wbcsd

Making manufacturing more sustainable through a value chain approach

An example in practice by ITC Paperboards and Specialty Papers Division

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Acronyms

AWS	Alliance for Water Stewardship
BEE	Bureau of Energy Efficiency
CII	Confederation of Indian Industry
CMC	Corporate Management Committee
DRCC	Dry resource collection center
EHS	Environment, health and safety
FMCG	Fast-moving consumer goods
GHG	Greenhouse gases
IPMA	Indian Paper Manufacture Association
IPPTA	Indian Pulp and Paper Technical Association
ISO	International Organization for Standardization
ITC PSPD	ITC Paperboards and Specialty Papers Division
M&E	Monitoring and evaluation
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MoU	Memorandum of understanding
NPC	National Productivity Council
RCS	Responsible care system
SCRC	Sustainability Compliance Review Committee
WBCSD	World Business Council of Sustainable Development
WOW	Wellbeing out of waste
WUG	Water User Group
WWF	World Wildlife Fund

Executive summary

Leading businesses across the world are striving to reduce emissions and become more sustainable not only as a response to reputational risk but also because it makes them more resilient and is in their commercial interest. 215 of the world's largest companies by market capitalization, with a market valuation of USD $17 trillion, have valued their potential losses due to climate risks to their businesses at USD $1 trillion, with many likely to be hit within the next five years.[1]

As part of its Energy Pathway, World Business Council for Sustainable Development (WBCSD) worked with over 30 companies globally to develop an integrated energy strategy to help companies achieve their sustainable energy objectives. An integrated energy strategy covers all the energy a company uses for its operations and across its energy-related value chain. It describes how a company works cross-functionally internally and externally with upstream and downstream stakeholders. It defines how energy-related inputs and outputs become more efficient, circular and low-carbon.

With this report, WBCSD brings a lighthouse example of a company in India that has used elements of integrated energy strategy and its own unique measures to become carbon-positive in its manufacturing operation.

ITC defines carbon-positive as successfully sequestering more carbon dioxide emissions than the company generates from its operations (Scope 1 and 2). This is described in their sustainability report.

The Paperboards and Specialty Paper Division of ITC Limited's (ITC PSPD) initiatives on energy, water and waste management, and carbon sequestration have various elements of the integrated energy strategy embedded in them.

These include a strong governance framework, robust data collection and management program, external and internal reporting as well as frequent engagement with internal and external stakeholders.

For instance, to ensure efficient energy use, it relies on a frequent multi-level performance review system involving executive level review, invests in enhancing employee capacity, gets inputs from various functions across the team on implementing the most energy efficient measures and rewards employees with the best feasible suggestions. Energy monitoring, analytical software and automated emailing reports to relevant functions help the company monitor the efforts' impact in real-time. This approach has resulted in the implementation of 42 energy conservation projects in the last three years with an investment of INR ₹82.07 million (USD $ 1.14 million), resulting in savings of INR ₹194.68 million (USD $ 2.69 million) due to reduced fuel consumption.

Maintenance, analysis and transparent disclosure of water use data from its operations form the bedrock of its water resource management. The company then works with internal and external stakeholders, including civil society and academic organizations as well as local communities to implement measures to optimize freshwater use through recycling, reusing and regenerating water.

In the case of waste management, its efforts extend beyond its own operations to its consumers and communities at large.

ITC PSPD has also benefitted from collaboration with its group companies in consumer goods and packaging divisions to come out with two new recyclable and biodegradable product lines, further expanding its reach in this space.

In order to reduce its scope 3 emissions, ITC PSPD has supported its suppliers to become more sustainable by devising a robust methodology to select suppliers based on various environmental and social criteria. The evaluation of suppliers is based on the use of energy and water efficient products, lifetime cost accounting for equipment, waste disposal activities and environmental certifications received by the suppliers.

For its measures towards carbon sequestration, which is a significant contributor in making ITC Group carbon-positive, the company has developed a social and farm forestry initiative. Through this initiative, it has been able to provide over 147 million person-days of employment till 2020 to resource constrained farmers in India, which now supply pulpwood for ITC PSPD and other businesses, hence ensuring material security.

This report sheds light on simple, structured and highly effective initiatives by ITC PSPD that other companies can replicate to accelerate their journey towards carbon-positive operations.

1 Introduction

1 Introduction

Globally, businesses are taking a lead in addressing environmental and social issues and establishing transparent governance that is aligned with social, environmental and economic performance standards. These actions are in recognition of the commercial cost of unsustainable business practices – 215 of the world's largest companies by market capitalization, with a market valuation of USD $17 trillion, have valued their potential losses due to climate risks to their businesses at USD $1 trillion, with many likely to be hit within the next five years.[1]

Taking pre-emptive action to effectively manage climate risks can not only prevent commercial losses but can also provide business growth opportunities. It is estimated that potential revenue of USD $ 2.1 trillion can be realized from new business opportunities arising from managing climate risks.[2]

These opportunities include increased revenue through demand for low emissions products and services, shifting consumer preferences and increased capital availability as financial institutions increasingly favor low-emissions producers. For example, the market for green bonds, a market-based instrument for financing projects addressing environmental and climate change related issues have increased from USD $11 billion to USD $270 billion globally between 2013 and 2020.[3]

