

# CII – ENVIRONMENTAL BEST PRACTICES AWARD - 2023

# GREEN SUPPLIER DEVELOPMENT PROGRAM (GSDP)

**Rialto Enterprises Private Limited,** 

Chennai

21<sup>st</sup> June 2023

# GREEN SUPPLIER DEVELOPMENT PROGRAM (GSDP)





GREEN

SUPPLIER

*Phase – 1 Mar'22 – Feb'23* 

# <u>What is Green Supplier</u> Development Program (GSDP)?

GREEN SUPPLIER

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Being an environmentally conscious & GreenCo platinumrated company, We started to

- Handhold all its supplier partners toward Green Journey
- Which focuses on Energy & Water Conservation, Greenhouse Gas Emission Reduction, Material Conservation & Waste management

# **OVERALL INTENT**

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- To evaluate the environmental performance of Supply Partners
- Support them to further improve their performance
- Support them in evaluating their Emissions

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- To make sure that the stakeholder fulfills all the legal regulation
- To recognize the best supplier, encouraging by giving the "Green Supplier Award"

## <u>GSDP – "PHASE 1"</u>

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Rialto launched the <u>GSDP</u> Phase – 1 on March 2022, to support its identified <u>"7</u> <u>Selected Supply Partners"</u>, which is having a major environmental impact





Rialto handholds each supply partner by

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- 1. Training Program with best case studies
- 2. Site Visit Baseline development in each area like energy, water, etc.,
- 3. GHG Assessment
- 4. Strengthen the compliance
- 5. Implementation Phase
- 6. Review Visit
- 7. Final site assessment

### FIRST REVIEW VISITS

SL NO.	SUPPLIER	1ST ROUND OF REVIEW*	e
1	SSF Plastics, Hosur	1-06-2022	
2	Bright Brothers, Pondy	28-05-2022	
3	Excel Plast, Coimbatore	31-05-2022	
4	Panoply Packaging, Chennai	26-05-2022	
5	Breech Oral care, Vadodara	3-06-2022	6
6	Ecoplast Industry, Faridabad	4-05-2022	8
7	Suba Plastics, Coimbatore	30-05-2022	

## **HANDHOLDING VISITS**



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Suba Plastics, Coimbatore



SSF Plastics, Hosur



Bright Brothers, Pondy



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Excel Plast, Coimbatore



Breach Oral Care, Vadodara

Focus on Energy Conservation, Renewable energy addition, GHG Mitigation, Waste reduction, etc.,

### GREEN SUPPLIER DEVELOPMENT PROGRAM

### **AUDIT RECOMMENDATIONS**

S.No

Ri	a	11	

#### S.No

#### Energy Efficiency

#### Compressor

Provide duct to the ELGI 18 Compressor to send out the hot air out of the compressor

**Improvement Points** 

- 1 room. Hot air intake to the compressor increases the power consumption of the compressor
- 2 Study the performance of the compressor by conducting a FAD test, also check the VFD performance as well
- 3 Conduct periodic leakage test (once a fortnight) and keep the air leak below 5%.
- 4 It is recommended to modify the existing concealed/underground airlines to ring main system with aluminium pipes

#### **Motors & Heaters**

- 5 Plan to replace the remaining ceramic heaters with Infrared Heaters/Induction heaters in a phased manner
- 6 Inventorise the old EFF2/IE2 motor and replace it to IE3/IE4 motor in a phased
- <sup>o</sup> manner. Cooling pump motors, power pack motor, etc.,
- 7 Conduct a feasibility study for installing VFD to the cooling water main circulation pump
- 8 Similarly, an interlock can be provided for the cooling tower fan. The fan should run only if the temperature difference( inlet & outlet) is more than 2 deg Celcius
- 9 Explore energy efficient IE3/IE4 motors for cooling pumps (Hot well & Cold well pump)

