1	**ID: 88**	**Title of measure**	**Sector: Textile Industry**
2	**Survey Year: 2007**	**Replacement of Oversized Pump by optimizing capacity in Spin bath in T.C. Plant (Scheme 1)**	**Technology: Booster & Ejector System**
3	Name of the Company	: **Century Rayon, Shahad, Dist. Thane, Maharashtra, INDIA**	
4	Agency that executed the project	: In-house	
5	Year of Implementation	: 2006-07	

6 **Unit Profile:**

Century Rayon is one of the largest producers of rayon filament yarn in Asia, with an annual production of 25000 tons of textile and tyre yarn. The company offers range of textile yarns in Pot spun & Continuous spun variety and also specialty yarns like flat yarn, micro yarn, colour yarn, dull yarn etc. Century Rayon produces high tenacity viscose filament yarn, namely Tyre yarn. Century Rayon also produces caustic soda, carbon-disulphide, sulphuric acid, hydrogen gas, liquid chlorine also for captive consumption and for domestic sale in open market. The annual turnover of the Thane unit for the year 2006-07 is US$ 126 million.

7 **Description of Energy Conservation Measure:-**

A Megma pump is used in calcination plant for pumping of concentrated sodium sulphate slurry which is received by the receiver in the settler tank. From the settler tank, the slurry is again fed to centrifuges and rotary dryer to obtain anhydrous sodium sulphate. The capacity of Magma pump is 36m^3/hr and average power consumption is about 6.5 KW / Hr. The capacity of Magma pump is based on the 36 TPD calcinations in the plant. However due to reduction in the no. of Tyre Yarn machines, the present calcined salt production is only about 17.5 TPD. Due to this changed situation, existing pump had become oversized. Accordingly, the existing Magma pump of 36 m^3/hr was replaced with a smaller capacity and energy efficient pump of 20 m^3/hr capacity, resulting in 27.5% reduction in electricity consumption.

8

Picture Before Modification

Picture After Modification

9	Total investment :	1,625 US$
10	First year energy cost savings :	1,250 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):	Nil
12	Annual electricity consumption before, MWh	51
13	Annual electricity consumption after, MWh	37
14	First year electricity savings, MWh	14
15	First year tons of CO_2 mitigated	14
16	Assumed sustainability, years	10
17	**Expected tons of CO_2 mitigated throughout life cycle**	**140**

1	**ID: 89**	**Title of measure**	**Sector: Textile Industry**
2	**Survey Year: 2007**	**Optimization of balloon setting in TFO machines**	**Technology: TFO Machines**
3	Name of the Company	: **R S W M Limited, Banswara, Rajasthan, INDIA**	
4	Agency that executed the project	: In-house	
5	Year of Implementation	: 2006-07	

6 **Unit Profile:**

RSWM Limited (formerly known as Rajasthan Spinning & Weaving Mills Limited), exports a complete range of yarn to over 66 countries across Europe, South Africa, Australia, Korea, Belgium, Singapore, Italy, Egypt and the Gulf countries. With nearly 60% of units production exported, the Company has a significant presence in the world of textiles. The unit has also made expansions in the year 2004-05 for 26,496 spindles & in the year 2006-07, an open plant with 1680 rotors.

7 **Description of Energy Conservation Measure:-**

The in-house R & D Team observed that the TFO (Two for one) twister consumes less power at lower balloon settings. The in-house team took the initiative to implement this recommendation of and the Balloon size was optimized by taking various studies with respect to different yarn count patterns. This measure resulted in power saving of 684 kWh /day.

8

Picture Before Modification

Picture After Modification

9	Total investment :	Nil
10	First year energy cost savings :	26,550 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):	Nil
12	Annual electricity consumption before, MWh	15,206
13	Annual electricity consumption after, MWh	14,961
14	First year electricity savings, MWh	245
15	First year tons of CO_2 mitigated	245
16	Assumed sustainability, years	10
17	**Expected tons of CO_2 mitigated throughout life cycle**	**2,450**

1	ID: 90	Title of measure	Sector: Textile Industry
2	Survey Year: 2007	Replacement of old boiler feed pump with energy efficient pump	Technology: Energy Efficient Pumps
3	Name of the Company	:	Century Rayon, Shahad, Dist. Thane, Maharashtra, INDIA
4	Agency that executed the project	:	In-house
5	Year of Implementation	:	2006-07

6 **Unit Profile:**

Century Rayon is one of the largest producers of rayon filament yarn in Asia, with an annual production of 25000 tons of textile and tyre yarn. The company offers range of textile yarns in Pot spun & Continuous spun variety and also specialty yarns like flat yarn, micro yarn, colour yarn, dull yarn etc. Century Rayon produces high tenacity viscose filament yarn, namely Tyre yarn. Century Rayon also produces caustic soda, carbon-disulphide, sulphuric acid, and hydrogen gas, liquid chlorine also for captive consumption and for domestic sale in open market. The annual turnover of the Thane unit for the year 2006-07 is US$ 126 million.