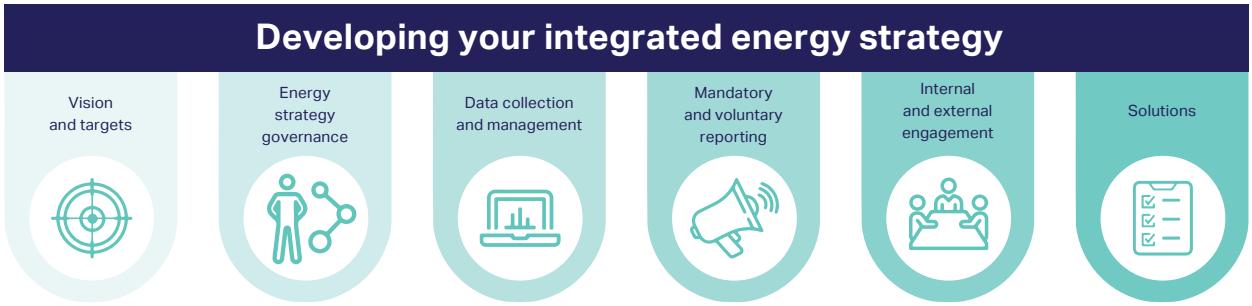
Planned and existing climate action in India has attracted increased attention, both nationally and on an international level. While per person emissions are low, India is now one of the world's largest emitters of greenhouse gases (GHG). India faces some of the highest disaster risk levels in the world, ranked 24 out of 191 countries by the 2022 Inform Risk Index.

The country is also vulnerable to the consequences of climate events (57 out of 191) due to its social and economic development. In fact, in 2019, economic losses due to climate change induced natural hazards in India have been USD $68 billion in purchasing power parity terms.[4]

The deep economic impact of climate change warrants definitive actions to reduce emissions. With energy consumption being by far the largest source of GHG emissions globally, efficient energy use and increased use of low-emission fuel sources can be effective measures to reduce emissions.[5]

The integrated energy strategy is a toolkit developed by WBCSD which helps companies achieve their sustainable energy objectives, thereby helping them gain a competitive advantage, manage costs and become more resilient to climate change.[6]

Figure 1: The six elements of an integrated energy strategy



The framework encourages organizations to collaborate with external partners and unlock additional opportunities, drive innovation and accelerate the transition to resilient and low-carbon operations across the businesses and those in the value chain. Through various elements of this framework as well as other unique measures, an Indian enterprise – the Paperboards and Specialty Paper Division of ITC Limited, a conglomerate, (ITC PSPD) has been able to become a net carbon positive business.

This report looks at how ITC PSPD is taking innovative approaches to address climate change and sustainability related risks while building market leadership in commercial performance. The objective of this document is to disseminate information about ITC PSPD's initiatives, highlight the benefits that can be derived by undertaking a sustainable approach to business operations, and to support other companies with similar operations and aspirations.

2 About ITC Paperboards and Specialty Paper Division

② About ITC Paperboards and Specialty Paper Division

ITC Group has a diversified presence in consumer goods, agri- business, hospitality, packaging and information technology businesses, apart from the paperboards and specialty paper business, which is undertaken through PSPD. ITC PSPD is a leader in the Indian paper and paperboard industry in terms of sales volume as well as being technologically advanced and a sustainability leader. Starting operations in 1978 in the town of Bhadrachalam in Telangana State, ITC PSPD today operates four manufacturing facilities with an annual production capacity of 0.81 million tons of paper and paperboard products.

The initiatives given below are a result of a group-level structured approach for undertaking sustainability initiatives aimed at enhancing the ITC brand value as well as realizing commercial benefits. Accordingly, sustainability initiatives in individual companies (including PSPD) are steered by the group-level policies on sustainability, which provide guiding principles along with a framework for implementation and monitoring actions, which include a strong institutional structure as well.[7] Compliance with the policies is regularly monitored and evaluated by the Sustainability Compliance Review Committee (SCRC) of the Corporate Management Committee (CMC). The report of the SCRC is reviewed by the CMC every quarter. The CSR & Sustainability Committee of the Board supervises the implementation of the policies.

Figure 2: Group-wide sustainability achievements of ITC (as of 2022)

The figure above are based on ITC's definitions:

a. Carbon positive: The company sequesters more carbon dioxide emissions than what it generates from its operations (Scope 1 and 2).

b. Water positive: The total rainwater harvesting potential created by the company is in excess of the net water consumed in its operations.

c. Solid waste recycling positive: The company enables recycling of waste in excess of the quantity of waste generated in its operations

3 Initiatives undertaken to address climate change and sustainability issues

③ Initiatives undertaken to address climate change and sustainability issues

The sustainability related initiatives of ITC PSPD aim to enhance plant performance across the following areas: energy management, water resource management, waste management, and Scope 3 GHG emission reduction.

