BRU

GREEN COMPANY RATING SYSTEM · CII · SOHRABJI GODREJ GREEN BUSINESS CENTRE, INDIA · Greenco · SILVER · 2013

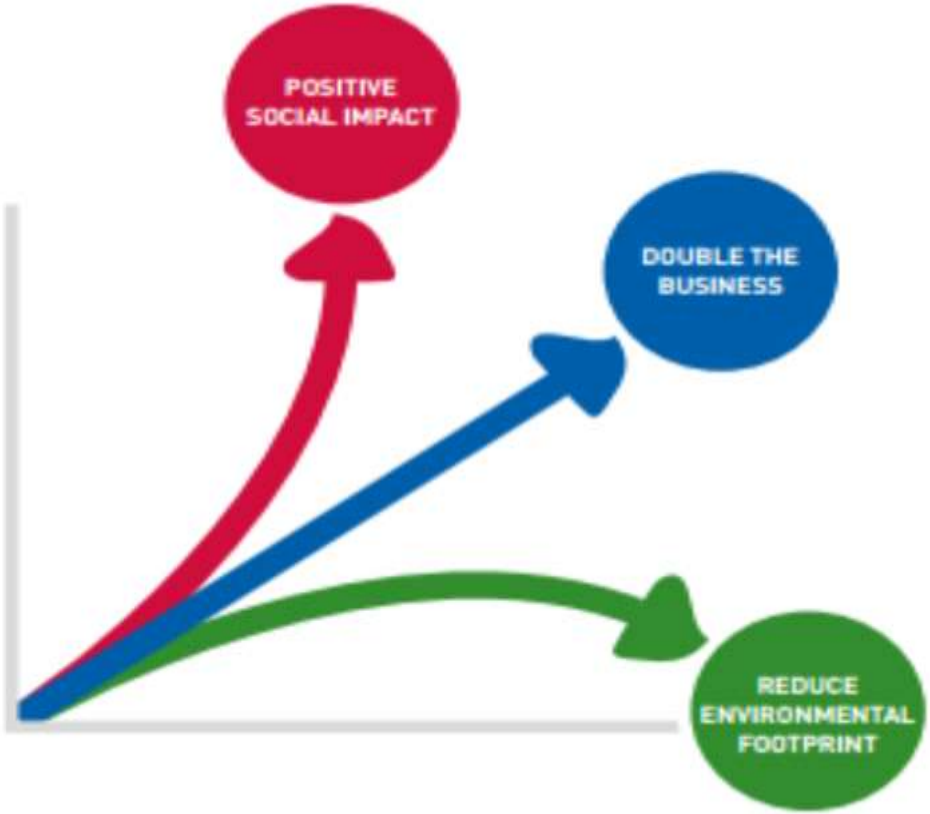
Hindustan Unilever Limited

MYSORE FACTORY

SUSTAINABILITY IS GOOD BUSINESS !!

MYSORE FACTORY UNIT

AN INSPIRING VISION !



Double the size of Unilever

whilst reducing our environmental footprint

and increasing our positive social impact

WHY GREEN-CO?

- More focused on actions and results
- Brings in an standardized and external focus
- Lets us know how GREEN are we
- Rating acts as driver for performance
- Recognizes holistic contribution from the team right from senior level to line operators

GREEN-CO JOURNEY TO SILVER !

DRIVER AND ENABLERS

ALL INLCUSIVE APPROACH !!

GOING BEYOND BOUNDARIES !

EXECUTION FRAMEWORK

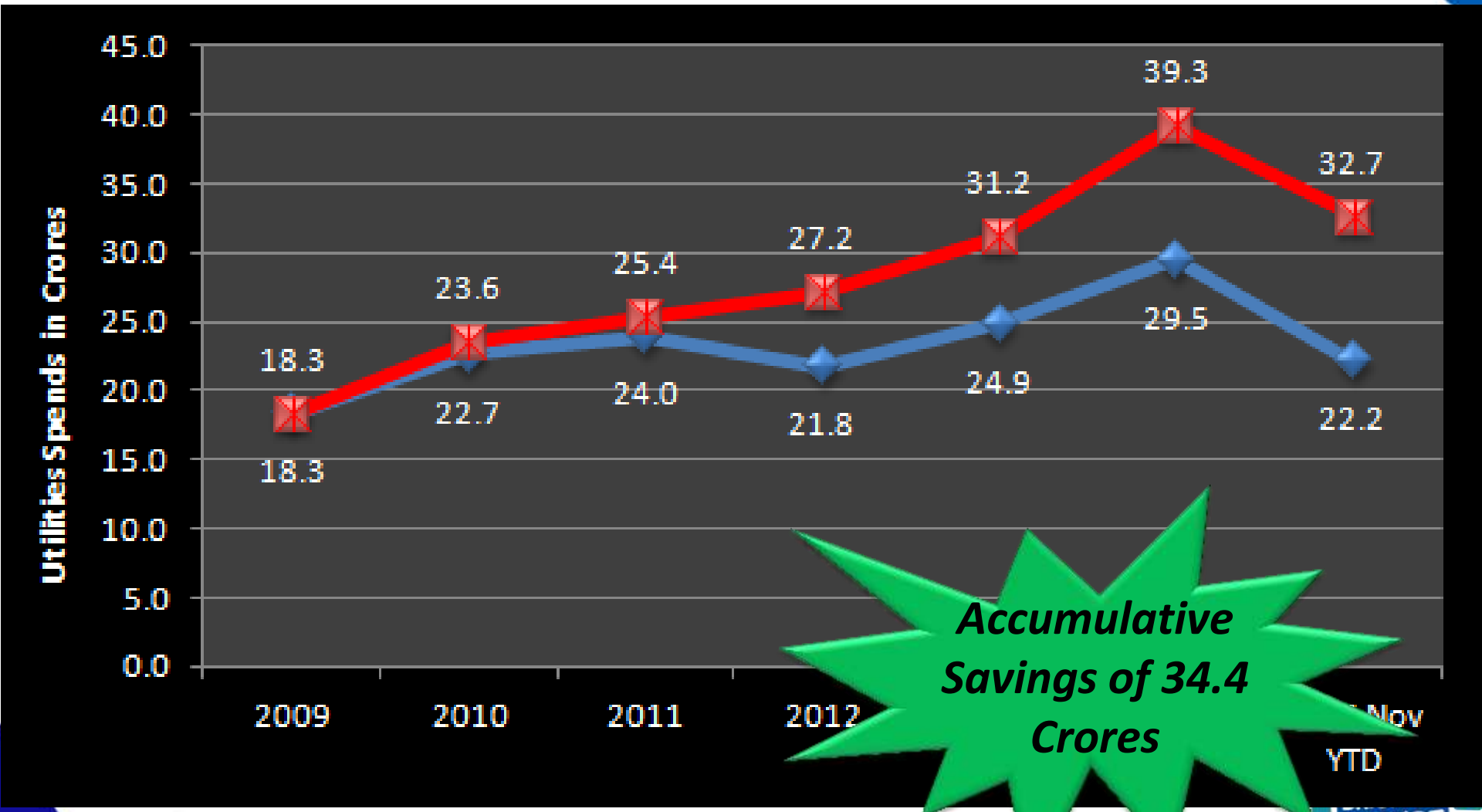
- Brainstorming discussions
- Identifying Opportunities
- Creating action Plan
- Deciding KPIs

- Allocating Resources
- Executing with speed

- Identify solutions to risk identified
- Taking CAPA

- Regular Reviews on progress
- Identifying bottlenecks/delays
- Identifying risk to KPIs

