

Green Supply Chain

(A commitment towards Responsible Sourcing)



- One of the largest privately-held diversified industrial corporation in India.
- 117 yrs of making pioneering products and touching millions of lives. Estd in 1897
- Revenue- USD 4 billion
- Employees-11750

Home Care to Rocket Launchers



Godrej Appliances

- Established in 1958.
- First company to manufacture Refrigerators in India.
- Turnover - 2400 Cr.
- Employees -1719 nos.
- Locations - Mohali, Shirwal, Mumbai



It is our obligation to leave the world in better shape for future generations than when we were born to it. The fate of humanity is linked with every living creature and resource of nature and we serve to nurture these bonds.

– S. P. Godrej

In conjunction with our vision for “brighter living” for all our stakeholders, we have developed a long-term vision for playing our part in creating a more inclusive and greener India. We have named this the **Good & Green** vision. By 2020 we aspire to do the following:

1. Ensuring employability

India has 600 million people below the age of 25 out of which only 80 million (13%) are employable. The effort is going to be on skilling these people such that they become employable.

2. Creating a greener India

In order for our businesses to truly become sustainable, efforts will be focused on creating carbon neutral, zero waste, water positive and energy efficient businesses.

3. Innovating for good & green products

A good product/ service is that which addresses a critical issue for people living below the poverty line. The issue could be related to health, hygiene, water, sanitation, housing, education or livelihoods.

A green product / service is that which reduces energy, water or material consumption by 20%, GHG emissions by 20%, eliminates toxic materials or uses 100% recyclable, renewable and / or natural material.



The goals for 2020 in each of the areas are:

- 1. Ensuring Employability** Training **1 million** rural and urban youth in skilled employment
- 2. Greener India** Achieving **zero waste, carbon neutrality, positive water balance and a 30% renewable energy source and 25% reduction in energy conservation**. The Godrej Group has already been working on these goals as we are signatories to the CII code for **CSR – Greener India** which is a 10-point program for ecologically sustainable business growth.
- 3. Innovation for Good & Green Products** Having a **third of our portfolio revenues** comprising good and/or green products and services – defined as products that are environmentally superior or addresses a critical social issue (e.g., health, sanitation, disease prevention) for consumers at the bottom of the income pyramid

Objective:

- To responsibly source products and services by considering environmental protection issues into the sourcing decision making process.
- To encourage all upstream suppliers to adopt green manufacturing and green supply chain, so as to not only reduce the environmental degradation, but to possibly have a positive impact on the environment.
- To show commitment towards continual improvement, prevention of pollution and to comply with all the applicable legal requirements.

Scope:

This Policy applies to the following category of products and services that constitute GAD purchase which include: Raw Materials, Parts and Components, Finished Products, Tools, Moulds & Dies, Capital Equipment and Service offerings.

Focus Areas:

1. Aim to source products and services that minimize environmental impact in the following areas:

- Energy efficiency, Water conservation and waste reduction
- Prevention/reduce the use of hazardous substances
- Life cycle assessment of products and services
- Conserve the resources of the planet
- Use renewable energy
- Proactive product stewardship

2. We are committed to support our suppliers in adopting green practices through awareness creation and training on the compliance requirements.

3. We give preference to suppliers who adopt green practices in addition to QCD performance in the following areas:

- Reduce specific energy and water consumption
- Minimizing the Green House Gas(GHG) emissions & measure the carbon footprint

- Minimizing the generation of waste and safe disposal of the hazardous wastes generated
- Recycle & reuse material to reduce absolute consumption
- Incorporating the use of renewable resources
- Practicing various eco-friendly concepts like green office/ building
- Nurturing the biodiversity(care for flora & fauna) in the vicinity of operations

4. We shall seek to implement the hierarchy of preference to avoid, reduce, reuse, recycle, recover, prevent and dispose throughout the sourcing activity.

5. We promote partnerships with suppliers who are:
ISO 14000 & OHSAS 18000 certified
Compliant with RoHS Directives



6. We commit ourselves to set and review the objectives and targets for the continual improvement in all the areas of our operations through everyone's involvement.