ENERGY MANAGEMENT

Three units of PSPD (plants at Bhadrachalam, Kovai and Tribeni in India) account for 87% of ITC's group level energy consumption and subsequently 80% of scope 1 and 2 GHG emissions.[8,9]

Bhadrachalam itself accounts for 77% of ITC's energy consumption and 64% of total emissions.

To ensure efficient energy use, a structured multi-department approach is adopted to plan and execute energy conservation activities for the Bhadrachalam plant, wherein the activities are driven by energy conservation cell in collaboration with concerned departments and the plant projects team.

The energy conservation cell, operating under the steering body for plant operation i.e., Unit Management Committee, undertakes ideation, planning and overall coordination of energy conservation activities and is supported by production and support functions like finance and procurement.

While the energy conservation cell is the prime driving force for energy efficiency in the plant, a judicious distribution of responsibility for the entire plant workforce had been laid out to ensure joint involvement in the initiatives. Distribution of responsibilities is given below.

Figure 3: Approach to undertake energy conservation activities in Bhadrachalam Plant

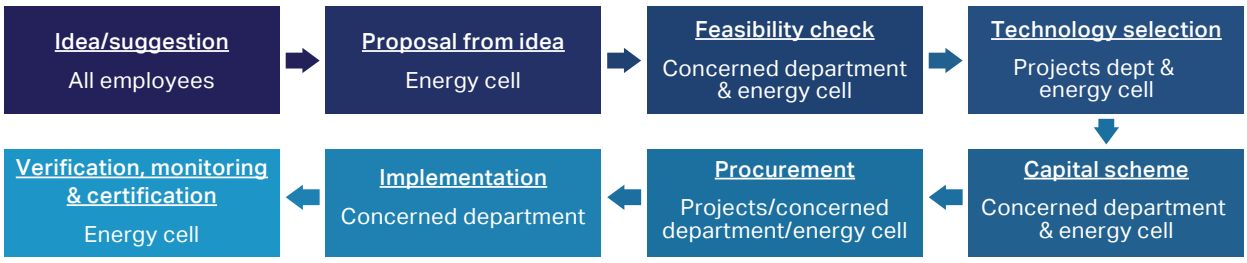


Table 1: Distribution of responsibilities for energy conservation program in Bhadrachalam plant

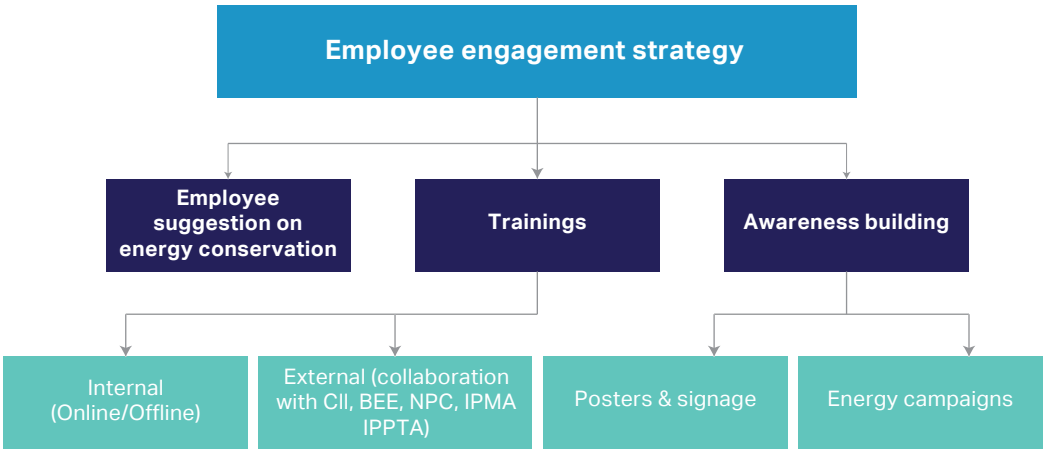
1	**Planning for energy & water conservation**	Measurement & data collection, Internal review & analysis of baseline energy consumption loss assessment due to inefficient energy performance, identify energy savings potential, suggest methods for optimization, coordination with third party for onsite activities
2	**Technology evaluation**	Gather information on technologies through competitors' best practices, vendors, secondary research and attending related seminars/forums. Assess viability of technology
3	**Budget allocation**	Gather vendor quotes post negotiation, identify funds allocated for planned/other schemes' budget, prepare justification note to seek approval, track expenditure and complete CAPEX
4	**Purchase criteria & vendor selection**	Finalize specifications with process & technical team, select vendor based on specifications & negotiate, ensure service/products delivered as per negotiated rates & terms.
5	**Planning & implementation**	Track service order execution progress, coordinate with user department for project planning & execution, schedule & cooridinate with third parties for implementation, if needed
6	**Monitoring & evaluation**	Identify deviation after field discussions, data collection & analysis to assess savings, management reporting, document savings in predefined formats & ratification from finance
7	**Capacity building & awareness**	Identify training needs & awareness creation, plan for internal/external/online trainings, communicate, conduct & track training status, campaign design for awareness creation

A periodic, multi-level performance review system, involving plant to executive level has also been constituted – daily reviews by plant operation managers, weekly reviews by the energy cell and monthly review by the Unit Management Committee.

