

11th CII National Award for Environmental Best Practices 2024

A Presentation By

NAHAR PAPER & BOARD MILLS PVT. LTD.

Project: Greening The Supply Chain

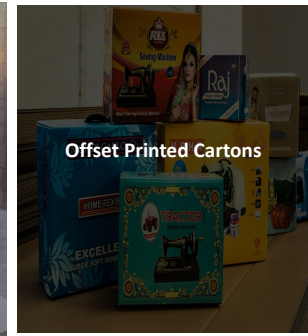
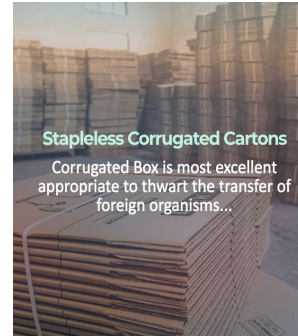
Theme: Carbon Footprint & Emission Reduction



We manufacture a broad array of sustainable packaging options designed to meet the needs of industry since 1984.

	GREENCO PLATINUM BUSINESS
	SOLAR PANELS: Focus on using renewable energy
	100% ON TIME DISPATCH: 50% of the inhouse fleet converted to CNG
	CII NATIONAL AWARD FOR ENVIRONMENTAL BEST PRACTICES 2022
	ONLY FSC CERTIFIED RM: Smaller environmental footprint than traditional packaging
	ISO CERTIFIED: 9001, 14001, 50001, 45001

PRODUCT PORTFOLIO:



Nahar Group of Companies



Bisleri



Team Behind It

01 Team Leader
05 Team Member



Team Leader
Rajnish Jain



Member
Aashriya Jain



Member
Rajat
Jain



Member
Ravi Kumar



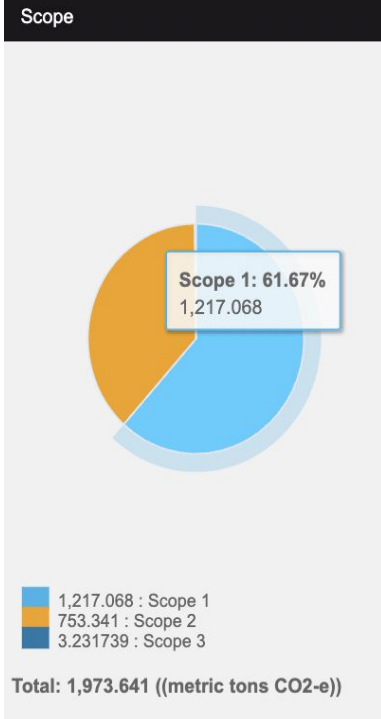
Member
Jatinder
Singh



Member
Lal
Bahadur



Key Problem: Trigger?



KEY PROBLEMS:

- *Total Carbon Footprint for 2023 stood at 1974 MT CO2-e*
- *No awareness on the key pollutant from Scope 1?*
- *No Target plan set for CO2 emission reduction*
- *Need to introduce awareness amongst the management on the 1.5 Celsius Agreement (The Paris Agreement's long-term goal of keeping warming "well below" 2C and aiming to limit it to 1.5C is the global benchmark for climate action)*

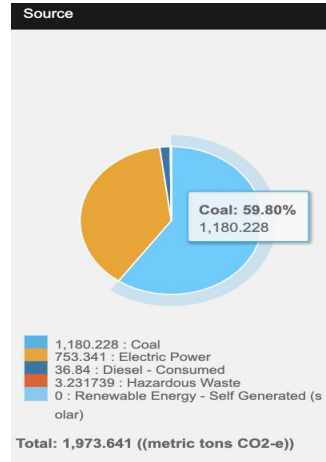
Pollutant	Scope 1	Scope 2	Scope 3	Total
CO2	1217068000.000	753341184.000	3231739.100	1973640923.100

**Values provided in g CO2e

Root Cause Analysis

Total Carbon Footprint = Scope 1, 2 & 3 Emissions

Scope 1 Production 2016-2022											Total
Coal	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23		
Volume kg	55,300	54,700	56,000	55,000	54,000	50,000	55,000	54,000	50,000		539,000
Emissions CO ₂ -e metric tons	135	133	137	134	132	122	134	132	122		1,315
Diesel - Consumed											
Volume liters	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000		12,000
Emissions CO ₂ -e metric tons	3.070	3.070	3.070	3.070	3.070	3.070	3.070	3.070	3.070		37
Renewable Energy - Self Generated (solar)											
Volume kWh	12,099	17,598	19,427	9,713	17,050	16,460	12,398	16,049	14,817		159,942
Emissions CO ₂ -e metric tons	0	0	0	0	0	0	0	0	0		0
Scope 2											Total
Electric Power	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23		
Volume kWh	71,220	69,724	71,736	79,892	79,644	84,936	81,364	66,836	59,272		897,252
Emissions CO ₂ -e metric tons	65	64	65	73	73	77	74	61	54		803
Scope 3											Total
Hazardous Waste	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23		
Volume metric tons	0.210	0.270	0.278	0.340	0.450	0.470	0.442	0.510	0.430		3.820
Emissions CO ₂ -e metric tons	0.148	0.191	0.196	0.240	0.318	0.332	0.312	0.360	0.304		2.698



