<i>[Signature]</i>
22	Patel Ritesh L	100 TPD	-	9408142201	<i>[Signature]</i>
23	Bhasat B. Chandhary	100 TPD	4182	9425196652	<i>[Signature]</i>
24	Oza Nikul P.	100 TPD	15004346	9426518817	<i>[Signature]</i>
25	Ranchal Nitin B.	100 TPD Pucking	15004341	9872048026	<i>[Signature]</i>



Confederation of Indian Industry

Capacity Building of Local Service Providers – Gujarat Dairy Cluster

Third Training Program

Date: 26th April 2018 | Venue: Conference Hall, Banas Dairy

List of Participants

S.NO	Name	Company/Plant	Email Id	Mobile No.	Sign.
26	Parthod Ashok D	Purchase	15004442 Purchase@banasdairy.com	9484752924	[Signature]
27	Patel Bhikubhai	LMP-2	15004407	9427973160	[Signature]
28	Jaya S. Jua	Purchase	15003411 Purchase@banasdairy.com	95140060636	[Signature]
29	Laxman R. Patel	C.F.P.	15003099	9427041061	[Signature]
30	Dipen P. Choudhasi	C.F.P.	15005178	8128260594	[Signature]
31	Kusum Lujji G.	Utility	rajilujji@banasdairy.com	9525672002	[Signature]
32	Bhavi Ramchandra	U	ramchandra@banasdairy.com	9428023772	[Signature]
33	Kiran Desai	CFP	kirandesai@banasdairy.com	9429155612	[Signature]
34	Jyoti Chaudhary	WPP	jyoti90@gmail.com	9238071153	[Signature]
35	Balot Parikay	WPP	parikay24073@gmail.com	9925602797	[Signature]
36	Ravin Khutani	UHT	khutani.ravin@gmail.com	9427648192	[Signature]
37	Nanesh Chaudhary	UHT	npchaudhary01@banasdairy.com	9427085004	[Signature]
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39	Himanshu Dangi	Demfoss	himanshu.dangi@demfoss.com	9998696835	[Signature]
40	Sanket Jain	Digicon Auto	Sales2@digicon.in	9727753949	[Signature]
41	Bhavesh Y. Thasa	Utility	bpthakar@banasdairy.com	9429407474	[Signature]
42	K. Kumar	QUICIC UTILITY Thermox	anicutility@gmail.com	9377480058	[Signature]
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Capacity Building of Local Service Providers – Gujarat Dairy Cluster

LSP = 12 + 14 = 26
 Dairy mob. = 25
 1342

Fourth Training Program

Date: 30th April 2018 | Venue: EDII, Ahmedabad

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List of Participants

S.NO	Name	Company/Plant	Email Id	Mobile No.	Sign.
1	Ramesh S. Bera	Amul Fed Dairy	Ramesh.bera@amul.com	7874886620	[Signature]
2	Ashwari Ashwari	" "	ashwari.ashwari@amul.com	9723845719	[Signature]
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8	Jitesh Karda	Mudramm Ent	info@mudramm.com	9376856553	[Signature]
9	Vikram Patel	eatec Eng. solva	vikram@eatecindia.com	9726314222	[Signature]
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14	Bipin B. Patel	AFD (BOP)	bipin@amul.coop	9426436338	[Signature]
15	Dhaval H. Kothari	AFD (NRP)	dkothari1309@gmail.com	9898513098	[Signature]
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17	Aastya Patel	Digi can	astya@digicon.in	9913109752	[Signature]
18	Sanket Jain	Digi can Automation	sales2@digicon.in	972995374	[Signature]
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LSP = 12
 Dairy mob = 13
 25



Capacity Building of Local Service Providers – Gujarat Dairy Cluster

Fourth Training Program

Date: 30th April 2018 | Venue: EDII, Ahmedabad

List of Participants

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28	Vijay Prajapati	AMUL, Anand	vprajapati@amul.co.in	9773300534	
29	A.A. Sheth	Amul - Anand	a.a.sheth@amul.co.in	8460188705	
30	Naishal C. Patel	Amul - Anand	naishal@amul.co.in	9924495704	
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✓ 34	Jitendra B. Mishra	Mittal Electric Works Anund Dairy	mittal-electric@mittal.com	940913381	
✓ 35	Prateek Vyas	Thermomax	prateek@thermomax.com	7703000025	
36	Shri. P.K. Suthar				
37	Shri. Prabhakar Shukla				
38	Fuljan Limjan	GEF-UNIDO-REF	fuljan.bee@gmail.com	9925190201	
✓ 39	Sachin Kumbhar	Jay pumps	sales@jaypumps.com	8401051025	
✓ 40	Jaydeep Gandhi	Shreeji (Thermomax)	shreeji@thermomax.com	7799985560	
✓ 41	Ashwinikumar Dandekar	Omga Tech	jindal@omga.com	9990000011	
✓ 42	Dhruv Patel	WATERTEC	dhruv@waterotec.com	8401156604	
✓ 43	Satish Shukla	Waaree		9609279000	
✓ 44	Neel Pathak	Waaree		9638888000	
✓ 45	Hasan Mydin	Hammonize			
46	Parash Mehta	Amul Fed.	parash.mehta@amul.co.in	9335051330	
47	Anuj Singh	Amul Fed.	anuj.singh@amul.co.in	9662623330	
48	Nikunj Patel	Sugan Bandary	nikunjpatel@bandary.com	9929586301	
49	Pranav Bhai Pande	Saboo Dairy	pranav.patel@saboo.com	7016701543	
✓ 50	Piyush Bhai	Mescot Eng.	piyush12@mescot.com	9899007772	
51	Vikasram Bhai	Madaan Dairy Aachi Nafal	vikas12@gmail.com	9226292786	

LSP = 14
Dairy men = 12