This policy has been communicated and made accessible to everyone in our immediate organization and is available on supplier portal for our supplier partners.

We have articulated the green philosophy in simple and lucid manner and would urge all of you to work towards this noble cause.

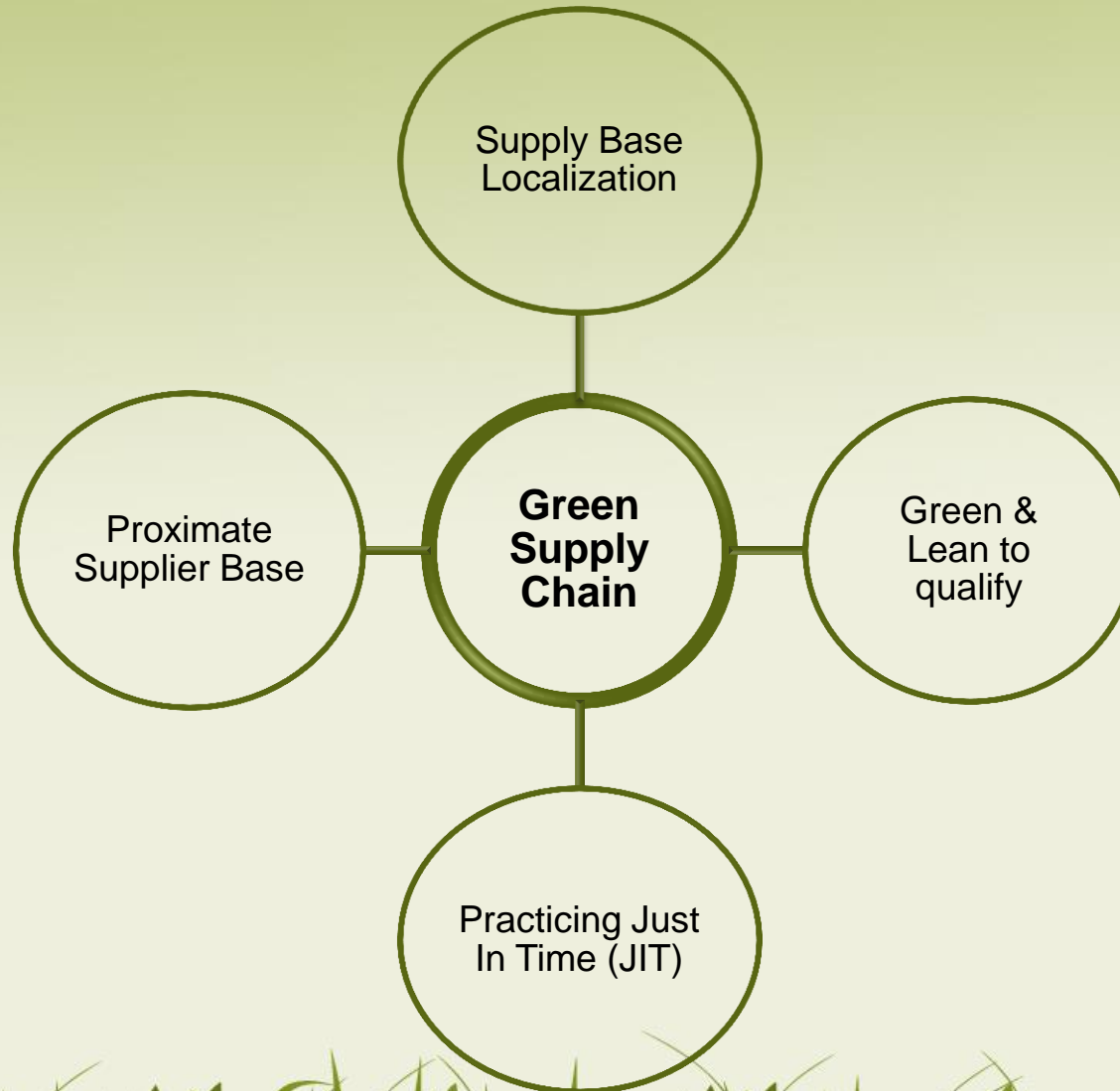


Activities done within the plant

(Do it our self



GSC Strategy – Model for GAD



Case Study – Reduction in carbon emission

Title – Localization of Air Conditioners

Route / Year	11-12	12-13	13-14	Mode of Transport	Delivery from Port to GAD Warehouse
Imports	130	75	60	Entire CBU - By Sea (Hongkong to JNPT- 7222 Km)	JNPT to Bhiwandi By road - 70 Km
GAD In-house (Shirwal)	0	14	42	1. IDU - By Sea (Hongkong to JNPT- 7222 Km) 2. ODU parts - By Road till Shirwal (Proximity suppliers around 100 Km) 3. Compressors - By Sea (Hongkong to JNPT- 7222 Km)	1. IDU - By Road (JNPT-Shirwal -200 Km) 2. Compressors - By Sea (JNPT-Shirwal -200 Km) 3. Shirwal Plant to Shirwal FG W/h - 0Km