#### **Metering System**

- Metering of all major energy consumers like compressors, Moulding machines, AHU
- 10 units, etc., (meters should be compatible with RS 485 port to connect it with online monitoring)
- 11 Explore online monitoring of Energy Consumption for all major energy consumers While purchasing new Injection Moulding machines and for plant expansions considers
- 12 only "All-Electric Injection Moulding Machines", It consumes less power when compared to conventional Induction machines/Servo Machines
- Replace the conventional air circulators (almonard fan) with BLDC air circulators.
  Consumes 30% less power than conventional fans

#### **Renewable Energy**

Set targets to increase the Renewable energy share of the facility. Plan to cover 100% of the roof area with Solar PV

#### Water & Wastewater treatment

- 15 Arrive at the detailed water balance diagram of the facility
- 16 Install low flow taps/Aerators in the canteen washing area and washrooms
- 17 Explore reusing the treated water back for urinal flushing operations this will reduce the freshwater consumption

ement Points

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Study the performance of the STP plant.

- 18 1. Check the capacity of sewage generated/day and STP capacity
  2. Install EMF meter and maintain the STP treated water discharge details
- 19 Connect all the rainwater harvesting lines from the roof area to sump through filter, to store and reuse the water back for other applications. It can also be diverted to the raw water sump as well(near cooling tower)
- 20 Calculate the Rainwater Harvesting Potential quantity of rainwater collected every year

It is recommended to install water meters and monitor the water consumption of the facility, like - Process water consumers like chilled water, cooling tower makeup, etc.,

- Domestic Water consumption Canteen, Washrooms, Handwash, etc.,
  Gardening water Consumption lit/sqm/day
  STP outlet should have a EMF meter
- 22 Consider installing a dishwasher machine for plate washing application to reduce the water consumption of the facility
- 23 Use drip Irrigation instead of open-end hose for gardening to save water

#### Waste Management

- 24 Hazardous waste area should be covered on all 4 sides, and should have primary & secondary containment - Display form 3 in front of the Hazardous waste yard
- 25 Ensure disposal of hazardous waste once in 90 days and E waste in 180 days as per compliance
- 26 Provide source segregation bins inside & outside the shop floor to segregate the waste at source

#### Material Handling

27 It is recommended to make a rack arrangement system in stores FG (handles), raw materials separately

#### **Certifications & Other**

- 28 Renew the expired ISO 9001 QMS certification
- 29 Display the policy in the local language at prominent locations inside the factory
- 30 Increase the display poster about the conservation of Energy, Water, Source segregation of Waste, etc.,
- Purchase Green Chemicals instead of conventional chemicals, for floor cleaning, washroom cleaning, etc.,
  Similarly for paints as well
- 32 A separate fire hydrant sump should be available along with the DG operated fire pump for back up.

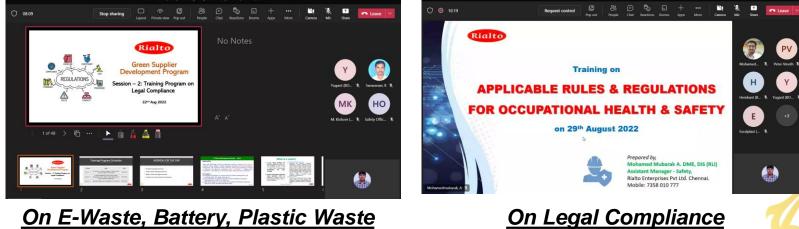
### **TRAINING & CAPACITY BUILDING PROGRAM**

Session	Торіс	Date
Session - 1	Energy Efficiency, Renewable Energy, Water Conservation & Best Practices	17.05.2023
Session - 2	GHG Accounting	17.05.2023
Session - 3	Introduction to Waste Management & Hazardous waste Management Rules 2016	17.08.2022
Session - 4	E-Waste Management Rules, Plastic Waste Management Rules, Biomedical Waste, Liquid & Gaseous Waste Management	22.08.2022
Session - 5	Applicable safety rules & regulation for Industries	26.08.2022



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<u>On Waste Management –</u> <u>Hazardous waste and Best Practices</u>