Quarterly review by the Management Committee is also undertaken to ensure involvement of the senior management in achieving energy efficiency targets. To facilitate energy monitoring, analytical software is utilized which helps in autonomous process control, real-time analytics for process performance data and automated email reporting.

Employee capacity development and awareness building are key elements of PSPD's employee engagement strategy for achieving energy reduction.

Figure 4: Employee engagement strategy in Bhadrachalam Plant



A holistic capacity enhancement of employees is undertaken through multiple platforms and collaborations as given in Figure 4 above. A key feature of the capacity building is the cross-functional utilization of knowledge resources. For instance, tools like run chart, disseminated as part of six sigma trainings in the plant, are being used to evaluate specific steam consumption of boilers.

Internal energy campaigns are organized to generate awareness on energy efficiency topics, annual spend on power and steam consumption, power and steam generation cost, and energy savings opportunities. Posters and sign boards are strategically placed at shop floor and the factory gate to apprise employees of each plant's energy targets, current energy consumption, and achievements.

As part of the Kaizen or continuous improvement philosophy of operations, a total of 362 suggestions for improving energy and water use performance was provided by the employees in 2019-20. Annual rewards and recognition programs are used to recognize employees contributing unique ideas on improving productivity.

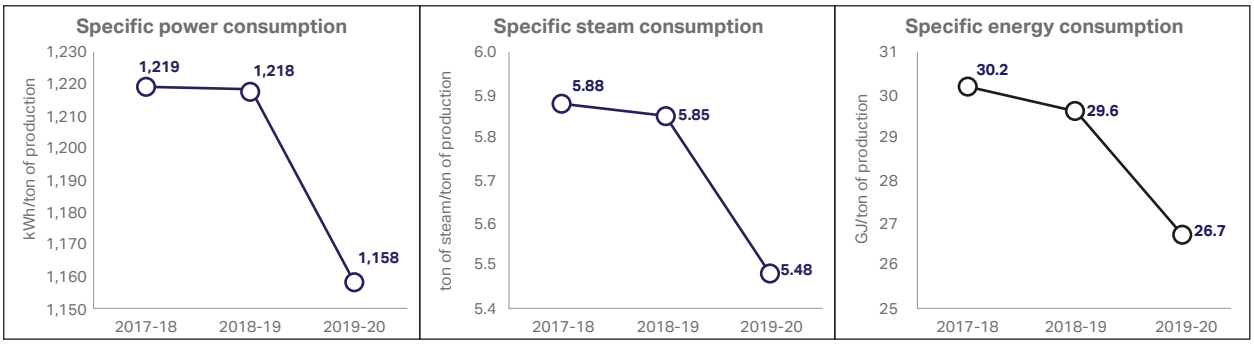
The finance team approves an annual energy conservation budget after evaluating initiatives proposed by the energy conservation cell. Additional initiatives can also be financed through open, flexible and substitution schemes leading to budget re-allocation from other heads as required.

In the past three years, the plant has implemented a total of 42 energy conservation projects with an investment of INR 82.07 million (USD $ 1.14 million), resulting in savings of INR 194.68 million (USD $ 2.69 million) due to reduced fuel consumption.

In addition to the above, PSPD made investments in solar, wind and biomass to improve renewable share in overall energy mix to 48.3%, thereby reducing its Scope 2 emissions.

Overall, the initiatives undertaken by investment has resulted in a significant reduction of energy consumption across plant operations.

Figure 5: Achievement of energy conservation initiatives for Bhadrachalam unit

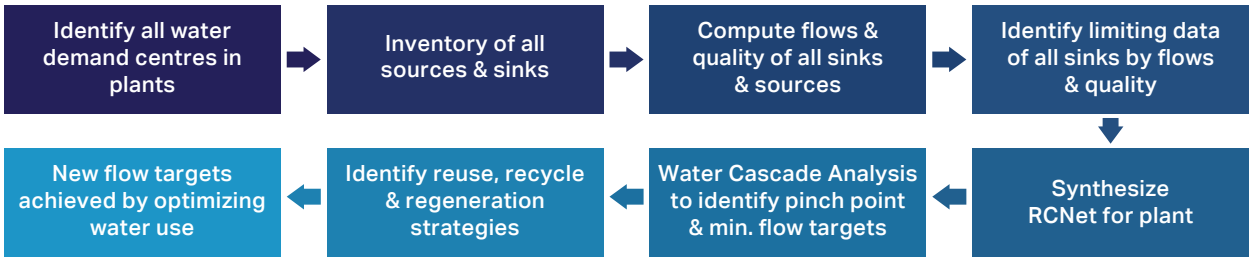


WATER RESOURCE MANAGEMENT

In 2020-21, PSPD units accounted for around 88% of ITC's total water intake and Bhadrachalam unit accounted for nearly 84% of the PSPD's consumption. In order to optimize water consumption, automated water accounting is undertaken by compiling equipment-specific water flow meter readings. Measures like reduction in shower nozzle sizes in paper machines have resulted in 825 kl/day water savings and use of treated wastewater in turbine condenser cooling tower has reduced freshwater consumption by 1500 kl/day. Even in the case of equipment replacement, water consumption is optimized in the design stage itself, as demonstrated during the replacement of the paper machine in 2018-19, which resulted in a 33.8% reduction in water consumption. Such water efficiency measures have helped reduce specific water consumption by over 50% from 72 kl/ton of product in 2008-09 (when such measures were first introduced) to 33.2 kl/ton in 2021-22.

