

Best Practices in the Field of Manufacturing – SPB unit Erode

Abstract: A Best practice is a method or technique that has been generally accepted as superior to any alternatives. It produces results that are superior to those achieved by other means. Regardless of the complexity of best practices, the aim is to make whatever we are doing work out better, faster and more efficiently with less problems and mistakes.

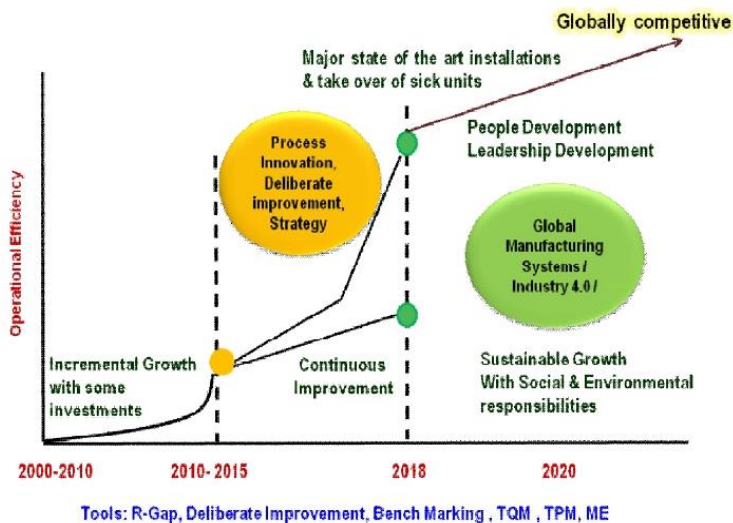
This paper deals with various aspects of our mill operation which are essential for sustainable operation while taking care of society around us, environment and our own growth.

Keywords: Sustainability, Green Initiatives, material conservation, circular economy, cross sector economy,



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The Approach towards Strategic Growth



Sustainability Management System

Our practices and systems are focused on the sustainability Management. We are taking care of meeting today's needs without abridging the rights of tomorrow's generation to meet their needs. The development strategies we work are ensuring that, they are socially desirable, economically viable & ecologically sustainable.

Some of the key points I would like highlight in this article are

- Primarily, the Farm forestry Initiatives has enabled us as wood positive. By the Green Initiatives in SPB - A Transformation in Business to Sustainability has started. It starts from the procurement of Raw materials, chemical, plant and machineries to our end products & services.
- In Energy front, our continuous efforts in reducing specific consumptions are significant and made us to earn the recognition of Energy leaders. Some of the major energy related innovative projects

in our sector are taking care of offsetting the fossil fuels. The Circular economy which was initiated 30 years before is continuing yielding us the benefits in terms of profit, sustainability and closure of our system.

Farm Forestry Initiatives

One of the most successful and sustained schemes that has been implemented in SPB are farm forestry activities. It has improved the livelihood of thousands of farmers and the community. The Objectives includes the Waste land development, rural employment, Environmental Protection, up-liftment of rural economy and availability of raw material to industry. The tangible and the intangible benefits we gain are the alternate ways to waste land development, Environment preservation, Global warming reduction, ensuring normal climatic conditions and reduction in Green House Gases.

Green Manufacturing

Our Green Manufacturing covers the entire product life cycle from conceptual design to disposal in a benign, harmless manner causing no or minimal adverse impact on environment by optimum use of resources and reduction of waste and pollution.

Benefits we gain are reduced use of natural resources and energy, a lower carbon footprint, building of a strong foundation for a global circular economy, brand enhancement, compliance to regulatory norms, increase in customer retention and potential cost savings etc.

Recent recognition by CII-GBC, at the National level across all industries as “Trending Performers” itself is a true reflection of our efforts and commitment to be a Green Company.

