A Snapshot of

To Walk The Talk

Manufacturer Voices: Peer Learning for Environmental Performance

german cooperation
DEUTSCHE ZUSAMMENARBEIT

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TO THE FINISH LINE
Advancing sustainability & circularity

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Initiative for Global Solidarity

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This book is a collection of voices from the TFL community and distinguished guest writers. Some contributors share their names with their essays, while others choose anonymity. None of us are professional writers, but we've crafted these pages with sincerity and authenticity.

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Hanoi, May 2025

Disclaimer

This book is a collection of real stories from manufacturers, brands, and industry experts on environmental sustainability efforts in the textile and footwear supply chain in Viet Nam. It serves as a source of inspiration and reference derived from a diverse range of manufacturers - different in sizes and resources, therefore it is not a collection of best practices or a technical guidebook.

This book aims to share lessons learned, encourage collective action, and amplify the voices of manufacturers in discussions on sustainability. The views expressed in this book are those of the contributing authors and do not necessarily reflect the views of GIZ.

To maintain the authenticity of the original Vietnamese narratives, we've opted for English summaries rather than full translations, which can sometimes lose cultural nuances. These summaries highlight the main points of each story, giving a glimpse into the manufacturers' experiences. Readers can access the original stories in Vietnamese via the links embedded in each summary.

There is no reason to believe that bureaucrats and politicians, no matter how well-meaning, are better at solving problems than the people on the spot, who have the strongest incentive to get the solution right.

Elinor Ostrom
Political Economist
2009 Nobel Laureate in Economic Sciences

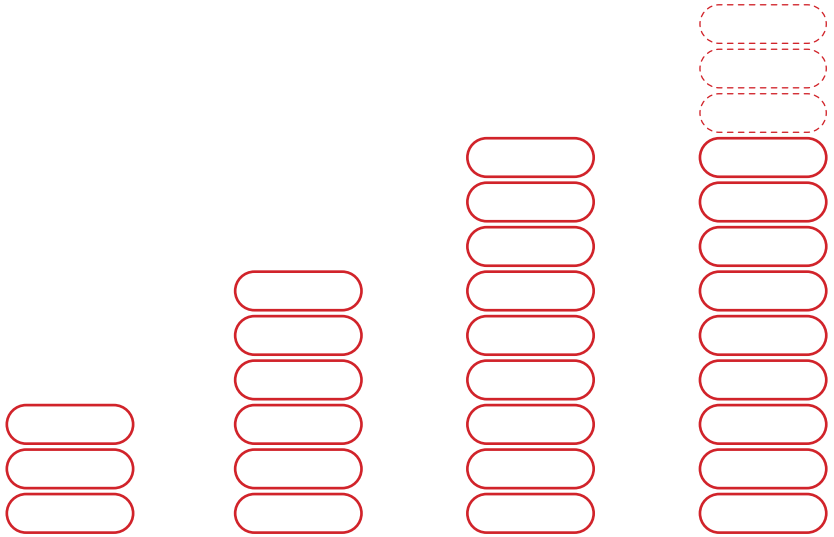
About To the Finish Line (TFL)

Launched in 2022 by GIZ, To the Finish Line (TFL) offers free annual online training and a year-round learning community for manufacturers in Viet Nam's apparel and footwear supply chain. TFL builds on the Higg Facility Environmental Module (FEM), exploring on-need deep dive topics for Learning 4 Action.

TFL has become an independent, non-profit program, hosted by Center for Development and Education (CED) since 2025.

"After two years of running, we are proud to say that the TFL programme has empowered our apparel and footwear manufacturers in Viet Nam to transform their environmental performance. Through Higg FEM 4.0, the programme has offered a deep dive in waste management, advancing disposal methods to reduce environmental impacts and GHG emissions. It combines expert-led training, peer learning, and actionable tools to drive measurable sustainability outcomes, which are widely recognised by ourproduction partners.**"**

Jeff Chan, Environmental Improvement Responsible, Amer Sports



TFL 2022

326

manufacturers, 245 with performance improvement (75% success factor).

TFL 2023

604

manufacturers, 471 improved (78% success).

TFL 2024

918

manufacturers, 716 improved (78% success).

TFL 2025 onward

a Learning Community

Estimated number of manufactures that report to have taken action based on the khowledge provided and peer-learning from TFL programme

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Foreword

by **Saskia Anders**

Dear Reader,

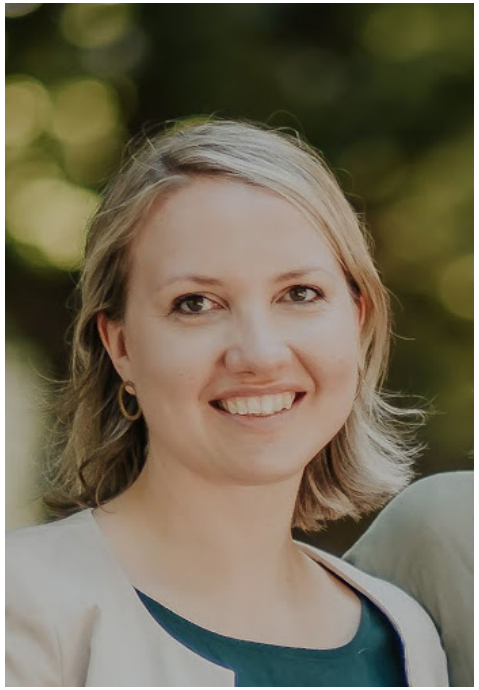
In the sustainability and development sector, we often focus on generating numbers and impact metrics to demonstrate the value of our work and that of our partners. What sometimes gets overlooked are the individual stories behind these numbers. Each number represents numerous stories of small or significant steps towards making a difference. This publication provides a platform for these stories, offering a glimpse into the diverse experiences and journeys of various textile manufacturers in Viet Nam.

The essays compiled in this publication were written by environmental practitioners from manufacturers participating in the To the Finish Line programme, an initiative designed to enhance environmental performance in Viet Nam's textile sector. The programme is the result of collective action by brands and their manufacturers, a prime example of how collaboration can co-create a training program and a community of driven individuals eager to expand their knowledge and take action. With over 4,200 learners from more than 1,000 factories participating, the programme represents a diverse community of manufacturing entities. The businesses vary in factory size, geography, and resources. What they have in common is the commitment of individuals in charge of environmental sustainability within their organizations. Their work is challenging, as they navigate different roles and interests, budgetary constraints, and changing environments every day.

By sharing their experiences, we get an authentic picture of the real-world challenges and successes encountered by these manufacturers. We are grateful for their willingness to share both success stories and lessons learned from failures, demonstrating that the path to sustainability is not always smooth or glamorous. In doing so, they provide valuable insights that can inspire other manufacturers with concrete examples, hurdles, and the resilient spirit of those in charge.

I hope you enjoy reading these stories.

Saskia Anders
GIZ
May 2025



Foreword

by **Chi Phan**

To Walk the Talk – A Journey of Problems, Solutions, and Transformation

As a long-time member of the To the Finish Line (TFL) community, I have the privilege of collaborating with the team behind "To Walk the Talk", a remarkable collection of stories that capture the essence of TFL: tackling challenges, finding solutions, and sharing knowledge to inspire action. This collection stands as a testament to the resilience and creativity of TFLers – from large manufacturers with robust environmental teams to smaller ones where a single individual juggles both Environment and Quality roles.

Within these pages, you'll discover real-life stories from the manufacturer floor, where each narrative is a piece of the **problem-solution** puzzle. A single Higg FEM question can lead to diverse solutions, reflecting the unique reality of each manufacturer. Sometimes, the journey to a solution is like learning to shoot – missing a few times before hitting the mark. Yet, it is through these trials that the most profound lessons emerge.

One story that particularly captures the essence of this book comes from Viet Thang Jean, a manufacturer facing the challenge of manual chemical spraying. Using the **What, So What, Now What** framework – a tool we often employ in TFL's Peer Work Group sessions – their journey unfolds:

What (What is the problem?)
The manual chemical spraying process at Viet Thang Jean caused toxic chemicals to disperse into the air. Workers inhaled these toxic substances, chemical usage was wasteful, and the fashion effects were inconsistent. For a manufacturer exporting to markets like the US, Japan, and Canada, this posed a serious threat to safety and quality.

So What (Why does it matter?)
This issue endangered workers' health, drove up production costs, and risked the manufacturer's reputation with international clients. In an era where sustainability is a global imperative, failing to address this could result in lost orders and diminished competitiveness against brands with strict compliance standards.

Now What (What do we do now?)
Viet Thang invested in e-Flow technology, spraying chemicals in a closed chamber to minimize dispersion and optimize resource usage. Initially, they encountered spotting issues due to unstable pressure, with a 20-30% defect rate in some products. Through persistent testing and adjustments – including spraying twice for stronger effects – they reduced exposure risks significantly. Workers are now safer, and the environment is cleaner.

This story, like many in To Walk the Talk, reflects the TFL spirit: face the problem head-on, seek a solution, and share the journey to inspire others. The **What, So What, Now What** framework isn't just a method for analysis; it's a mindset that encourages us to write, speak, and reflect, deepening our learning and helping others find their own solutions. We cherish even the misses before the hits, for failure often teaches us the most.

Here's a photo of me at the Bachema Laboratory in 1999, Professor Rolf Gloor once told me: "Chi, I like the way you work. You don't just bring up the problems, but also propose potential solutions." Those words have stayed with me throughout my career, and now, as I read about your TFL journeys, I feel that same mindset resonating – pairing problems with solutions.

I invite you, especially those in manufacturing, to explore these stories through the **What, So What, Now What** framework. Relate these experiences to your own challenges and share your journey. One day, you may contribute a chapter to a future To Walk the Talk. Let's embrace the TFL community, where we - TFLers, united in Learning for Action - continue crafting stories of change from the manufacturing floor.

Chi Phan,
GIZ
May 2025

Chapter
01

Environmental Management System (EMS)

An Environmental Management System (EMS) is a holistic strategy and process to identify, track and manage the environmental impacts of your facility over time. While it's possible to make incremental environmental improvements at your facility without a comprehensive plan, your facility can only maximize environmental performance by setting a long-term strategy that will inform decision-making on environmental management.

Essay #1: A Fully Empowered and Competent Compliance Team

Link to full essay in Vietnamese

Cheng Da III Co., Ltd is a shoe sole manufacturer founded in 2018 producing 24 million pairs annually, and has prioritized compliance since our inception. Our Compliance Team, consisting of six members, are truly empowered thanks to clear mandate and support from our Management Board, who issued formal directives and delegated authority to address compliance issues.