To optimize water use, Bhadrachalam unit is implementing water pinch analysis, for which ITC has collaborated with CII and will be utilizing RCNet software developed by the University of Nottingham in the UK.[10]

Figure 6: Methodology of implementing water efficiency through RCNet



Consumption optimization achieved by recycling, reusing or regenerating water is undertaken to match demand requirements of freshwater of one or more production processes from the available supply of used water from other processes.[11] The input and output water quality parameters are matched by the optimization software. The application of this process is currently underway in the unit and is expected to deliver water savings of 7.3% between 2020-21 and 2022-23.

As a consequence of implementing water conservation measures, ITC's Kovai unit was awarded the highest recognition for water stewardship (platinum level) by the Alliance for Water Stewardship (AWS) in October 2019. It is only the second facility globally and the first in India to receive this certification.

The figure below provides a brief of the activities by Kovai plant as part of AWS certification process, followed by explanatory notes to specific activities.[12]

Table 2: Water stewardship activities by Kovai plant of ITC PSPD

Data collection	Water stewardship plan	Plan implementation	Site performance evaluation	Stewardship communication
• Collaborate with World Wild Life Fund (WWF) to assess water availability in the vicinity of plant • Plant level water inflow & outflow measured to track water use variance • Life Cycle Analysis report of plant wastewater • Testing drinking water by third party as per IS10500 • Quality test of treated wastewater to verify compliance • Independent study to identify households with sanitation gaps • Identified water related challenges[A] in vicinity of plant	• Collaborate with external stakeholders for plan development • Knowledge sharing with ITC plant in Malur[B] • Water stewardship policy & commitment adopted • Policy contains mission, vision & goals for onsite & nearby areas • On-site water emergency response plan developed • Targets along with budget for watershed & water, sanitation & hygiene activities formulated • Water stewardship plan communicated as EHS objective	• Formed 29 Water User Group (WUG) to address issues & spread awareness • MoU with NGOs to support WUGs • Undertake infrastructure for demand side water efficiency[C] • MoU with Tamil Nadu Agriculture University to spread best practices • Staff under MNREGS utilized to collect organic & process wastes • Disclosure of activities through village board	• Define M&E structure for water stewardship plan • Water & money savings from activities evaluated • Monthly, quarterly review to evaluate water use reduction target achievement • Annual EHS, divisional & corporate audits support performance evaluation • Outcomes from awareness building activities recorded & evaluated	• Internal governance mechanism for AWS listed outside plant gate • Public display boards to communicate stewardship plan • Catchment targets given in brochures & annual melas to WUGS, communities, & local government • Onsite communication to employees through videos & brochures • Water stewardship performance published & distributed to Government authorities

Note:

A. Drought risk, variance in river water flow, water demand in competing sectors, high groundwater draft

B. ITC's food unit and warehouse in Malur block of Kolar district faced uncertainty in water supply and have adopted various interventions to streamline water supply and reduce demand[13]

C. Ring bunds with mulching and drip, drip irrigation and absorption trenches

Supply side initiatives at the Kovai plant have helped local communities and supplement plant water consumption - constructing new water harvesting and recharge structures, deep farm ponds, open well and rejuvenating 393 traditional water harvesting structures have helped over 40,000 farmers, reducing freshwater use by 3.9 million kl annually, which is 3.5 times the average annual water withdrawal at Kovai plant (1.12 million kl).

SUSTAINABLE WASTE MANAGEMENT

As with energy consumption, PSPD units account for over 88% of the waste generated at group level and actions for reducing waste generation are continuously implemented, guided by group level waste recycling policy on waste segregation at source.[14]

The units identify all waste streams and track their movement to final disposal, thereby helping segregate waste materials (non-hazardous and hazardous wastes) with potential for alternate use.

Examples of waste generated in the units and their re-use is given below:

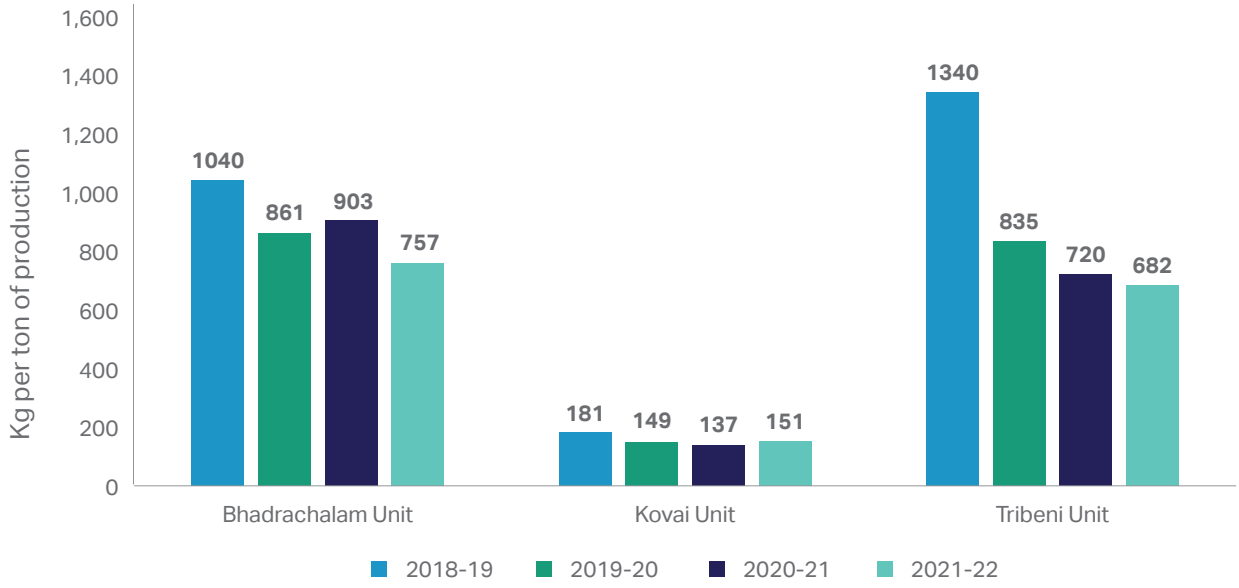
Table 3: Alternate applications for a sample of wastes generated in PSPD units

Non-hazardous wastes		Hazardous wastes	
Type	**Alternate application**	**Type**	**Alternate application**
Fly ash from boilers	Used by cement and brick manufacturers	Empty plastic containers/ liners	To agencies to re-use it after detoxification
Lime sludge	In-house lime kiln & by cement plants	Effluent treatment plant sludge (dry)	Small scale egg tray/ secondary board making units
Bottom ash from boilers	Brick plants and filling of low-lying areas	Used lead acid batteries	Returned to dealers on buy-back policy
Wood waste from chipping	Used as a fuel in in-house boiler	Oil-soaked cotton waste	Incinerated in the existing internal recovery boiler

For 2020-21, about 3% of waste (by weight) generated by ITC can be categorised as hazardous waste as per Indian statutes and around 97% of this was sent for recycling to authorized external agencies.[15] Recycling and reusing plant wastes have helped improve specific waste generation for each plant of PSPD, even exceeding internal targets for the last two years as given in Figure 7 below.

Targets were missed in Bhadrachalam plant in 2018-19, since waste generation increased due to project-related activities for the installation of a new paper plant.

Figure 7: Waste reduction targets and achievement for PSPD plants from 2018 to 2021



The concept of waste reduction for PSPD extends beyond its own operations to its consumers and communities at large. PSPD has leveraged in-house packaging expertise from ITC's printing and packaging business and collaborated with the FMCG businesses in the group to understand end consumer needs and develop two sustainable packaging product lines – Filo series products are certified recyclable, while Omega series products are biodegradable.

PSPD's Well Being Out of Waste (WoW) campaign is a pioneering example of how organizations can bring positive change in communities through focused actions. The roots of this campaign go back to April 2007, when a recycling program, "Wealth Out of Waste" was initiated by PSPD.[16] The scope was expanded, and the program transformed to "WoW" focused on creating scalable solutions for spreading awareness about recycling, encouraging people to segregate and dispose waste responsibly and creating sustainable livelihoods for people working as rag pickers. The table below provides a condensed view of the activities undertaken in the initiative:

Table 4: Activities undertaken under WoW initiative

Awareness building	Source segregation for households	Efficient collection system	Building partnerships
• Train volunteers for door-to-door dissemination of best practices • Educating workers on waste segregation • Games, quizzes, events WOW clubs in schools • Street plays, campaigns, pamphlets, hoardings	• Households given separate bucket for wet & dry waste • Volunteers check correct disposal by households • Dry Resource Collection Centres (DRCC) setup • DRCC segregate recyclables to maximize value extraction from waste	• Establish recycling systems to achieve economics of scale • ITC trained personnel segregate wastes into material categories • Develop market linkage to facilitate sale of waste for reuse in industries	• Ensure better health & safety standards & higher income for ragpickers • Build capacity in municipality staff for waste management • Helps connect end users of waste (mostly small & medium enterprise) with waste sources

