BEE's National Program
on
Energy Efficiency and Technology Up-gradation in SMEs

Pali Textile Cluster

Baseline Energy Audit Report
Shree Padmawati Dyeing




Submitted to

ENERGY IS LIFE
BEE
CONSERVE IT

Submitted by

InsPIRE

InsPIRE Network for Environment

April 2016

contents

List of Annexures

List of Tables

List of Figures

List of Abbreviations

APH	Air-preheater
BEE	Bureau of Energy Efficiency
BD	Blow Down
BOP	Best Operating Practice
BFW	Boiler Feed Water
CETP	Common Effluent Treatment Plant
CSE	Center for Science and Environment
CRS	Condensate Recovery System
FD	Forced Draft
HP	Horse Power
ID	Induced Draft
kcal	Kilo Calories
kg	Kilogram
kVA	Kilo Volt Ampere
kW	Kilo Watts
MSME	Ministry of Micro Small and Medium Enterprises
RTHPA	Rajasthan Textile and Hand Processors Association
RO	Reverse Osmosis
SEC	Specific Energy Consumption
SFC	Specific Fuel Consumption
SPC	Specific Power Consumption
SME	Small and Medium Enterprise
SO	Sulphur Oxide
TDS	Total Dissolved Solids
TFH	Thermic Fluid Heater
VFD	Variable Frequency Drive

About The Project

The project titled "BEE's National Program on Energy Efficiency and Technology Up-gradation in SMEs" supported by Bureau of Energy Efficiency (BEE), Ministry of MSME and Rajasthan Textile and Hand Processors Association (RTHPA) aims to bring down the energy demand of MSME industries located at different clusters around the country. Pali Textile Processing cluster located at Pali, Rajasthan is one such cluster, which has been selected under the program. The project aims to support the MSME units in Pali to implement Energy Efficient Technologies in the SME units.

There are more than 400 Small and Medium Enterprise (SME) textile processing units operating in the various industrial pockets of Pali. The project aims to initially diffuse energy efficient technologies in selected units in the cluster. These units will act as demonstration units for long term and sustainable penetration of energy efficient technologies in the entire cluster. InsPIRE Network for Environment, New Delhi has been appointed as the executing agency to carry out the following activities in the cluster:

- Conducting pre-activity cluster workshop in the cluster.
- Conducting initial walk through audits in 5 representative units of the cluster.
- Identify and propose BEE on energy efficient process technologies, relevant to the cluster, with highest energy saving and replication potential, and their cost benefit analysis.
- Identify local technology/service providers (LSP) for the above technologies in the cluster
- Identify SME units willing to implement and demonstrate the energy efficient technologies
- Assist BEE to enter into a contract with each of the shortlisted SME units to enable implementation and showcasing of Energy Efficient technology.
- Conduct comprehensive Baseline Energy Audits in the shortlisted SME units wherein these technologies can be implemented and document the findings in the form of a report.
- Develop technology specific case studies (Audio-Visual and print) for each technology
- Prepare Best Operating Practices (BOP) document for the top 5 energy using equipment / process in the industry cluster
- Enumeration of common regularly monitorable parameter at the process level which have impact on energy performance, and listing of appropriate instrumentation for the same with options including make, supplier, indicative cost specifications and accuracy of measurements.
- Carry out post implementation energy audit in the implemented units to verify energy savings as a result of EE technology implementation.
- Verify and submit to BEE all the relevant documents of each participating unit owner indicating his complete credentials, proof of purchasing the equipment, evidence of implementation and commissioning of the EE technology in the unit.

As part of the activities conducted under the energy efficiency program in Pali Textile cluster, detailed energy audits in 11 Textile units in Pali was conducted in the month of March and April'2016. This specific audit report details the findings of the energy audit study carried out at Shree Padmawati Dyeing.

Executive Summary

1. Unit Details

Unit Name	:	**Shree Padmawati Dyeing**
Address	:	F-72, Punayata Industrial Area, Pali, Rajasthan- 306401
Contact Person	:	Mr. Vimalchand Salecha, Proprietor (Cell no: 9414122064)
Products	:	Cloth processing (cotton & polyester)
Production		1,00,000 to 2,00,000 meters of processed cloth per day
DIC Number		080201200050 Part-II
Bank Details		State Bank of Bikaner & Jaipur, Pali, A/c No.: 61182240177, IFSC Code: SBBJ0010532
TIN / PAN No.	:	TIN: 08493256864 PAN: ADHPJ4735D
Contract demand		96 KVA

2. Existing Major Energy Consuming Technology

Jet Dyeing Machine

- 7 Nos of Jet Dyeing machine equipped with thermos-dynamic (TD) traps.
- Each jet machine uses steam at 200 kg/hr with a production of 1100-1200 mtrs of processed cloth per batch from jet dyeing machines (2-3 hrs time required for one batch).

Jigger Machine

- A total of 4 numbers of open jigger machines used for cotton dyeing at elevated temperature (60-80 ^{0}C). Jiggers are not equipped with temperature monitoring and control system.
- Each jigger machine uses 2000-2500 liters of water in each cycle.

3. Proposed Energy Saving Technologies with Cost Economics

Proposed Energy Saving Measures

- Installation of pneumatic float traps in jet dyeing machines.
- Installation of temperature monitoring and control system in jigger machines

Table 1: *Cost Economic Analysis*

Technology	Estimated Energy Savings (%)	Savings (in Rs)	Investment (in Rs)	Simple Payback period (Months)
Float traps in jet dyeing machine	27	4,53,049	4,00,000	11
Temperature Monitoring & Control in Jigger Machines (for 4 Jiggers)	5.70	1,96,901	1,60,000	10

CHAPTER 1:

Introduction

1.1 ABOUT THE CLUSTER

The Pali textile cluster is one of the biggest SME clusters in Rajasthan having over 350 member industries. The units in the cluster are mainly located in industrial areas namely Industrial Area Phase I & Phase II, Mandia Road Industrial Area and Punayata Industrial Area. Balotra and Bhilwara are other textile clusters in Rajasthan. These clusters also have similar processes and any intervention in Pali would benefit entrepreneurs in these clusters as well. Pollution of nearby river was a significant environmental issue. Center for Science and Environment (CSE) conducted a study to assess the situation behind the environmental issues. The units faced closure for a long time due to legal actions and decided to set up a Common Effluent Treatment Plant (CETP) for redressal the waste water related issues. The CETP is being operational under a trust managed by the entrepreneurs themselves.