Base Year	2022
Target Year	2030
Base year Activity output	
Base year Scope 1 emission	1430.104
Base year Scope 2 emission	730.843

Road Map: Idea Generation to eliminate Root Cause

SCOPE 2	Electricity												
	Trajectory to becoming 100% Renewable Electricity (Sum of %RE solutions as below)		20.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%
	% Renewable Energy - Self Generated (solar)	20.00%	20.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%
SCOPE 1	Fuel (Gasoline , Diesel, Fuel oil, Methanol)												
	% Trajectory to phase-out Fuel take into account growth in alternative energy emissions	41.00%	50.00%	58.00%	67.00%	75.00%	83.00%	91.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	Electricity for heat instead of fossil fuel	Shift to CNG instead of Diesel for transportation											
	CO2 Emission Reduction Trajectory												
SCOPE 1	Coal	1378.2	Step 1 was to FOCUS ON COAL USAGE										
	% Stop coal Trajectory to phase-out Coal	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	%Biomass for heat instead of coal	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	%Industrial Waste for energy for heat instead of coal	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			

Major Milestone: ZERO COAL TRAJECTORY



WOODEN PELLETS:
Rs 8.95/KG



WASTE



WOOD: Rs
6.20/KG



*"BIOMASS: AGRO WASTE FUEL" fueling
Nahar's boiler system (Rs 4.70/KG)*

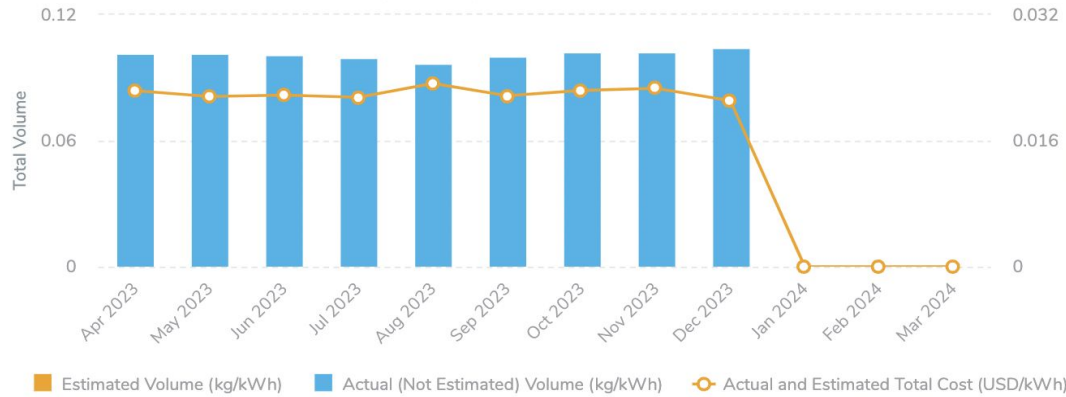
- 100% shift from PETCOKE to run Nahar's boiler system.
- Aim was to shift towards becoming a carbon positive company.
- The shift took place in 1 go & not stages on the 25th December 2023 as planned.
- The shift took 3 working days to be completed.