We established a structured management process for the team. Each year, the team must develop and submit the annual environmental safety plan for the Board's approval, then collaborate with other departments to implement and monitor the plan. As the factory adopted Higg FEM in 2020, more human resources with technical competence were assigned to be responsible for each module. Team members are required to go through annual assessment with the required performance scores of 70% or higher. We updated our knowledge through training, both online and in person. We also joined To the Finish Line organized by GIZ and brands.

Our Management Board plays a key role in supporting, evaluating and approving plans. They also serve as a source of inspiration by actively participating in local environmental programs with the Compliance Team. In short, management's commitment and Compliance Team's expertise are vital for our success.

Essay #2: Turning Point in 2023: Revitalizing Our Environment Team

Link to full essay in Vietnamese

Our garment factory was established in 1988 with 12,000 workers producing 79 million products annually. We struggled with a superficial approach to sustainability for years. Our Environmental Team, formed merely to meet legal and client requirements, lacked support from leadership and departments, resulting in poor performance - no significant environmental improvements and frequent delays in project approvals due to budget constraints and lack of support from production and other departments.

Recognizing that continued inaction would compromise compliance and customers' trust, at the same time getting inspired by experts and peer factories from GIZ's Higg FEM training, we shifted to action. We consistently review and share updates on environmental regulations with the Board of Directors (BoD) and other departments to inform decisions and approvals for environmental projects. Every six months, our Compliance Department and Environmental Management Board meet with the BoD and other department heads to discuss environmental issues with concrete reference. We also actively research and propose environmental improvement projects to the BoD, such as our recent "waste sorting at source" initiative.

On the other hand, we frequently engage with customers and partners to stay updated and timely implement improvement projects to meet new requirements. Our team invested in quarterly internal workshops to enhance environmental awareness and action across the company.

These solutions have brought about positive changes for the factory. We have gained support from our BoD, demonstrated through budget approvals, investment in training, and directives for cross-departmental collaboration.

Essay #3, 4, 5: Boosting Worker Awareness through Improved Training Methods

These three factories faced common problems with internal training on environmental issues. Lengthy, complex and sometimes irrelevant training sessions caused disengagement, low knowledge retention, and scheduling conflicts with production demands. In response, they shortened and simplified training, tailoring content to specific roles, and improved instructor skills for interactive sessions, leading to higher comprehension and fewer environmental violations.

Story #3 (Anonymous): Workers kept forgetting training content (only 2% answered all post-training questions correctly) and usually violated safety requirements due to jargon-heavy, irrelevant materials. The factory's efforts resulted in 30% answering all questions correctly and violations dropping to two out of seven audits.

Link to full essay in Vietnamese

Story #4 (Ngoc Mai): Besides the shared problems, they also found it hard to monitor and evaluate training outcomes. Along with the mentioned measures, they implemented QR-code surveys to track understanding and trained instructors via workshops, raising comprehension from 50% to 70%.

Link to full essay in Vietnamese

Story #5 (Anonymous): They specially dealt with workers' low learning motivation by integrating environmental practices into daily work and using games and rewards, fostering a sustainable workplace culture.

Link to full essay in Vietnamese

Essay #6: A Cleaner Factory: 90% of Workers Now Dispose Waste Properly

Link to full essay in Vietnamese

At our knitwear apparel manufacturer with 19 years of operation and 1,006 workers, annual waste sorting training did not work well at first: some workers still littered in workshop hallways, leading to messy workplaces and raised cleanup costs.

Having analyzed the root causes, we found out that there were not enough trash bins and their distribution was not proportional to the different demand of each area. Training had no follow-up, and there was no one to monitor the behaviors.

To address the issue, we rearranged and added more bins, placed them where workers needed them most, added post-training assessment, set up a feedback channel, assigned a janitor supervisor for regular checks, and set up regular meetings to evaluate and improve the practices.

Now, 90% of workers put waste in the right bin, saving two hours daily on cleanup, though 10% still need reminders. Our factory is cleaner, and we are building a safer, greener workplace with zero littering as our starting point.

Essay #7: Building an Environmental Training Plan: Turning Challenges into Progress

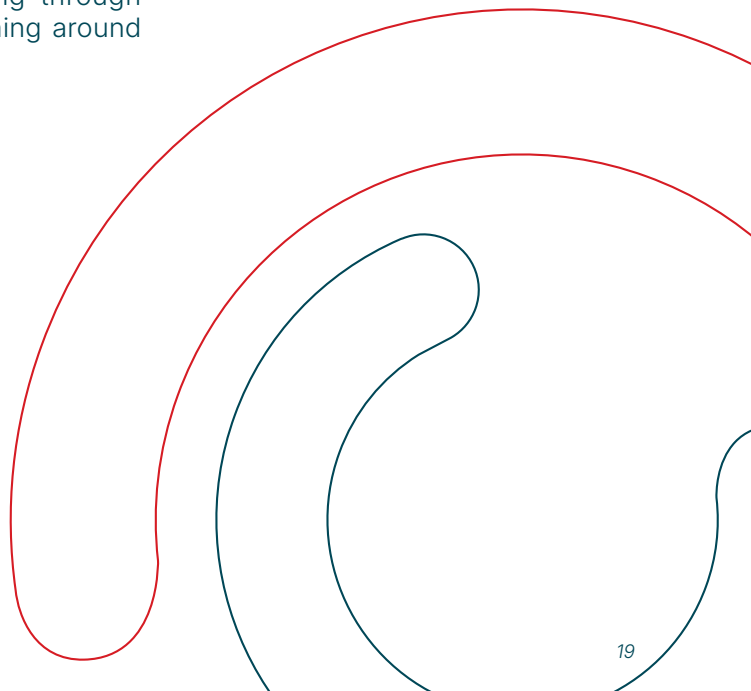
Link to full essay in Vietnamese

Our factory adopted the Higg FEM platform in 2018, but we struggled with raising workers' environmental awareness. Despite having displayed environmental policies on notice boards across the factory, many workers had difficulties understanding them thoroughly. These policies and strategies were not included in onboarding content for new hires, leaving them unaware of their environmental responsibilities.

Admitting our oversight, we took action in 2024. Starting in January, we rolled out a factory-wide training plan, encouraged and approved by our Management Board, with quarterly themes: Q1 on Environmental Policies, Q2 on Energy Saving, Q3 on Waste Sorting, and Q4 on Water Conservation.

We also integrated environment content in onboarding training for new hires. To gauge progress, we ran an online survey at year-end to assess workers' awareness, which they could access via a QR code. In addition, workers can use the Wovo platform to anonymously raise concerns on different topics, including environmental issues.

As a result, worker awareness has been raised and translated into action: waste sorting improved with no complaints from contractors, and monthly water use dropped 10% from 2023. The Wovo platform has received environmental reporting such as leaky faucets, broken machinery, or unsorted waste in specific areas. We are still working through challenges, like fitting training around production schedules.



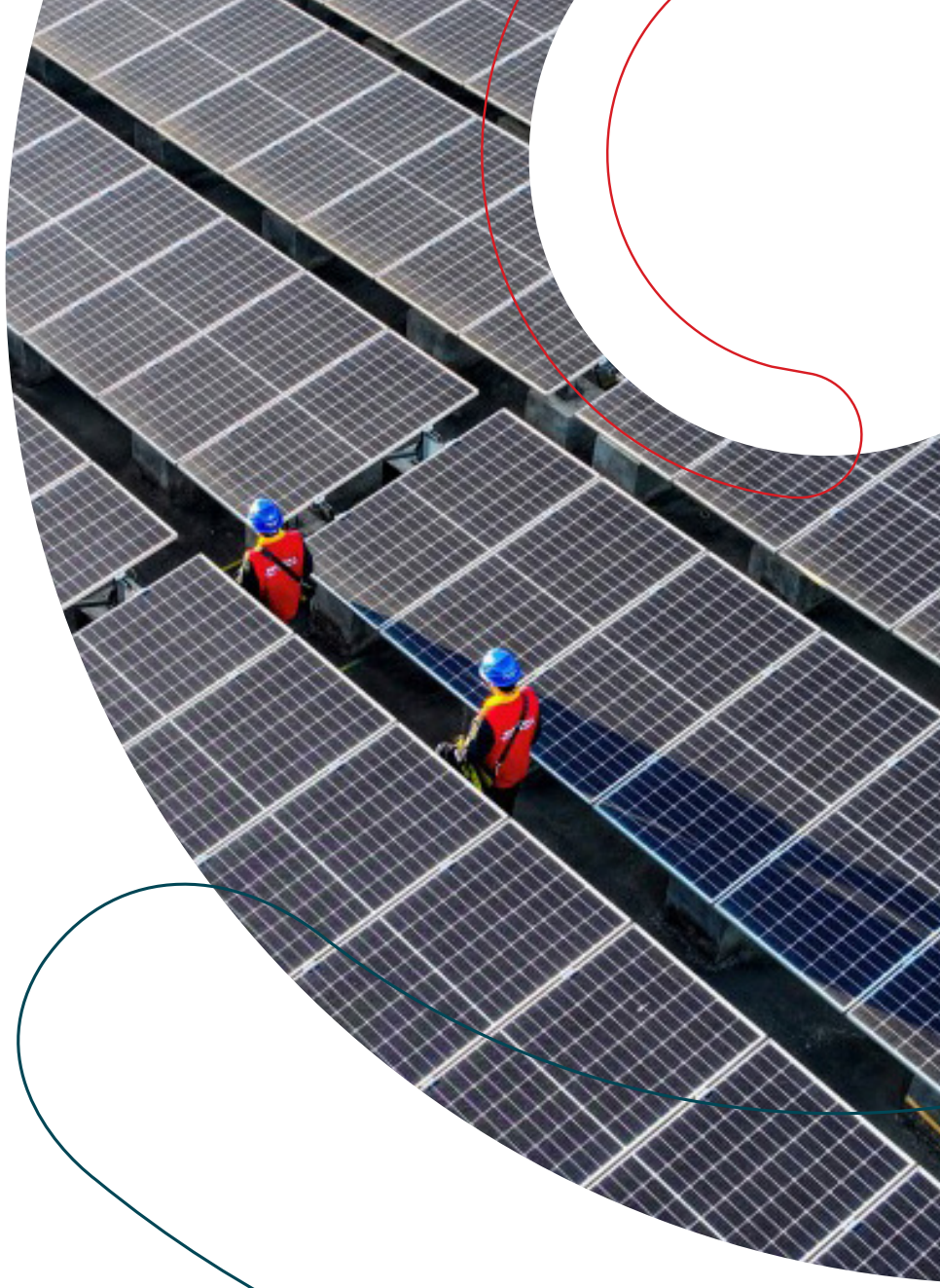
Chapter
02

Energy & Greenhouse Gases

Energy production and energy use are the largest human-made sources of air pollution and greenhouse-gas (GHG) emissions. The operational, environmental, and financial impacts of energy are key issues for facility operations. Driving energy efficiency and use of renewable energy throughout facility operations is an important area of focus for all factories.