Ironically, even though none of the resources required for textile processing is available locally, the textile cluster at Pali has grown despite the odds. The industrial area has no water and all the water required is transported from a distance of over 20 KM. The labour working in the cluster is mostly from outside Pali, at times from as far as Eastern UP and Bihar. Equipment suppliers are all based in Gujarat and Pali does not have enough local service providers or consultants. Even the grey (raw) cloth, dye and chemicals are brought mostly from Maharashtra and Gujarat. Coal or residual pet coke is also not available locally.

Only resource that is available locally is the entrepreneurship of the people, availability of clear sky for over 340 days in an year and good power availability. Presence of a pool of dye masters to process over 400 shades through colour recipe based on experience is another plus for Pali. Initially, Surat used to be the largest processing center for dyeing but a large portion of the job there got outsourced to Pali due to problems like Pollution, Flood, Plague etc.

1.2 ABOUT THE UNIT

M/s Shree Padmawati Dyeing, Pali, was established in the year 2009 and is engaged in processing of cloth (both cotton and polyester) which includes raw cloth (grey) processing, dyeing and finishing operations. The unit uses wet steam from the boiler unit located in the adjoining site. The manufacturing unit is located at F-72, Punayata Industrial Area, Pali. The unit operation is overseen by Mr. Vimalchand Salecha, Proprietor.

The raw material procured by the unit includes grey (raw cloth) purchased from various sources predominantly from Gujarat and Maharashtra. The unit operates for 12 hours per day, presently.

The daily production lies in the range of 1,00,000 to 2,00,000 meters of processed cloth per day. The major energy usage in the unit includes wet steam (generated from coke fired boiler situated in adjoining site) and electricity. The average monthly electricity consumption (derived from reported date of last one year) is 16,347 kWh. ***Figure 1.1*** depicts monthly electricity consumption vis-à-vis total monthly production of the unit for last one year.

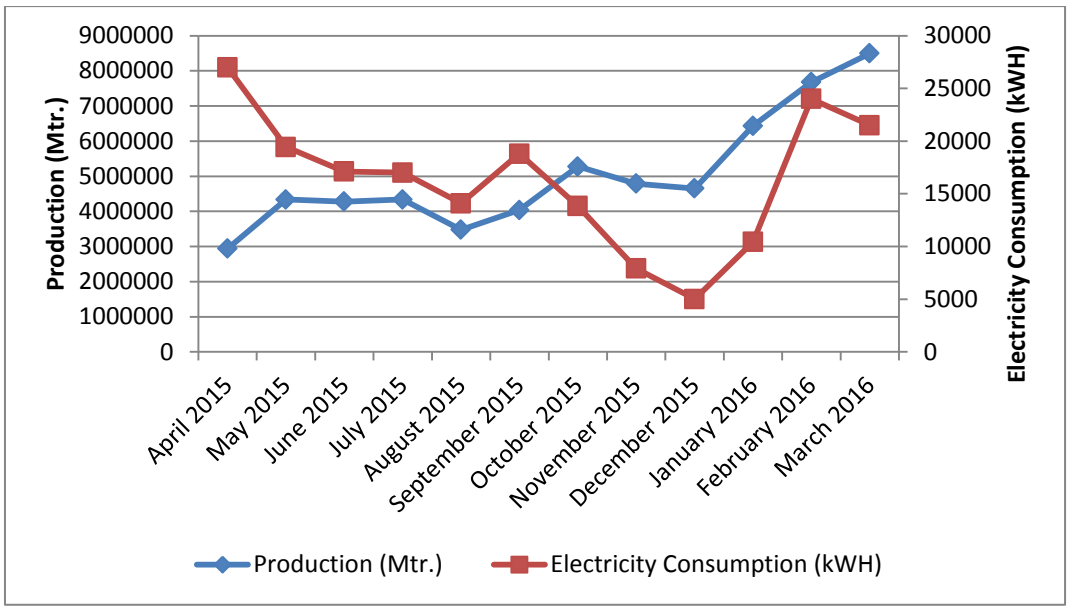


Figure 1.1: ***Monthly variation of production and electricity consumption***

Figure 1.2 below respectively depicts the variation in specific electrical energy consumption vis-à-vis the monthly production for last one year.