Our inspiration is from the message of our Chairman:

“GreenCo has provided us with a new perspective to our way of looking at green and environmental sustainability. GreenCo brought together employees from all departments and verticals to work on this collective aspect of sustainable and green growth. “The cultural change and the impact that it has made, has earned us our Gold rating”. We look at GreenCo as an important tool that will continue to guide and shape SPB in its Various Green initiatives”

Our Energy Management Cell is focusing on Restoring basic condition of equipments, Process / Energy Optimization, Innovation, Technological Upgradation, Awareness / Knowledge Management, Audits – Internal & External, and we follow PDCA cycle. The dedicated team focus on the specific consumption at each stage of the operations.

Our unique practice of developing talents include screening system for the developing young managers to participate in National level Examination for Energy Managers conducted by BEE. 17 people are trained in last 2 years and 9 people have cleared the exam in the last year and are certified as “Energy Managers”. They are the backbones in all our energy Initiatives. Also one of our Managers could make it up to the final stage of the “Young and Emerging Leaders” across all sectors at the national level, conducted by CII and is awarded as “Finalist”.

Focusing on water Conservation, we have come down from 64 to 43 m3/ton of paper in the past 4 years. It is due to our steady efforts to bring down the consumption and by applying 6R principles wherever possible without affecting the quality of the product.

In extending the water conservation projects beyond the fence, all our quarters are equipped with Rain water harvesting system. Also, de-silting of village tanks, lakes and canal and construction of check dams were done for increasing their storage capacities thus making the ground water recharged.

Renewable Energy

The predominant form of Biomass energy available at integrated mills is Black liquor, the lignin

rich by-product of fiber extraction from wood. Generation of green power by firing black liquor in recovery boiler leads to substitution of overall energy requirement. We have increased the green energy by 7% in the past 4 years.

GHG Mitigation

SPB’s strategy of addressing GHG emissions reduction through energy efficiency, avoiding emissions through the use of renewable energy is highly appreciated. The efforts have led to a 13% reduction in GHG emissions intensity. Good progress made in Carbon sequestration is through tree farming, logistics optimizations by improving load ability, bulk procurement of major items etc. To highlight, the mitigation of methane by collection and burning as fuel in lime kiln as partial fuel furnace oil at minimum investment cost is our major breakthrough.

To increase the awareness not only to employees but also the budding students, science exhibitions are being conducted by the Students of SPB Primary school with Central themes as Global Warming, GHG Emission reduction measures with special emphasis on Tree Farming with factual demonstrations.

Waste Management

Following best practices in operation, emphasis is given to waste segregation and collection. Some of the initiatives included are to reduce solid waste from the process and instead of sending to landfill they are sent for other industries as raw materials. By this we are helping others to help ourselves.

Appreciable efforts are put in for reducing specific waste water generation. Our treated waste water is used for irrigation only after meeting the inland surface water discharge standards. TNPCB also has permitted for usage of treated effluent for irrigation, thus making us as Zero discharge plant to river bodies.

Material Conservation & Recycling

100% sustainable sourcing of bagasse through ‘Waste-to-Wealth’ initiative, 83% replacement of limestone by efficient lime-mud recycle, 11.3% replacement of virgin wood with bagasse and recycled fiber, 11% weighted reduction in the packaging material used, namely, HDPE fabric, ESKP wrappers for ream and reel packaging, etc our major achievement in Material Conservation & Recycling. As Eco-Friendly Initiative, Industrial grade Urea is replaced with Green Chemical (EMN 2900) for maintaining active biomass

concentration (MLVSS) in the aeration basin of secondary effluent treatment plant, usage of Pro-clean chemical for TDS reduction in EOP stage.

Green Supply Chain

SPB is committed to improve environmental efficiency in the supply chain by reducing the resources such as Energy, Water, Material and GHG emission across major suppliers and in Supply Chain. Out of 24 suppliers, 9 suppliers are ISO 14001 certified, One of the suppliers – M/s. Fimakem is GreenCo Gold Certified, 80% of the suppliers and vendors are covered in the awareness creation programs and efficiency improvement programs with a specific focus on environmental parameters.