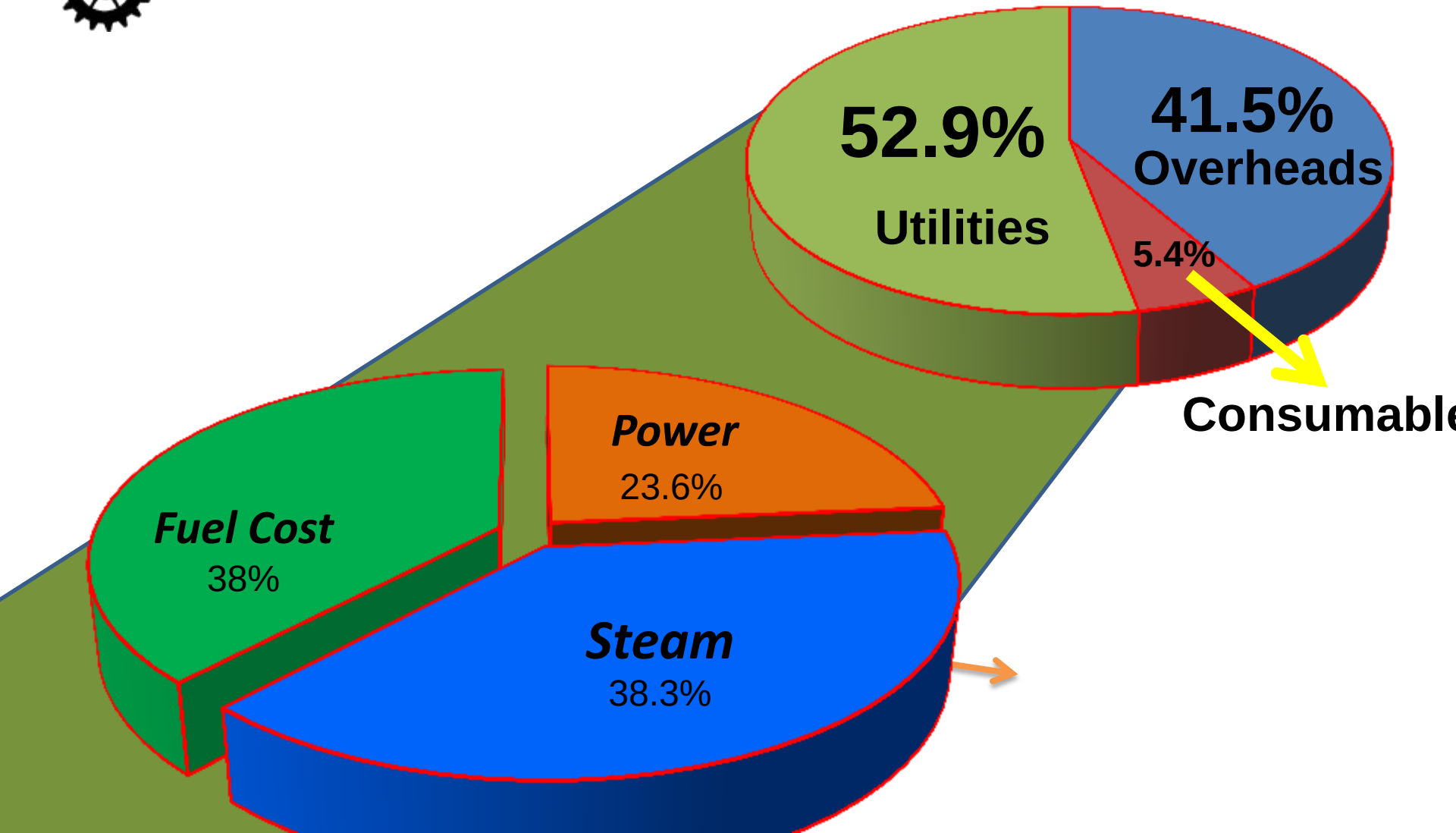
PERFORMANCE FOR THE LAST 5 YEARS



ENERGY EFFICIENCY

COST STRUCTURE

ENERGY CONTRIBUTION - CONVERSION COST



ENERGY MONITORING SYSTEM

SCHEMATIC DIAGRAM power

STEAM MONITORING SHEET

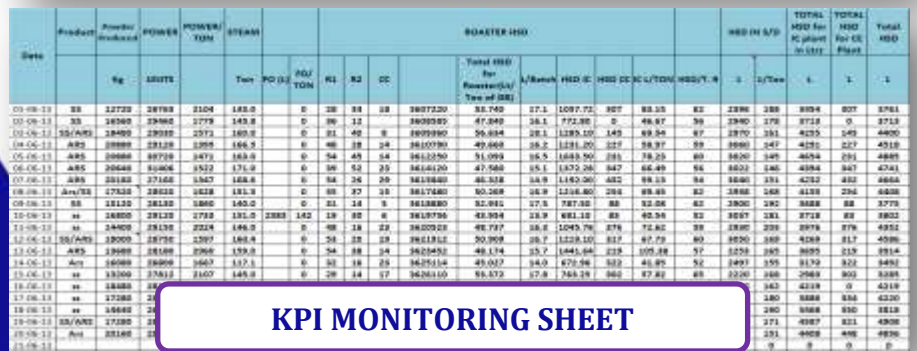
Emission Monitoring

Performance Monitoring Sheet - For Major Energy Intensive Equipments

Sl.No	Equipment	Location	KW	rpm	Existing motor eff	New IE3 motor eff	Rewinding loss	No of operating days	Power cost(Rs)	Operating hrs	kWh	Annual unit savings	Annual savings(Rs)	Cost of motor
1	VAM Chiller*	Utility	240		88	94		297	6	13	10529.7	136800	2019808	
2	Compressor*	Utility	120	1440	89	93.5	0.5	297	6	18	7207.8			
3	Main exhaust fan	MM	110	1440	93.3	94.3	0.5	297	6	24	8403.6	15038	98231	99868
4	FD Fan (Combustion fan)	Boiler House	45		91.7	94	0.5	297	6	24	3497.8	10364	62185	131080
5	Combustion fan	MM	37	2850	91.2	93.7	0	297	6	24	2891.8	7716	48294	92478
6	Cooling Tower Fan	Cooling Tower	30	1458	90.7	93.8	0.5	297	6	24	2357.8	8519	51112	131080
7	Supply fan	MM	25	1463	89.9	93	0	297	6	24	1823.4	5947	35680	99868
8	DH supply fan	Utility	22	1448	90.5	93	0.5	297	6	24	1811.5	5686	34116	99868
9	RWB airveyor blower to silo	DM	22	1465	89.9	93	0	297	6	20	1453.6	4845	29072	99868
10	RWB airveyor blower to grinder	DM	22	1465	89.9	93	0	297	6	20	1453.6	4845	29072	80365
11	Vacuum pump	DM	22	970	90.6	92.1	0.5	297	6	20	1442.3	3115	18692	569080
12	Vibrosupply fan	MM	19	1465	89.3	92.8	0.5	297	6	24	1318.8	8027	28184	224880
13	1st Stage Aerator A												28184	131080
14	1st Stage Aerator B												28184	129525
15	1st Stage Aerator C												28184	99868
16	GB recycle airveyor blower												22250	215780

PERFORMANCE MONITORING SHEET

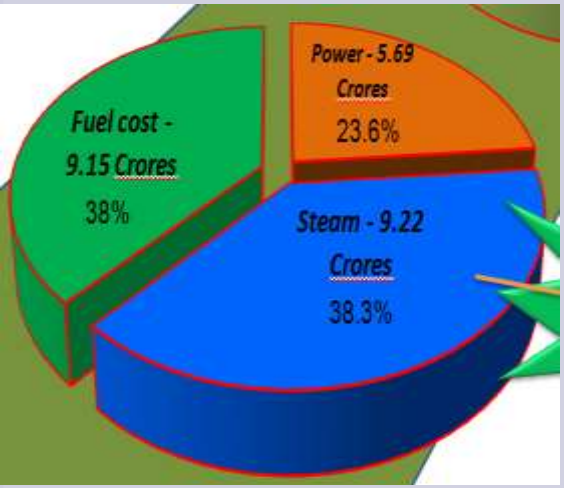
ONLINE DIESEL MONITORING



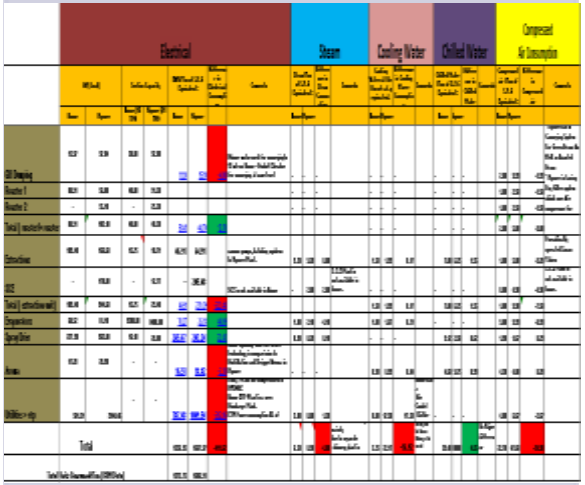
KPI MONITORING SHEET

METHODOLOGY

Pareto Analysis



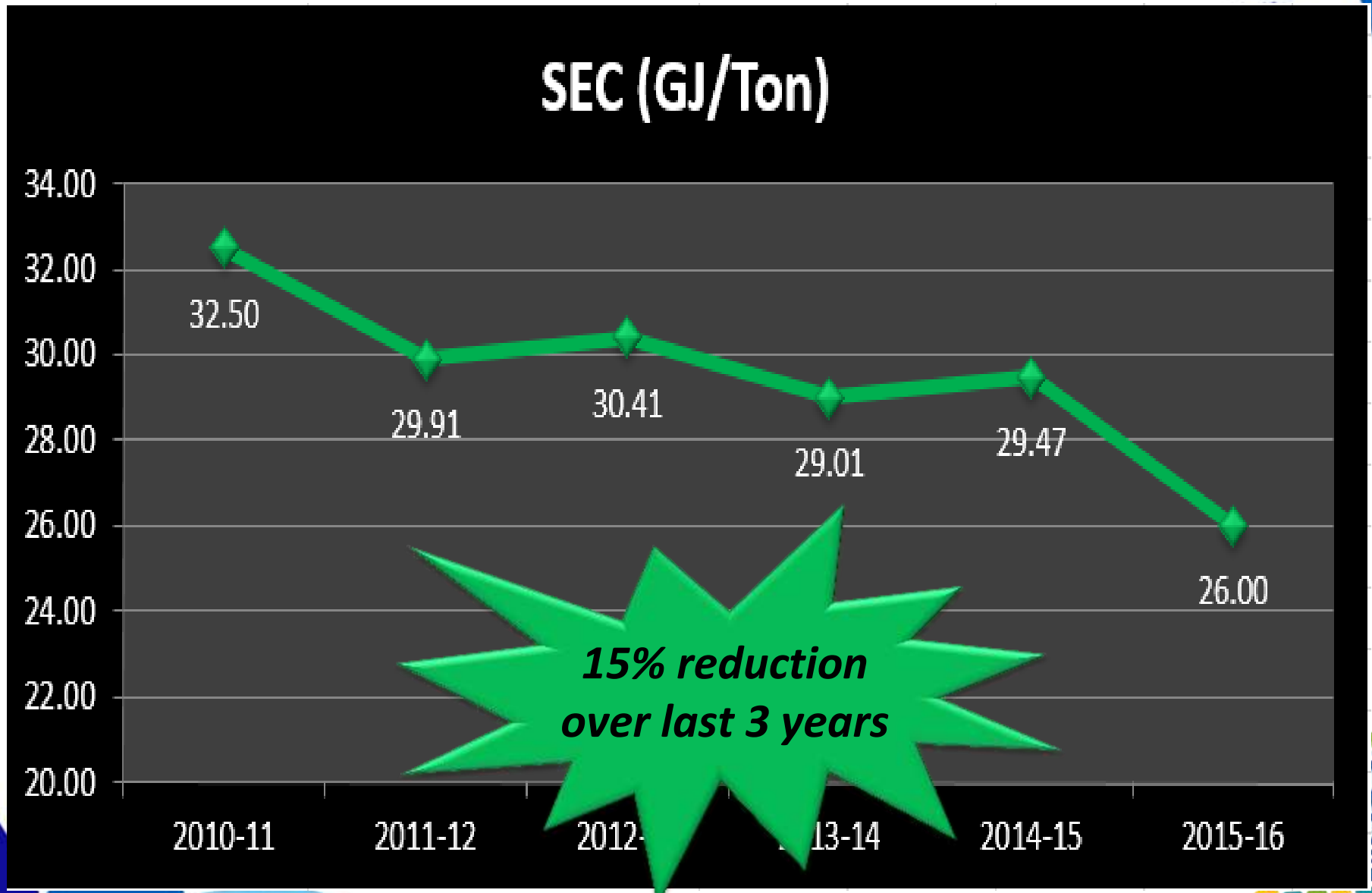
Energy Benchmarking



Key Themes identified in

- Steam
- Electricity
- Fuel

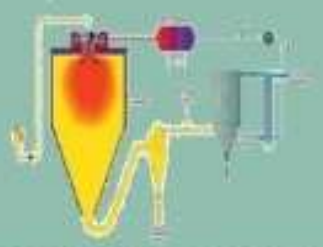
SEC TREND


SEC (GJ/Ton)
34.00
32.00
30.00
28.00
26.00
24.00
22.00
20.00
32.50
29.91
30.41
29.01
29.47
26.00
2010-11
2011-12
2012-
13-14
2014-15
2015-16
15% reduction
over last 3 years

Energy Savings over Budget 2015

5.3Crs

ENERGY IDEAS



SPRAY DRIER EFFICIENCY IMPROVEMENT

* DHU performance enhncement to reduce RH
* HIgh capacity Vibrosieve for reduced rework

1.1 Crores

ELECTRICAL ENERGY OPTIMIZATION

* 3D TRASAR
* VFD Installation
* LED Lighting
* IE3 Motors
* Planetary Gearbox
* Lighting Timer

0.5 Crores

SPENT BURNING - PHASE 1

* Controlled Fuel feeding for Dry spent
* Phase 1 of in-house spent burning

1.2 Crores

MMB EFFICIENCY IMPROVEMENT

* On-line Third pass Ash Removal System
* Coffee Extraction Blowdown Optimization for reducing FO boiler Uptime

0.8 Crores

STEAM ECONOMY IMPROVEMENT

* Controlled Steam Utilisation in DHU
* Extraction Area Leakage Arresting
* SSP Steam Optimization