Explore

System Map can guide the industry towards a net-zero future [1]



[1] *A Vietnamese version of this map was made by GIZ with the permission of H&M Foundation and Accenture*

Essay #8: Our Multi-Department GHG Team Completed a GHG Inventory In-House!

Link to full essay in Vietnamese

Our garment factory, established in 2015 with 3,500 workers, embraced a challenge in 2023 when customer brands requested GHG reductions toward net-zero by 2050.

Despite our existing systems like ISO 50001, ISO 14001, and Higg FEM, expertise gaps remain a challenge to accurate GHG emissions calculation - the first step to get closer to the net-zero target.

A GHG Management Team was formed with multi departmental staff from HSE (Health, Safety & Environment), Maintenance, Electrical Mechanic, and manager/technician of relevant production teams. We discussed and extracted emission data by Scopes 1, 2, and 3; built staff capacity on GHG inventory through training programs provided by MOIT, ISO 14064, TFL and its Climate Action Training deep-dive; added meters in more areas for more detailed data, and improved fuel input tracking for the boiler.

By Q4 2024, we completed a reliable GHG inventory ourselves, setting a baseline and GHG reduction targets.

Essay #9: Science Based Targets (SBT) Realization at a Leading Garment Manufacturer

Link to full essay in Vietnamese

As a garment manufacturer established in 2015 and employing over 17,000 workers, our energy and chemical use spiked as production grew, increasing GHG emissions.

To meet climate goals, we conducted assessments and identified that the majority of GHG emissions were from coal boilers (53%), equipment electricity consumption (44%), refrigerants with high Global Warming Potential (GWP), and oil-based chemicals and fuels (3%). Based on this data, we developed and launched a comprehensive action plan for 2020 - 2024.

Since 2021, we've replaced our two coal boilers with 825 mini electric boilers and cut emissions by 3,215 tCO2 (30% reduction); Turned off chillers 30 minutes before shifts ended to save 1,200 kWh daily; Prioritized procuring air-conditioners with low-GWP refrigerants and maintain existing ones periodically; Replaced 80% of the chemicals used in our processes with water-based ZDHC MRSL level 3 certified chemicals; Replaced LPG (Liquefied Petroleum Gas) kitchen equipment with electric units in six out of nine kitchens; Coordinated shared transportation for staff to cut 700 liters of diesel and 500 liters of gasoline yearly; Purchased 8 MWp of rooftop solar electricity from the Industrial Park, installed 5 MWp solar panels for 30% of energy needs, and purchased I-RECs to make 100% of our electricity consumption green. These efforts curbed emissions despite production expansion, gave us a competitive edge, and aligned us with our Science-Based Targets.

Essay #10: Lessons from the Design Phase for GHG Emission Reducing Target

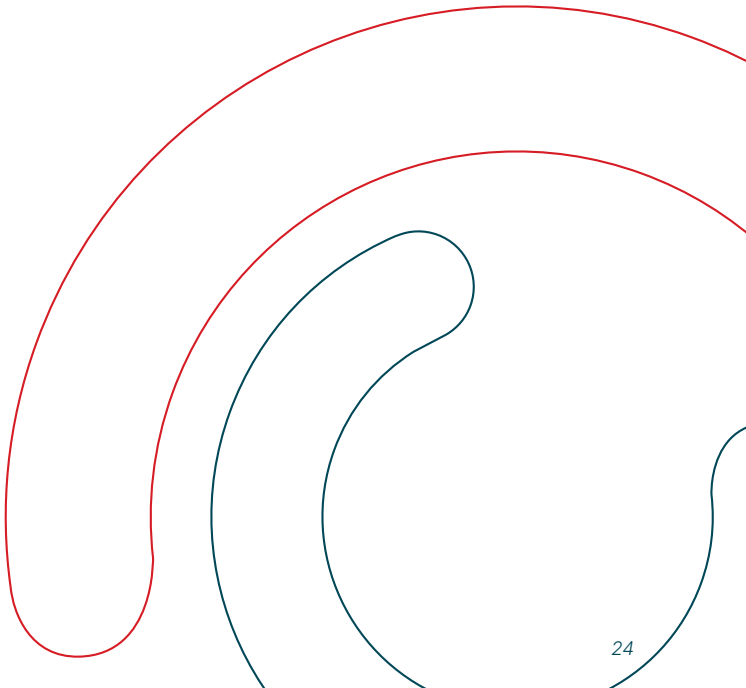
Link to full essay in Vietnamese

At Company S, a manufacturer aiming to supply for prestigious brands, we planned and invested significantly for low GHG emission from the design and construction phases.

The Management Board and Technical Team prioritized energy efficiency with glass roofs for natural light, 100% LED lighting, inverter air conditioners and chillers, rooftop solar panels, and recycled surface and rainwater for cooling systems and sanitation.

Some challenges emerged in practice: glass roofs caused overheating in summer and building safety risks during storm season, while recycled water sources were insufficient in the dry season. These are valuable lessons learned for us.

We continue to improve by seeking solutions and learning from peer manufacturers to come up with more energy and emission reduction projects.



Essay #11: Installing Timers for Glue Spraying Machines—Cutting CO_2 Emission in Footwear Production

Link to full essay in Vietnamese

Before, our glue spraying machines ran non-stop and wasted significant energy, leading to increased emissions. To address this, we introduced timers to automate operations, ensuring that they ran only when needed. Early scheduling missteps briefly disrupted production, but after some fine-tuning, energy use dropped, contributing to the reduction of CO_2 emissions by 5% compared to the previous year.

Through this low-investment, quick-return solution, we proved how small technology innovations can help to cut GHG emissions. It is scalable for similar manufacturers.

Essay #12: Smart metering & monitoring for electricity efficiency and safety

Link to full essay in Vietnamese

Company L is a Taiwan FDI garment manufacturer founded in 2015 with 3,000 workers. Early struggles with electrical management led to recurring issues - electrical overloads, blown fuses, circuit breaker trips, etc. Delayed or missed shutdowns of electricity after work also resulted in up to 10% energy waste and posed a fire risk, as there was no one on-site except for the security guards.

In late 2020, after a thorough assessment and consultation by a Taiwanese technical solution expert team, the Management Board invested billions of VND in a smart metering and monitoring system: signal boxes were installed in each electrical cabinet and real-time electricity consumption data is tracked and reported via a phone app, alerting managers to overloads and delayed shutdowns. The system provides us with insights to improve energy efficiency, while ensuring safe operations by preventing fires.

Author: Vo Phuoc Thien

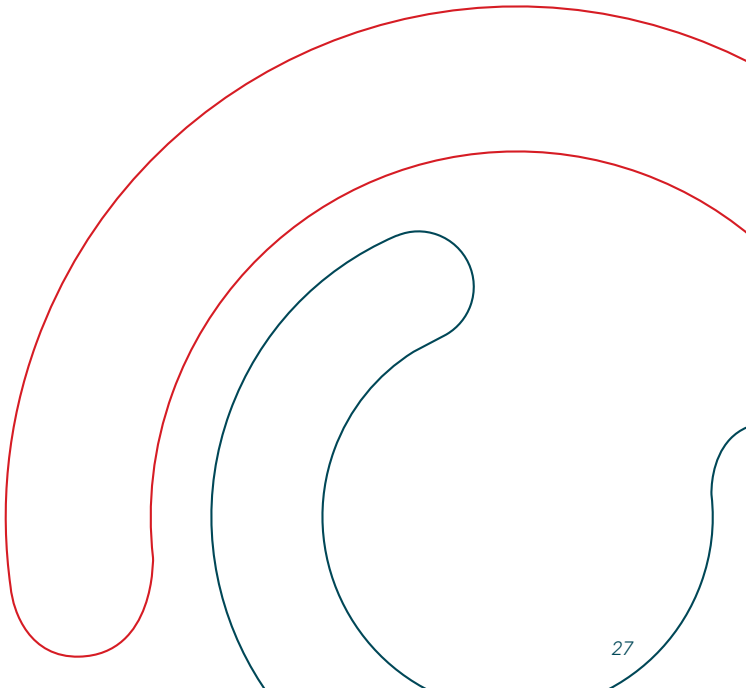
Essay #13: Empowering Every Employee as an Energy Saver at a Mid-Sized Luggage Factory