Local OEM Split ACs	4	13	13	1. IDU - By Sea (Hongkong to JNPT- 7222 Km) 2. ODU parts - By Road (Proximity suppliers around 250 Km) 3. Compressors - By Sea (Hongkong to JNPT- 7222 Km)	1. IDU - By Road (JNPT- Delhi - Kalamb – Km) 2. Compressors - By Sea (JNPT- Delhi - Kalamb - 1700 Km) 3. FG/CBU - By road (Kalamb to Mohali FG W/h-100Km)
Local OEM Window ACs	2	3	0	1. Compressors - By Sea (Hongkong to JNPT- 7222 Km) 2. Other parts - By Road (Proximity suppliers around 250 Km)	1. Compressors - By Sea (JNPT- Delhi - Kalamb - 1700 Km) 2. FG/CBU - By road (Kalamb to Mohali FG W/h-100Km)
Total (Qty in '000)	136	105	115		

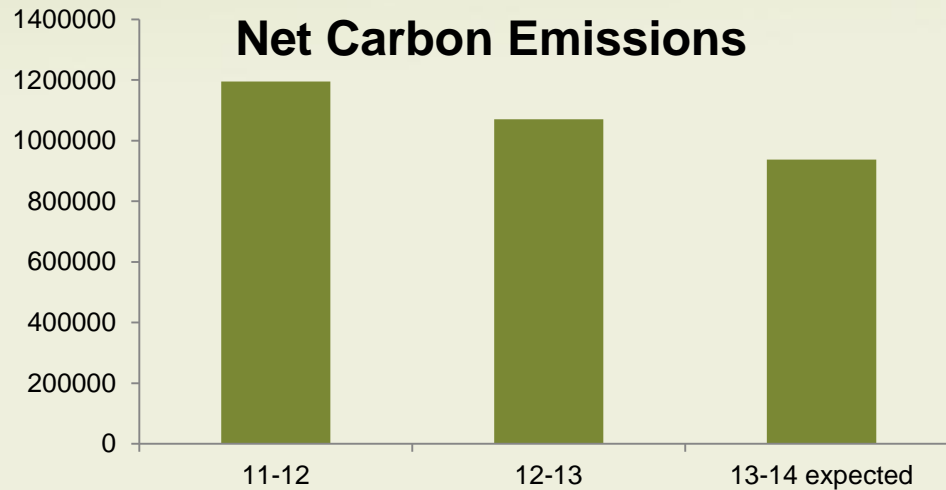
Note :

**Split AC (CBU- Completely Build Unit) = 1 IDU + 1 ODU with 1 Compressor

***an Stuffing Qty (Container Load) for Sea Shipment

- | | |
|--------------------------|-------------------------|
| 1. 40 HQ for CBU | Approx 200 Units |
| 2. 40 HQ for IDU | Approx 550 IDU's |
| 3. 20 ft for Compressors | Approx 1000 Compressors |