7 **Description of Energy Conservation Measure:-**

Boiler feed pump is used to feed the hot water to 4 nos. boilers in acid plant no. 1 & 2. Three nos. boiler feed pump are available, out of which one is running and other two pumps are standby. These pumps are multistage pumps. The capacity of each pump is 13.6 m^3/hr having 170 meter head and power consumption 12.9 kW. As an energy conservation measure, the in-house team of the unit took the initiative to replace one pump with energy efficient pump of capacity 15 m^3/hr & head 167 meter. This pump consumed 9.88 kW power only (Efficiency of 64.6 %).

8 **Picture Before Modification**

Picture After Modification

9	Total investment :		3,125 US$
10	First year energy cost savings :		2,300 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):		Nil
12	Annual electricity consumption before,	MWh	113
13	Annual electricity consumption after,	MWh	86
14	First year electricity savings,	MWh	27
15	First year tons of CO_2 mitigated		27
16	Assumed sustainability, years		10
17	**Expected tons of CO_2 mitigated throughout life cycle**		**270**

1	ID: 91	Title of measure	Sector: Textile Industry
2	Survey Year: 2007	Shifting of 2500 KVA 11/0.415 KV transformer to reduce line losses	Technology: Transformers
3	Name of the Company	:	R S W M Limited, Banswara, Rajasthan, INDIA
4	Agency that executed the project	:	In-house
5	Year of Implementation	:	2006-07

6 **Unit Profile:**

RSWM Limited (formerly known as Rajasthan Spinning & Weaving Mills Limited), exports a complete range of yarn to over 66 countries across Europe, South Africa, Australia, Korea, Belgium, Singapore, Italy, Egypt and the Gulf countries. With nearly 60% of units production exported, the Company has a significant presence in the world of textiles. The unit has also made expansions in the year 2004-05 for 26,496 spindles & in the year 2006-07, an open plant with 1680 rotors.

7 **Description of Energy Conservation Measure:-**

The unit had a transformer of specifications of 2500 KVA, 11 .415 KV for Mill 6. The in-house team observed that the power loss was high because of the long LT cables and intermediate panels. The team took the initiative to shift this transformer near LT panels which resulted in reduction of the line losses. After shifting, LT cable length reduced from 200 meters to 25 meters and due to which the voltage drop reduced by 6.45 Volt .

8 **Picture Before Modification**

Picture After Modification

9	Total investment	4,375 US$
10	First year energy cost savings :	16,775 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):	Nil
12	Annual total transformer losses before, MWh	240
13	Annual total transformer losses after, MWh	82
14	First year electricity savings, MWh	158
15	First year tons of CO_2 mitigated	158
16	Assumed sustainability, years	10
17	**Expected tons of CO_2 mitigated throughout life cycle**	**1,580**

1	**ID: 92**	**Title of measure**	**Sector: Textile Industry**
2	**Survey Year: 2007**	**Energy saving by replacing the Electrical heating system to steam heating**	**Technology: Steam Heating**
3	Name of the Company	:	**Mahaveer Spinning Mills, Phagwara Road, Hoshiarpur, Punjab, INDIA**
4	Agency that executed the project	:	In-house
5	Year of Implementation	:	2006-07

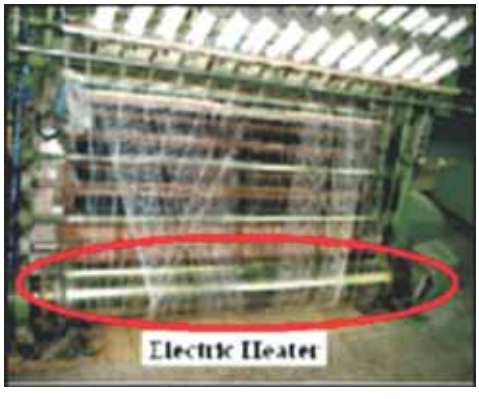
6 **Unit Profile:**

Mahavir spinning mills (MSM) is a Flagship unit of Vardhman Textiles Limited, was established in the year 1973. This is a multi location and multi product-manufacturing unit. The unit produces 20.5 Tons of sewing thread per day & has 60352 yarn spindles installed on date at Hoshiarpur location. The Hoshiarpur unit is one of the top most leading spinning and sewing threads.