Tangible benefits

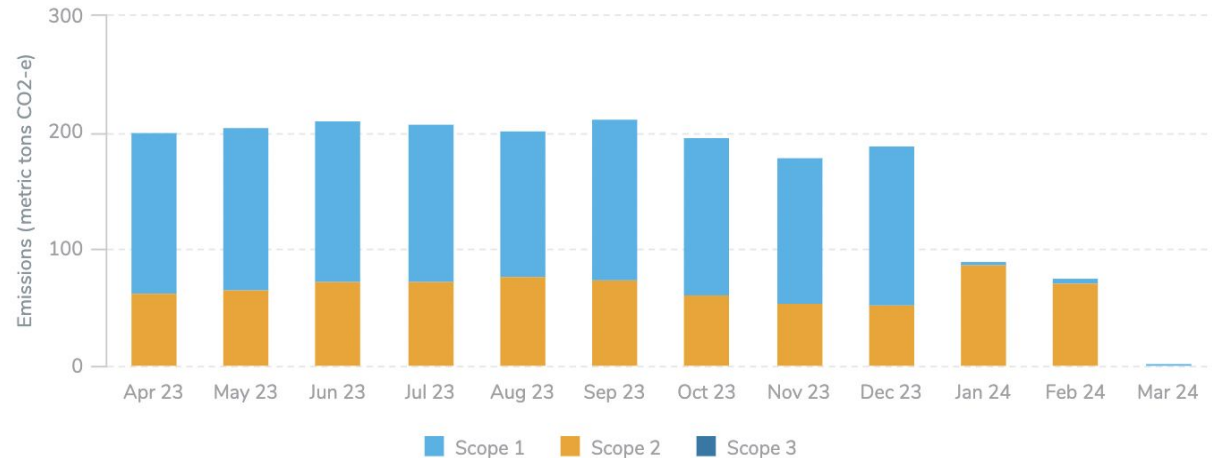
Quantitative (PET COKE VERSUS BIOMASS):

Productivity (GHG Emissions) GODREJ & BOYCE GREEN TRACKER:	 GHG (Green House gases emission) CO2/kg of production - TRACKER ATTACHED													60% + Reduction	
	Supplier Name:-	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24		
	FY2023-24	200	205	210	207	203	212	196	179	190	90	60	202		
	FY2022-23	197	203	208	205	200	198	200	208	206	200	201	202		
	FY2021-22	196	201	210	207	208	202	197	198	200	202	203	200		
Cost Benefit	Pet Coke costs Rs 14.5/Kg compared to Biomass costing at Rs 4.5/KG													Rs 9.5/KG Benefit	
Delivery	- Biomass hails from a renewable resource making availability much easier in comparison - Biomass supplier is stationed 7km's from the factory & Pet coke supplier approx 152km's													95 Times Easier	
Safety	- Workers are now protected against chronic respiratory problems - Workers at the boiler are safe from skin & eye irritation issues arising from burning toxic materials														
Quality	- The efficiency level depends on maintenance techniques & frequency - Efficiency of biomass boilers also increases easily with the type of fuel being used													81-90%	