Year	Carbon emissions of Sea transport	Carbon emissions of Road transport (in kgs of CO ₂)	Total Carbon emissions (in kgs of CO ₂)	% reduction in CO ₂ emissions compared to previous year (taking base quantity as constant)
FY 11-12	1,188,491	6,707.3	1,195,198	
FY 12-13	790,364	36,197.9	826,562	10%
FY 13-14	769,500	43,121.6	812,622	12%



10% reduction in CO₂ emissions in 2012-13. Further 12% reduction in 2013-14

Case Study – Material conservation

Title - Conversion of Cold runner moulds to Hot Runner moulds

Initiative: To convert existing cold runner plastic injection moulds into hot runner system moulds thereby reducing runner formation during moulding. This will result into material weight reduction

Previous Status: Total 8 moulds are targeted for conversion from cold runner to hot runner

Current Status: Two moulds are converted from cold runner to hot runner system.

Mould	Existing wt of runners (gms)	Revised wt of runners (gms)	Total reduction in weight (gms)	Material procured in 13~14 (pcs)	Existing Wt in MT/year	Revised Wt in MT/year	Savings (RM in MT for 13~14)
TG Trim	45	2	43	491672	22	0.98	21.02
Freezer Frame	38	11	27	161951	6.15	1.78	4.37
				Total	28.15	2.76	25.37 MT

90% reduction in runner material during processing of these 2 items

Case Study – Energy conservation

Title - Cycle time optimization for energy conservation & productivity improvement

Initiative: To optimize cycle time of plastic moulded items running at supplier end

Existing Status: Total 270 Shirwal moulds running at supplier end were identified

Current Status: Total 108 moulds were attended for cycle time optimization wherein there was reduction in cycle time for 72 moulds

Parameter	Status	Earlier Energy Consumption (Top 20 moulds data)	Revised Energy Consumption (Top 20 moulds data)	Energy saving / year
Reduction in cycle time	72 moulds	4,89,214 KWh	2,33,389 KWh	2,55,825 KWh

52% reduction in energy consumption is secured

Case Study – Waste reduction

Title - EPS packing replacement by paper pulp packing

Benefits:

- More than 200T EPS consumption reduced annually
- Paper Pulp Packaging easily recyclable and biodegradable whereas EPS is non-biodegradable
- Transportation reduced by 80% thus lowering GHG emissions
- Cost reduction without affecting packaging quality



Activities done with suppliers

(Inculcating operational excellence in suppliers for
better tomorrow)



GSC Strategy – Model for Suppliers



GSC – Initiatives & Targets for suppliers

Levers	Initiatives	Short term 2013-15	Medium term 2016-18	Long term 2019-20
Awareness creation & Training program	To create awareness and train all the critical suppliers on the green practices	Energy , water and waste conservation	Material conservation and reduction in GHG emissions	Awareness on Life cycle assessment and Product Stewardship
GAD - Cluster Program including GREEN	Reduction of energy, water and waste at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 3% at supplier end
Supplier Efficiency Improvement	Conducting Supplier Engagement Program (SEP) every quarter	Making all suppliers RoHS compliant by May 2014	Motivating 50% of critical suppliers for ISO 14001 certification	Motivating 100% of critical suppliers for ISO 14001 certification
Audits & monitoring	Institutionalization of Supplier Quality System assessment process with focus on Green	To conduct SQSA for all critical suppliers every 2 years	Ongoing	Ongoing
	Data collection and monitoring for energy, water and waste at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 3% at supplier end



Various platforms used for supplier training :

- Supplier clusters
- Supplier performance review meetings
- Communication through e-buy portal
- E-mail to all supplier CEOs through Head Sourcing
- Purchase order – inclusion of Green clause
- Supplier quality system assessment

100% critical suppliers covered under various awareness programs with focus on reduction in Energy & Water consumption and Waste