By Practising GreenCo, substantial reduction in Specific Power, Steam and Water, Significant increase in Green Thermal and Electrical Energy Generation are achieved. All above have led to GHG reduction, improved Waste Management System, Reduction of input Resources and increased Recycling. We are helping Vendors to become Green. Our products are based on Product stewardship and Life Cycle Assessment. GreenCo has helped us in developing Greenery and increasing biodiversity.

Some of the Major and Innovative Projects - Implemented are

1. Conversion of Bubbling to Spouted AFBC Boiler with increased bed heating surface area for enhanced and efficient Steam & Power generation.

- Increase in Steam Generation 25 TPH
- Increase in Power Generation 6 MWh
- Power Savings 20000 kWh/Day
- GHG Reduction 36000 tCO₂e/Annum

2. Black Liquor – White Liquor Spiral Heat Exchanger White liquor temperature could not be maintained in RDH station with the conventional shell and tube heat exchanger. This had necessitated to look into alternate advanced heat exchanger with state of the art technology

- Steam Saving 25 TPD
- GHG Reduction 2646 tCO₂e /Annum

3. Bio Gas firing in Rotary Lime Kiln Our "Unique way of handling foul condensate" and fire as partial fuel replacement in Lime kiln. By this, we had reduced COD load to ETP

● F. Oil reduction	3.5 KL / Day
● COD Load Reduction	20 %
● GHG Reduction	42439 tCO ₂ e / Annum

We are pioneers in promoting the concept of Circular Economy, leading the Way for Sustainability at SPB. The waste water in the mill is divided into three streams viz. Low BOD, Medium BOD and High BOD streams. The low BOD effluent is treated in a separate clarifier and recycled back in the mill. The high BOD stream is taken through an Anaerobic Lagoon to reduce BOD and to generate methane gas which is used in our Lime Kiln to reduce furnace oil. The overflow from the anaerobic lagoon joins the medium BOD stream and treated in an extensive effluent treatment facility. The final treated effluent well within the standards prescribed by Tamilnadu Pollution Control Board (TNPCCB) is used to irrigate about 1200 acres of land to cultivate Sugarcane. The sugarcane is procured by our

sister concern Sugar Mill viz. Ponni Sugars(Erode) Limited which in turn generate sugarcane bagasse, a residue left after extraction of sugar from sugarcane. The bagasse is used by our Paper Mill to manufacture high quality, environment friendly Paper.

As Industry leaders, we are taking care of our society also. And for this, Our Company has implemented several community development programmes for the people living around the Mill. Some of them to highlight are supply of treated and protected drinking water through a network of 300 taps and two overhead tanks in the rural drinking water scheme, running of three schools for the benefit of poor children living around the Mill site, provision for rain water harvesting facilities and construction of check-dams to collect rain water in the nearby villages.

We have established 4 community health centres with full time qualified physician, para medical staff and free medicines, Conducting free Eye-Camps, Blood donation Camps, Diabetic check-up Camps, etc., every year.

As stated earlier in the graph, the HR is playing a major role in giving required shape to our

employees to shoulder higher responsibilities. As the saying goes, "What is not measured cannot be managed", HR is constantly monitoring their progress to improve productivity.

Practices make a man perfect. We have the dedicate team at each department to train them theoretically and practically. Skill mapping, training needs identification, assigning job responsibilities and periodic evaluation are some of our HR practices which makes us to strengthen and to utilize our Man Power resource.

Conclusion

The Industry is demanding for the survival of fittest and fastest. It is the need of the hour to prove ourselves that we are not disturbed by any means. This is quite possible if we adopt the best practices in every activity of our business.

SPB's manufacturing excellence, with sustainability as the founding principle, has created an enviable financial record. SPB takes pride in achieving Consistent and Stable Financial Performance over the years due to adaptation of best practices and green practices.