<u>On E-Waste, Battery, Plastic Waste</u> <u>Management</u> SUPPLIER

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## **1. BREECH ORAL CARE, VADODARA**

**Greenco Silver** 

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ISO 9001, 14001 Certified



Installed STP Plant – 30 KLD



100% LED lighting replaced



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**VFD For Cooling Tower** 



Retrofitted Infrared Heater – 4 No's On Pilot Basis

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Replaced conventional pump with EE IE3 pump – 7.5 kW

Replaced conventional Exhaust fans EE Exhaust fans- - 4 No's



### **1. BREECH ORAL CARE, VADODARA**

Installed Piezometer to monitor the Ground water level

(NS)

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Solar Plant – 200 kWp

Installed Occupancy Sensor in office



Installed Solar Street Lights



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Source Segregation of Waste



Reusable boxes for backer card movement





## **1. BREECH ORAL CARE, VADODARA**

### **Other Green Initiatives:**

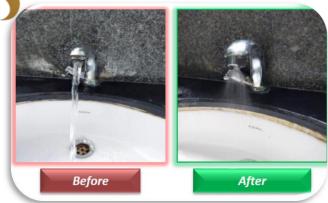
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- Servo Retrofit for Injection Moulding
- Energy Efficient IE4 Compressors
- GHG Inventorisation
- Signed agreement for Open Axes solar power purchase for the new factory

Summary of the environmental benefits achieved			
Electrical energy savings	264896	kWh	
Thermal energy savings	3.1	kL of fuel	
GHG emission mitigation	216.5	MT of CO2 eq.	
Water conservation	6160	kL of water	
Total investment made	37.64	Rs Lakhs	
Monetary savings	25.76	Rs Lakhs	

Installation of low flow taps – 35 No's

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**Mutiplast Machine servo** 

Retrofit 4 M/c. on a pilot

basis



Induction Heaters for Moulding Machine





4 No's AC Energy Saver – 21% saving



Solar & Wind power purchases to 85% in 2022-23 (Earlier it was 6%)



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VFD to the Hydraulic Motor

EV for Company





Compressors- line isolation in B4 and B3 based on the Pressure requirements

#### **Sprinklers for Garden**





Centralised compressor for B3 & B4

EMF Meters for Water monitoring





GreenPro Certified - House Keeping Chemicals



Construction of Sludge Bed for STP

5 Ply to 3 Ply Carton Box

### Bopp Tape 3 inch to 2 inch

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BEFORE





### **STB BOX NEW PACKING STANDARD**



Before

Qty. Per Box 99No's (33\*3) 2 Separator and 13 set of Partition





Qty. Per Box 120 No's (40\*3)

2 Separator and No's Partition

BOTTOM OLD PS



Before

Qty. Per Box 198No's (66\*3) 2 Separator and 13 set of Partition



**BOTTOM NEW** 

After Qty. Per Box 224 No's ( 112\*2)

2 Separator and 2 No's Partition

### <u>Awareness creation</u> to Employees





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Miyawaki Forest of 300 saplings, 53 species in 4100 sqft on Environment Day celebration on June 5<sup>th</sup> 2022.

#### **Other Initiatives**

- 1. Cooling tower fan PID
- 2. In-house merging conveyor production of EBM machine

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3. GHG Inventorisation

Summary of the environm	nental bene	fits achieved
Electrical energy savings	821703	kWh
GHG emission mitigation	2944.3	MT of CO2 eq.
Water conservation	4200	kL of water
Resource conservation	234	MT of material
Renewable energy addition	2000	kWp of RE
Waste Reduction	8900	kgs of waste
Total investment made	48.6	Rs Lakhs
Monetary savings	69.8	Rs Lakhs

## **3. SUBA PLASTICS, COIMBATORE**

Construction of Waste Management Yard

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Source Segregation of different waste



ISO 9001, 14001 & 45001 Certified



Installation of Water Meters for major locations

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**Online Monitoring System** 