GSC – Supplier Training

Supplier Cluster – MRM snaps



GSC – Supplier Training

Supplier performance review – mentoring by Top Management



Conducted on quarterly basis

GSC – Supplier Training

Snapshots of Supplier Awareness Programs



Review & Training -
Class-room & Gemba



Supplier cluster – inducing operational excellence



ROADMAP FOR GODREJ SUPPLIER CLUSTER

DELIVERABLES

SMED Cellular manufacturing Multi-tasking	PRODUCTIVITY IMPROVEMENT	Reduction in c/o time Reduction in throughput time Improvement in labour productivity
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CTQ mapping Concept of 100% inspection Quality Alert boards 7 QC tools + QC story CP/ CPk studies Poka Yoke Calibration SOP creation	QUALITY	Reduction in rework (inprocess) Zero defects at customer end Measure cost of Poor Quality
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Mapping and monitoring efficiency of - Energy Water Waste Toxicity	GREEN	Reduction in Energy consumption Reduction in Water consumption Reduction in all type of Waste RoHS compliant products and processes
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Step 0 to 2	MY MACHINE	Breakdown reduction trend
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1S / 2S Red Tag campaign Fixed point photography Jogging track Safety	5 S	1S score worksheet Zero red tag items Before / after photos Boundary walls clear Department Safety Score (DSS), Frequency / Severity rate, No. of accident free days
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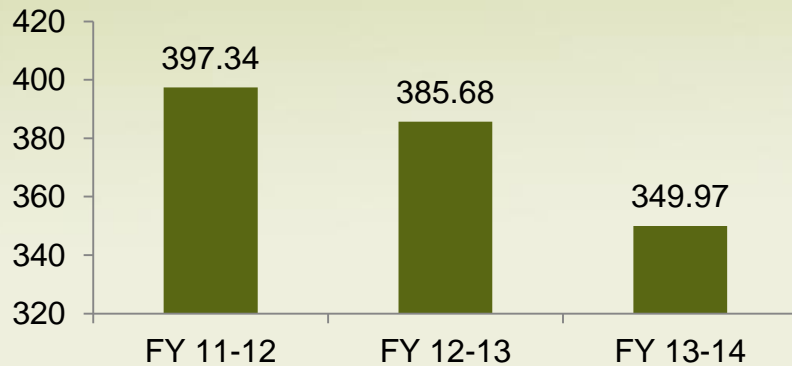
Time in Months :	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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Supplier audits & performance monitoring

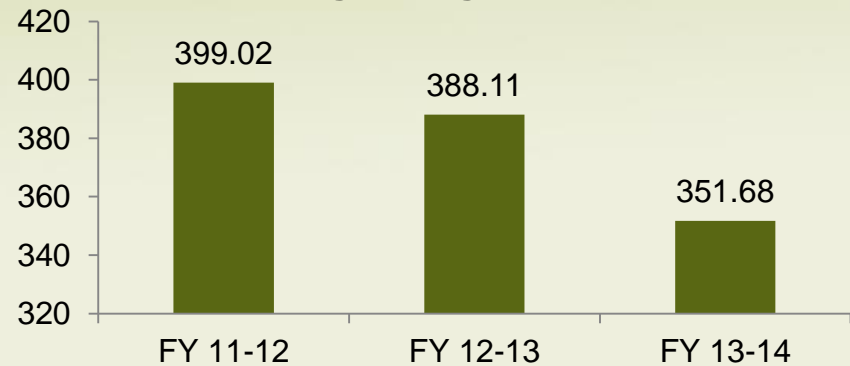
An Example – M/s SAG, Khandala

Area	2011-12	2012-13	2013-14	Reduction
Energy KWh	397.34	385.68	349.97	12%
Water In KLtr	NA	0.71	0.52	27%
Waste In Kg	399.02	388.11	351.68	12%