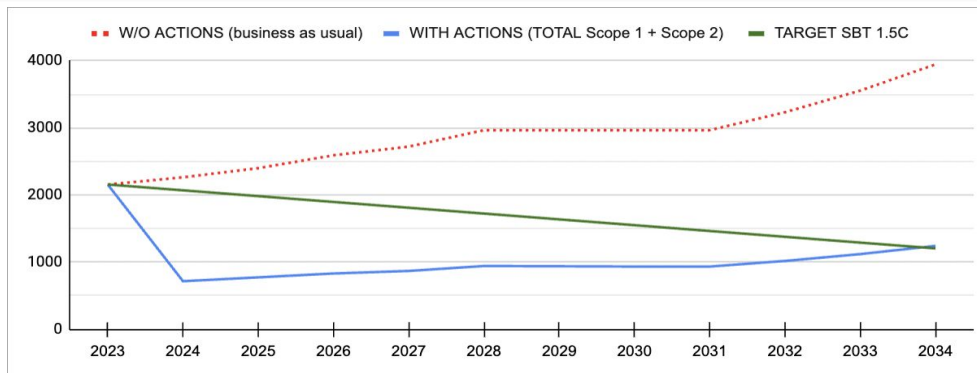
Tangible benefits



TOTAL EMISSIONS **SUMMARY**

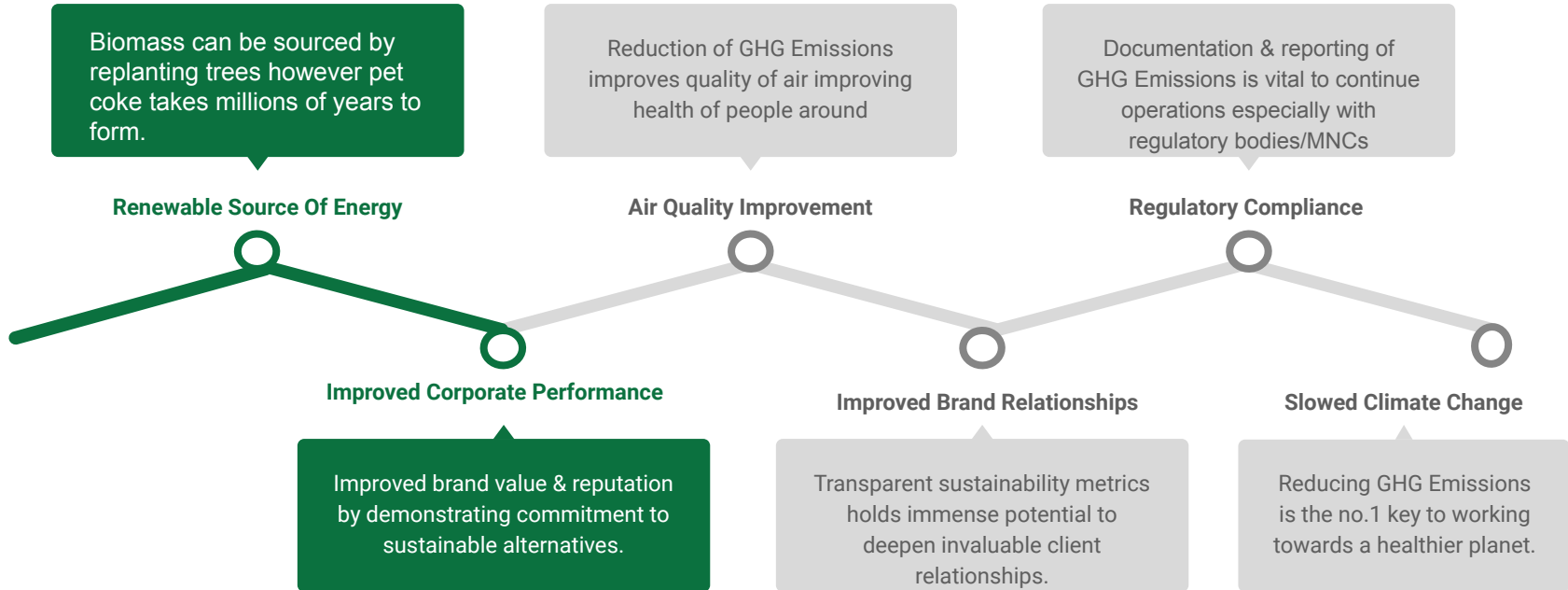


Tangible benefits: Before & After Summary

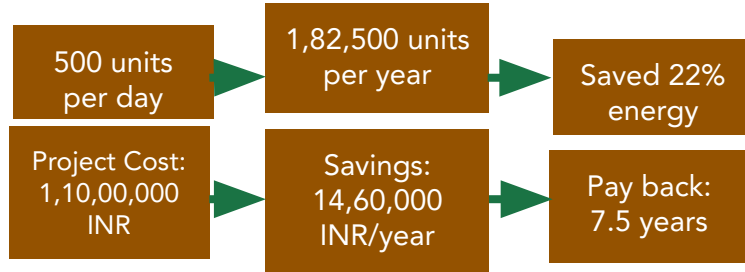


CO2 Trajectory (TONS CO2)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
SCOPE 1 w/o actions	1430.10	1501.61	1591.71	1719.04	1804.99	1967.44	1967.44	1967.44	1967.44	2144.51	2358.97	2618.45
SCOPE 2 w/o actions	730.84	767.39	813.43	878.50	922.43	1005.45	1005.45	1005.45	1005.45	1095.94	1205.53	1338.14
W/O ACTIONS (business as usual)	2160.95	2268.99	2405.13	2597.54	2727.42	2972.89	2972.89	2972.89	2972.89	3240.45	3564.50	3956.59
SCOPE 1 with actions	1,430.10	43.59	42.38	41.12	38.83	37.59	32.86	27.54	27.54	30.01	33.02	36.65
SCOPE 2 with actions	730.84	613.91	667.01	720.37	756.39	824.47	824.47	824.47	824.47	898.67	988.53	1097.27
WITH ACTIONS (TOTAL Scope 1 + Scope 2)	2,160.95	657.50	709.39	761.49	795.22	862.06	857.33	852.00	852.00	928.68	1,021.55	1,133.92
TARGET SBT 1.5C	2160.947	2033	1904	1776	1647	1519	1390	1262	1134	1005	877	748