Solar PV – 11 kWp



Bio Composting Bins for Food Waste



## **3. SUBA PLASTICS, COIMBATORE**



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Rainwater Harvesting system to capture the roof and non-roof area

Installed 250 kWp Solar Roof Top plant – 100% roof covered





Avoid running DG by switching monthly shutdown with weekly off – saving 9020 KL/month



Installed BIO STP plant to Treat the Sewage waste

## **3. SUBA PLASTICS, COIMBATORE**

Mass Tree Plantation drive along with Forest Department 5<sup>th</sup> June 2022

#### **Other Green initiatives**

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- 1. Timer switch for Street lights
- 2. GHG Inventorisation
- 3. Awareness Program to Employees
- 4. Purchase of Green Certified Chemicals

Summary of the environmental benefits			
achieved			
Electrical energy savings	96028.0	kWh	
Thermal energy savings	32.4	kL of fuel	
GHG emission mitigation	161.5	MT of CO2 eq.	
Water conservation	54.0	kL of water	
Renewable energy addition	250	kWp of RE	
Waste Reduction	743	kgs of waste	
Total investment made	5.1	Rs Lakhs	
Monetary savings	23.7	Rs Lakhs	



ISO 9001, 14001 & 45001 Certified



**EMF** Meter

Installed 8 no's

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**Compressed air transportation** Replaced underground GI Pipes with over-thesurface PPR Pipes

Heaters – 25% savings

**12 No's Energy Efficient Infrared** 

Source Segregation of different waste



### **4. BRIGHT BROTHERS LIMITED, PONDICHERRY**

#### Downsized the water circulation pump



Units savings per day	85
Units savings per month	2550
Units savings per year	30,600

VFD for Water Circulation pump – Avoided Recirculation



Unit savings per day	65
Unit savings per month	1950
Unit savings per year	23400

Installed VFD for Compressor & Power pack



### **4. BRIGHT BROTHERS LIMITED, PONDICHERRY**

Modified the existing Waste management Yard as per PCB compliance

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Installed Solar Street Lights



#### **Other Green initiatives**

1. Screw Barrel Size reduction

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- 2. GHG incentivisation
- 3. Awareness Program to Employees
- 4. Tree Plantation Drive

Summary of the environmental benefits achieved			
Electrical energy savings	158502	kWh	
GHG emission mitigation	82.6	MT of CO2 eq.	
Resource conservation	7.123	MT of material	
Total investment made	17	Rs Lakhs	

Monetary savings

16

Rs Lakhs

## **5. EXCEL PLAST, COIMBATORE**

Environmental Policy

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#### EXCEL PLAST Environment and sustainability policy

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Polycarbonate sheet to avoid daytime power consumption



Installed Energy meters to account the Energy consumption



Rainwater Harvesting at the facility

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**Energy Savers for AC's** 



Low flow Water fixtures



Installed Bio-Septic tank to

## **5. EXCEL PLAST, COIMBATORE**

Constructed Hazardous waste storage yard

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Purchased Electric bike for company internal movements



Summary of the	environmen	tal benefits		
achieved				

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Electrical energy savings	1278	kWh	
Water conservation	3759	kL of water	
Total investment made	3.5	Rs Lakhs	
Monetary savings	0.30	Rs Lakhs	

### Other Green initiatives

- 1. GHG inventorisation
- 2. Tree Plantation Drive
- 3. Source Segregation of waste

## **6. PANOPLY PACKAGING, CHENNAI**

#### **Construction of Waste Management Yard**

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Water meters installed for major areas



#### **FSC** certified

#### Water Saving aerators



Installed BLDC Fans – 16 No's



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#### More than 80% of Renewable Energy Share



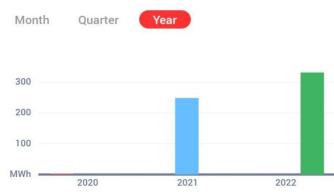
Installed 400 kWp of solar Roof Top



Use of Briquette (Renewable energy) as a Boiler Fuel

#### 6. PANOPLY PACKAGING, CHENNAI Rialto GREEN SUPPLIER Monitoring of Solar Generation Installed Online Monitoring software for Energy Monitoring **Comparative Production** Month Quarter Year 2020 2021 2022