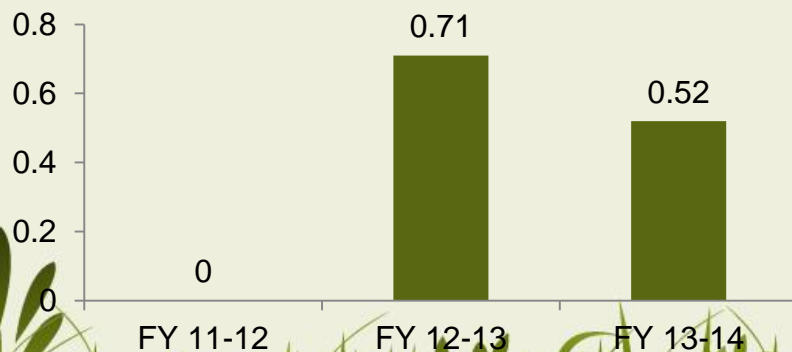
Power Kwh/MT RM Processed



Wastage In Kg/MT RM Processed



Water in KLtr/MT RM Processed



Supplier initiatives on Green

An Example – M/s SAG, Khandala



Wind Turbine for office & utility lighting



Induction lamp for shop floor & street lighting



APFC panel to maintain unity power factor



Transparent sheets for roofing

Supplier initiatives on Green

An Example – M/s SAG, Khandala



Bio-Gas Plant



Effluent Treatment Plant



Green house constructed from recyclable & waste material



Drip irrigation for watering plants in garden

Supplier initiatives on Green

An Example – M/s SAG, Khandala

Green Campus



Shree Ashtavinayak Glass - Efficiency improvement

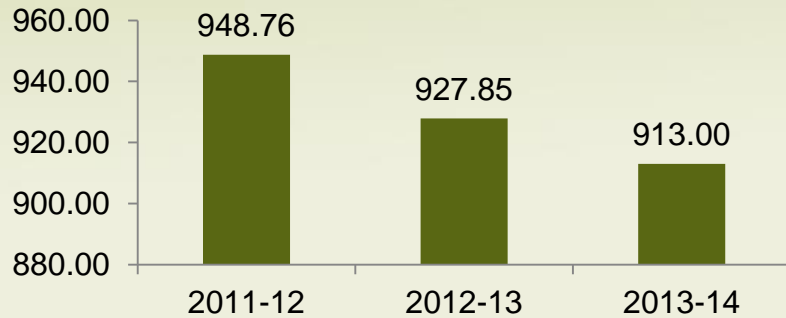
Area	Major initiatives taken	Benefits achieved
Energy	Transparent sheets for roofing at regular intervals to have effective usage of day light	Reduction in power consumption required for shop floor illumination in day time
	APFC panel installation	To maintain unity power factor
	Use of Induction lamps in place of Metal Clad lamps on shop-floor & street lighting	49% Reduction in power consumption for shop floor & street lighting
	Use of LED lights in place of tube light & CFL in office & utility area	30% Reduction in power consumption for office & utility lighting
	Installation of 1 Kva wind turbine for office & utility lighting	Use of renewable source of energy for office & utility lighting
	Installation of Bio-Gas plant	Production of 1.5 Kg gas / day
	Production planning to have continuous running of glass toughening oven	Reduction in energy consumption due to avoidance of frequent on & off of oven
Water	Installation of ETP plant to have recycling & reusage of water used for processing	49% Reduction in fresh water consumption
	Up-gradation of production facilities	80% Reduction in waste of water due to spillage on floor
Waste	Improvement in glass toughening process	Reduction in rejection and scrap
	Procurement of RM to suit best cutting layout	Reduction in wastage
	Construction of Green House	Reduction in wastage