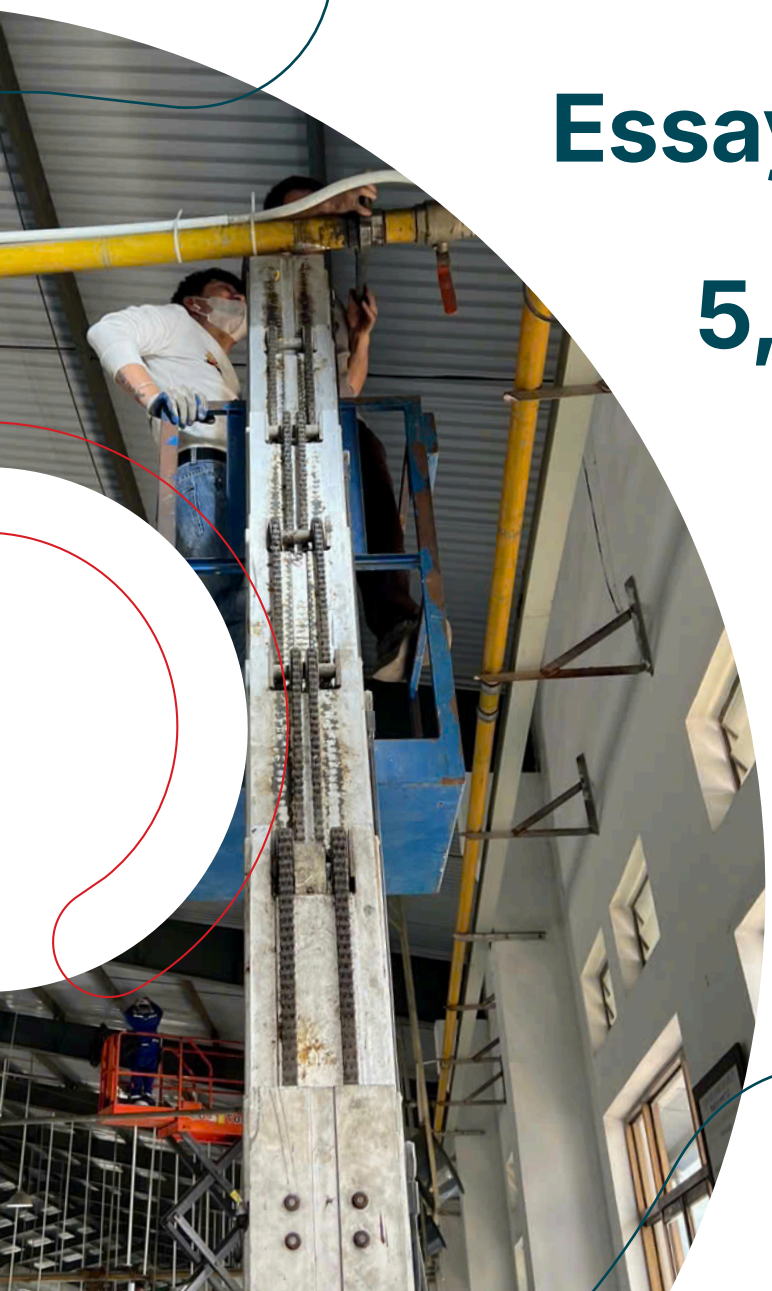
Link to full essay in Vietnamese

We are a mid-sized luggage factory in Binh Duong, operational since 2006 with 1,300 workers. Despite having applied measures to conserve energy, we still observed workers leaving lights on when not in use, or misusing compressed air. We realized that awareness raising about energy efficiency is highly needed for direct users - the workers.

Vibrant campaigns like “Earth Hour” and “Earth Day” were launched, featuring bike parades, recycling competitions, and posters. These were complemented by more regular internal assessments to detect inefficiencies, monitoring and recording of daily electrical usage for analysis, and the installation of a solar energy system - reinforcing our commitment to clean, efficient energy use.

Our workers now actively work to avoid energy waste, turning off lights and AC when not needed, actively reporting and fixing leaks in compressed air tanks... Some even took the initiative and installed residential solar panels after witnessing the economic benefits.





Essay #14: Eliminating Compressed Air Leakage and Misuse at a 5,000-Worker Footwear Factory

Link to full essay in Vietnamese

In our footwear factory of over 5,000 workers producing 9.5 million pairs annually, an energy audit in December 2023 revealed a staggering rate of 30% compressed air leakage, which caused low air pressures, increased machine operating frequency leading to shorter machine lifespan, higher repair costs, disruptions to production, and increased energy consumption.

To address this, we formed teams to implement daily leak detection and reparation, with bi-weekly leak assessment to track progress. This is a low-cost and effective approach, using tools like tagging and work instructions. Furthermore, it engaged all employees and built their sense of responsibility, strengthening our energy-saving culture.

Additionally, we researched and experimented with electric alternatives to pneumatic devices to further reduce energy consumption. Criteria included efficiency, investment, and payback period.

By October 2024, we reduced the leakage rate from 30% to 15%, saving 60,000 kWh and cutting costs by 120 million VND, with the goal of reaching 13% by December and under 10% by 2028.

Essay #15: Sakurai Viet Nam - From Compliance to Active GHG Reduction

Link to full essay in Vietnamese

Sakurai Viet Nam, a Japanese-owned exported garment manufacturer established in 2009 in Thanh Hoa, operates 15 workshops and employs 12,000 workers. An energy audit highlighted significant opportunities for energy efficiency (EE) and renewable energy (RE) improvements.

Between 2018 and 2024, the company implemented several targeted improvements:

- Installed sub-meters in 2021 to monitor energy use by area, identifying air conditioning as the top energy consumer (accounting for more than 50% electric consumption), following by the pneumatic system, then cutting, sewing, and printing lines;
- Periodically check and fix air conditioning systems. Replaced air conditioners in 5 factories (May–July 2024) with more durable models using more eco-friendly gases, with plans to upgrade the remaining factories;
- Applied heat - reflective roof coating for all workshops (2018-2021), reducing air conditioning energy use by 23%-saving 3.4 million kWh/year at a cost of $2,320,830 and a payback period of 8.5 years;
- Replaced 43,003 neon light bulbs with LED ones (2021-2023), saving 2.29 million kWh/year at a cost of approximately $440,000 and a payback period of 2.7 years;
- Installed rooftop solar system for all workshops (2022–2023), generating 3.2 million kWh in 2024, meeting 21% of energy needs.

By 2024, electric consumption decreased by 12% from 2023, following a 10% reduction in 2023 vs. 2022. Throughout the process, the capabilities of Environmental Committee members also improved thanks to hands-on collaboration with industry experts, aiming for international standards such as ISO 50001 and SBTi.

Author: Nguyen Thi Hue – Sakurai Viet Nam Co., Ltd

Essay #16: From Coal to Biomass at Chyang Sheng Viet Nam

Link to full essay in Vietnamese

Chyang Sheng Viet Nam is a dyeing and printing company operating in Binh Duong since 1995, employing 580 workers.

In 2023, we launched the transition from coal-fired to biomass boilers following six steps: confirming the change with authorities, selecting qualified contractors, conducting site surveys, evaluating technical methods, upgrading and testing, and fully operating the new system.

Securing a stable, high-quality biomass supply is challenging. We established a series of criteria to select contractors. After evaluation, compressed rice husk pellets were chosen as the best fit, offering a calorific value similar to coal, adjustable sizes, feasible production and transport, and eco-friendly sourcing from rice fields without additives.

Another challenge was that biomass differs from coal as a fuel with faster burning, lower heat retention, and higher ash/dust emissions. To address that, we had to adjust operating parameters and upgrade boiler technology. After upgrading, we evaluated steam pressure stability, steam-to-biomass ratio, and emission compliance with environmental standards.

The last challenge was the high investment costs for equipment upgrades and ash/slag processing. To reduce costs, we utilized existing equipment and installed support systems like feeding, injection, and silo systems. We also sought partners to repurpose ash and slag for producing fertilizers and bricks, which lowered processing costs and enhanced environmental sustainability.

By switching to biomass from coal, our factory achieves significant environmental benefits, reaching 70% renewable energy usage and a notable reduction in SO2, NOx, and CO. It not only reduces our reliance on non-renewable energy but also paves the way for a sustainable future and achieving Net Zero goals.

Author: Vincent Truong – Chyang Sheng Viet Nam Co., Ltd

Essay #17: Freetrend Viet Nam's Energy Overhaul—Saving 1.5 Million kWh/Year

Link to full essay in Vietnamese

Freetrend Industrial Viet Nam, operating since 1997 in Ho Chi Minh City, employs 15,000 workers and produces 15 million pairs of shoes annually. Through active tracking and analyzing energy data, we found out that electricity accounted for 99.67% of our total energy consumption.

We developed improvement plans and implemented the following key energy efficiency measures during 2018 - 2024:

- Replacing 11,000 fluorescent lights with LEDs in the span of six years, using a "rolling" approach which prioritized broken bulbs to reduce budget burden and alleviate environmental impacts of discarded bulbs. 770,000 kWh saved and 502 tons CO_2 reduced annually;
- Insulating sole-pressing machines to optimize their performance. 584,979 kWh saved and 330.396 kgCO_2 reduced annually, with 617 million VND investment and a 0.58-year payback period;
- Optimizing machine idle times by analyzing the best on/off timing for each machine type, then instructing workers with specific notes pasted on some machines, and installing automatic timers on others. This is a very simple and low-cost measure that can easily be replicated. 89,147 kWh saved and 60.316 kgCO_2 reduced annually;

Before advancing to renewable energy solutions like Direct Power Purchase Agreements (DPPA), we chose to focus on systematic and effective electricity-saving programs as described.

Challenges and how we overcame them:

- High investment costs: We calculated ROI for decision making, prioritized low-cost solutions, while dividing large projects into smaller phases and implementing them during a longer period of time;
- Updating and applying new technology: We collaborated with suppliers to organize live demo sessions with the presence of technicians and team leaders to evaluate effectiveness, thereby selecting the most suitable machines;
- Market instability: We applied a flexible schedule, prioritizing quick solutions during low production periods, while strengthening communication with customers to understand demands and adapt early to changes in orders, environmental standards, or carbon footprint requirements.

Lessons learned:

- Flexible and careful financial planning
- Investing in technology and workforce training
- Continuous market analysis and a flexible strategy

Cumulative Impacts:

- Total Energy Savings: Estimated at over 1.5 million kWh/year, equivalent to reducing more than 2,345 tons of CO_2 annually;
- Improved Energy Efficiency: Electricity consumption per pairs reduced 3% from 2020 to 2022, and 2% from 2023 to 2024;
- Economic Efficiency: After the investment phase from 2018–2021, starting in 2022, annual electricity savings began to exceed the total accumulated investment costs, demonstrating the financial sustainability of the projects.

Author: Mai Thi Minh Thuy - Freetrend Industrial (Viet Nam) Co., Ltd

Essay #18: VFD Failure — A Hard Lesson in Energy Efficiency

Link to full essay in Vietnamese

We are a garment factory established in 2001, employing 3,000 workers. Our three 50HP air compressors at Workshop 3 operated at 7.2 bar (required: 4-6 bar), ran in load/unload mode with 20% idle time *(with a lot of leakage - it would be 60% if all the leaks were fixed)*, causing significant energy loss. In 2023, we tried to address this issue by installing variable frequency drives (VFDs) for the air compressors, as recommended by several internal and external experts. We researched about VFD and calculated ROI, then went through a careful process to select the contractor. Initial tests in July 2023 showed a 7.87% energy saving and a 1.5-year ROI, surpassing the contracted 4.6% ± 0.6% savings (2.15-year ROI).

However, by September 2023, two consecutive bearing failures in one compressor led to production disruptions during peak production time. We tried to find the cause and fix the issue along with the contractor but no solutions were found, and the project was halted in July 2024. We not only lost more than 100 millions dong of investment, but also six months of research and nine months of efforts to fix the issue.