16 No's – Energy Meters installed



• 2020 • 2021 • 2022

#### **Other Green initiatives**

- **Energy-Efficient IE4 Screw Compressors**
- Condensate Recovery from Steam and 2. reusing for pre heating
- **GHG** Inventorisation 3.
- Reuse of the Captured Rainwater for day-to-4. day consumption

Summary of the environmental benefits achieved				
Electrical energy savings	25920	kWh		
GHG emission mitigation	319.89	MT of CO2 eq.		
Water conservation	200	kL of water		
Renewable energy addition	400	kWp of RE		
Total investment made	139.7	Rs Lakhs		
Monetary savings	34.4	Rs Lakhs		



## 7. ECO PLAST INDUSTRY, HARYANA

Installed Energy Meters for all major consumers

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Installed Energy Efficienct IE3 motors for Machines



Installed High Density Heaters for Machines



Replaced Reciprocating compressor with Screw Compressor



Replaced Diesel



Push Taps replaced to

save water

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Daylighting Arrangement made at shop floor



## 7. ECO PLAST INDUSTRY, HARYANA

Captured Rainwater is stored and reused back for day-to-day activities

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Hazardous waste storage Yard



NP

### **Other Green initiatives**

- 1. Purchasing Green Housing chemicals
- 2. Awareness creation to employees
- 3. Packaging material Reduction Initiatives

Summary of the environmental benefits achieved				
Electrical energy savings	13806	kWh		
GHG emission mitigation	14.6	MT of CO2 eq.		
Water conservation	9300	kL of water		
Resource conservation	0.4	MT of material		
Waste Reduction	3050	kgs of waste		
Total investment made	80.3	Rs Lakhs 🛛 🧹		
Monetary savings	9.9	Rs Lakhs		

## **PERIODIC NEWSLETTER CIRCULATION**

The best practices of one supplier are circulated to others by monthly bulletins



Products

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The CATALYST 18th Au Breech Oralcar Simple solutions for Sustainability ê 🗭 🐂 🏠 🚱 **Plastic Injection Moulding Technologies** 

The major energy-consuming equipment in the plastic manufacturing process is Injection moulding machines. Today's plastic injection moulding machine technology is far more energy efficient. Injection Moulding machines are classified primarily by the type of driving systems they use, including (a) Hydraulic injection moulding machines, (b) Servo Hydraulic injection moulding machines (c) Electric injection moulding machines (d) Hybrid injection moulding machines.



technology for plastic production. The specific energy consumption (kW/ton of product) vary from process to process because of variation in multiple parameters. Different injection moulding machines consume vastly different amounts of energy, based on the size of their clamping mechanisms, screw, heater, and pumps.

Technology	kWh/kg *	However, based on the survey made		
Hydraulic Plastic Injection Moulding	0.60-0.70	by a Not-for-Profit organization (NPO) along with various stakeholders like consultants		
Servo Hydraulic Plastic Injection Moulding	0.40-0.48	Machine Manufacturers, Pla product manufacturers, and vario case studies from the energy audit		
Electric Plastic Injection Moulding	0.25-0.30	NPO, the estimated specific energy consumption of injection moulding technologies is given in the table.		

2. Plastic Injection Moulding **Technologies** 



With the recent tariff revision from the Tamilnadu Electricity Regulation Commission (TNERC) the monthly electricity bill for the industries has increased. Industries were trying to reduce their electricity bill by taking several initiatives like switching to energy-efficient equipment, avoiding idle running of machines, avoiding losses, etc., to reduce the monthly electricity bill.