Accomplishment through creating awareness, training & total employee involvement

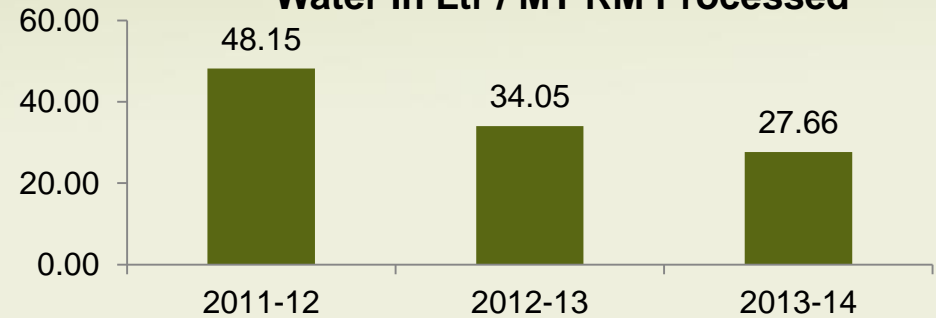
An Example – M/s Ajay Poly, Wing

Area	2011-12	2012-13	2013-14	Reduction
Power Kwh	968.76	927.85	890.62	8%
Water In Ltr	48.15	34.05	27.66	41%
Wastage In Kg.	37.00	23.00	19.00	42%

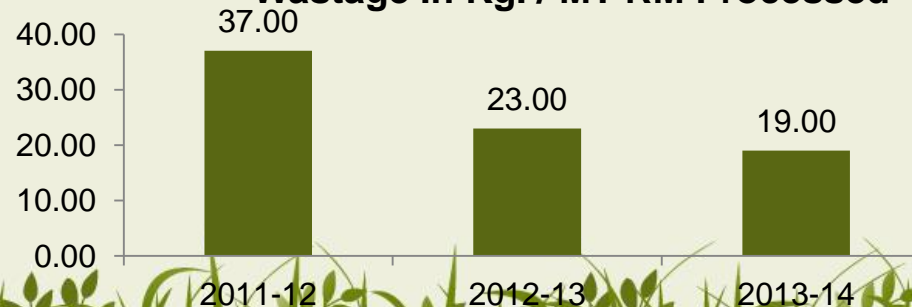
Power Kwh / MT RM Processed



Water In Ltr / MT RM Processed



Wastage In Kg. / MT RM Processed



Ajay Poly Pvt. Ltd. - Efficiency improvement

Area	Major initiatives taken	Benefits achieved
Energy	Transparent sheets for roofing at regular intervals to have effective usage of day / natural light	Reduction in power consumption required for shop floor illumination
Water	Recirculation of chilling plant water by installation of water softening plant	Reuse of water enabled reduction in water consumption
	Arrested / removed all the leakages in water lines	Eliminated wastage of water
	Usage of waste water from canteen for gardening	Reduction in fresh water requirement
Waste	Process improvements to reduce eliminate the excess material consumption during welding of gasket	Reduction in waste
	100% reprocessing & reusage of process scrap	Reduction in RM waste

Accomplishment through creating awareness, training & total employee involvement

Supplier Rewards & Recognition

Criterion for vendor qualification for Eco-Award :

1. To have ISO14001 certification
2. To score maximum marks on environment parameters as per SQSA and or Green Survey
3. To demonstrate atleast ONE new environmental project during the year



Eco Awards for “Best Environmental Performance”

Way Forward

Future plan for implementing the Green Sourcing Policy

	Short term 2013-15	Medium term 2016-18	Long term 2019-20
To create awareness and train all the critical suppliers on the green practices	Energy , water and waste conservation	Material conservation and reduction in GHG emissions	Awareness on Life cycle assessment and Product Stewardship
Reduction of energy, water and waste at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 3% at supplier end
Conducting Supplier Engagement Program (SEP) every quarter	Making all suppliers RoHS compliant by May 2014	Motivating 50% of critical suppliers for ISO 14001 certification	Motivating 100% of critical suppliers for ISO 14001 certification
Institutionalization of Supplier Quality System assessment process with focus on Green	To conduct SQSA for all critical suppliers every 2 years	Ongoing	Ongoing
Data collection and monitoring for energy, water and waste at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 5% at supplier end	Reduction of energy, water and waste by 3% at supplier end

The Result



Greenco - Platinum



Thank You.....