Lessons learned include: enforcing strict contractor accountability with a six to twelve month maintenance clause, conducting thorough risk assessments with backup plans, consulting equipment manufacturers for system compatibility, and carefully considering between purchasing a new air compressor with an integrated VFD and installing a separate VFD to control the existing system.

Expert Insight: The Missing Puzzles in Efforts to Improve Energy Efficiency

Link to full essay in Vietnamese

Author: Nguyen Do Thuyen,
IEEP Training Coordinator - UNIDO

This article explores how textile manufacturers tackle energy efficiency as a vital part of their mission to reduce GHG emissions, reflected with stories manufacturers shared in To Walk the Talk.

"To Walk the Talk": What Are Enterprises Doing to Use Energy More Efficiently?

Textile manufacturers implement energy efficiency measures tailored to their production lines and resources. Some engage external consultants to conduct detailed energy audits. Others perform internal assessments and draft plans for improvement, take actions based on their group's strategic direction, or participate in collaborative programs, etc.

Their effort and commitment are evident.

The question is: can they do even better? And how?

The Missing Pieces

"Where Are We Consuming the Most Energy?" - Identifying Significant Energy Users (SEUs)

To enhance energy efficiency, textile manufacturers could consider identifying Significant Energy Users (SEUs) - equipment or systems consuming the most electricity or fuel. For example, in a textile facility, cutting machines account for 30% of total energy use and could deliver greater savings with just a 5% improvement compared to lighting, which consumes only 5% and yields less even with a 20% improvement. Prioritizing high-impact SEUs allows effective resource distribution, hence leading to substantial efficiency gains.

Using ISO 50001's methodology, manufacturers can measure energy consumption and savings potential to rank SEUs effectively. Examining energy sources, such as grid electricity or gas boilers, and their proportional usage helps focus efforts on critical areas (80/20 principle).

Expert Insight: The Missing Puzzles in Efforts to Improve Energy Efficiency

"How Do We Know If We're Using Energy Efficiently?" - Collecting and Analyzing Energy Data

Evaluating energy efficiency requires looking beyond total consumption. A manufacturer that uses 10% more electricity but produces 50% more garments may still be operating efficiently. Variables like production volume, ambient temperature, or product type play a role. One manufacturer cut annual consumption by 584,979 kWh by insulating dyeing equipment, while another saved 1,200 kWh daily by shutting off cooling systems 30 minutes before shifts end. However, these savings need proper context to confirm overall efficiency.

ISO 50001 provides tools like Energy Performance Indicators (EnPI) and Energy Baselines (EnB) to account for factors such as output or operating hours. For instance, if a manufacturer's 2023 electricity use is lower than 2022's for similar production levels, it indicates improved efficiency. These tools also support forecasting energy needs and setting achievable targets. While monthly data is a good starting point, collecting daily or weekly SEU-specific data offers greater accuracy. Some manufacturers already employ real-time monitoring to detect issues, like faulty motors causing abnormal spikes, and resolve them promptly.

Energy Management System per ISO 50001: An Approach to Sustain Efforts in Energy Efficiency

ISO 50001 offers a way to integrate energy efficiency into daily operations, helping maintain consistent results.

Energy audits are often conducted by external consultants to identify specific savings opportunities. ISO 50001 complements this by involving management and processes to create a comprehensive, ongoing strategy. Energy audits offer immediate recommendations for improvement, while ISO 50001 establishes a long-term framework that supports ongoing emission reduction goals.

Of course, choosing the right approach to energy efficiency depends on manufacturers' context. We hope the insights and fresh perspective on ISO 50001's Energy Management System shared here will offer manufacturers an option in the Energy Efficiency journey.

Expert Insight: Developing Rooftop Solar Power Projects in manufacturers in Viet Nam – Observations and Recommendations

Link to full essay in Vietnamese

Author: Dzung Tran, Pathway to Megaton Technical Lead - To the Finish Line

As businesses increasingly focus on reducing greenhouse gas emissions—especially in energy-intensive sectors such as the textile and garment industry, which also faces mounting pressure from export markets—renewable energy, particularly solar power, is becoming a key solution in green production strategies.

Viet Nam has significant solar energy potential, with average solar radiation ranging from 4.6 to 5.2 kWh/m²/day and annual sunshine hours between 2,000 and 2,500 in many regions. These are ideal conditions for solar power development, with rooftop solar photovoltaic (PV) systems being especially suitable for industrial facilities, particularly those with large factory roofs such as in textiles, footwear, and wood processing.

In addition to environmental benefits, rooftop solar PV has become increasingly economically viable due to sharply declining costs—an average global reduction of about 82% from 2010 to 2020—and continuous improvements in system efficiency. Businesses can reduce electricity cost, improve their corporate image, and meet emission reduction requirements.

However, the rapid development of rooftop solar in VietNam—particularly during the 2019–2020 period—has also revealed several notable issues, from unstable policy frameworks to uneven implementation capacity, which have posed technical, legal, and financial challenges for many companies.

This article presents some observations and provides recommendations to help businesses choose effective, sustainable approaches to implementing rooftop solar PV systems.

Expert Insight: Developing Rooftop Solar Power Projects in manufacturers in Viet Nam – Observations and Recommendations

Key Issues in Rooftop Solar Development in Viet Nam

- Policy and support ecosystem limitations: Despite significant deployment over the past decade, rooftop solar is still relatively new in Viet Nam. The sector experienced a boom from 2019 to late 2020, driven by generous Feed-in Tariff (FIT) incentives. However, this rapid growth coincided with a shortage of skilled technical personnel and inconsistent regulations across government agencies - covering areas such as construction, environment, and fire-fighting - causing difficulties for businesses in obtaining permits and operating systems.

- Prolonged policy gaps: After the FIT policy ended in late 2020, no new incentive mechanism was introduced between 2021 and 2024. This left the market in a state of stagnation. In the absence of clear direction, many companies had to delay or cancel investment plans, leading to financial losses and diminishing confidence in the market's stability.

- Grid infrastructure lagging behind growth: As of the end of 2023, Viet Nam had approximately 101,000 rooftop solar systems with a total installed capacity of about 9,296 MWp. However, the electricity distribution systems - particularly in industrial zones or rural areas - have not been upgraded in time. As a result, many systems could not be connected to the grid or were forced to curtail output, leading to wasted investment and reduced financial viability.

- Limited understanding and project management capacity: Some businesses have undertaken projects without adequate information or management experience. A lack of knowledge about the technology, insufficient experience in selecting suppliers, and poor contract negotiation have led to risks such as project delays, low system performance, or binding agreements with unfavorable terms. In some cases, businesses have been unable to change providers despite problems because the contracts lacked strong protective clauses.

Recommendations for Businesses

To successfully implement rooftop solar PV systems, businesses should consider the following key actions:

- Conduct thorough feasibility and legal assessments: Carefully evaluate technical aspects (structure, roof area, suitable capacity, grid connection), financial aspects (investment cost, payback period, electricity purchase model), and legal compliance (construction permits, fire safety, environmental approvals, project registration, grid sale capability). A well-prepared foundation reduces risks and improves project feasibility.

- Select reputable partners and establish clear contracts: Partners should demonstrate technical capability, have a strong project portfolio, and offer transparent warranties, maintenance, and operation procedures. Contracts should clearly specify timelines, maintenance responsibilities, fault resolution, and dispute mechanisms.

- Build internal capacity: Companies should train technical staff to understand solar systems in order to supervise project progress and quality. Assigning dedicated personnel improves project control and accountability.

- Leverage technical support resources: Engage with industry associations, independent consultants, or support programs from international organizations to access updated information, receive technical support, and reduce project costs.

Conclusion

Rooftop solar PV is a practical solution for textile and garment manufacturers in Viet Nam aiming to reduce emissions. However, success depends on comprehensive preparation, careful partner selection, and a clear implementation strategy. As policy frameworks gradually improve, proactive efforts by businesses will be key to ensuring efficient, sustainable operations that deliver long-term value.

Chapter
03

Water

There is a finite amount of water on Earth. The increase in global demand for water not only creates a risk for manufacturers' business but also creates a risk for the neighbouring community and planet on a broader scale. The operational, environmental, and financial impacts of water use are key issues for facility operations. Driving efficient water use and reductions throughout facility operations is an important area of focus for all factories.

Essay #19: Water-saving Equipment? Invest in High Quality Ones!

Link to full essay in Vietnamese

We are a garment factory established in 2005 with around 1,000 workers. Since our factory is located in an area with abundant water resources and environmental awareness training was limited in quality, the workers did not feel the need to save water. They left taps running while washing hands or chatting, and toilet flush valves overflowed, flooding floors.

In 2015, we responded with annual training, vivid posters, and installed 60 semi-automatic faucets costing 26.9 million VND (about $1,283 USD). Initially, water usage dropped 24% compared to 2014, but the low-cost faucets broke within one or two months because of their low quality and because workers had to continuously press them to get more water, indicating that our training failed to acquaint them with the new equipment. Gradually, all semi-automatic faucets had to be replaced with standard ones.

This experience taught our small factory a valuable lesson: invest in quality solutions to ensure lasting water-saving success, along with thorough training and regular maintenance.

Author: Lana Bui

Essay #20: Struggling in Setting Water Target Without Sub-Meters

Link to full essay in Vietnamese

We are a shoe cap factory in the Mekong Delta, operational since 2011 with over 6,000 workers. With this large workforce and regional cultural influences, where abundant natural water leads to unconscious usage, the factory consumes a significant amount of water and faces high water costs of 150 million VND/month.

Management demanded reductions, but the environmental team struggled to set a "just right" target. We ended up with a target of 10% reduction compared to the year before, thinking it was achievable. However, we failed to plan exactly how many m^3 of water should be reduced in which area and which process due to the lack of specific data, as the factory has just one water meter.

Since it was challenging to propose the costly solution of installing sub-meters in each area, low-cost initiatives like training, showing water-saving videos in the canteen, posters, and leak repairs were applied. However, they only cut usage by 0.5-1%. We missed the KPI and earned a "C" rating. The insight: sub-metering, SMART goals, and stronger leadership commitment and investment are critical for effective water management.

Essay #21: Aim High, Act Smart, Save Water at Far Eastern

Link to full essay in Vietnamese

Far Eastern Apparel Viet Nam, located at the Vietnam Singapore Industrial Park (VSIP) 1, has been operational since 2007, employing nearly 4,000 workers across 74 sewing lines. In 2019, the factory faced a significant challenge with a high-water KPI of 5.57 L/pcs. To address this, we took action in 2020 by installing 13 sub-meters to track usage and reusing 23 cubic meters of rainwater through 10 stainless steel tanks for cleaning and irrigation. These efforts lowered the KPI to 5.39 L/pcs—a 3.2% decrease.