Intangible benefits

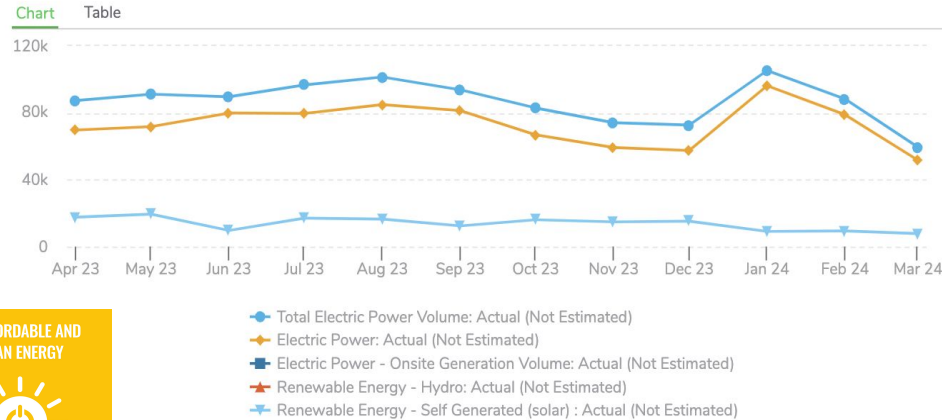


Renewable Energy: Solar Panels



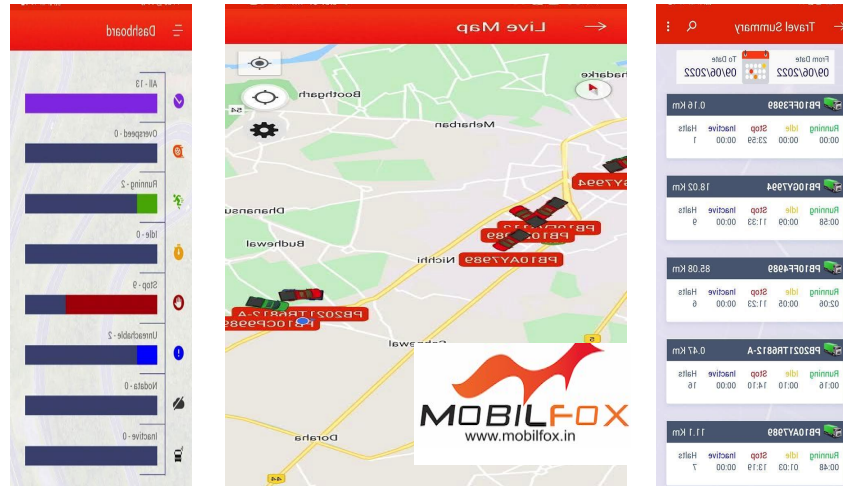
*204.8 kWp grid tied
Solar Power Plant*

Electric Power sources (kWh)



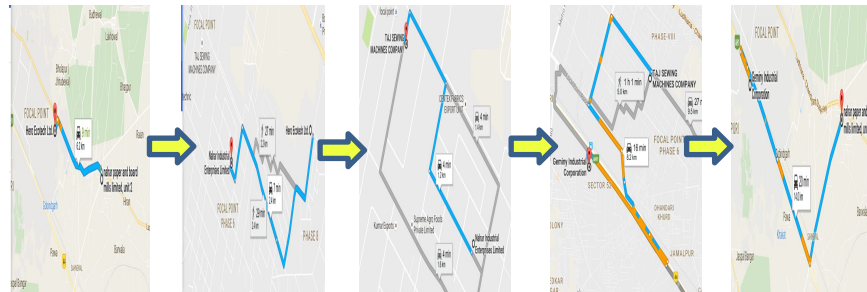
7 AFFORDABLE AND
CLEAN ENERGY





- Using milk run model to plan smarter routes
- Simple intuition seldom leads to optimal solutions, and over time tradition often allows patterns that are wasteful
- In this example – Nahar -> Hero Eco Tech -> NIEL -> Taj Sewing -> Gemini -> Nahar ***we saved 42 Kilometers by amending delivery routes using only 5 litres of diesel instead of 12 litres.***

INVENTORY ON THE WHEELS



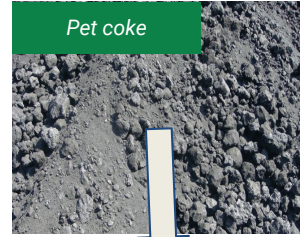
Cost Saving on fuel: 25,000 INR/month
Cost Saving on vehicle: 4,00,000 INR
Fuel Saving: 19,200 liters of diesel/year
CO2 Emissions Sacing: 1690 MT CO2
emissions/years

Project Cost:
36,00,000 INR

Pay back:
1.2 years



Replication Potential: Group Companies



Pet coke



Firewood

We aim to apply our learnings and strategies proven to be successful at our sister concern, Nahar Paper & Board Mills Unit 1.