Figure 8: Outreach of WoW initiative, as of 2020

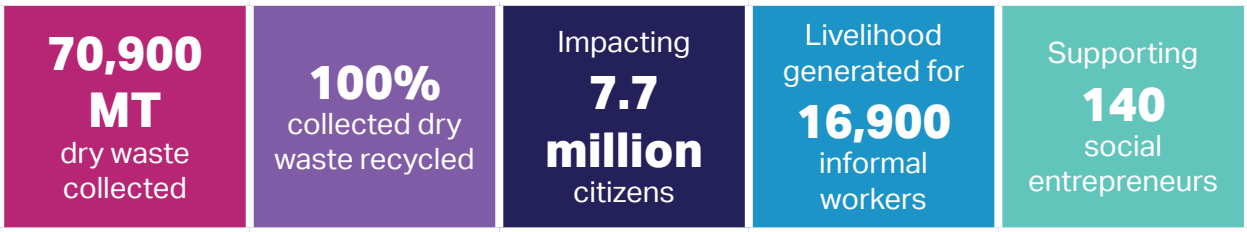


Figure 9: Social and environmental impact of WoW initiative

REDUCTION IN SCOPE 3 GHG EMISSION

ITC has the distinction of being carbon positive for 17 years in a row, due to a combination of activities to reduce Scope 1, 2 and 3 emissions as well as carbon sequestration activities. While energy conservation activities have contributed to a reduction in Scope 1 emissions, the adoption of renewables helped to reduce Scope 2 emissions. In order to reduce Scope 3 emissions, PSPD has undertaken initiatives for its suppliers, in alignment with the group's Green Policy.

Table 5: Supply chain decarbonization initiatives

OPERATING MECHANISM	TARGET (2022-23)
Strategy 1: Reduce transportation for procurement	
• Substitute imported materials with local products (like recycled paper, fibre, chemicals) • Procure materials within 500 km radius of plant	• Improve YoY import reduction by 5% • Increase YoY proximity procurement by 5%
Strategy 2: Lifetime cost for procuring energy efficient equipment	
• Lifetime energy cost estimated based on equipment's technical specifications • Costs added to vendor quotes to arrive at final quote for selection • Ensures selection of energy efficient equipment due to lower lifetime cost	All current & future equipment purchase through lifetime cost accounting
Strategy 3: Sustainable supply chain evaluation	
• Major suppliers based on value of material/ equipment sold selected for evaluation • Template developed to evaluate operational standards like specific water, power, steam consumption, waste disposal • Evaluators from PSPD visit supplier locations to verify data supplied by vendor for template • Rating assigned to each vendor basis evaluation (A-E, 'A' being best and 'E'-needs improvement). • 1.5% premium given to suppliers having higher performance rating i.e. A rated supplier selected even if quotes are 1.5% higher than B rated one	Increase green assessment (for reduction in energy, wastes, water use & emissions) from 60% of all critical suppliers in 2020-21 to 100% in 2022-23
Strategy 4: Vendor awareness building	
• Training based on operational area of vendor • 27 critical vendors, 35 A-Class vendors trained on multiple sustainability topics • Bi-annual vendor meets in presence of PSPD leadership are present • Best practices shared & best performing vendors awarded with in vendor meets.	Vendor category specific awareness building targets in 2020-21and impose performance targets from 2021-22
Strategy 5: Environmental certifications	
• Motivate vendors to take environmental certifications through supplier evaluation criteria or awareness building. • Over 25 vendors ISO 9001, ISO14001 and/or Responsible Care System (RCS) certified	Increase YoY addition of vendors with environmental certification from 3 in 2020-21 to 7 in 2022-23

These initiatives have resulted in a 17.2% weighted average reduction on baseline figures for 2016-17 in supplier resource consumption and a 16.46% reduction in power consumption. These reductions have resulted in a 9.44% reduction in GHG emissions for the suppliers.

CARBON SEQUESTRATION

As mentioned in the previous section, carbon sequestration activities have been a significant contributor to ITC group's unique achievement of being carbon positive. This has been achieved through the Social and Farm Forestry initiative of PSPD, which has helped sequester 2.1 times the group-level emissions.[17] Under the initiative, fast growing clonal saplings developed in the company's R&D center is distributed to resource constrained farmers for cultivation. The pilot initiative undertaken in eight districts of Andhra Pradesh has not only been expanded to four other states to supply pulpwood for PSPD but has also been adopted by another ITC business (agarbatti manufacturing)[18] for bamboo plantations. The initiative has greened over 800,000 acres generating over 147 million person-days of employment till 2020.

4 Conclusion

④ Conclusion

As demonstrated through the activities undertaken by ITC PSPD, sustainable business operations not only help reap environmental and social benefits but also tangible commercial benefits. For instance, its carbon sequestration activities through the social and farm forestry initiative, which is a significant contributor to ITC being carbon positive, have also helped ensure raw material security and mitigate any external risks that can potentially threaten its future output plan.

Apart from a continuous endeavor to increase the use of renewable power in its operations, ITC PSPD lays equal emphasis on implementing energy efficiency measures. Its structured cross-functional approach with involvement of procurement, technical, plant operations, energy and finance teams, backed by frequent employee capacity enhancement programs, to select feasible energy efficiency measures stands out.

Collaborations with leading national and international expert organizations and academic institutions in water management have enabled the company to adopt cutting-edge IT tools for accurate water accounting both at the equipment and plant level, which has been the key enabler in significantly reducing water consumption over the years. The company has also taken a holistic approach in the case of waste management by looking at the waste generated from its own operations and from that of its consumers and communities at large to make a much bigger positive impact on surrounding societies.