Details	Normal Hour Consumption	Peak Hour Consumption	Night Hour Consumption
Period of the day	10 AM TO 6 PM, 5 AM TO 6 AM	6 AM TO 10 AM. 6 PM TO 10 PM	10 PM TO 5 AM
Tariff	Normal Tariff	25% Extra	5% rebate
Electricity Charges (Rs/unit)	6.75	8.44	6.41
Demand		INR 550 / kVA	

take to lower your electricity cost. While electricity bills are dependent on many factors, one major part is the amount of electricity consumed and when it is being consumed. Below are some of the simple ways to reduce the electricity bill without reducing the overall electricity consumption.

There are several ways that you can

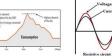
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Revised TNERC tariff from for HT Consumers w e f Sep 2022



Any planned machine stoppage/ Maximum utilization Schedule maintenance can be machine during the night & taken during the peak hours, non-peak hours during 6 - 10 AM & 6 - 10 PM

Transfer your load to non-peal Power purchase from 3" hours - Fixed load can be run during party through IEX the night or non-peak hours. Eg: Filling the water sumps, Fire Sumps,







Ensure the maximum recorded demand is dose to the contract Maintain Power factor clos demand with the Electricity board to unity. If required instal - Install a Demand controller to the APEC unit control reaching the maximun demand

Holiday can be declared during the EB Monthly shutdown. Switch to renewable sources instead same week Sunday ca of energy - daytime be made a working day to consumption can be offset reduce the Diesel consumptio in DG

3. Tips to Reduce Your Energy Bill 3

<u>GSDP</u> PHAS -1 OUTCOMES

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After the GSDP Phase – 1 Program, Supply partner performance were improved

Energy Efficiency

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- Water Conservation
- Waste Management & Material Conservation
- Strengthen the Compliance
- Capacity build the team

# ASSESSMENT PROCESS FOR "GREEN SUPPLIER AWARDS"



# <u>ASSESSMENT PROCESS FOR</u> <u>GREEN CHAMPION AWARDS</u>

- How companies proactively take action to mitigate the environmental impacts
- GreenCo Lite checklist (500 Points)
- Supply partners were evaluated based on the 500-point scale around 8 parameters

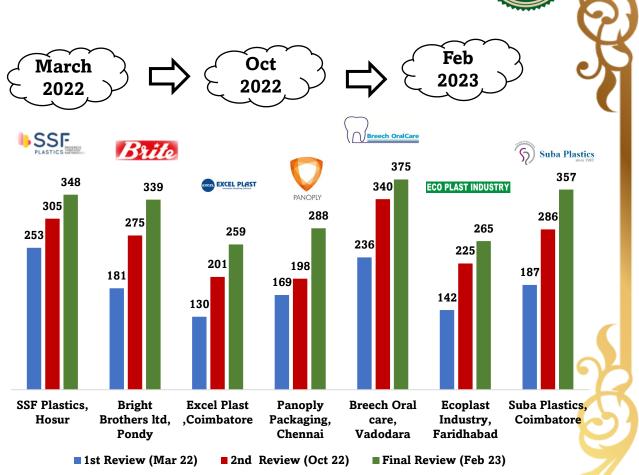
S.No	Evaluation Criteria	Score Distribution
1	Basic Environmental Certifications - ISO, FSC, GreenCo, others	155
2	Energy Efficiency - Improvement activities	50
3	Water Conservation activities	35
4	Waste Management Initiatives	55
5	Greenhouse Gas Management	70
6	Material Conservation	50
7	Compliance to Statutory requirements	35
8	Community Impact - CSR, Tree Plantation, etc.,	50
T	otal Score for Supplier Evaluation	500

### **GREEN SUPPLIER DEVELOPMENT PROGRAM (GSDP)**

### PHASE – 1 OUTCOMES

#### **Scores Obtained by the Supplier**

Supplier	1st Review (Mar 22)	2nd Review (Oct 22)	Final Review (Feb 23)	400 350
SSF Plastics, Hosur	<b>253</b>	305	348	300
Bright Brothers ltd, Pondy	181	275	339	250
Excel Plast ,Coimbatore	130	201	259	200
Panoply Packaging, Chennai	<b>169</b>	198	288	150
Breech Oral care, Vadodara	<b>236</b>	340	375	100
Ecoplast Industry, Faridhabad	142	225	294	50 0
Suba Plastics, Coimbatore	187	286	357	