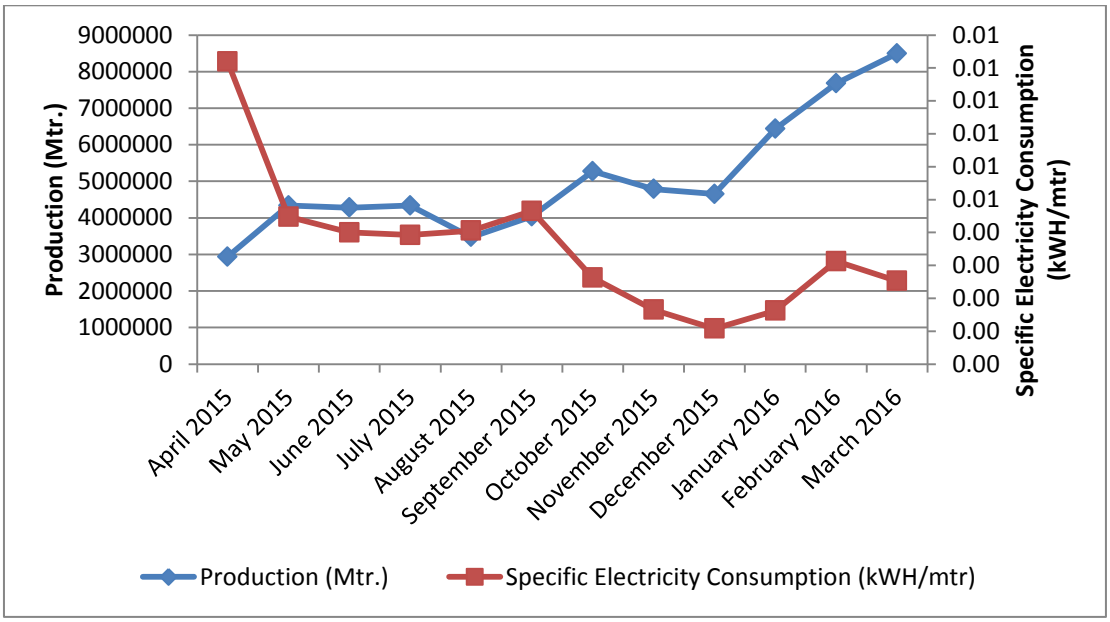


Figure 1.2: ***Variation in specific electrical energy consumption and monthly production***

According to the assessment of the energy consumption data as reported by the unit (filled in questionnaire attached), the specific electrical energy consumption of the unit varies from 0.001 kWh/mtr to 0.009 kWh/mtr over a period of one year with an average of 0.004 kWh/kg. The unit used wet steam directly from the adjoining company, wherein coke is used as fuel with a calorific value of 8200 kCal/mtr. The total average specific energy consumption (in kcal), based on reported data for one year, based only on specific electricity consumption is estimated as **3.08 kCal/mtr** of product. The energy consumption pattern for the unit has been summarized below at ***Table 1.1***.

Table 1.1: ***Energy consumption details of Shree Padmawati Dyeing***

SN	Parameter	Unit	Value
1	Name and address of unit	Shree Padmawati Dyeing, F-72, Punayata Industrial Area, Pali, Rajasthan-306401	
2	Contact person	Mr. Vimalchand Salecha, Proprietor	
3	Manufacturing product	Processed cloth (Cotton/ Polyester)	
4	Daily Production	1,00,000 to 2,00,000 mtr per day	
Energy utilization			
5	Average monthly electrical energy consumption	kWh	16347
6	Specific electrical energy consumption	kWh/mtr	0.004
7	Specific energy consumption[1,2]	kCal/mtr	3.08
8	Electrical energy cost[3]	Rs/mtr	0.02

Note:

[2]: Thermal equivalent for one unit of electricity is 860 kCal/kWh.

[3]: The unit operates for 25 days a month (1 shift of 12 effective hours per day).
Cost of electricity has been taken as Rs 6.50 / kWh

1.3 PRODUCTION PROCESS OF PLANT

The ***Figure 1.3*** below shows the typical process employed at processing of textile products at Shree Padmawati Dyeing:

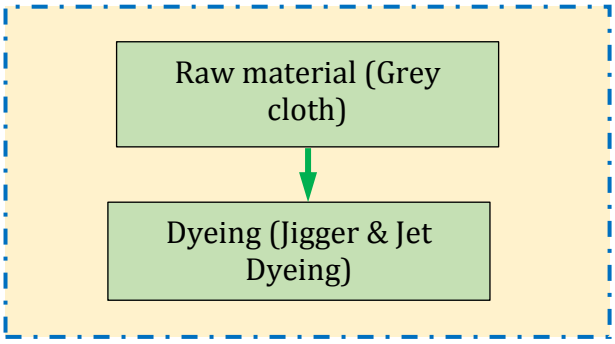


Figure 1.3: ***Production process at Shree Padmawati Dyeing***

Note:

Shree Padmavati Dyeing has only the dyeing facility in their premises. All other facilities including boiler unit, desizing, mercerzing, cautic dyeing, finishing (zero-zero/felt) and stenter is located in the adjoining site in a different company (sister-concern). Since, the tripartite agreement under the project has been signed by Shree Padmavati Dyeing, facilities limited to its premises have been taken up for the energy audit studies.

1.4 ENERGY AUDIT METHODOLOGY

The primary objective of the energy audit was to quantify the existing energy consumption pattern and to determine the operating efficiencies of key existing systems. The key points targeted through energy audits were determination of specific energy consumption, various losses, operation practices like production, fuel consumption, steam utilization and losses, process temperatures, electrical energy consumptions etc. Pre – planned methodology was followed to conduct the energy audits. Data collected at all above steps were used to calculate various other operating parameters like material processing rate (mtr/hr), specific electricity consumption (kWh/kg), specific steam utilization (kg/kg), etc. The energy audit methodology is depicted in ***Figure 1.4*** below:

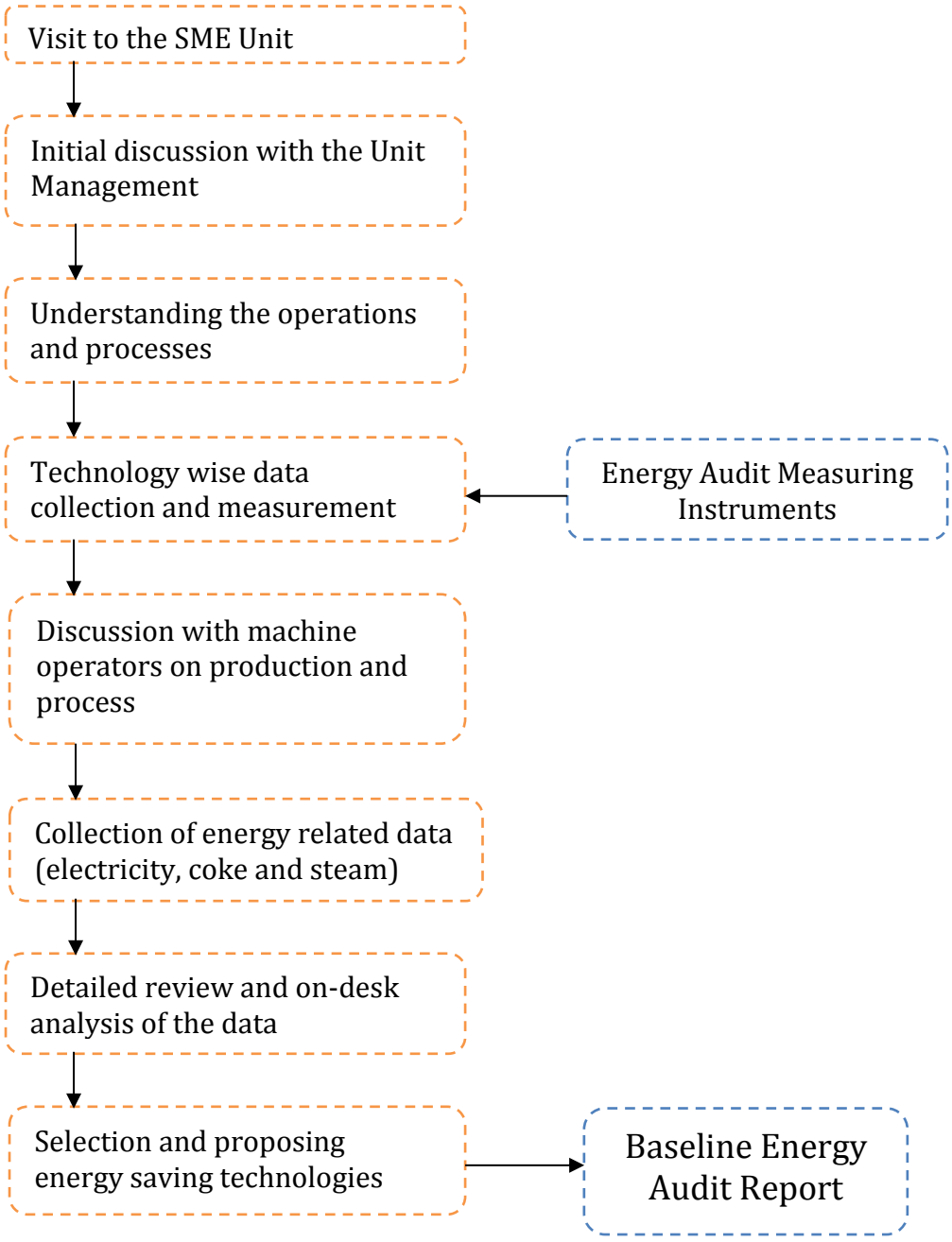


Figure 1.4: ***Energy audit methodology***

1.5 UNIT PHOTOGRAPHS

Caption: Jet Dyeing of fabric at Shree Padmavati Dyeing

Caption: Cotton fabric dyeing using Jigger Machines

Caption: Polyester dyeing using Jet dyeing machine

Caption: Jigger machines

Caption: Jet Dyeing machines

Caption: Jigger Dyeing

Present Process, Observations and Proposed Technology

2.1 INSTALLATION OF FLOAT TRAPS IN JET DYEING MACHINE

2.1.1 Present Process

Shree Padmavati Dyeing has installed 7 nos. of jet dyeing machines having a capacity of 200 kgs each. The unit has a steam boiler of 3 tonnes capacity (from adjoining site) to generate wet steam required for the process. Steam is used at a working pressure of 4-5 kg/cm^2 in the jet dyeing machines. In the condensate outlet, 25 NB thermodynamic (TD) traps are installed in all 7 nos. of jet dyeing machine.

2.1.2 Observations

Thermodynamic traps work on the difference in dynamic response to velocity change in the flow of compressible and incompressible fluids. As steam enters, static pressure above the disk forces the disk against the valve seat. The static pressure over a large area overcomes the high inlet pressure of the steam. As the steam starts to condense, the pressure against the disk lessens and the trap cycles. This essentially makes a TD trap a "time cycle" device: it will open even if there is only steam present, this can cause premature wear. If non-condensable gas is trapped on top of the disc, it can cause the trap to be locked shut. However, the efficiency of TD traps is low in comparative to float traps. In the current process, it was observed that the TD traps are not being able to remove condensate properly. As a result, the operator by-pass the valve to remove the condensate in the heating cycle. Thus, a significant amount of steam is lost in each heating cycle.

2.1.3 Conclusion

As per the study conducted in the unit, it is suggested to install pneumatically operated float traps in steam unit of jet dyeing machine in place of TD traps. These float traps will be able to filter out condensate in the machine exit and allow steam to pass through the line. The amount of steam being discharged along with the condensate can be saved in the process.