1.5 Crores

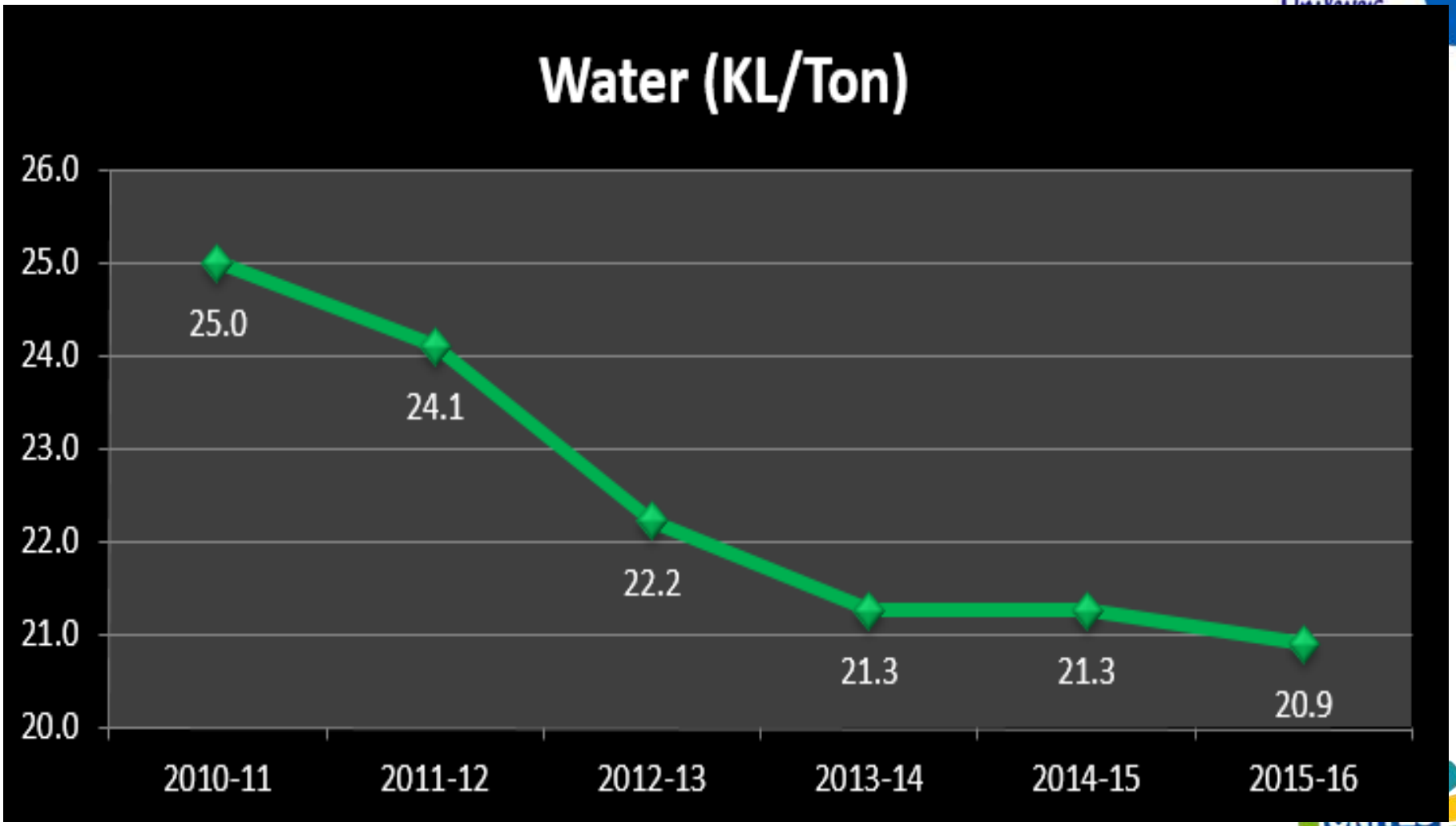
ROASTER EFFICIENCY IMPROVEMENT

Modulation Unit for Diesel Savings

0.2 Crores

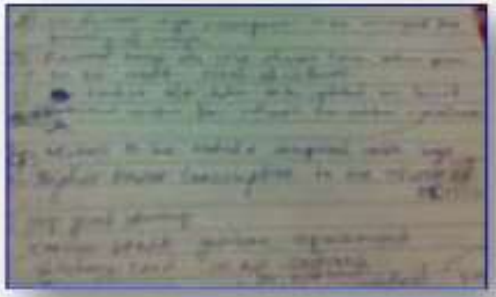
WATER CONSERVATION

SPECIFIC WATER CONSUMPTION (KL/T)