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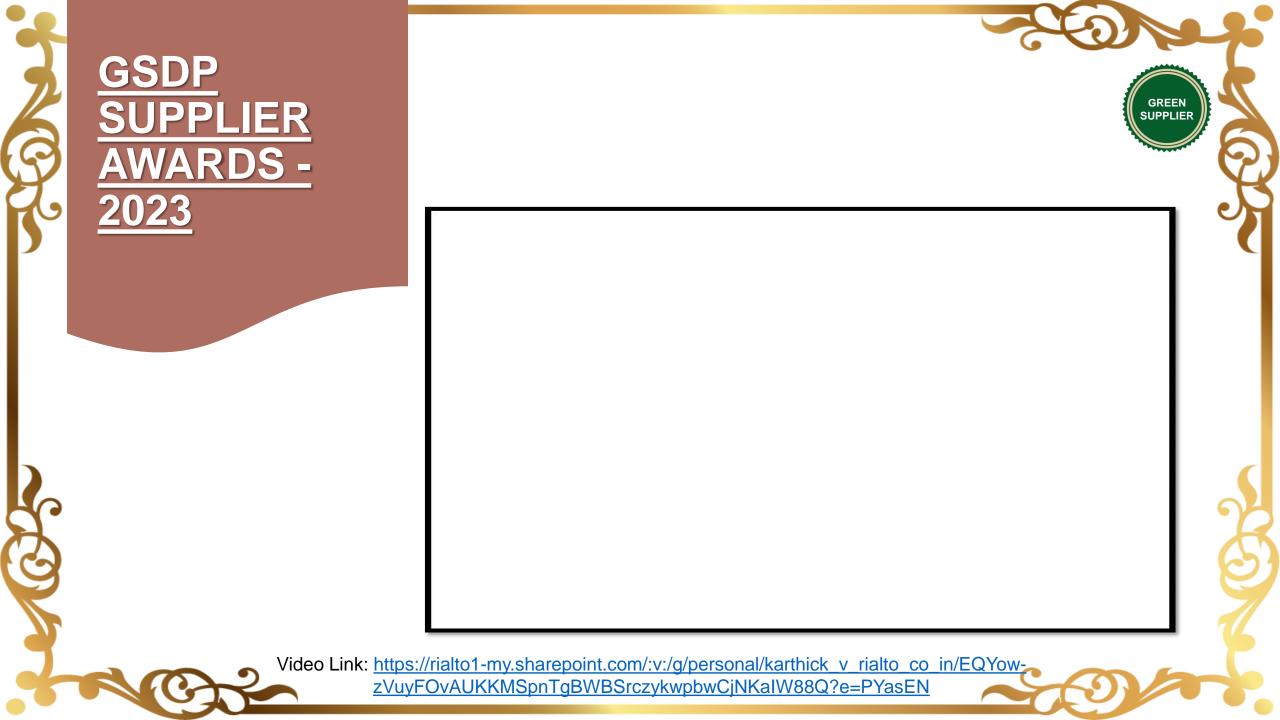
SUPPLIER SHOWED AN AVERAGE IMPROVEMENT OF 42%

# <u>GSDP – Phase – 1: OUTCOMES</u>

Cumulative a	achieved Achieve	ed

Electrical energy savings	13,80,855	kWh
Thermal energy savings (Diesel & CNG)	35.5	kL of fuel
GHG emission mitigation	3739.4	MT of CO2 eq.
Renewable energy Addition	2411	kWp of RE
Water Conservation	19914	kL of water
Resource conservation	241.5	MT of material
Waste Reduction	12693	kgs of waste
Total investment made	340 (453 M\$)	Rs Lakhs
Monetary savings	175.6 (228 M\$)	Rs Lakhs
ROI	2	years







# OUR CONTINUOUS IMPROVEMENT JOURNEY CONTINUES.....