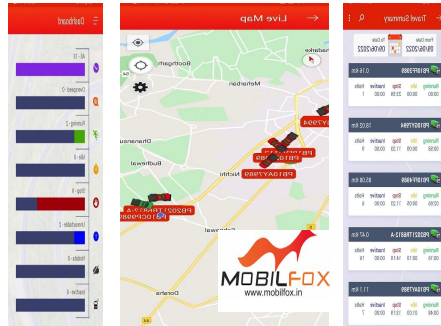
- We shifted away from the pet coke boiler after seeing tremendous benefits in UNIT 2. Switched to Firewood.
- Inclusion of all employees and workers in the overall sustainability strategy through zonal/departmental teams
- Team meetings for brainstorming possible solutions for real time problems

Cross Functional Teams & Trainings



Replication Potential: Sector

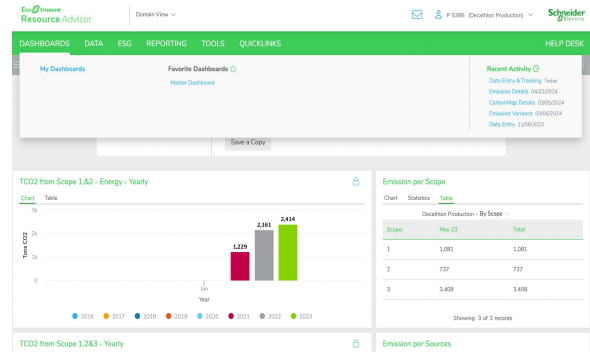
GEO-FENCING: MOBILFOX TOOL



SHIFT AWAY FROM PET COKE



RESOURCE ADVISOR TOOL



SOLAR PLANT



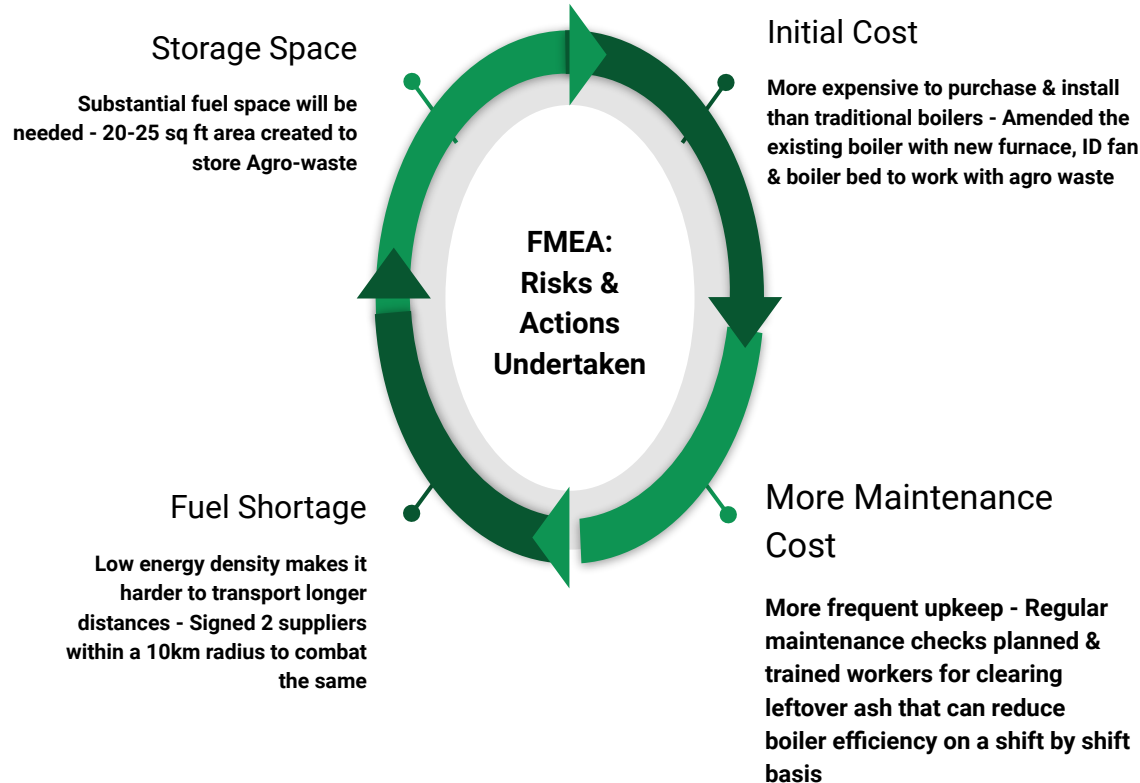
SWITCH TO CNG FLEET



TREE PLANTATION DRIVE



Challenges Faced



Technical:

- ❖ Training for new digital initiatives takes time which distracts employees from their day to day operations
- ❖ Lack of an inhouse IT Team