The installation of the float-traps in the steam utilizing units will lead to following benefits:

- Higher capacity turndown trap

- Complete Space Optimization – Area required for installation is less
- No welding required
- No Inline leakages
- Lesser Radiation losses
- Reduced transportation costs

2.1.4 Cost Economics Analysis

The section below provides a cost benefit analysis for installation of float traps in the existing steam line of the jet dyeing machine in place of the existing TD traps:

Table 2.1: ***Cost Economic Analysis of installation of float traps in jet dyeing machine***

SN	Parameter	Unit	Value
1	Bypass Valve size	mm	25
2	Percentage opening of bypass valve	%	20
3	Orifice size of opened valve	mm	5
4	Operating pressure	kg/cm^2	4
5	Steam leakage per batch per jet dyeing machine (considering 45 min heating cycle/jet dyeing)	kg/batch/jet dyeing m/c	30
6	No. of batches	no.	5
7	Total steam leakage /day/jet dyeing	kg/day/jet dyeing m/c	150
8	No. of jet dyeing machine	no.	7
9	Quantity of steam saved	kg/day	1050
10	Energy saved	%	27
11	Quantity of fuel saved daily	kg/day	183
12	Annual fuel saving	kg/yr.	60407
13	Annual cost saving	Rs/yr.	453049
14	Investment	Rs	400000
15	Pay back	months	11

* Cost of fuel taken as Rs 7.5/kg

As per the detailed calculations done, it is proposed to install float traps in place of existing thermodynamic traps in the steam line of the jet dyeing machine. The estimated fuel saving with the installation is 60,407 kgs annually which can save an amount of Rs. 4,53,049 per year. Thus the cost of the 7 nos. of float traps (estimated to be Rs. 4,00,000) can be recouped in less than a year.

2.2 TEMPERATURE MONITORING AND CONTROL IN JIGGER MACHINES

2.2.1 Present Process:

Shree Padmawati Dyeing has installed a total of 4 nos. of open Jigger machines running with 2 HP motor each. These jigger machines are used for dyeing of cotton cloth at elevated temperature of 60-80 ^{0}C depending on the type of fabric and the dye used. Steam is fed into the system for the required amount of elevated temperature. Once the dyeing process is over, the hot water is drained out of the factory. The temperature requirement for water is different for different grades of dyes and quality of fabric. However, no temperature monitoring system has been installed in the jigger machines. Monitoring and control of temperature of water is done purely based on manual interference.

2.2.2 Observations

Dyeing of cotton fabric is done with the help of a jigger machine. In this process the fabric is rotated in a shallow dip containing hot water. The temperature of the water depends on the type of dyeing agent and the quality of the fabric. Typically a temperature range between 60 ^{0}C to 80 ^{0}C is adopted based on different fabric quality and dye. Steam is used to bring amount the required temperature in the process. In case of Shree Padmawati, no temperature monitors is being installed in any of the jiggers. The monitoring of water temperature and its control is purely done by manual interference. A study of the jigger water temperature showed off-shooting of temperature at certain places. Thus, a significant amount of energy in the form of steam required to heat water is being lost due to the absence of temperature monitoring and control system. It is suggested for installation of sensor based automatic temperature control and monitoring system in the jiggers.

2.2.3 Conclusion

In order to maintain the correct temperature profile in the jigger water, it is suggested to install a sensor based temperature monitoring and control system. This system can be used to monitor the temperature level of water in the jiggers and control the flow of steam by a pneumatically operated valve. This will be lead to optimum utilization of steam in the jiggers thus leading to a substantial energy savings.

Benefits of the installation of the temperature monitoring and control system in Jiggers machines are:

- Precision temperature control
- Reduced energy consumption
- Better quality of production

- Savings in terms of feed water to jiggers.

2.2.4 Cost Economics Analysis

The section below provides cost benefit analysis for the installation of temperature monitoring and control system in 4 nos. of jiggers.

Table 2.2: ***Cost Economic Analysis of jigger water temperature monitoring and control system***

SN	Particulars	Units	Value
1	Temperature observed in Jigger	°C	95
2	Temperature to be maintained	°C	80
3	Machine Capacity	kg	200
4	Steam pressure	kg/cm^2	4
5	Steam Enthalpy @ 4 Kg /cm^2 pressure	kCal/kg	657
6	Liquor Ratio		0
7	Water Capacity	Kg	400
8	Specific heat coefficient (Cp)-water	kCal/kg °C	1
9	Specific heat coefficient (Cp)-fabric	kCal/kg °C	0.5
10	No. of batches per day	nos.	2
11	Saving of steam per batch	kg / hr	11
12	Saving of steam per day (considering 10 hrs. heating period in 2 batch)	kg/day	114
13	Savings of steam per annum	kgs/annum	37648
14	Annual fuel savings	kgs	6563
15	Annual monetary savings	Rs	49225
16	Investment per jigger	Rs	40000
17	General payback period	Months	10
18	Annual fuel savings for 4 jiggers	Kgs	26253
19	Annual monetary savings for 4 jiggers	Rs	196901
20	Investment for 4 jiggers	Rs	160000
21	Pay-back	Months	10
22	Energy savings	%	5.70

The proposed temperature monitoring and control system installed in 4 nos. of open jiggers will lead to an annual saving of 26,253 kgs of coke leading to a monetary saving of Rs 1,96,901. Thus, the estimated investment of Rs 1,60,000 for 4 nos. of units can be recouped in less than a year.

Questionnaire

Energy Audit – Questionnaire Form

BEE National Programme
On
"Energy Efficiency in SMEs – Pali Textile Cluster"

Name of the MSME unit		SHREE PADMAWATI DYEING
Address:		F-72, Punayata Ind. Area Pali
Ph. No:		9414122064
Name of the respondent		Vimalchand Salecha
Designation:		Properitor
Mobile No. / Email id		
Unit details		
Year of Establishment		2009
Type of Products		Cotton & Polyster Dyeing
Installed Capacity		1000 Thaan / Day
Operating hrs per day		12 hrs
Connected Load (kVA or kW please specify)		130 HP
Supply Voltage (Volt)		11 KV
Duration of electricity supply		

Annual Energy Consumption/ Production

Financial Year (April to March)	2013-14	2014-15	2015-16
Coke consumed (kg)			
Biomass Briquettes			
Wood			
Cost of coke (in Rs.)			
Electrical units consumed (In kWh)			
Electricity charges (in Rs.)			
LDO/HSD/ FO consumption (L)			
Fuel Cost (in Rs.)			
Production (Kg)		-	3,39,853