Driven by customer and corporate goals to reduce water use by 20% by 2025, at the end of 2020, we set targets and implemented improvements accordingly with the baseline year of 2020. However, a three-month shutdown in 2021 due to COVID-19 disruptions caused the KPI to spike to 7.5 L/pcs. In response, we prioritized urgent, high-impact, easy-to-implement, and highly effective measures first. Between 2021 and 2024, the factory implemented urgent fixes, including upgrading 80% of underground pipes to exposed ones at a cost of $15,000 USD to easily spot and prevent leaks, constructing a 100 cubic meter rainwater tank for $20,000 USD for toilet flushing and cleaning, and installing timers for $2,000 USD to control water flow during work hours.

Over two years, these efforts saved 3,959 cubic meters of rainwater, reducing costs by $3,500 and KPI reached 4.2 L/pcs. However, the KPI dropped to 4.7 L/pcs due to the addition of six new sewing lines that increased overall water usage. Compared to the 2020 baseline, total water usage per product unit decreased by 12.8%, achieving 64% of the set target.

Aiming for the 2025 target, we built a 200 cubic meter rainwater tank costing $40,000 USD to further reduce the KPI to 4.3 liters per product. However, climate challenges have reduced rainfall to 25% of projections, extending the payback period from three to twelve years.

We commit to our “continuous improvement” ethos, and splan strategically to adapt with operational reality.

Author: Thuong Nguyen - Apparel Far Eastern (Viet Nam) Co., Ltd

Chapter
04

Wastewater

Wastewater can be a significant contributor to pollution and contamination of surrounding natural systems and communities if not managed, treated, and/or disposed of appropriately. The operational, environmental, and financial impacts of wastewater are key issues for facility operations. Driving efficient water use and reducing the amount of contaminants discharged to the environment from facility operations is an important area of focus for all factories.

Essay #22: Wastewater Recycling for Irrigation and Toilet Usage

Link to full essay in Vietnamese

We are a shoe sole factory with a branch in Vinh Long, producing 10 million pairs in 2024 with 700 workers. With our process, we consume 150-200 m^3/month for cooling products, 800 m^3/month for cooling machines, 500 m^3/month for domestic causes (including 100 m^3 for toilets), and 1,000 m^3/month for irrigation. Such water use significantly increased our operational costs.

Following the 2023 FEM verification, we were encouraged by the verifiers to recycle wastewater with examples from peer factories. The Sustainability Department, supported by management, upgraded the wastewater treatment system using UMBR and MBR technologies to meet QCVN 40/2011 standards (Column A). The treated wastewater, qualified for reuse and approved by local authorities, was redirected to irrigate greenery and flush toilets, saving 500-600 m^3/month and reducing costs by 8.6 million VND/month ($410 USD). Our management remains committed to green initiatives, including solar power adoption and transitioning to electric forklifts, among others.

Note: UMBR and MBR Technologies: UMBR (Upflow Multilayer Bioreactor) combines anaerobic digestion with membrane filtration to treat wastewater efficiently, while MBR (Membrane Bioreactor) uses aerobic processes and membranes to filter out contaminants, producing high-quality water suitable for reuse.

Essay #23: Quick Fix for Wastewater Leaks into Rainwater system

Link to full essay in Vietnamese

We are a garment factory established in 2023 with over 750 workers. During an inspection, the CSR staff discovered that at the connection point with the industrial park's rainwater drainage system, the rainwater drainage from the factory was discharging wastewater even though there was no rain at the time. This poses a serious risk of environmental pollution and could damage the company's reputation.

An investigation revealed that the water discharge pipe of the cooling pad system was mistakenly connected to the rainwater drainage. We immediately called the cooling pad contractor and worked with them to reroute the pipe into the wastewater system within 1 week.

We learnt the value of internal inspection, quick remedial action, and in this case, reinforcing the need for strict contractor oversight and environmental training for vendors.

Chapter
05

Air Emission

Air emissions from industrial processes and manufacturing operations have the potential to emit pollutants into the air that impact the environment, human health and contribute to climate change (...) By proactively managing and working to reduce impacts of your facility's air emissions, you can reduce your exposure to regulatory risks or new requirements from business partners.

Expert insight: VOC - Like a Glass of Sugar Water

Link to full essay in Vietnamese

Dinh Khanh Toan, a seasoned chemicals trainer, reflects on his experience teaching about Volatile Organic Compounds (VOCs - solvents in glue and paint that evaporate easily, risking workers' health and the environment. Despite his expertise, persistent basic questions from trainees led him to wonder, "Am I over-complicating my training?" This introspection fuels his essay to simplify the issue of VOCs for manufacturers and practitioners. Using a layman's language, Toan explains VOC properties and provides practical methods to identify, calculate, and control emissions in manufacturing settings. He also invites readers to join the TFL community's year-round Q&A forum to learn from peers and experts.

Author: Dinh Khanh Toan, Lead trainer CMI 2021-2025 - To the Finish Line

Essay #24: “To Know, Ask; To Excel, Learn; To Master, Do”

Link to full essay in Vietnamese

Longway Viet Nam Co., Ltd., established in 2007, specializes in manufacturing bags, backpacks, balls, gloves, and accessories, producing 26 million products annually. Each month, we use 70–80 chemicals, totaling around 4,000 kg. Initially, managing volatile organic compounds (VOCs) was a challenge due to our passive approach. We relied on the BVe3 platform to report monthly chemical usage and check compliance with standards like ZDHC MRSL V3.1, RSL, SVHC... By the 10th of each month, we submitted data, then waited until the 17th for the Technical Report, which highlighted violations. This delay meant we only identified VOC-containing chemicals weeks after use, forcing us into a reactive cycle that wasted time and resources.

Determined to improve, we embraced a proactive mindset. We contacted BVe3’s technical team to learn how to identify VOCs independently, studied the “*How to Higg*” guide to understand VOC components, and attended external courses like ZDHC Chemical Management System, ZDHC Emissions Management. Internally, we held meetings with the Production, Procurement, and Compliance Teams to align efforts. The process wasn’t easy - online research often led to conflicting information, and third-party experts withheld details due to confidentiality. A breakthrough came when our management supported us in joining the TFL community, connecting us with industry experts, peer manufacturers, and brand specialists who shared practical insights and best practices. It is a vibrant knowledge exchange community.

With this knowledge, we developed two effective tools. First, we built an Excel tool in just two weeks which reveals instantly upon inputting the CAS number whether a chemical contains VOCs or violates RSL/MRSL standards, with a “Non-Compliance” column flagging issues for all staff to use. Second, we cross-checked chemical properties using resources like ChemicalBook and AFIRM’s VOC guide. Now, we update our VOC list monthly and require suppliers to provide 100% CAS disclosure for production chemicals. BVe3’s team helps clarify vague MSDS percentages, ensuring accuracy.

This journey transformed us. We now actively check chemicals before use, saving time and reducing VOC emissions, as chemicals are our primary VOC emission source. Our motto, “To know, ask; to excel, learn,” along with management’s support for our effort, the TFL community of continuous learning for action, all played crucial roles to our purue of a wiser, greener manufacturing.

Author: Tran Thị Ai Linh,
Longway Viet Nam Co., Ltd.

(*) The curator board added “to master, do” to the author’s original motto, reflecting the essay’s strong emphasis on action

Chapter
06

Waste (No More)^2

Waste No More is a GIZ initiative to accelerate the transition to circular textile in Viet Nam.

We, manufacturers, encounter significant waste management challenges. Workers are often unfamiliar with sorting waste materials, which hinders efficient waste handling. Limited storage space further complicates the process, while the high costs of waste treatment impose financial strain. Moreover, the lack of transparency in waste contractors' practices leaves the final destination of waste unclear after it departs the factory. Legal obstacles, such as customs regulations, also impede the use of recycled materials.

Recyclers operating on closed-loop systems struggle to obtain sufficient fabric clippings as feedstock, and many manufacturers face the elevated costs of recycled materials.

Despite these hurdles, manufacturers are actively addressing the issues: training workers in waste management techniques, adopting innovative technologies to reduce waste, and partnering with brands and suppliers on initiatives to increase recycling rates and improve worker safety in the waste sector.

These real-life waste stories underscore the challenges of this journey. However, with brand guidance and a commitment to the principle of "Waste No More Time, Waste No More Resource," manufacturers are accelerating the transition to a circular textile industry.

Initiatives like Waste No More are integral to this journey.

Essay #25: Waste Journey: Discipline and Commitment work!

Link to full essay in Vietnamese

I am part of a team at a 1,000-worker shoe manufacturing factory in Dong Nai. When I joined in 2022, I quickly spotted a glaring issue: our waste management was terribly inefficient. Each year, the factory shelled out over one billion VND just to deal with waste, in which about 90% was for 610,520kg of industrial waste. The management process was a mess: Waste was not sorted, data was vague with no tracking system, and the management seemed oblivious to how dire the situation had become.

Before this, in the early days of my HSE (Health, Safety, and Environment) career, I used to work at a Japanese company where waste management was treated with utmost seriousness. Failing to sort waste properly there meant immediate disciplinary action, with managers leading by example. That experience instilled in me a strong sense of responsibility for using resources efficiently. At this new factory, I was determined to shake things up, even though I knew it would not be a walk in the park.

Action: Planning and Persuasion

I called a meeting with key teams: security, HSE, and production management to surface how they understood and implemented waste management. I started small by mentioning that our customers demanded waste inputs following Higg FEM, and that if we didn't shape up, we risked losing orders - and workers could lose their jobs. Next, I drafted a year-long waste reduction plan, assigning clear tasks to each department, and got it signed off by the boss.

We kicked off training for all workers on waste sorting. The security team was put in charge of overseeing waste from the workshop to the storage area, ensuring it was sorted into categories like white fabric scraps, colored fabric scraps, rubber waste, and paper boxes. Production managers were tasked with keeping workers on track, while the HSE team logged and reported monthly data.

To win over the management board, I put together a presentation for the management meeting. When I highlighted that we were burning through over 1 billion VND yearly on waste, our General Director was stunned and shot back, "Why has this been allowed to drag on?" I knew then I had grabbed their attention—and that was the game-changer.

The Spirit of "Waste No More"

We embraced the "Waste No More" mindset—no more squandering. The security team tracked daily waste totals and shared updates in a group chat that included the General Director. Whenever the figures spiked, the boss pondered, and departments scrambled to cut defects, which slashed waste. Even the design team stepped up, tweaking material norms to save 3-4% per product.