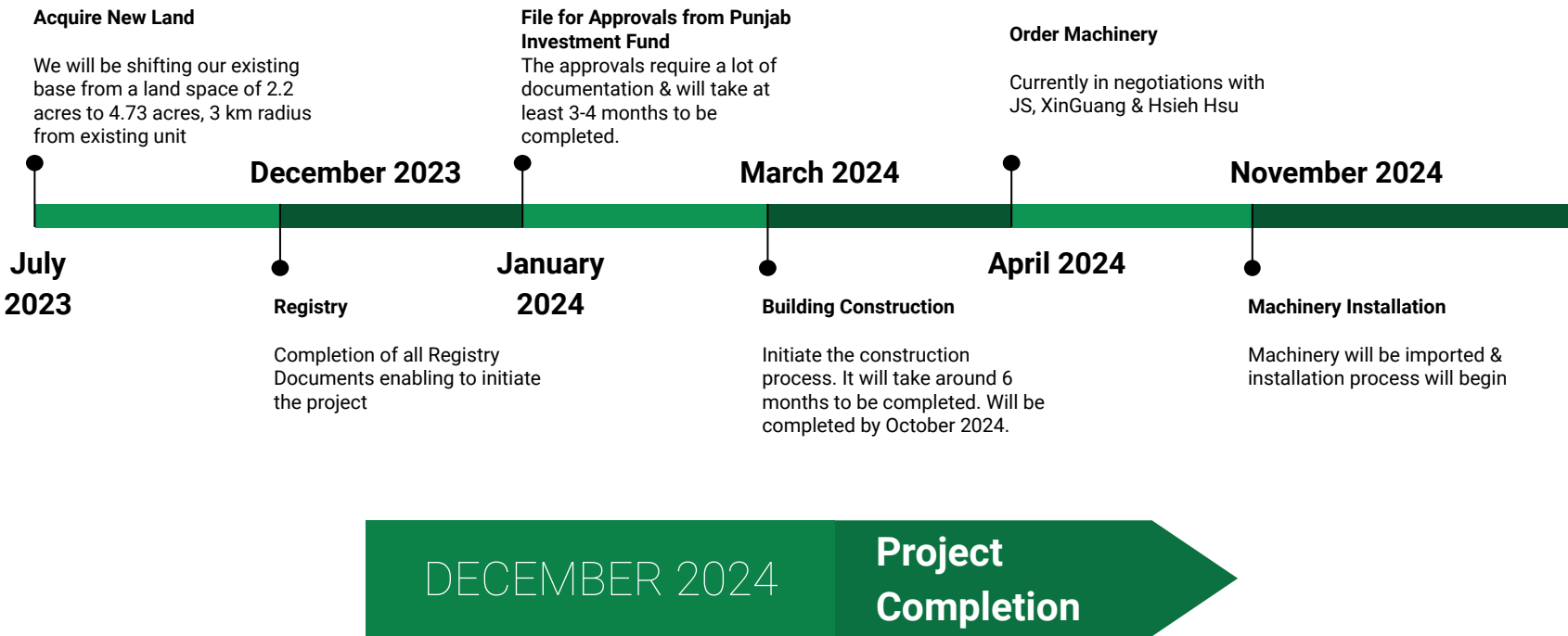
Administrative:

- ❖ Sourcing cost increased by 25-35% per annum for biomass
- ❖ The quantity required has increased x 4 times for biomass