Source and Calorific Value of Fuels:

Fuel	Source	Calorific Value (kCal)
Coke (Kg)		NA
Biomass Briquettes		

For : Shri Padmawati Dyeing
Prop. / Manager

Wood				
HSD (L)				
LDO (L)				
FO (L)				
Electricity (kWh)				

Monthly Energy Consumption and Production Data

Month	Production (Kg) Ham	Coke consumption (Kg)	Biomass /Wood Consumption (Kg)	Electricity consumption (kWH)	HSD/LDO /FO (L)	Any other fuel (specify units)
April'15	16320			26994 ✓		
May'15	24096			19434		
June'15	23769			17112		
July'15	24102			17016		
August'15	19307			14088		
September'15	22438			18804		
October'15	29309			13842		
November'15	26608			7914 ✓		
December'15	25839			5010		
January'16	35743			10440		
February'16	42650			24012		
March'16	47201			21498 ✓		

Cost variables per Kg of Production	Cost Variable	Cost/ kg of production
	Electricity Cost	Rs 6.5/kWh
	Coke Cost	
	Fuel Cost (LDO/HSD/FO) etc.	NA
	Labour Cost	
	Material Cost	
	Other Cost	

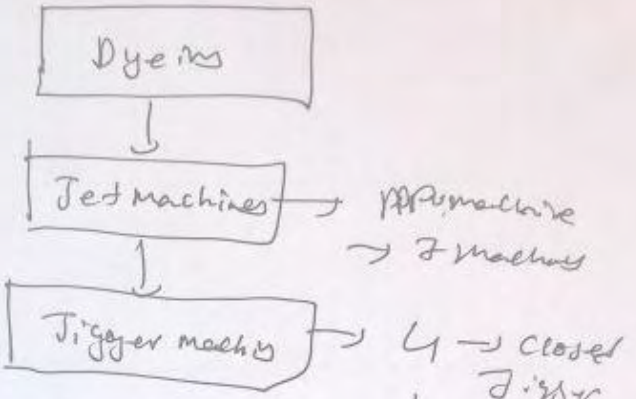
For : Shri Padmavati Dr...

Prop./Man...