Wonderful Results

In just the first quarter of 2023, we sold rubber waste for 12 million VND - waste that used to only cost us to dispose of. I suggested funneling that cash into rewards for workers who nailed 5S standards - imagine how happy they were! By the end of 2023, industrial waste plummeted to 159,460 kg, with processing costs down to 227.7 million VND. We did not just save hundreds of millions of VND; we turned waste into profit.

The "Waste No More" spirit that I learned from experts and peer factories at GIZ's workshops further inspired us to keep maintaining and improving our waste management practices. The figures that our factory had achieved was the collective result of our management's support and our colleagues' unity. Following this success, our management aims to further reduce waste from the cutting stations by investing in automatic cutting machines.

Author: Tran Dang Ngoc - *Tuấn Việt Shoe*

Essay #26: Four Waste Actions in an Apparel Manufacturer

Link to full essay in Vietnamese

As an apparel manufacturer in Viet Nam, we have embarked on a journey to reduce waste in our production process. Here are the initiatives that we have implemented:

1. **Reusing Thread Rolls:** We stopped buying lining paper to separate fabric layers during cutting and started reusing leftover thread rolls. This simple change saved us 1,844 kg of paper and up to 232,344,000 VND each year.

2. **Automatic Cutting Machines:** We invested in five automatic cutting machines to replace manual ones, slashing fabric waste from ten bags to just two.

3. **Digital HR software** for meal registrations, leave requests, and gate passes, eliminating paper forms. We saved ten reams of paper just after one month of implementation.

4. **Reusing Plastic Bags:** We now reuse plastic bags that originally held raw materials to store fabric scraps and waste, saving us 20 million VND on new bags and cutting down on plastic waste.

Essay #27: Turning Waste into Profit

Link to full essay in Vietnamese

We are an apparel manufacturer producing about eight million products monthly for sports brands. We have embraced the **Waste No More** goal of "turning waste into profit." Initially, we sorted waste by categories like fabric scraps, plastic bags, paper tubes, and paper scaps. Nevertheless, fabric waste was not sorted further and sold cheaply to be downcycled, wasting resources and raising concern about the actual disposal method.

To address this, we implemented

1. Internal waste management procedures.

2. Fabric clip sorting at cutting tables for higher-value reuse and recycling.

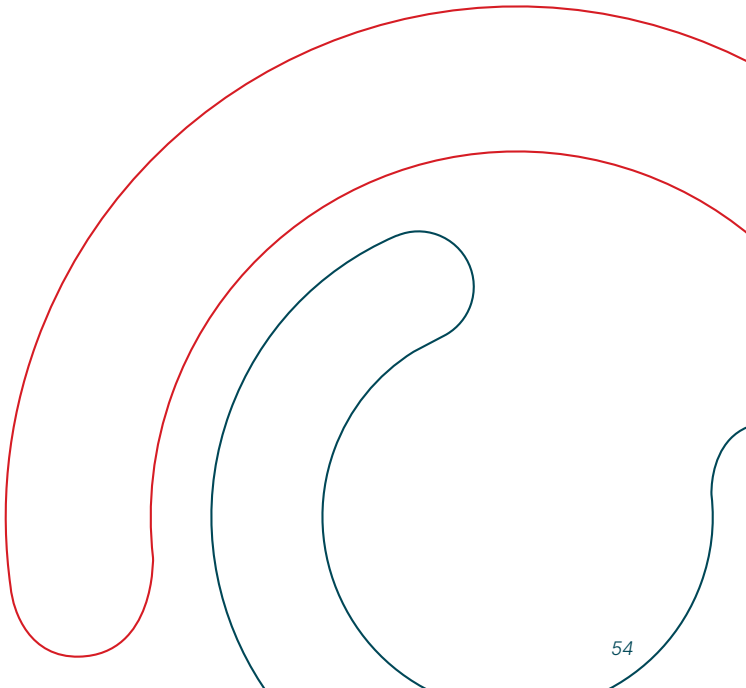
3. Smart scale at cutting tables with barcode scanning.

4. Partnered with a Tier 3 cotton yarn factory, transferring 107 tons of 100% cotton waste at five times of the previous waste's value.

5. Collaborated with a competent waste contractor to recycle fabric scraps into fibers and downcycle the rest to avoid waste-to-energy for recyclable materials.

6. Invested in automatic cutting systems & optimizing markers for waste reduction.

We are still working to improve transparency in waste disposal and find contractors that can recycle all fabric waste. Currently, there is no standardized tool to fully evaluate contractors based on their capabilities, environmental impact, safety, human rights, and transparency. We will continue participating in programs similar to Waste No More aiming at assessing waste contractors and prioritizing partnerships with vertically integrated contractors.



Essay #28: Don't Waste Waste — It's Money!

Link to full essay in Vietnamese

At Company A, an apparel factory, we faced a rising waste problem in 2022—with similar production levels, the amount of waste generated increased by 6-13% compared to 2021, with no sorting in place. Most waste was sent for landfill or incineration. Determined to change this, we set goal in 2023 to reduce waste generation and apply sorting at source.

Actions included:

1. **Invested in Automatic Spreading and Cutting Systems:** Replace manual cutting with new machines that ensure cutting specifications, minimize fabric damage and incorrect specifications. The amount of defective semi-finished products reduced by 34% and sorted waste now recycled instead of incinerated.
2. **Added More Waste Bins for Sorting:** We installed 16 large bins across our workshops—orange for domestic waste, green for recyclables (e.g., cans, plastic bottles), and yellow for food waste—plus 48 smaller bins for paper scraps at sewing lines, three for each line.
3. **Organized Sorting and Provided Training:** We allocate separated storage area for each category of waste and trained workers on environmental awareness and sorting at source. We also distributed reusable water bottles to cut single-use plastics, and posted awareness posters. Initially, only 70% workers followed, but after three months of implementation, almost 98% workers have adopted sorting at source.

Closing 2023, we reduced production waste by 46% (71,488 kg) and cut landfill/incineration rates to 34-45%. We are now minimizing hazardous waste and exploring automatic fabric cutting by codes to reduce paper use. Don't Waste Waste —It's Money!

Author: Dang Thi Huong Lan

Essay #29: Waste No More Transformed Our Waste Management

Link to full essay in Vietnamese

Factory S in Nam Dinh has 12,000 workers. Before January 2024, we used to store industrial waste (fabric, paper, cartons, plastic, metal, etc) unsorted in a warehouse. Inspired by the Waste No More (WNM) program, insights from experts and other peer manufacturers, our Compliance and Environmental Safety teams launched a sorting initiative in early 2024.

We rolled out the program in three phases:

Phase 1 (March–June 2024): We trained all staff on sorting at source, starting with supervisors who then trained workers. Training covered program goals, participants' responsibilities, waste identification and sorting techniques, data tracking, and production innovations to minimize waste. We also introduced labeled bins and storage areas for efficient sorting, encouraging departments to compete in waste reduction.

Phase 2 (June–December 2024): We monitored progress quarterly, using manual logs and Excel to track data. Daily waste quantities were recorded by categories. Waste were stored in designated areas. This allowed us to analyze trends and set reduction goals.

Phase 3 (January–December 2025): We are exploring advanced recycling methods, verifying contractor disposal processes, and adopting tools like T-Waste Tracker for precise waste tracking.

After three months, 100% of workers implement sorting waste at the source, reducing Q2 2024 waste by 17% compared to Q1 through increased reuse of polybags and paper. Reuse rates rose by 2%, with innovations like repurposing fabric ends for smaller parts and reusing cartons for storage. This success has spurred motivation across teams, and we are committed to scaling our Waste No More project to other manufacturers in our corporate.

Essay #30: Sorting at Source - A Transformative Journey

Link to full essay in Vietnamese

At our export sports shoe manufacturer in Viet Nam with more than 20,000 workers, the types of waste generated are very diverse. For a long time, our five-member Environmental Management team struggled to help workers see why they should spend time to sort waste instead of focusing on productivity. Many times, our failure in waste sorting led to waste contractors' complaints.

After having tried many methods, a sweet surprise came after we invested in the smart scale system for waste data collection and traceability. We convinced our workers that if waste had not been an important matter, we would not have made such a big investment. At the same time, we launched several awareness campaigns, including competitions like "Crafting Products from Waste" and events like World Environment Day. By 2023, 95% of workers underwent annual sorting training, and sorting became routine. We achieved an **81% recycling rate** - exceeding our 2025 target - transforming soles into rubber tiles, thread spools into household items, and fabric scraps into ceramic padding with lower disposal costs.

Essay # 31: Sorting at Source at Viet Vuong 2

Link to full essay in Vietnamese

At Viet Vuong 2 Co., Ltd., an export apparel factory in Quang Nam, we produce 1,800,000 products annually with a workforce of 1,790. Initially, waste management and 5S hygiene were major challenges - unsorted waste littered the factory floor, delaying cleanup and requiring staff overtime before customer audits. Fabric dust permeated the air, posing health risks like respiratory and skin issues for workers, and coated sewing machines, necessitating daily maintenance to safeguard products. Accumulated dust also posed fire risks, especially in Central Viet Nam's intense heat.

Through the Waste No More Peer Work Group in Hue (August 2024), we gained a clearer understanding of the importance and benefits of sorting at source and were determined to implement it in our factory. Our Department put a lot of efforts in convincing the Managers of the Production and Cutting Departments to allow and instruct workers to sort waste while trying to keep their productivity. Then, we provide workers with practical supporting tools: Cutting workers were equipped with rolling bins for them to shove in fabric scraps. Sewing stations are added fabric bags for threads and plastic bags. Every 30 minutes, the cleaning staff would collect the sorted waste.

Within one week, our factory transformed - floors became cleaner, dust levels dropped, and waste handling improved. This reduced health and safety risks, enhanced productivity, lowered machine maintenance costs, and improved product quality, impressing clients and opening new business opportunities. We now enforce daily 5S checks, emphasizing that a clean factory ensures orders, jobs, and worker well-being.

Essay #32:Production Waste Sorting at a Garment Manufacturer - Initial Steps Towards Sustainability

Link to full essay in Vietnamese

S is a garment factory based in Central Viet Nam with more than 5,000 workers. We used to have a lot of concern regarding where our production waste will end up. There was no sorting procedure, neither was sorting culture as workers did not have the knowledge, and were always under pressure for productivity. Waste sorting and disposal was 100% on the hand of the waste contractors, and they could not provide us with specific waste disposal data.