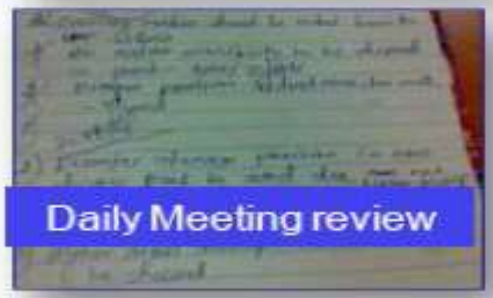


ONLINE REVIEW MECHANISM

Shift Review SMS



Daily Meeting review



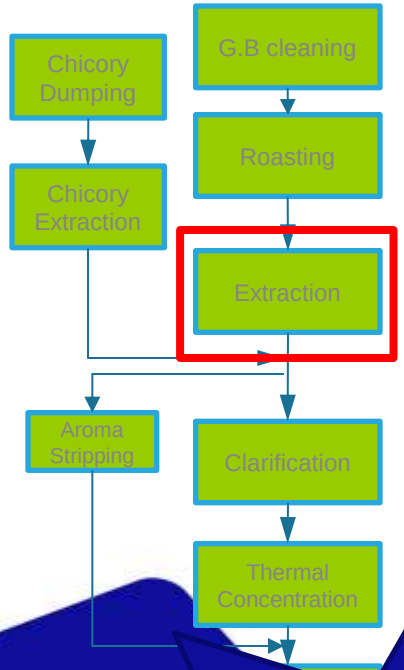
Weekly meeting review

Monthly CRM meeting review

Quarterly JTBD meeting review

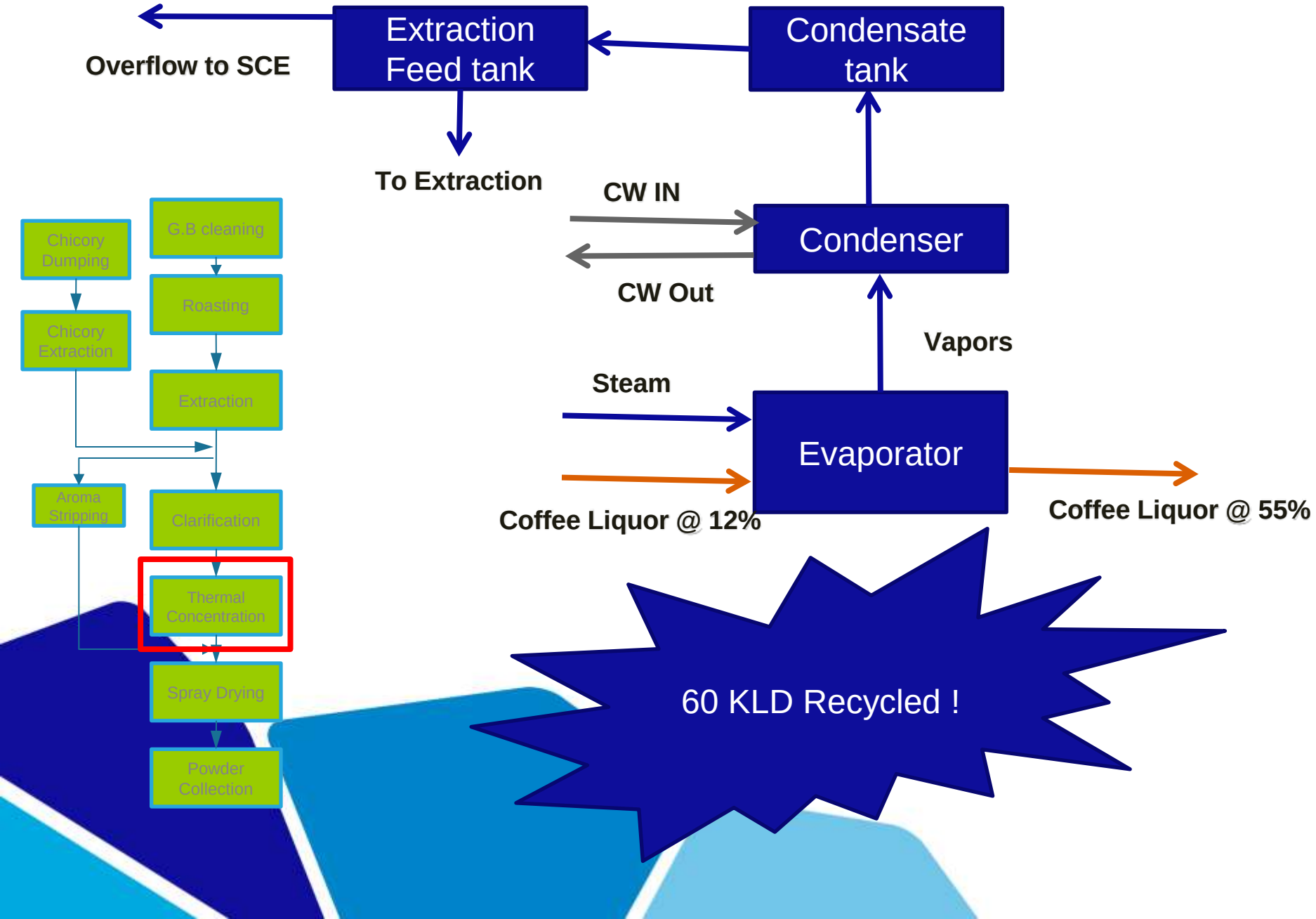
Yearly MR meeting review

SPENT WATER RECYCLING

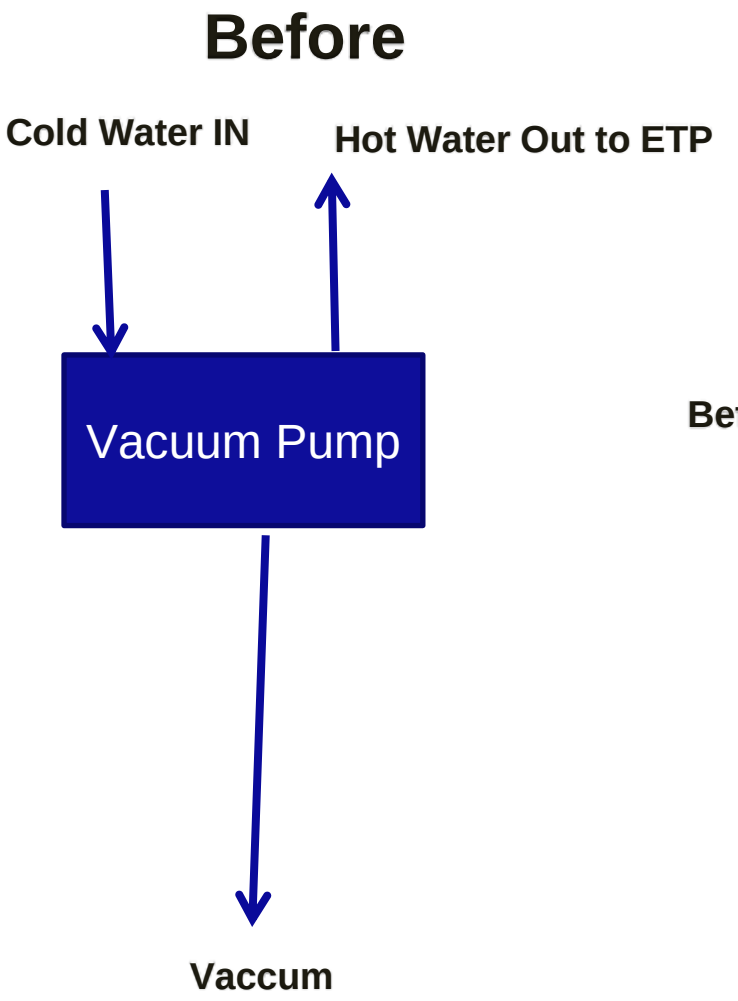


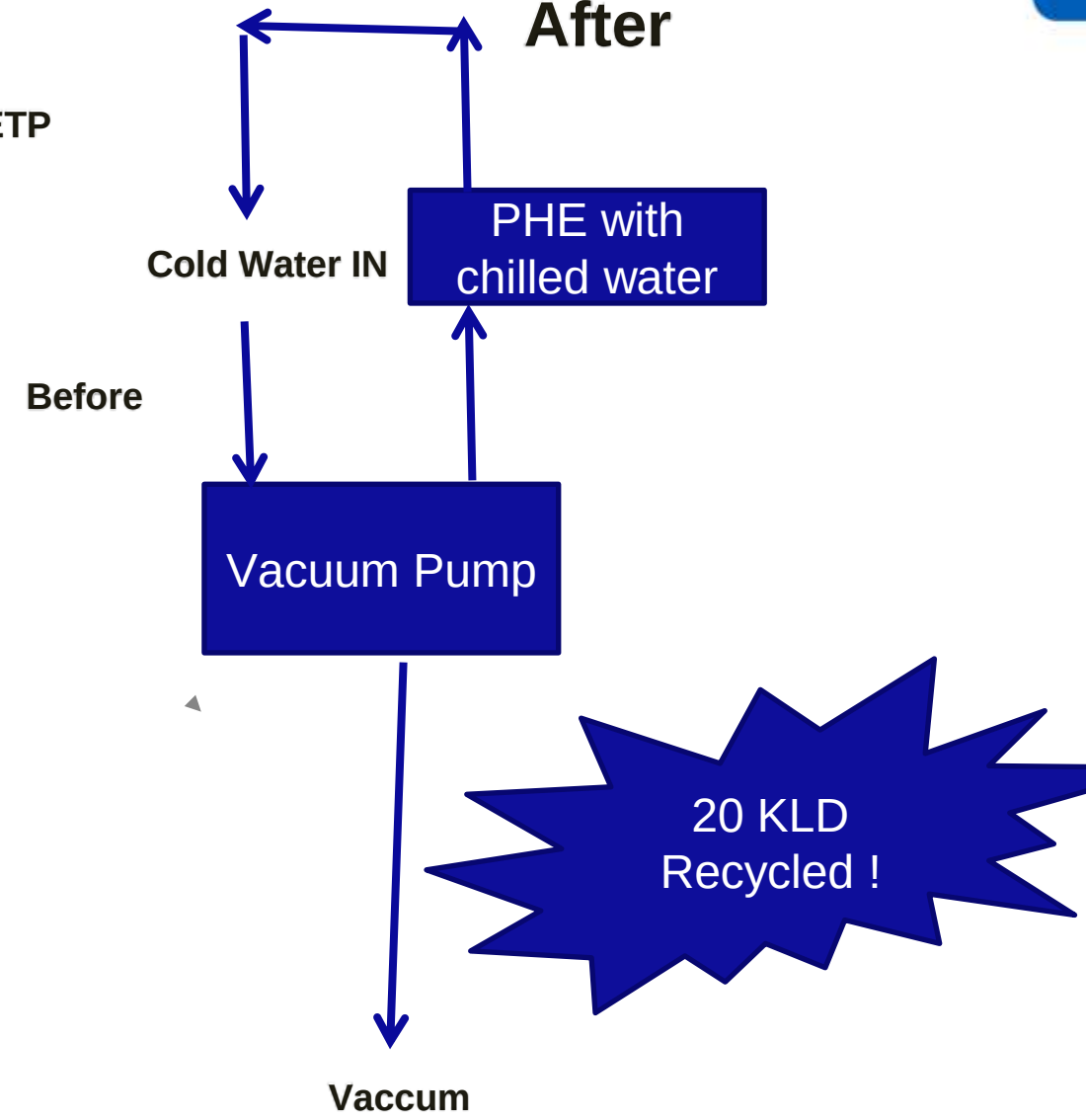
40 KLD Recycled !