		Total Production Cost	

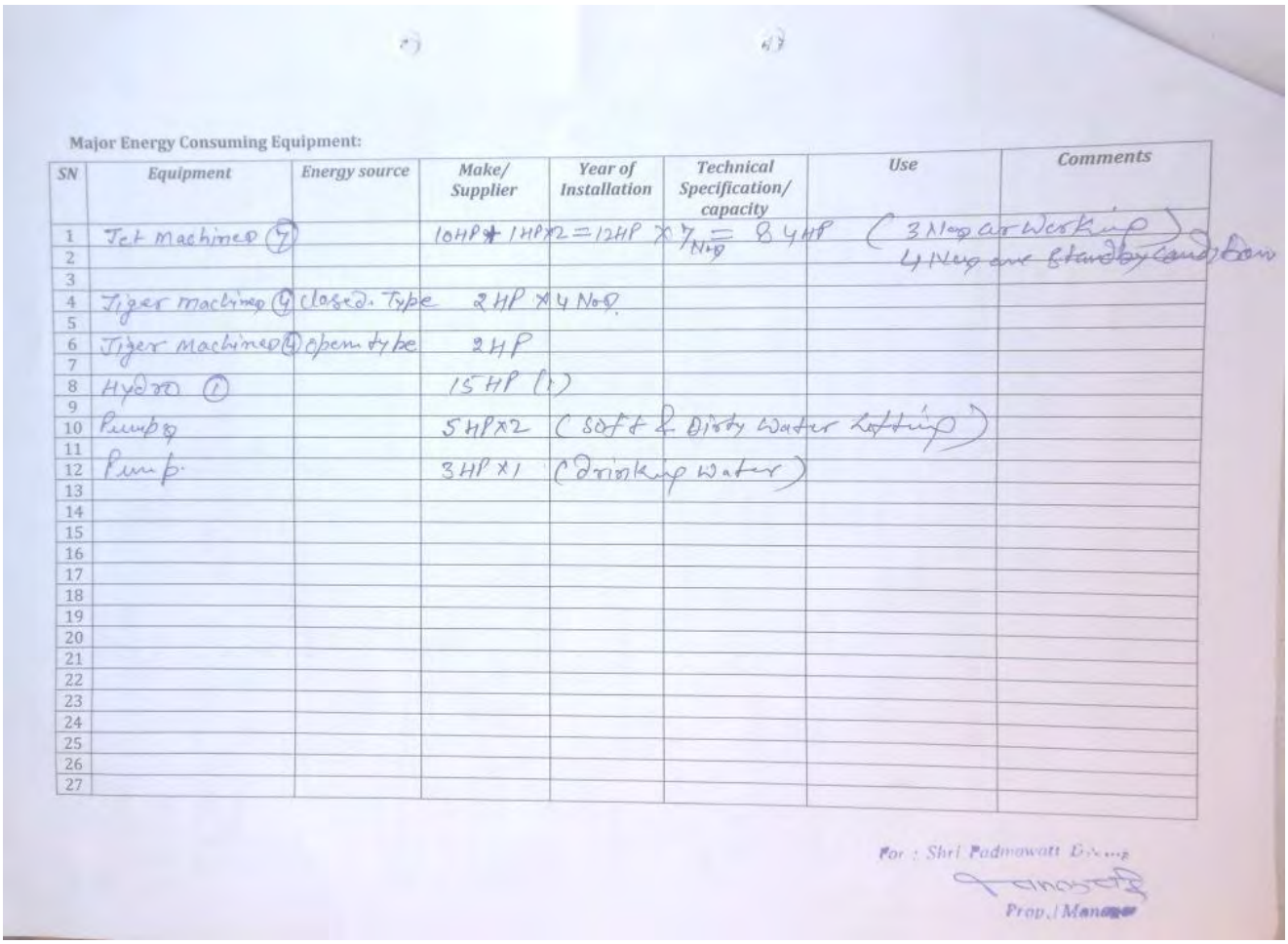
~~Factory Layout~~

Process layout



For : Shri Padmavati Dyeing

Prop./Manager

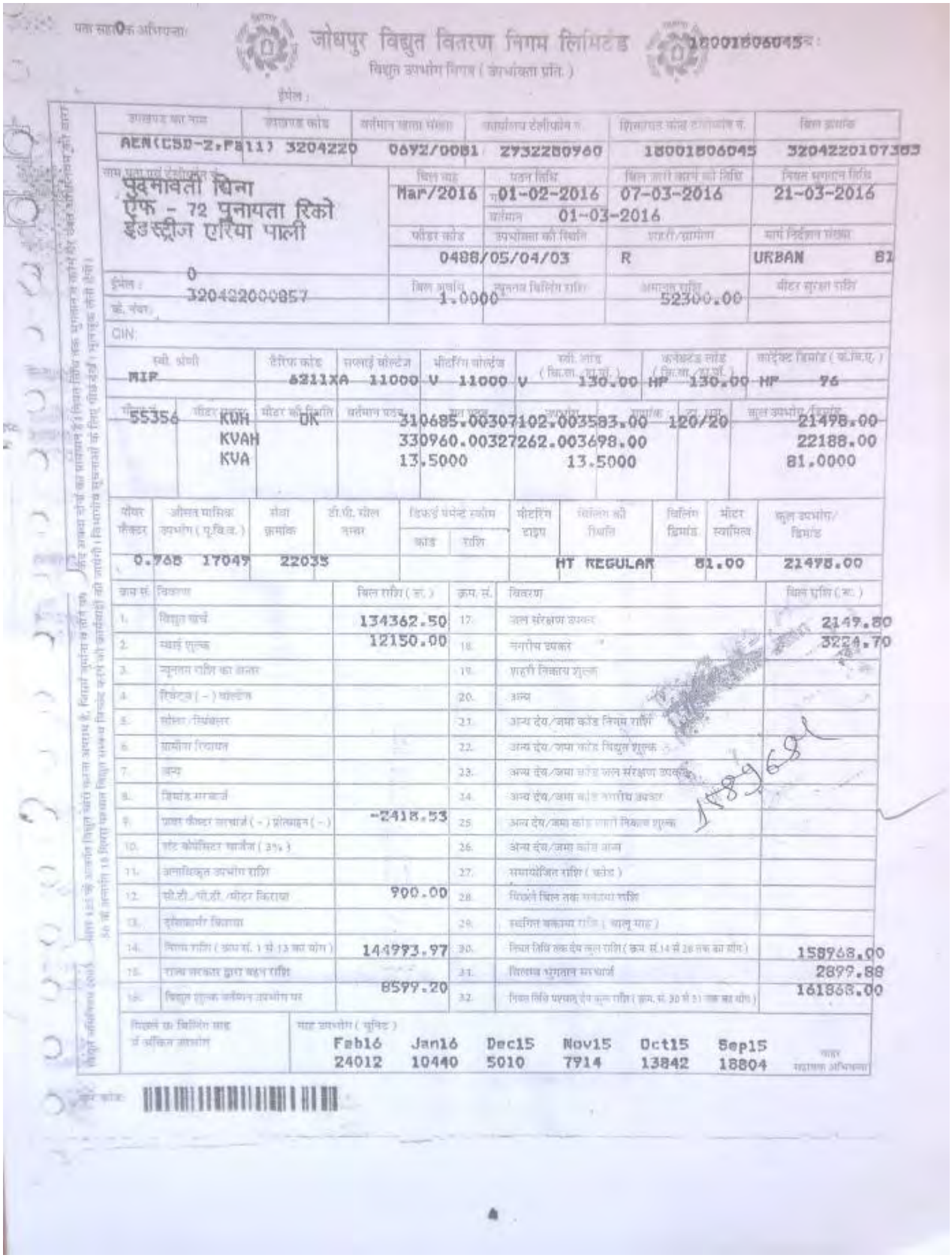


Major Energy Consuming Equipment:

SN	Equipment	Energy source	Make/ Supplier	Year of Installation	Technical Specification/ capacity	Use	Comments
1	Jet machines (7)		10HP + 1HP×2 = 12HP × 7 No = 84HP			(3 No's are Working 4 No's are Stand by Condition)	
2							
3							
4	Tiger machines (4)	closed. Type	2HP × 4 No's				
5							
6	Tiger Machines (1)	open type	2HP				
7							
8	Hydro (1)		15HP (1)				
9							
10	Pumps		5HP×2			(Soft & Dirty Water Lifting)	
11							
12	Pump		3HP×1			(Drinking Water)	
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

For : Shri Padmawati Dyeing

Prop./Manager



जोधपुर विद्युत वितरण निगम लिमिटेड

विद्युत उपभोग निगम (उपभोक्ता प्रति.)