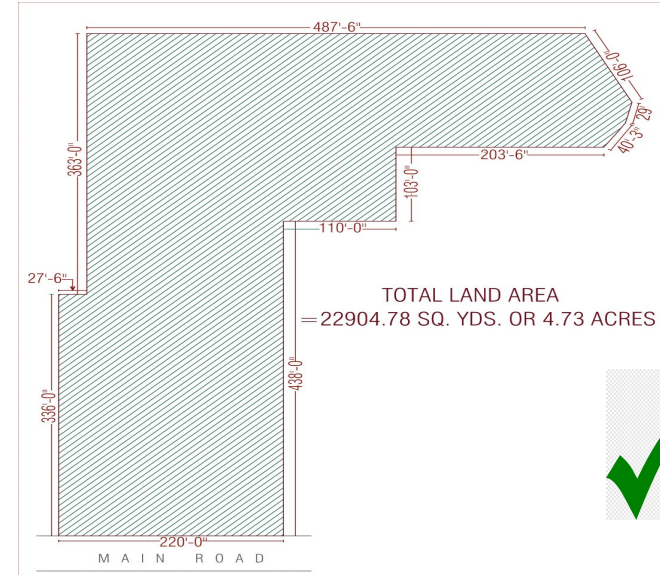
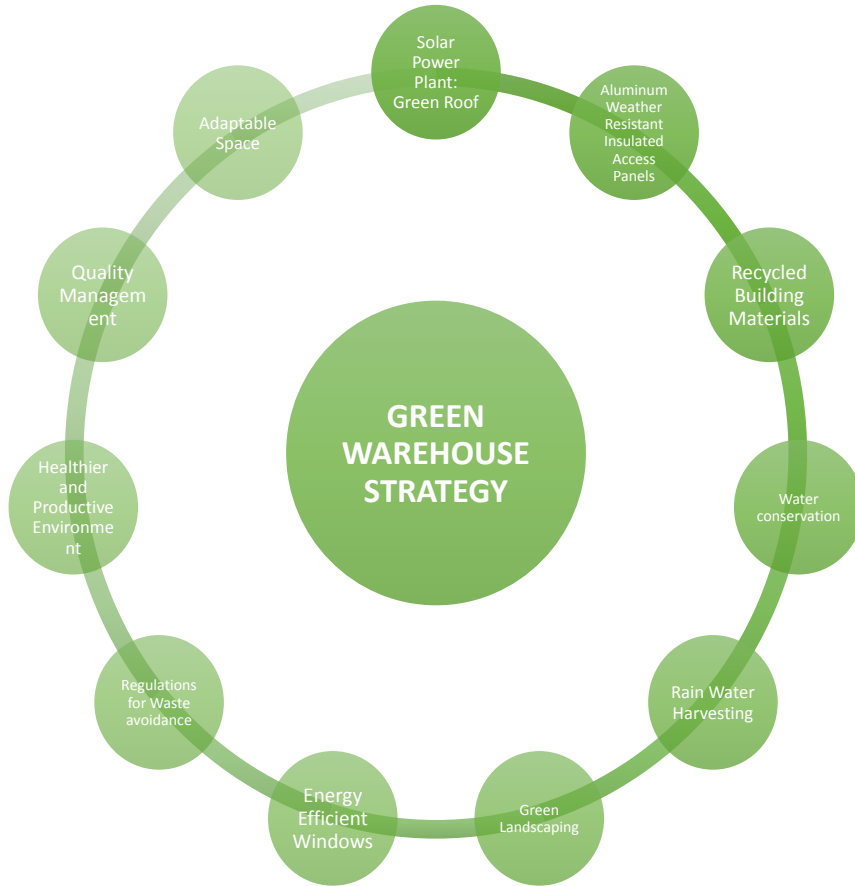
Operational:

- ❖ Getting accustomed to new ways of doing things
- ❖ Provision of training to lower level workers from relevant bodies

Priority Plans for Fast-track



Priority Plans for Fast-track



- ❑ **Insulated building**
 - Big energy savings
 - Reduced dependency on air con & heating units
 - Prevents moisture condensation
 - Fire protection
 - Maintains comfortable indoor temperature
- ❑ **Solar Panels (shift from 204.8 kwp to 500 kwp)**
- ❑ **Shed height increased from 25FT to 40FT for better air circulation**

What more to green our value chain?



Over 26,000+ eucalyptus & poplar trees planted at Nahar Farms



Tree planted by Godrej & Boyce Sourcing Team, Mohali



Tree planted by Godrej & Boyce Sourcing Team, Shirwal

Results:

- 60% reduction in Scope 1 emissions with the zero coal trajectory
- Target SBTi 1.5 C set

Best Practices:

- Align long-term sustainability goals with business goals
- Focus on source reduction to reduce waste
- Use green supply chain analysis as a catalyst for innovation
- Identify waste stream & creatively find solutions
- Inclusion of all employees and workers in the overall sustainability strategy



Achievement Sharing Mode



NAHAR NEWS | August 2022



Felicitation 2022: Pillars of Indian Economy

We are delighted & so humbled to announce that we have been felicitated at the Pillars of Indian Economy by the Punjab State Government for our contribution towards the economy & growth of Punjab. We are honoured to have been awarded by the finance Minister, S. Harpal Singh Cheema for our sustainability initiatives & long standing contribution to the state GDP. Special thanks to [Business Standard](#), [The Print](#), [Daily Hunt](#), [Zee5](#) & [ANI News](#) for recognition.

A huge thank you to our wonderful team, without them this would not have been possible. Ofcourse, we cannot forget you! Thank you for your confidence, trust & years of loyalty in our organisation as your supplier partner! Actions speak louder than words, we aim to stand tall on the building blocks of persistence, reliability & timely delivery and ensure to raise the standards of packaging solutions in the market.



Business Standard