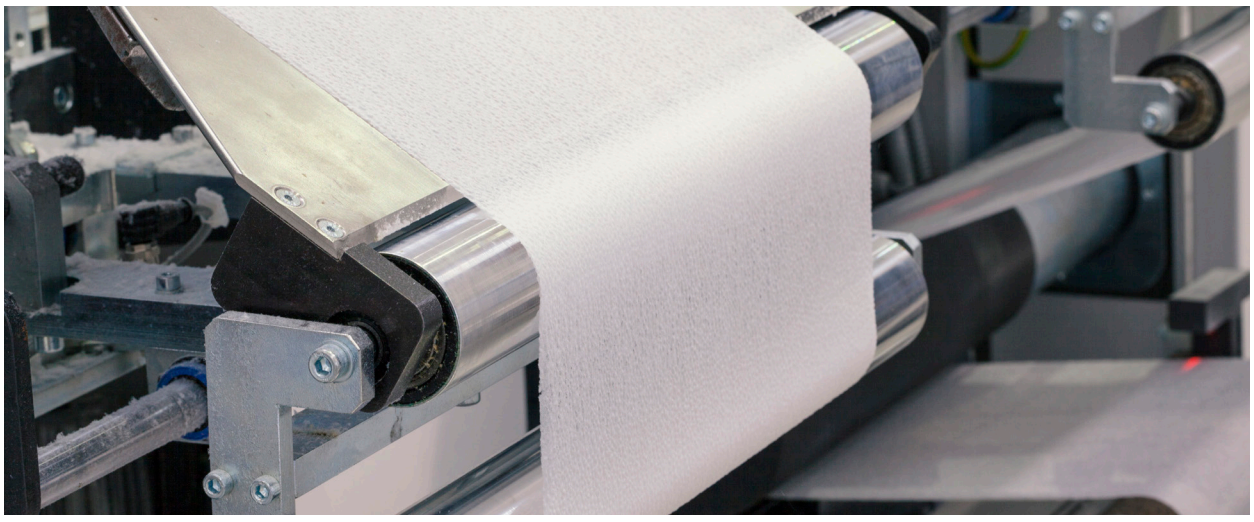
Moreover, ITC PSPD's evaluation criteria to select supply chain members based on their water and energy use, and waste disposal practices has supported GHG emission reduction for its suppliers.

While net zero emissions have come into focus in recent years, even at a global level, ITC, primarily through its actions in PSPD, has been carbon positive for over a decade.

Despite the apparent costs in undertaking such activities, PSPD has reaped the benefits, capturing efficiency value, building supply resilience, strengthening community acceptance and utilizing the sustainable outlook to develop new business opportunities in the form of biodegradable paper products.

Despite these achievements, the division and the entire ITC group have set itself even more ambitious targets in its Sustainability 2.0 Vision for 2030.

This compendium of sustainability initiatives undertaken by ITC PSPD is expected to provide businesses with practical steps that can be replicated in their operations and aid executives' decision-making, particularly in fast-growing emerging economies.



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7. ITC Limited. (2022). Sustainability Policies. https://www.itcportal.com/about-itc/policies/sustainability-policy.aspx#HealthSafety

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11. In recycling output water of a production process being fed back to the same process, while in reuse, output water is fed to other process(es). Both involve minimal processing to reach desired quality levels. Regeneration involves contaminant removal from wastewater using advanced filtration techniques

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This report is a result of working closely with finance, procurement, sustainability, marketing and sales teams at ITC's PSPD on its existing energy strategy. This compendium of sustainability initiatives undertaken by ITC PSPD is expected to provide the readers with practical steps that can be replicated in their operations, as well as aid executive decision making, particularly in fast growing emerging economies.

DISCLAIMER

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ABOUT WBCSD'S ENERGY PATHWAY

Projects in the Energy Pathway bring together forward-thinking companies across value chains to design a net-zero carbon, nature positive and equitable energy transformation as well as scale innovative business models for low-carbon energy solutions.

As part of the integrated energy strategy work, WBCSD worked with Carbon Intelligence and representatives from WBCSD member companies to prepare a standard guideline for companies to visualize their energy journey, generate and maintain buy-in across their organization and future proof their energy strategy. As part of this project, we worked with ITC's PSPD to implement the relevant key elements of the guideline in ITC PSPD's energy strategy.

ABOUT WBCSD

WBCSD is the premier global, CEO-led community of over 200 of the world's leading sustainable businesses working collectively to accelerate the system transformations needed for a net zero, nature positive, and more equitable future.

We do this by engaging executives and sustainability leaders from business and elsewhere to share practical insights on the obstacles and opportunities we currently face in tackling the integrated climate, nature and inequality sustainability challenge; by co-developing "how-to" CEO-guides from these insights; by providing science-based target guidance including standards and protocols; and by developing tools and platforms to help leading businesses in sustainability drive integrated actions to tackle climate, nature and inequality challenges across sectors and geographical a regions

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD $8.5 trillion and 19 million employees. Our global network of almost 70 national business councils gives our members unparalleled reach across the globe. Since 1995, WBCSD has been uniquely positioned to work with member companies along and across value chains to deliver impactful business solutions to the most challenging sustainability issues.

Together, we are the leading voice of business for sustainability, united by our vision of creating a world in which 9+ billion people are living well, within planetary boundaries, by mid-century.

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