EVAPORATOR REJECT WATER RECYCLING

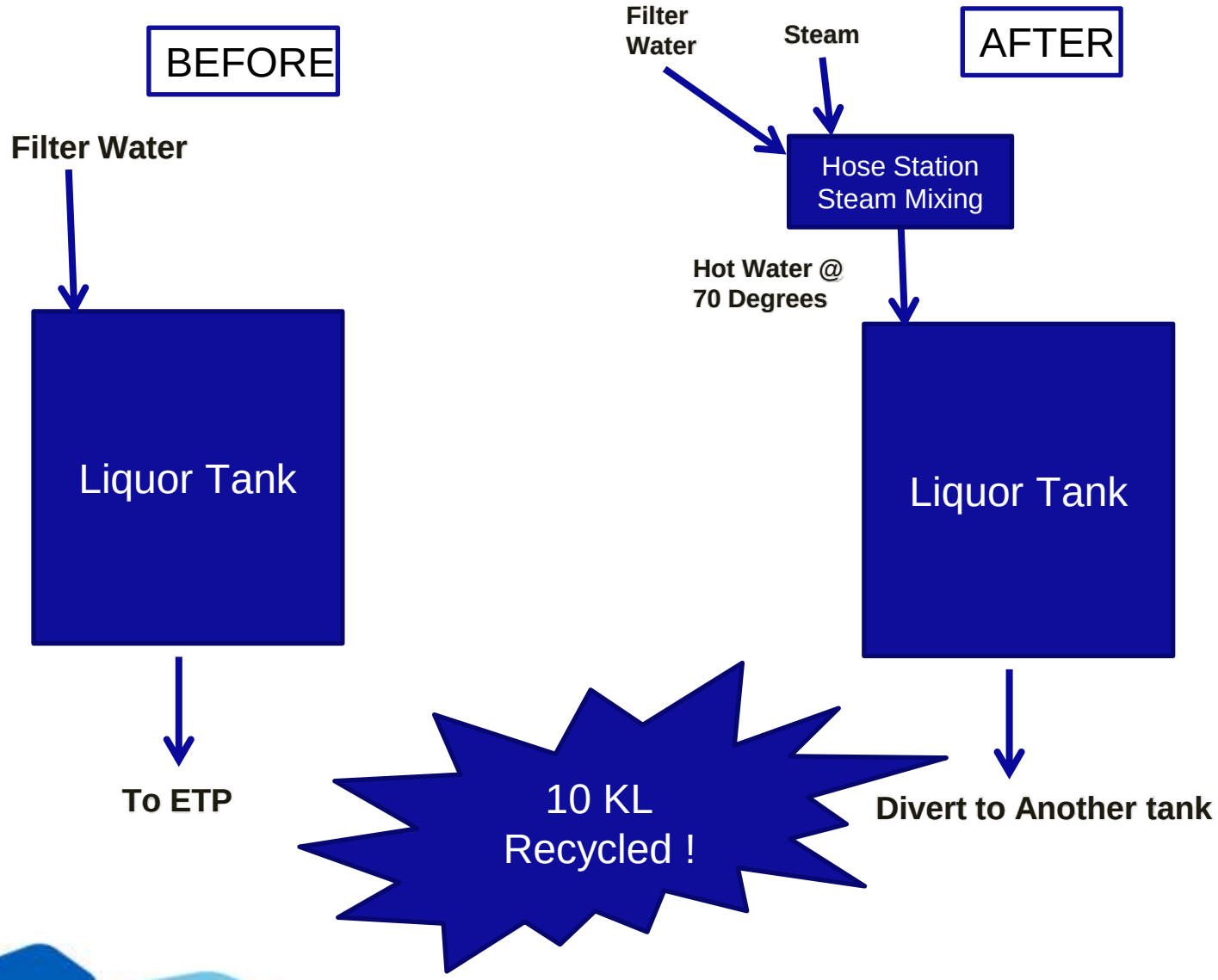


VACUUM PUMP WATER RECYCLING

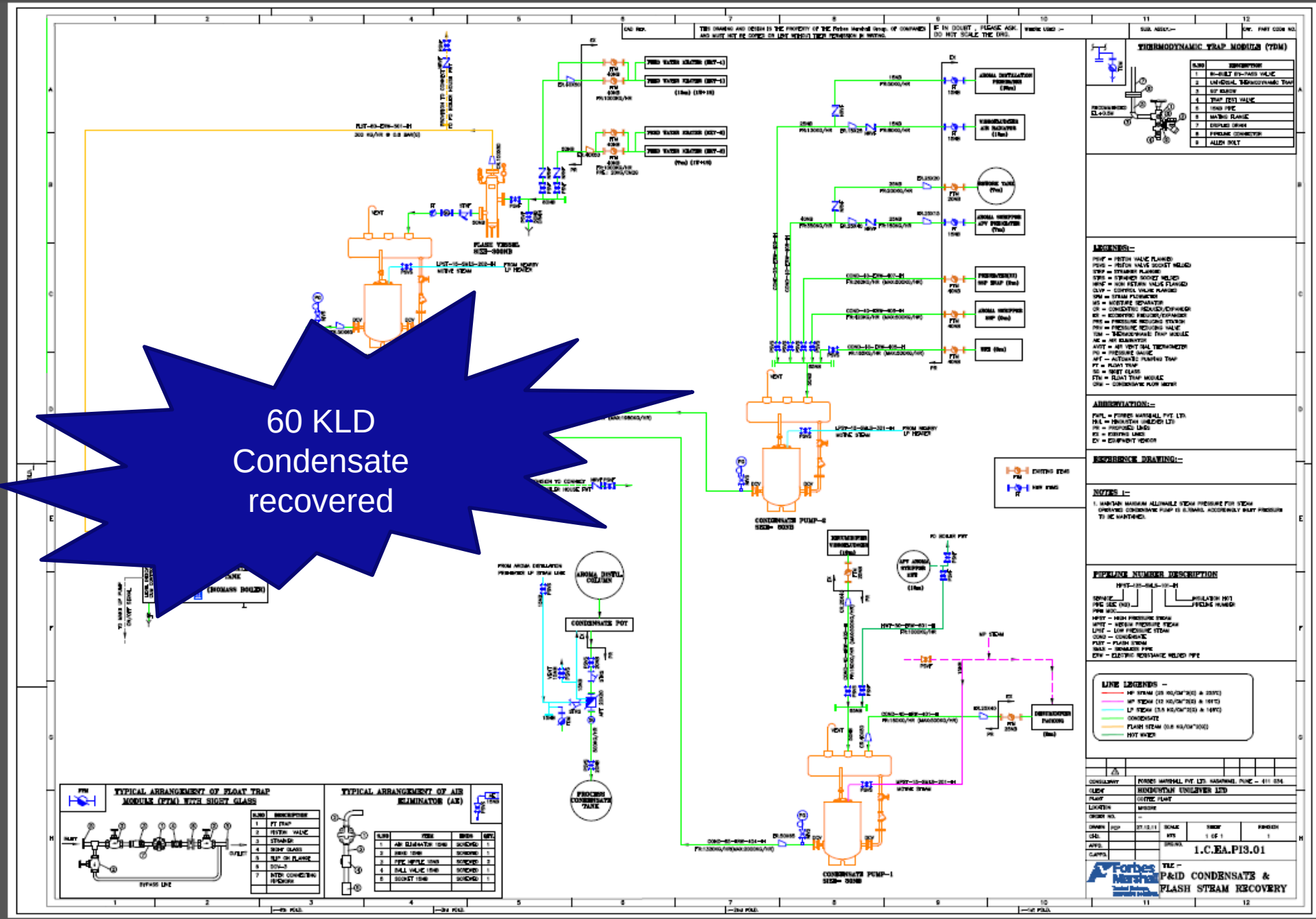




HOSE DOWN STATION AND TANK DRAIN COLLECTION



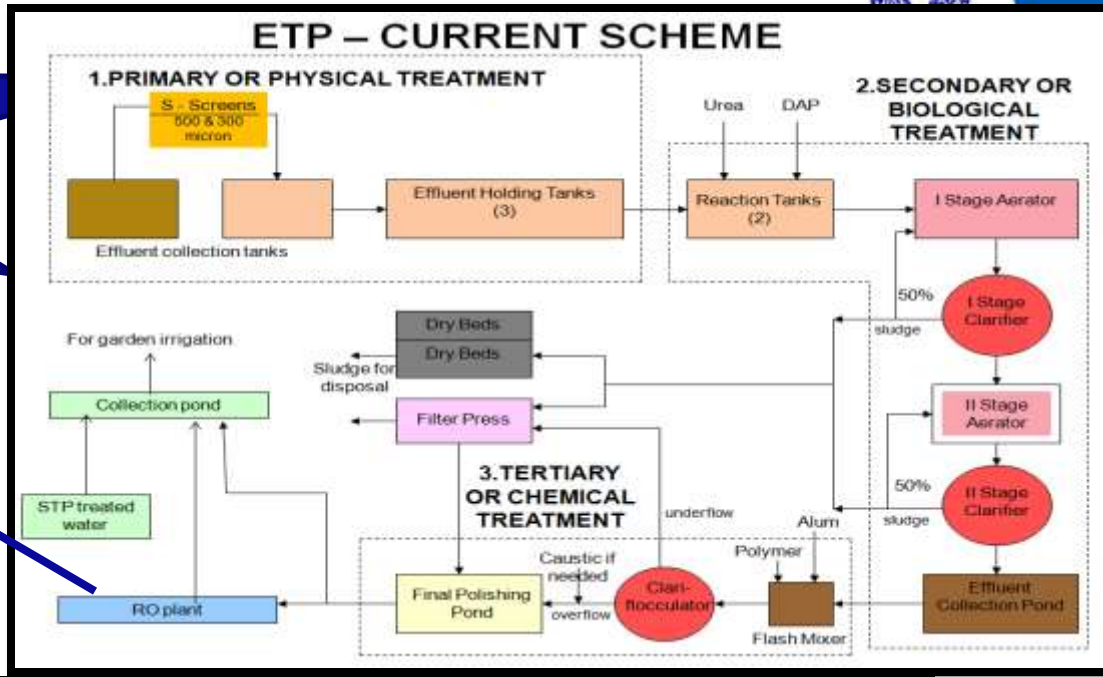
Boiler condensate recovery



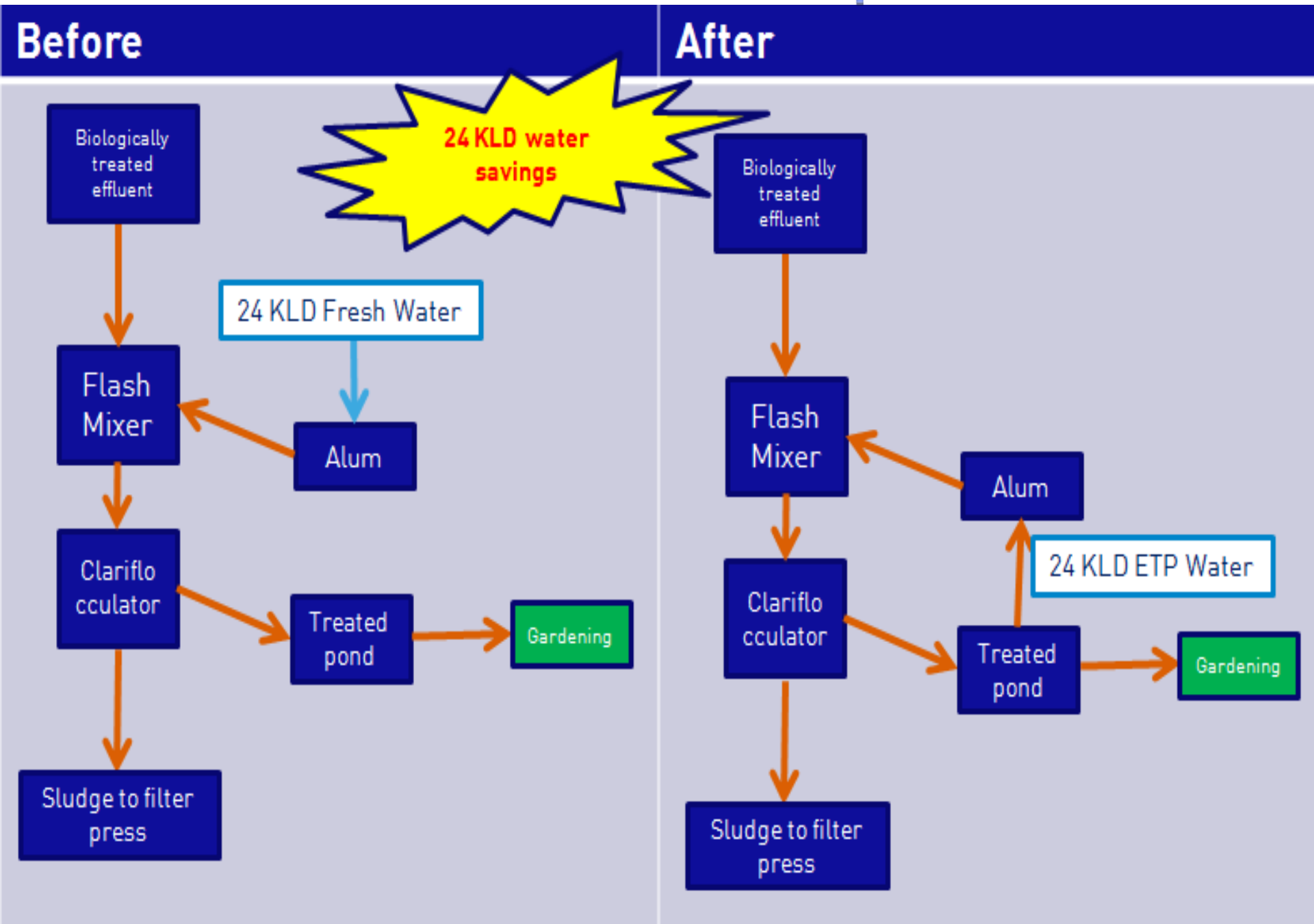
ETP RO Recovery

40 KLD Recycled!

Ro permeate to Cooling tower, Boiler

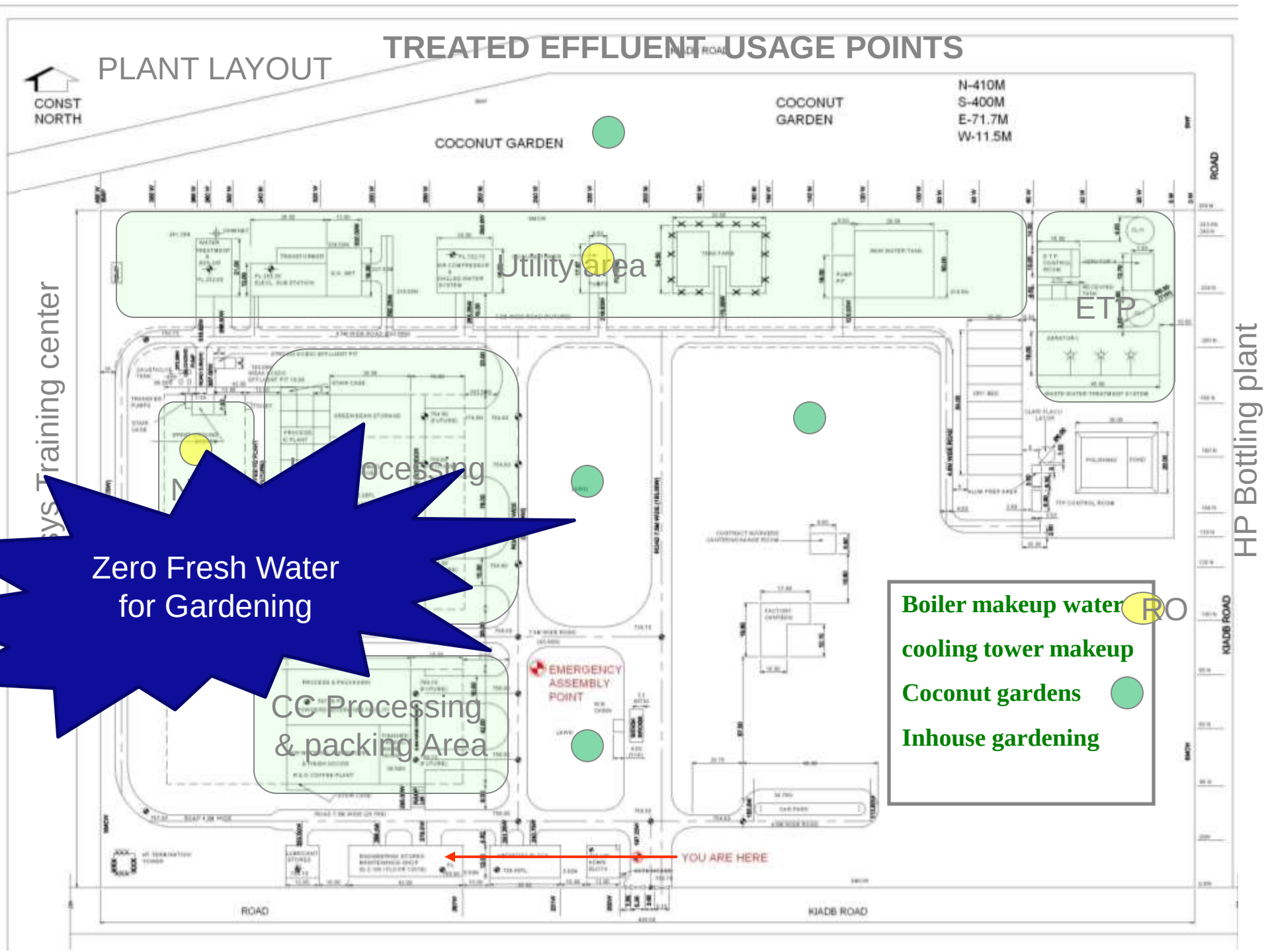


ETP Water for Alum Preparation



TREATED EFFLUENT USAGE POINTS

PLANT LAYOUT



OUR OWN KITCHEN GARDEN

- Water from ETP
- Manure from Biogas plant

Treated water used for gardening & Vegetable growing in coconut garden

LANDSCAPING

Witnessed snakes will be relocated to Chamundi / Bandipur forest

Identified Fauna species

1. Mouse / Rodents
2. Termites
3. Monkeys
4. Pigeons, Parrots, Crows, Sparrows, Owls, Wood peckers
5. Ants
6. Squirrels
7. Mongoose
8. Snakes
9. Chameleons
10. Snails
11. Lizards
12. Centipedes
13. Millipedes
14. Flies
15. Earth worms
16. Honey bees
17. Butterflies
18. Peacocks
19. Dogs and Cats

BEST PRACTICES SHARED WITH LOCAL COLLEGES

Water saved for 1000 Urban People !!

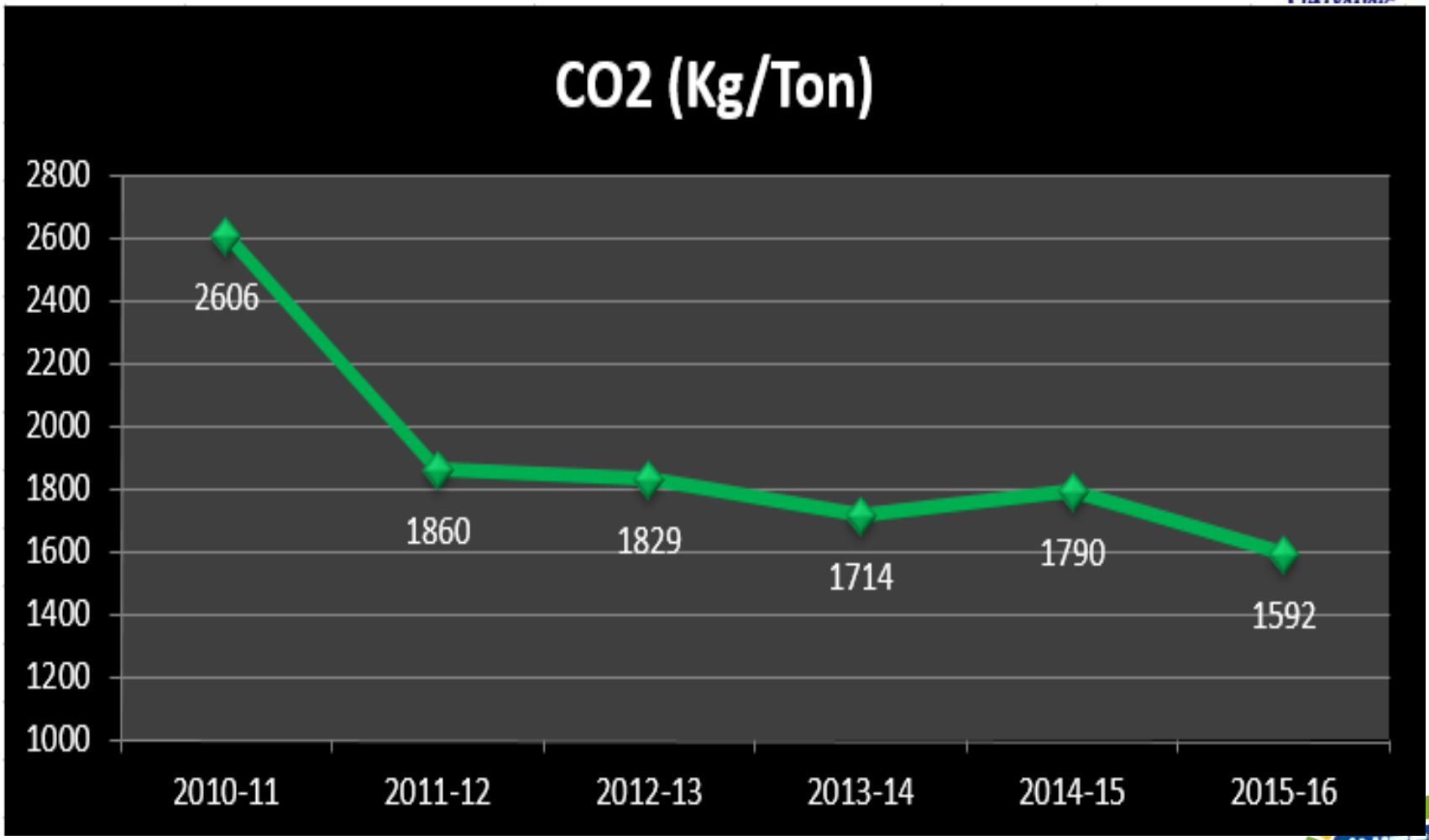
Water Saving Project	Savings (KLD)
Spent Water recycling	40
Evaporator Reject water recycling	60
Vaccum pump water recycling	20
Hose Down Station and Tank drain collection	10
Boiler Condensate Recovery	60
ETP RO Recovery	40
ETP Water for Alum Preparation	24
Total (KLD Saved)	**254**