उपखण्ड का नाम	उपखण्ड कोड	वर्तमान खाता संख्या	कार्यालय टेलीफोन नं.	रिजस्टर्ड कोड टेलीफोन नं.	बिल क्रमांक
AEN(CSD-2,PS11)	3204220	0692/0081	2732280960	18001806045	3204220107383

पुदमावती धिना
ऐफ - 72 पुनायता रिको
इंडस्ट्रीज एरिया पाली

बिल माह	पठन तिथि	बिल जारी करने की तिथि	नियत भुगतान तिथि
Mar/2016	01-02-2016	07-03-2016	21-03-2016
	वर्तमान 01-03-2016		

फीडर कोड	उपभोक्ता की स्थिति	शहरी/ग्रामीण	मार्ग निर्देशन संख्या
0488/05/04/03	R	URBAN	81

ईमेल :	बिल अवधि	स्वीकृत बिलिंग राशि	अनुबंध राशि	मीटर सुरक्षा राशि
0	1.0000		52300.00	
320422000857				

GIN:

श्रेणी श्रेणी	टैरिफ कोड	सप्लाई वोल्टेज	मीटरिंग वोल्टेज	स्वी. लोड (कि.वा. / अ.शक्ति)	कनेक्टेड लोड (कि.वा. / अ.शक्ति)	कांट्रेक्ट डिमांड (के.वी.ए.)
MIP	6211XA	11000 V	11000 V	130.00 HP	130.00 HP	76

मीटर क्रमांक	मीटर की स्थिति	वर्तमान पठन	पूर्व पठन	गुणांक	उप गुणांक	कुल उपभोग / डिमांड
55356 KWH	OK	310685.00	307102.00	3583.00	120/20	21498.00
KVAH		330960.00	327262.00	3698.00		22188.00
KVA		13.5000		13.5000		81.0000

पॉवर फैक्टर	औसत मासिक उपभोग (यू.वि.व.)	सेवा क्रमांक	डी.पी. खोल सका	डिफर्ड पेमेन्ट स्कीम कोड	डिफर्ड पेमेन्ट स्कीम राशि	मीटरिंग टाइप	बिलिंग की स्थिति	बिलिंग डिमांड	मीटर स्वामित्व	कुल उपभोग / डिमांड
0.765	17049	22035				HT REGULAR		81.00		21498.00

क्रम सं.	विवरण	बिल राशि (रु.)	क्रम. सं.	विवरण	बिल राशि (रु.)
1.	विद्युत खर्च	134362.50	17.	जल संरक्षण उपकर	2149.80
2.	स्थाई शुल्क	12150.00	18.	नगरीय उपकर	3224.70
3.	न्यूनतम राशि का अंतर		19.	शहरी विकास शुल्क	
4.	रिबेट्स (-) चार्जेज		20.	अन्य	
5.	सोलर / रिन्यूवेबल		21.	अन्य देय / जमा कोड नियम राशि	
6.	सामीला रियायत		22.	अन्य देय / जमा कोड विद्युत शुल्क	
7.	अन्य		23.	अन्य देय / जमा कोड जल संरक्षण उपकर	
8.	डिमांड सरचार्ज		24.	अन्य देय / जमा कोड नगरीय उपकर	
9.	पावर फैक्टर सरचार्ज (-) प्रोत्साहन (-)	-2418.53	25.	अन्य देय / जमा कोड शहरी विकास शुल्क	
10.	रेंट कोमेंसटर चार्जेज (3%)		26.	अन्य देय / जमा कोड अन्य	
11.	अनाधिकृत उपभोग राशि		27.	समायोजित राशि (क्रेडिट)	
12.	सी.टी. / पी.टी. / मीटर किराया	900.00	28.	पिछले बिल तक भुगतान राशि	
13.	दुर्घटनाजनित किराया		29.	स्थगित बकाया राशि (चालू माह)	
14.	नियत राशि (क्रम सं. 1 से 13 का योग)	144993.97	30.	नियत तिथि तक देय कुल राशि (क्रम. सं.14 से 28 तक का योग)	158968.00
15.	राज्य सरकार द्वारा वहन राशि		31.	विलम्ब भुगतान सरचार्ज	2899.88
16.	विद्युत शुल्क वर्तमान उपभोग पर	8599.20	32.	नियत तिथि पश्चात् देय कुल राशि (क्रम. सं. 30 से 31 तक का योग)	161868.00

पिछले छः बिलिंग माह में अधिकतम उपभोग	माह उपभोग (यूनिट)						
	Feb16	Jan16	Dec15	Nov15	Oct15	Sep15	
	24012	10440	5010	7914	13842	18804	

SHREE PADMAWATI DYEING

F-72
Rumeysatg, Pali

PROCESS SALES SUMMARY FROM :01/04/2015 TO 31/03/2016
PROCESS UNIT :PROCESS CHARGE

PROCESS NAME	THAN	METER	AMOUNT
CHIRAG	265.00		69450.00
RE-DYEING	633.00		632.00
PC(DEEP)	91,198.00		16925330.00
MEL.DYE.& HEAT SET	37,286.00		10598780.00
SAREE LIGHT COL.	1,210.00		163640.00
WOLLY (LIGHT)	7,555.00		908280.00
INDO.(DEEP)	32,977.00		5500085.00
INDO.(LIGHT)	414.00		65580.00
WOLLY (DEEP)	17,935.00		2373850.00
COTTON	5.00		1500.00
PC DEEP SPC COLOUR	27,516.00		5564566.00
GREY RET.	1,060.00		31.00
WOLLY SCORING	14,338.00		690145.00
ROTO(DEEP)	7,383.00		1207760.00
GREY SHORT	64.00		0.00
[illegible]	50.00		11500.00
WOLLY(SAREE COL.)	144.00		17280.00
ROTO(LIGHT)	202.00		20040.00
MELE.DYE. ONLY	100.00		21000.00
ROTO ASTER COLOUR	14,226.00		2103860.00
PC(DUSTY)	15,610.00		2534790.00
P.C.CUT BORDER	257.00		67480.00
PC(LIGHT)	64,409.00		7916570.00
INDO.150 PANNA	480.00		115160.00
GREY TRANSFER	40.00		0.00
INDO.SCORING	202.00		20200.00
INDO.108 PANNA	2,294.00		393400.00
TOTALS	3,37,853.00		57290909.00

1 Thaan = 180 Mtrs.

Steam Loss Chart