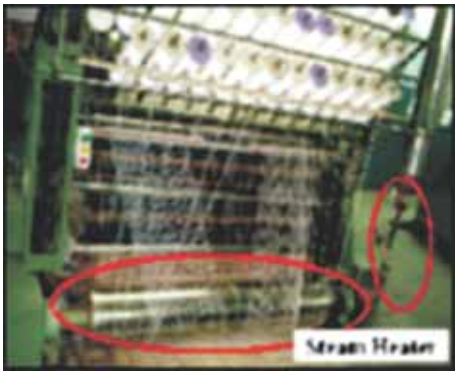
7 **Description of Energy Conservation Measure:-**

The unit is using 18 kW electrical heaters at the thread polishing machine. After applying liquid polishing material on thread, It gets wet & needs drying. Electrical power consumed per day on one no. polishing m/c was 93 kWh/day, considering 210 days running in a year. The electrical heaters have been replaced by steam heaters. The equivalent steam required is 123 kg at 3.0 kg/cm^2 pressure

8 **Picture Before Modification**



Picture After Modification



9	Total investment :	1,250 US$
10	First year energy cost savings :	1,418 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):	Nil
12	Annual total transformer losses before, Mwh	–
13	Annual total transformer losses after, Mwh	–
14	First year electricity savings, Mwh	17
15	First year tons of CO_2 mitigated	17
16	Assumed sustainability, years	10
17	**Expected tons of CO_2 mitigated throughout life cycle**	**170**

1	**ID: 93**	**Title of measure**	**Sector: Textile Industry**
2	**Survey Year: 2007**	**Reduction in height of spinning halls by installation of false ceiling**	**Technology: False Ceiling in Air Conditioned Space**
3	Name of the Company	: **Indian Rayon (A Unit of Aditya Birla Nuvo Limited), Veraval, Gujarat, INDIA**	
4	Agency that executed the project	: In-house	
5	Year of Implementation	: 2006-07	

6 **Unit Profile:**

Indian Rayon (A Unit of Aditya Birla Nuvo Limited) is one of the market leaders of viscose filament yarn business. The Rayon division is one of the 8 divisions of Indian Rayon, located in Veraval, Gujarat. The main product of Rayon division is the Viscose Filament Yarn apart from chemicals like sulphuric acid, carbon disulphide which are consumed in-house and sodium sulphate, which is a by product. The total Production capacity is 45.0 TPD of Yarn, comprising 40 TPD Pot Spun Yarn (PSY) & 5.0 TPD Continuous Spun Yarn (CSY).During the year 2006-2007, the unit produced 17669 MT of yarn with the capacity utilization of 107 %. The Veraval unit's annual sale turnover was US$ 83.5.million in the same year.

7 **Description of Energy Conservation Measure:-**

As an energy conservation measure, the in-house team recommended to provide false ceiling in the spinning halls. This reduced the height of halls by about one metre, which in turn resulted in reduction in hold up air volume in spinning halls. As a result the power consumption of hall conditioning equipment reduced considerably.

8


INDIAN RAYON
(a Unit of Aditya Birla Nuvo Ltd.)
(RAYON DIVISION)
VERAVAL

RAY ONE

ENERGY MANAGEMENT POLICY

Indian Rayon, a Unit of Aditya Birla Nuvo Ltd., Veraval is committed to demonstrate excellence in Energy Management Performance on a continual basis.
To achieve this, we are committed for-

- Monitoring and Control of consumption of Energy through effective Energy Management System and periodic energy audits.
- Continuous Upgradation of process with energy efficient & eco-friendly technology to optimize the energy cost.
- Promoting & Propagating Energy Awareness among all the employees.
- Bench marking our performance with the best and endeavoring to be ahead in the world.

(V.G.Somani)
PRESIDENT

Picture After Modification

9	Total investment :		213,625 US$
10	First year energy cost savings :		108,350 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):		Nil
12	Annual electricity consumption before,	MWh	--
13	Annual electricity consumption after,	MWh	--
14	First year electricity savings,	MWh	788
15	First year tons of CO_2 mitigated		788
16	Assumed sustainability, years		10
17	**Expected tons of CO_2 mitigated throughout life cycle**		**7,880**

1	**ID: 94**	**Title of measure**	**Sector: Textile Industry**
2	**Survey Year: 2007**	**Installed in house steam heater for FO heating**	**Technology: Steam Heaters**
3	Name of the Company	: **R S W M Ltd, Banswara, Rajasthan, INDIA**	
4	Agency that executed the project	: In-house	
5	Year of Implementation	: 2006-07	

6 **Unit Profile:**

RSWM Limited (formerly known as Rajasthan Spinning & Weaving Mills Limited), exports a complete range of yarn to over 66 countries across Europe, South Africa, Australia, Korea, Belgium, Singapore, Italy, Egypt and the Gulf countries. With nearly 60% of units production exported, the Company has a significant presence in the world of textiles. The unit has also made expansions in the year 2004-05 for 26,496 spindles & in the year 2006-07, an open plant with 1680 rotors.

7 **Description of Energy Conservation Measure:-**

In house designed steam heater has been installed in place of electrical heaters to heat furnace oil at fuel oil separator to save power. The steam cost is negligible as the unit has waste heat recovery boiler at WARTSILA DG Sets.

8 **Picture Before Modification**

Picture After Modification

9	Total investment :	1,250 US$
10	First year energy cost savings :	6,775 US$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):	Nil
12	Annual electricity consumption before, MWh	193
13	Annual electricity consumption after, MWh	35
14	First year electricity savings, MWh	158
15	First year tons of CO_2 mitigated	158
16	Assumed sustainability, years	10
17	**Expected tons of CO_2 mitigated throughout life cycle**	**1,580**