RENEWABLE ENERGY AND GREENHOUSE GAS MITIGATION

Unilever to become ‘carbon positive’ by 2030

27-11-2015

November 2015: We are furthering and deepening our climate action by eliminating fossil fuels from our operations and directly supporting the generation of more renewable energy than we consume.


CO2 (Kg/Ton)
2800
2600
2400
2200
2000
1800
1600
1400
1200
1000
2606
1860
1829
1714
1790
1592
2010-11
2011-12
2012-13
2013-14
2014-15
2015-16

CARBON FOOT PRINT ACTIVITIES					
Year	Scope 1 emissions CO_2e (MT)	Scope 2 emissions CO_2e (MT)	Scope 3 emissions CO_2e (MT)	CO_2e MT	Mitigation Total Reduction in emission intensity since baseline year study CO_2e (MT)
2011 - 12	12,288	8,172		20460	Baseline Year
2012 - 13	6,879	8,238		15117	6,011
2013 - 14	7,128	8,561		15689	5,933
2014 - 15	8,455	9,373		17828	7,794

HOW green ARE YOU?

2011

0% Green Energy

2013

35% Green Energy

2014

40% of Energy Used was Renewable Energy

2015

CLOSER THAN EVER BEFORE !

55% Energy Used is Renewable Energy

CURRENT GREEN QUOTIENT – PROCESS STEPS

GREEN COFFEE BEANS

ETP/ Admin 0%

CHICORY CUBES

55% Energy is Green

GB Cleaning 0%

Roasting 0%

Granulisation 0%

CHICORY EXTRACTIO 55%

Extraction 70%

Clarification 0%

Evaporation 80%

SPRAY DRYING 5%

Utilities GQ

87%

0%

0%

2016 GREEN QUOTIENT – PROCESS STEPS

GREEN COFFEE BEANS

ETP/ Admin 90%

CHICORY CUBE

GB Cleaning 90%

Roasting 0%

Granulisation 90%

Extraction 92%

CHICORY EXTRACTIO 92%

Clarification 90%

Evaporation 91%

SPRAY DRYING 80%

85% Energy will be Green by 2016

Utilities GQ

94%

90%

35%

TODAY'S SCENARIO

55% as Green Energy

Online third Pass installation for MMB Uptime Improvement

MMB Installation to Avoid FO Boiler

Replace Electrical Heating with steam heating

Bio-gas generation through canteen waste

2016 ACTION PLAN !!!

65% as
Green Energy

ESP in MMB
Exhaust

Full In-house
spent burning

Electricity
Generation through
Steam Turbine

8.62 Crores
Ann Sav

2016 ACTION PLAN !!!

83% as
Green Energy

Off-Site Solar
Power purchase

ESP in MMB
Exhaust

In-house
spent burning

Electricity
Generation through
Steam Turbine

8.86 Crores
Ann Sav

2016 ACTION PLAN !!!

* Extraction Yield Improvement
* Elimination of Packing DHU through AC

85% as Green Energy

Off-Site Solar Power purchase

ESP in MMB Exhaust

In-house spent burning

Electricity Generation through Steam Turbine

* 4 Seal EGA Improvement
* IC Dumping Powder collection
* Rework Tank Installation

9.41 Crores Ann Sav

2017 ACTION PLAN !!!

100% as Green Energy

Thermic Fluid heater

* Extraction Yield Improvement
* Elimination of Packing DHU through AC

Off-Site Solar Power purchase

ESP in MMB Exhaust

In-house spent burning

Electricity Generation through Steam Turbine

* 4 Seal EGA Improvement
* IC Dumping Powder collection
* Rework Tank Installation

16.41 Crores Ann Sav

In-house Solar Generation

GOING

Electricity generation through Bio-gas

Planting Additional Trees to sequester Carbon

Generation of excess Electrical Energy through Solar panels in 33 acres

Steam Turbine Installations to generate excess Power

WASTE MANAGEMENT

Waste Categories

Gas

1. Total 13 stacks
2. SOx

Liquid

1. Lubricant Oil
2. Effluent

Solid

1. Coffee spent
2. Chicory spent
3. Drybed & filter press
4. Boiler ash
5. Battery
6. Plastics waste
7. Woven sacks
8. Gunny bags
9. Garbage
10. Metal scrap
11. Waste wood
12. Steel scrap
13. Waste paper

ZERO LAND FILL

Best ⟵ ⟶ Worst

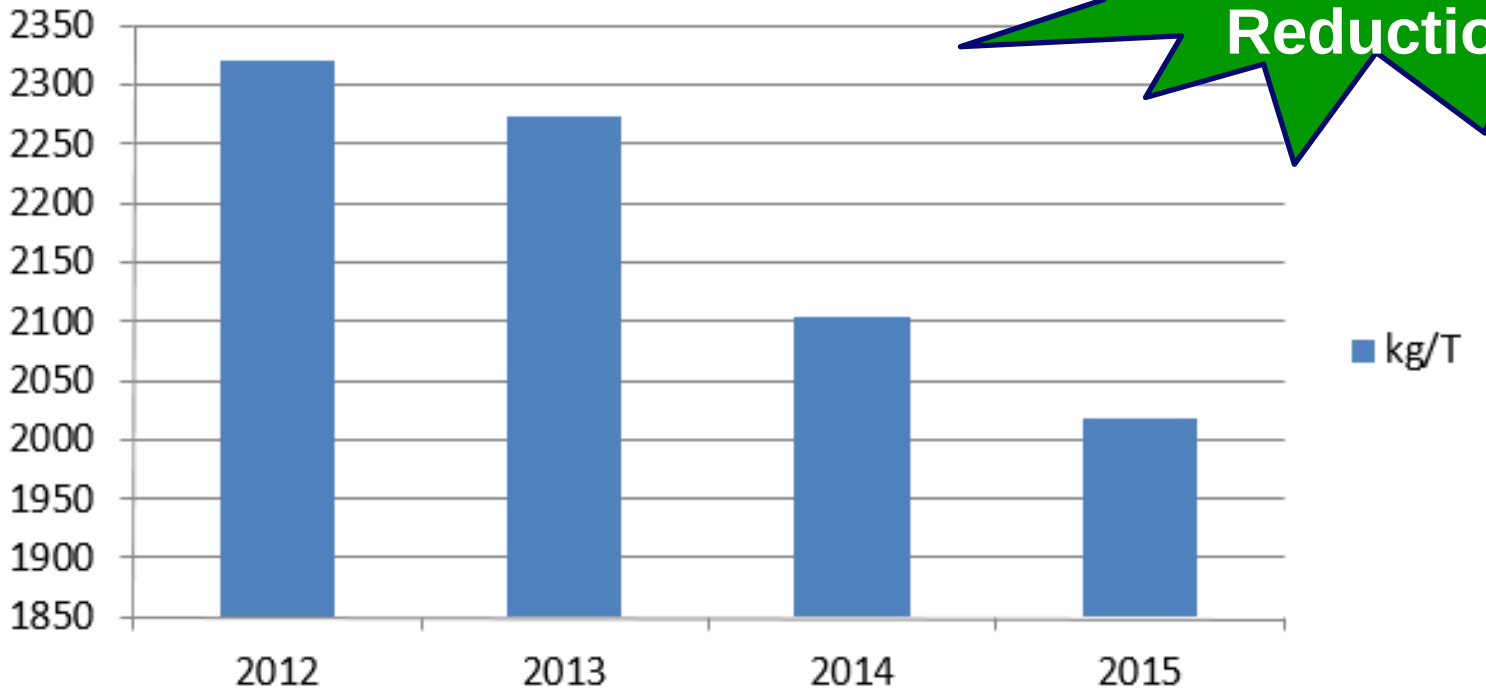
GENERAL WASTE

Waste Type	CATEGORY	Picture of waste (if available)	ELIMINATE / PREVENT		REDUCE		REUSE		RECYCLE			TREAT			INCINERATE - ENERGY FROM WASTE		DISPOSE (LANDFIL)	
			Method	Picture (if available)	Method	Picture (if available)	Method	Picture (if available)	Method	Picture (if available)	End Product	Method	Picture (if available)	End Product	Method	Picture (if available)	Method	Picture (if available)
Canteen food Waste	Soap Factory				Waste is monitored and displayed for Everybody's information.		Send to Animal Pen		Kitchen wastes are recycled by vermi composting inside the factory		Compost						SHOULD NOT BE AN OPTION	
Glass/Bottles	Soap Factory				Reduced generation of broken glass ware scrap by providing Rubber Sheet on shelves of lab				Collected separately and send to Glass Factory through recycler		Glass bottles						SHOULD NOT BE AN OPTION	
Cleaning Waste (sludge and dust from pits)	Soap Factory																SHOULD NOT BE AN OPTION	
Batteries	Soap Factory						Use of Re-Chargeable batteries.		Collected in special boxes and recycled by selling it back to dealer.	www.arp-batteries.co.uk	Batteries						SHOULD NOT BE AN OPTION	
Electronic Waste	Soap Factory								Collected separely and sent to recycling plants/HP/Canon		Various Electronic products						SHOULD NOT BE AN OPTION	
Medical Waste	Soap Factory														Send for Incineration		SHOULD NOT BE AN OPTION	
Boiler Ash	Soap Factory		Steam Purchased from nearby 3P to stop inhouse boiler.	ZERO WASTE													Send to Landfill @TSDF Site	
Paper & Cardboard from offices	Soap Factory								Segragated at source and send for recycling		3rd grade cardboard boxes, Paper Roll						SHOULD NOT BE AN OPTION	
Metal	Soap Factory								Segragated separately in the factory and sold to recycling company		MS Ingots, Aluminium Utensils, SS Sheets						SHOULD NOT BE AN OPTION	

SCRAP YARD WITH DESIGNATED AREA FOR DIFFERENT TYPES OF WASTE

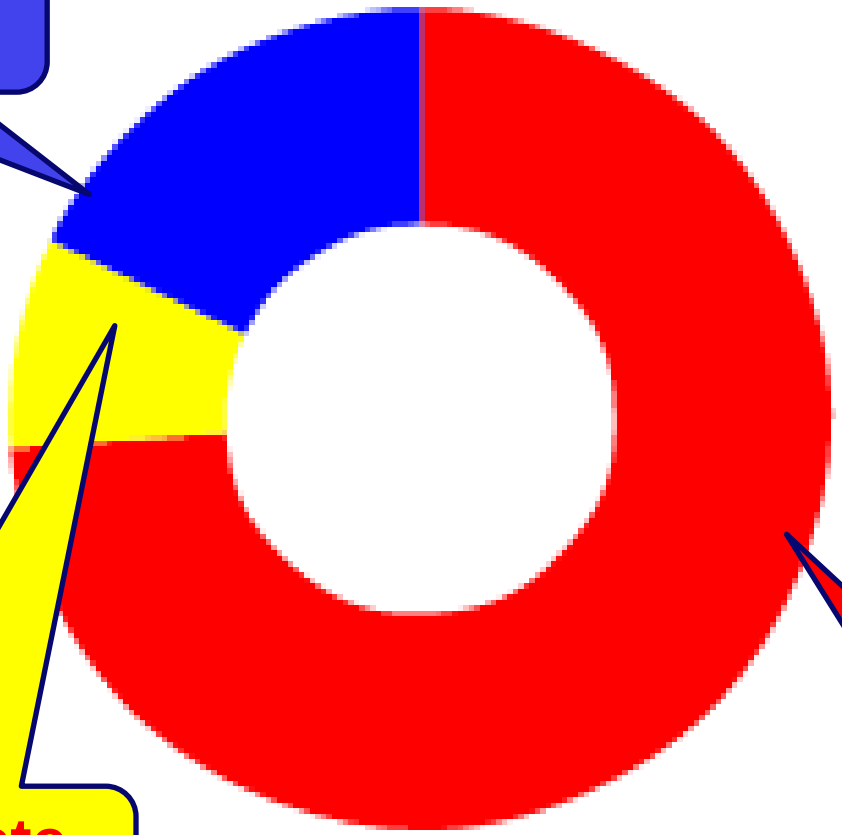
UNITED TO BUILD A BRIGHTER FUTURE

TREND



13%
Reduction

Waste Contribution – Mysore Factory



Liquid Waste
17.8%

Other Solid Waste
8.3%

Spent Waste
73.8%

WASTE REDUCTION

254 KLD ETP LOAD ELIMINATED THROUGH WATER RECYCLING

IN-HOUSE SPENT BURNING 70% REDUCTION

Air Waste reduction

S.No.	Air Pollution Source	Type of Fuel Used	Emission Constituent	Chimney Height Provision (AGL, ARL)		Air Pollution Control Equipment		Remarks
				Existing	Modified	Existing	Modified	
1	GB Dumping and Cleaning	Nil	SPM	Dust Collector-GB Bucket elevator - 10 AGL	10 AGL	Cyclone	Bag Filter	
2	GB Conveying System	Nil	SPM	GB Airveyor dust collector - 23 AGL	16 AGL	Cyclone	Bag Filter	4 stacks combined into One through High efficiency Bag Filter
				GB Storage Dust collector - 23 AGL		Cyclone		
				GB Airveyor Cyclone Collector (Electrically operated) - 23 AGL		Cyclone		
				Grinding feed Cyclone collector - 16 AGL		Cyclone		
3	Roaster - R2000	HSD	SPM	Roaster-1 - 23 AGL	23 AGL	Catal[illegible]	[illegible]erter	
4	Roaster - Neptune 1500	HSD	SPM	Roaster-2 Electrically operated - 23 AGL		[illegible]lytic Converter		
5	RWB Conveying System - IC	Nil		RWB Batching & Grinding [illegible]	16 AGL	Cyclone	Bag Filter	5 stacks combined into One through High efficiency Bag Filter
				Airveyor [illegible]		Cyclone		
				[illegible]		Cyclone		
				[illegible]ning & Grinding-2 - 26 AGL		Cyclone		
				RWB Cooling Car cyclone collector (Electrically operated) - 23 AGL		Cyclone		
6	Spray Dryer	HSD	SPM	Spray Dryer - 54 AGL	54 AGL	Cyclones	[illegible]	
7	RWB Conveying System - CC	Nil	SPM	Airveyor of RWB Silo at R&G plant - 3 ARL	3 ARL	Cyclo[illegible]	[illegible]	
8	Chicory Dumping - CC	Nil	SPM	Chicory powder tipping, seiving & m/c dust collector - 10 ARL			Bag Filter	
9	FO Boiler (8TPH)	FO	SO2	Boiler (8TPH) [illegible]		[illegible]fficient combustion	Efficient combustion	
10	FO Boiler (12 TPH)	FO	SO2		50 AGL	Efficient combustion	Efficient combustion	
11	Agro Waste Boiler and Indirect Fired HAG			New boiler 15 TPH - KSPCB) - 40 AGL	40 AGL	Bag Filter	Bag Filter and Efficient Combustion	Indirect Fired HAG Connected with Agro waste Boiler Chimney
12	DG Set - 1000 KVA	HSD	Nox (as NO2) NHMC PM CO	DG Set - 1000 KVA - 30 ARL	30 AGL	Efficient combustion	Efficient combustion	
13	DG Set - 1500 KVA	HSD	Nox (as NO2) NHMC PM CO	DG Set - 1500 KVA - 30 ARL	30 AGL	Efficient combustion	Efficient combustion	

Reduction in Stacks – from 21 to 13

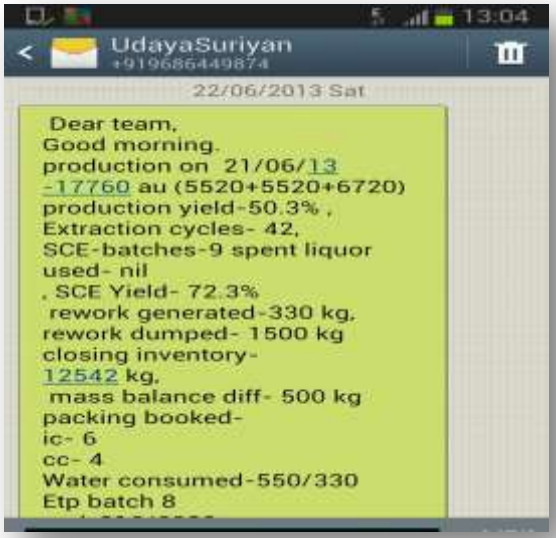
Reduction in SPM level – Avg 90 to 30 !!!

MATERIAL CONSERVATION

MATERIALS

- GREEN COFFEE
- ROASTED CHICORY CUBES
- LIQUID CHICORY
- NITROGEN(DECOLOURISING AGENT)
- POLY-ETHELENE LAMIANTE
- CORRUGATED FIBRE CARTONS

MONITORING SYSTEM



Daily/weekly/monthly yield Monitoring

CROSS FUNCTIONAL TEAM

HUL Mysore Unit - 2012 Training Calendar

S. No	Topics Covered	Category	Faculty Member	No of Employees involved	Duration, Hours	Month & Year	Status
	ENERGY/WATER/GHG/WASTE						
	MATERIALS & OTHERS						
71	Knowledge of truck loading and counting	GHG	VINAY DHARESWAR	8	1	Jan-12	Closed
72	Optimisation of loading/unloading truck patterns	Material	TRAMESH	8	1		
73	Maintaining Min. 6 months inventory	Material	TRAMESH	8	1	Jan-12	Closed
74	JH TRAINING	Systems	MALLIKARJUN/ANUSH	5	1	Jan-12	Closed
75	5S Implementation Training	Systems	K.S.RAMAKRISHNAN	2	1	Jan-12	Closed
76	Ability to supervise welfare activities including Canteen	SHE	K.S.RAMAKRISHNAN	2	1	Jan-12	Closed
77	JH TRAINING	Systems	ANI SOMSHELAR/ ANUSH	15	1	Jan-12	Closed
78	SAP - Warehouse Operation	Systems	Vinay Dhareswar	3	6	Feb-12	Closed
79	5S	Systems	External	2	4	Feb-12	Closed
80	5S	Systems	External	2	4	Feb-12	Closed
81	Engg database on computer	Systems	T.Ramesh	4	2	Feb-12	Closed
82	TPM Edge	Systems	HR	2	4	April 12	Closed
83	Should know how to generate MRP requirement	Systems	PROMOD	2	2	Oct 12	Closed
84	5S Refresher Training	Systems	Ramki	2	1.5	Dec 12	Closed
85	5S Refresher Training	Systems	H B Chandran	4	3	Dec 12	Closed
86	5S Training	Systems	Satish	10	20	Dec 12	Closed

TRAINING

A	B	C	D
S. No	Topics Covered	Category	Faculty Member
		ENERGY/WATER/GHG/WASTE	
1	Knowledge of Electricity Act (Statutory acts , energy savingsetc)	Energy	K GOPALAKRISHNA
2	Knowledge of handling spent coffee –Importance of using spent as recycling fuel , reduction in GHG & SOx	Energy/GHG/Waste	VINAY SUBBEGOWDA
3	Problem Solving Techniques	All	S.PRABAKARAN
4	Weekly OJT-RCA/ WHY WHY MAR-12	All	UTILITY TEAM
5	Good Manufacturing Practices standards - Reduction of spoilage , spillage , reduction in energy & Water wastage etc	Material/Energy/Waste	RAEJSH
6	Problem Solving Technique	All	S.PRABAKARAN
7	Emission reduction in operations	Energy/GHG	S.PRABAKARAN
7	Understanding of Function of motors	Energy	BALAKRISHNAN
8	Weekly OJT-RCA/WHY WHY MAR-12	All	MANUFACTURING TEAM
9	5S -Reduction in wastage, cleaning discipline , waste segregation	Material/Waste	External
10	Energy Saving Awareness Week - Presentation**	Energy	S.PRABAKARAN
11	Knowledge of steam piping system components (valves, traps PRVs hangers etc	Energy	Vinay Subbegowda
12	Operation & Maintenance of Compressors**	Energy	Mallikarjun
13	Water Conservation - Safety Measures & Controls in operation**	Water	Manjunath. K
14	Energy conservation & Water Conservation Techniques - Operation	Energy/Water	Engineering
15	Knowledge of Spoilage Control	Material/Waste	Manufacturing
16	Understanding of Operation and maintenance of pumps	Energy	Engineering
17	Knowledge of calculating VDA	Energy	Ramki
18	Knowledge of Chiller Operation	Energy	Mallikarjun
19	Knowledge of instrumentation (pressure controller, water level controller etc)	Energy	Murugajothi
20	Knowledge of Operation and maintenance of cooling m/c	Energy	Thanupillai

TRAINING PARTICIPATION & FEEDBACK

Training on roasting loss and yield improvement


Hindustan Unilever Limited
HINDUSTAN UNILEVER LIMITED - MYSORE FACTORY
TRAINING & DEVELOPMENT PROGRAMME

Training Evaluation

MATERIAL RECYCLING

LIST OF MATERIAL CONSERVATION PROJECTS

- Optimized the roasted Beans moisture to 6%
- Optimized the roasted Beans curing time to 6hrs
- Recycling of westfalia Desludge
- Uninterrupted steam supply from MMB
- Planned cleaning procedure in SCE and Extraction line
- Changed the raw material spec. in Chicory.
- Collection of leakages and recirculation.

MATERIAL RECYCLING

PROJECT-1: WESTFALIA SLUDGE RECYCLING SYSTEM

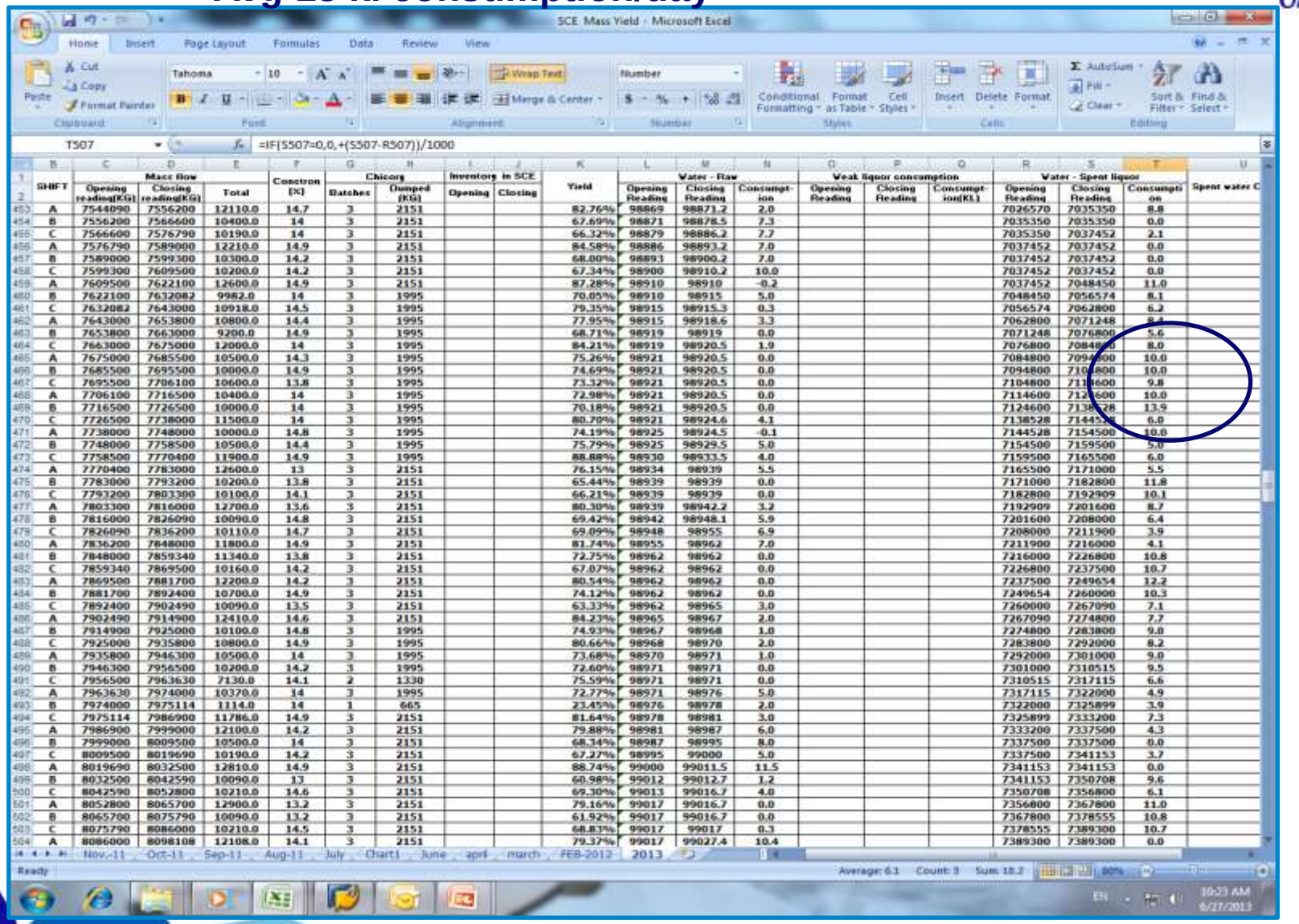
- COLLECTION OF SOLUBLE SOLIDS

- FILTER PRESS FOR SEPRATION

- 40% OF DESLUDGE MATERIAL RECOVARABLE WITH TSS 13-15%

MATERIAL RECYCLING

- Daily Sludge recovery monitoring With Flow meter
- Avg 13 kl consumption/day



SCE Mass Yield - Microsoft Excel

=IF(S507=0,0,+(S507-R507))/1000

SHIFT	Mass flow			Constron (%)	Chicory		Inventory in SCE		Yield	Water - Raw			Weak liquor consumption			Water - Spent liquor			Spent water C
	Opening reading(KG)	Closing reading(KG)	Total		Batches	Dumped (KG)	Opening	Closing		Opening Reading	Closing Reading	Consumption	Opening Reading	Closing Reading	Consumption(KL)	Opening Reading	Closing Reading	Consumption	
A	7544090	7556200	12110.0	14.7	3	2151			82.76%	98869	98871.2	2.0				7026570	7035350	8.8	
B	7556200	7566600	10400.0	14	3	2151			67.69%	98871	98878.5	7.3				7035350	7035350	0.0	
C	7566600	7576790	10190.0	14	3	2151			66.32%	98879	98886.2	7.7				7035350	7037452	2.1	
A	7576790	7589000	12210.0	14.9	3	2151			84.58%	98886	98893.2	7.0				7037452	7037452	0.0	
B	7589000	7599300	10300.0	14.2	3	2151			68.00%	98893	98900.2	7.0				7037452	7037452	0.0	
C	7599300	7609500	10200.0	14.2	3	2151			67.34%	98900	98910.2	10.0				7037452	7037452	0.0	
A	7609500	7622100	12600.0	14.9	3	2151			87.28%	98910	98910	-0.2				7037452	7048450	11.0	
B	7622100	7632082	9982.0	14	3	1995			70.05%	98910	98915	5.0				7048450	7056574	8.1	
C	7632082	7643000	10918.0	14.5	3	1995			79.35%	98915	98915.3	0.3				7056574	7062800	6.2	
A	7643000	7653800	10800.0	14.4	3	1995			77.95%	98915	98918.6	3.3				7062800	7071248	8.4	
B	7653800	7663000	9200.0	14.9	3	1995			68.71%	98919	98919	0.0				7071248	7076800	5.6	
C	7663000	7675000	12000.0	14	3	1995			84.21%	98919	98920.5	1.9				7076800	7084800	8.0	
A	7675000	7685500	10500.0	14.3	3	1995			75.26%	98921	98920.5	0.0				7084800	7094800	10.0	
B	7685500	7695500	10000.0	14.9	3	1995			74.69%	98921	98920.5	0.0				7094800	7104800	10.0	
C	7695500	7706100	10600.0	13.8	3	1995			73.32%	98921	98920.5	0.0				7104800	7114600	9.8	
A	7706100	7716500	10400.0	14	3	1995			72.98%	98921	98920.5	0.0				7114600	7124600	10.0	
B	7716500	7726500	10000.0	14	3	1995			70.18%	98921	98920.5	0.0				7124600	7138528	13.9	
C	7726500	7738000	11500.0	14	3	1995			80.70%	98921	98924.6	4.1				7138528	7144528	6.0	
A	7738000	7748000	10000.0	14.8	3	1995			74.19%	98925	98924.5	-0.1				7144528	7154500	10.0	
B	7748000	7758500	10500.0	14.4	3	1995			75.79%	98925	98929.5	5.0				7154500	7159500	5.0	
C	7758500	7770400	11900.0	14.9	3	1995			88.88%	98930	98933.5	4.0				7159500	7165500	6.0	
A	7770400	7783000	12600.0	13	3	2151			76.15%	98934	98939	5.5				7165500	7171000	5.5	
B	7783000	7793200	10200.0	13.8	3	2151			65.44%	98939	98939	0.0				7171000	7182800	11.8	
C	7793200	7803300	10100.0	14.1	3	2151			66.21%	98939	98939	0.0				7182800	7192909	10.1	
A	7803300	7816000	12700.0	13.6	3	2151			80.30%	98939	98942.2	3.2				7192909	7201600	8.7	
B	7816000	7826090	10090.0	14.8	3	2151			69.42%	98942	98948.1	5.9				7201600	7208000	6.4	
C	7826090	7836200	10110.0	14.7	3	2151			69.09%	98948	98955	6.9				7208000	7211900	3.9	
A	7836200	7848000	11800.0	14.9	3	2151			81.74%	98955	98962	7.0				7211900	7216000	4.1	
B	7848000	7859340	11340.0	13.8	3	2151			72.75%	98962	98962	0.0				7216000	7226800	10.8	
C	7859340	7869500	10160.0	14.2	3	2151			67.07%	98962	98962	0.0				7226800	7237500	10.7	
A	7869500	7881700	12200.0	14.2	3	2151			80.54%	98962	98962	0.0				7237500	7249654	12.2	
B	7881700	7892400	10700.0	14.9	3	2151			74.12%	98962	98962	0.0				7249654	7260000	10.3	
C	7892400	7902490	10090.0	13.5	3	2151			63.33%	98962	98965	3.0				7260000	7267090	7.1	
A	7902490	7914900	12410.0	14.6	3	2151			84.23%	98965	98967	2.0				7267090	7274800	7.7	
B	7914900	7925000	10100.0	14.8	3	1995			74.93%	98967	98968	1.0				7274800	7283800	9.0	
C	7925000	7935800	10800.0	14.9	3	1995			80.66%	98968	98970	2.0				7283800	7292000	8.2	
A	7935800	7946300	10500.0	14	3	1995			73.68%	98970	98971	1.0				7292000	7301000	9.0	
B	7946300	7956500	10200.0	14.2	3	1995			72.60%	98971	98971	0.0				7301000	7310515	9.5	
C	7956500	7963630	7130.0	14.1	2	1330			75.59%	98971	98971	0.0				7310515	7317115	6.6	
A	7963630	7974000	10370.0	14	3	1995			72.77%	98971	98976	5.0				7317115	7322000	4.9	
B	7974000	7975114	1114.0	14	1	665			23.45%	98976	98978	2.0				7322000	7325899	3.9	
C	7975114	7986900	11786.0	14.9	3	2151			81.64%	98978	98981	3.0				7325899	7333200	7.3	
A	7986900	7999000	12100.0	14.2	3	2151			79.88%	98981	98987	6.0				7333200	7337500	4.3	
B	7999000	8009500	10500.0	14	3	2151			68.34%	98987	98995	8.0				7337500	7337500	0.0	
C	8009500	8019690	10190.0	14.2	3	2151			67.27%	98995	99000	5.0				7337500	7341153	3.7	
A	8019690	8032500	12810.0	14.9	3	2151			88.74%	99000	99011.5	11.5				7341153	7341153	0.0	
B	8032500	8042590	10090.0	13	3	2151			60.98%	99012	99012.7	1.2				7341153	7350708	9.6	
C	8042590	8052800	10210.0	14.6	3	2151			69.30%	99013	99016.7	4.0				7350708	7356800	6.1	
A	8052800	8065700	12900.0	13.2	3	2151			79.16%	99017	99016.7	0.0				7356800	7367800	11.0	
B	8065700	8075790	10090.0	13.2	3	2151			61.92%	99017	99016.7	0.0				7367800	7378555	10.8	
C	8075790	8086000	10210.0	14.5	3	2151			68.83%	99017	99017	0.3				7378555	7389300	10.7	
A	8086000	8098108	12108.0	14.1	3	2151			79.37%	99017	99027.4	10.4				7389300	7389300	0.0	

Nov-11 | Oct-11 | Sep-11 | Aug-11 | July | Chart1 | June | april | march | FEB-2013 | 2013

Ready | Average: 6.1 | Count: 3 | Sum: 18.2 | 80%

MATERIAL RECYCLING

- 100 % Usage of Roasted beans chaffs as a Boiler fuel.

MINIMISING PACKAGING MATERIAL USAGE.

Pneumatic Brake system

Pneumatic sealer system

Vertical sealer modification

PM SAVINGS

	SKU	No pouches	Pouch wt(gm)	total pouch weight(gm)	CFC weight(gm)	Recycled content
CC	100	120	4	480	900	855
	200	60	6	360	780	741
	500	24	11	264	920	874
IC	50	120	3	360	640	608
	100	120	4.5	540	620	589
	150	36	10	360	900	855
	200	30	11	330	900	855
				2694	5660	5377
					Recyled content	**64%**

RM SAVINGS

Target	UOM	2015 Target	Actual	Improvement over 2010
Improve RM loss against BOM by improving GB & chicory yield	%	0%	0.33%	76%
Reduce priamry & secondaryPM loss	%	-1%	0%	78%

BEST WISHES FOR YOUR OWN GREEN-CO JOURNEY !