After joining Waste No More, we aspired to launch sorting at source in our cutting department. We applied the following methods:

- Introduced waste tickets on cutting tables, specifying the fabric type, color, and composition for collecting staff to easily identify.
- Provide a three-compartment bin (fabric, paper/carton, plastic bag) under each cutting machine for cutting staff to shove sorted waste down.
- Collecting staff then sort fabric scraps by composition and color as it boosted waste value, with white cotton fetching higher prices.
- Storage department weight each bag of waste and share the data with the Compliance department.

Regarding waste contractors, we partnered with brands to select reliable ones and require them to periodically provide disposal reports. Currently, our 100% cotton fabric clips are transferred to Recover Viet Nam and will be recycled into new fibers.

Challenges and Solutions:

- Reduced productivity: we added part-time supporters during peak hour. In the future, waste sorting will be a part of workers' job description.
- Collecting staff were unfamiliar with fabric identification and sorting: we created an illustrative sorting hand-book which is easy to navigate and provide hands-on training
- Limited inter-departmental coordination: we used Zalo/Teams groups and mini-meetings to align efforts.

Results:

- Our new waste contractor provides recycling and landfill data, giving us clarity on waste outcomes.
- Sorting habits are taking root, paving the way for broader adoption.
- Management ensures this is a factory-wide movement, not just a slogan. We embed the **Waste No More** culture.

Essay #33: Walk the Talk—Our Journey with Brands Toward Zero Waste

Link to full essay in Vietnamese

Our apparel factory in Southeast Viet Nam with over 5,000 workers produces 25 million products annually. By 2022, over 90% of our industrial waste was landfilled or incinerated. The recyclability of fabric waste was greatly reduced because it was not sorted. Inspired by a customer's insight - "Waste is simply excess material in the wrong person's hands" - and guided by our "Move to Zero" vision, we joined a Brand's Minimum Waste Management Program.

Implementation:

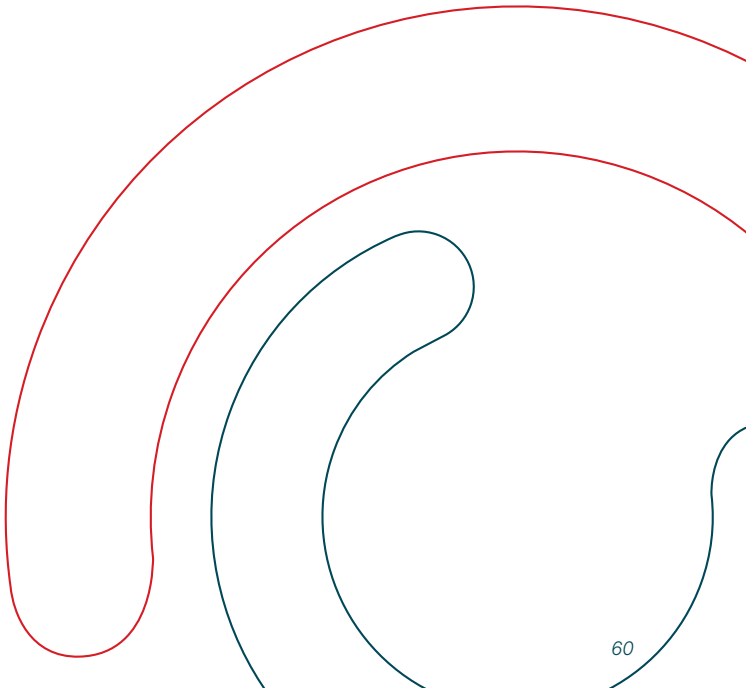
- Conducted a SWOT analysis on our waste management system.
- Adopted advanced cutting technology and software, reducing excess fabric waste.
- Invested in Smart Scale.
- Promote reusing, take-back, and recycling.
- Trained workers on sorting for recycling.

Collaboration with Brands:

- Brands mandated sorting fabric waste at cutting and sewing stages.
- They provided ongoing support, connecting us with experienced manufacturers for benchmarking, and enrolled us in TFL training, shortening our learning curve.
- Together, we selected a new contractor capable of recycling 100% of cutting waste, completing the transition by June 2022 with minimal cost impact despite customs challenges.

Results:

- Landfill rates dropped from over 90% to under 10% per annual Higg FEM reports.
- 100% of industrial waste is now recycled, per customer data.
- We reduced fabric waste by 6.25%, surpassing our 5% target, and saved 100 million VND yearly by returning carton cores to contractors.



Essay #34: Sorting for Closed-Loop Recycling - A Joint Experiment with Brand

Link to full essay in Vietnamese

Current Waste Sorting Program at United Sweethearts Viet Nam:

United Sweethearts Viet Nam, established in 2001, employing more than 3,000 workers and operating over 3,000 modern machines. We began waste sorting in 2007 and have since become a leader in our customers' supply chain for waste management. We have trained workers on proper waste disposal and introduced color-coded bins:

- **Green:** Non-hazardous and recyclable waste
- **Blue:** Domestic waste (e.g., food containers, milk cartons)
- **Yellow:** Medical waste
- **Red:** Hazardous waste (mainly rags with oil)
- **Black:** Hazardous waste from broken needles with oil

Initially, waste processors handled detailed sorting of the Green bins, until some brands required sorting at source for fabric, paper and plastic waste.

Potential project - Closed loop with Polyester / Polyamide waste

From January to June 2023, our factory piloted the "Potential Project - Closed Loop with Polyester / Polyamide Waste" with a customer brand. The aim was to establish a closed-loop system for their products.

Project Implementation Steps:

1. **Estimating Waste Volume:**
   - The Purchasing Department collaborated with fabric suppliers to create a formula estimating fabric weight per item and estimate the waste amount.
   - The brand reviewed and chose 100% Polyester and 100% Polyamide-6 fabrics for the project, adding an "UNSURE" category due to the limited Polyamide-6 quantity.
2. **Implementation Guidance:**
   - A meeting was conducted with Warehouse and Cutting Departments to explain the project's purpose using the 5W1H model (Who, What, When, Where, Why, How).
   - Staff were trained to identify the project fabrics, which were tagged with different color strings to prevent mix-ups.
   - A prioritized area at the fabrics warehouse was designated for the project fabrics.
3. **Waste Sorting at Source:**
   - We coordinated with relevant departments to sort waste by item:
   - Fabrics preparation and delivery: Warehouse staff identified the project fabrics and informed the Cutting department during delivery.
   - Cutting and sorting at source: Cutting supervisors verified fabric codes and directed workers to sort waste carefully, logging each type. They could hire additional staff specialized in sorting for brand-led projects.
   - Storage and Inspection: Sorted waste was moved to the warehouse by forklift. The Compliance Department cross-checked and recorded final weights.

Essay #34: Sorting for Closed-Loop Recycling - A Joint Experiment with Brands

4. **Customer Progress Check:**

In late February 2023, the brand audited the project and provided feedback for timely improvement:

- Retrain staff on sorting to ensure no impurities in sorted fabrics scraps
- Replace plastic bags with paper boxes for storage
- Provide regular updates on waste volumes
- Specify storage requirements

5. **Packaging:**

- By May 2023, the target fabric volume was achieved.
- Customer brand required to prepare packing lists, HS codes, and "export" documentation.
- Departments worked together to repackage, recheck, weigh, calculate volumes, and label each box[3].

Upgrading our Waste Sorting System

After six months, the project had enhanced our waste sorting system:

- **Self-assessment against brands' requirement:** Before each project, a factory should self-assess and check thoroughly with customers to alleviate extra work for requirements such as achieving 99% fabric purity or requiring packing lists.
- **Sorting at source for recycling:** As the departments have been trained on advance sorting, we introduced "Waste Sorting Stations" with carts and labels, categorizing waste into two to three types (Fabric, Paper, Nylon) for areas with high waste generation and easy to conduct sorting at source. At first, this initiative was implemented only in the Cutting department, then the Warehouse, and Packaging departments actively asked for equipment to apply in their areas.
- **Recycling project development:** We proactively collaborated with Vietnamese firms to transform fabric scraps into "polyfill" for jacket padding.

The project enhanced our company's reputation and contributed remarkably in the journey to sustainability through adding values and purposes to our products. We are advancing toward the "Waste No More" vision: circular textile.

Author: Nguyen Thi My Phung - *United Sweethearts Viet Nam Garment Co., Ltd.*

[3] The waste, at the end, could not be exported for closed loop recycling, as the recipient country does not allow waste shipment/import. The project diverted to local recycling.

Essay #35: Enhancing Brand Trust Through Accurate Waste Data at a Shoe Factory

Link to full essay in Vietnamese

Our company, a leather shoe manufacturer in Dong Nai, employs over 10,000 workers and produces more than 15 million pairs of shoes for export annually. With such scale, waste sorting and accurate data collection emerged as a critical challenge.

Workers at the Recycled Material Consolidation Center (RMCC) faced difficulties distinguishing between similar waste types and often logged incorrect data, leading to inaccurate weight by category. This undermined our reporting to clients and management, eroding trust and hindering our ability to set reliable waste reduction targets.

To address this, we implemented a structured plan:

- **Training and Surveys:** Conducted a detailed RMCC survey to pinpoint confusing waste types and provided targeted retraining for workers.
- **Waste Sample Booklet:** Developed a visual guide with images and descriptions to assist with accurate data entry.
- **Daily Briefings and Visual Aids:** Introduced 15-minute morning meetings led by the RMCC supervisor, using a numbered waste chart to reinforce waste categorizing.
- **Regular Monitoring:** Established frequent checks with immediate feedback to correct errors on the spot.

Our efforts yielded clear results: Workers used the booklet and chart to enter data more quickly and correctly. Accurate data enabled us to improve our reports to customers as well as to trace waste sources, identify problems and reduce waste through collaboration with workshop managers.

Essay #36: Recycling Fabric Waste: The Bottleneck of Customs Procedures

Link to full essay in Vietnamese

Our factory is an FDI apparel manufacturer outside the industrial zone in Nam Dinh. We produce about 900,000 products annually, generating 9-10 tons of fabric waste each month. From 2016 to 2023, waste disposal methods were unclear - everything was dependent on the waste contractors. They refused to indicate clearly the methods in the contracts for many reasons. As a consequence, our whole waste data for baseline was inaccurate, and there was the risk of contractors' disposing waste in appropriate ways.

In 2024, we pushed for recycling PET, PA, and Cotton fabric clips by requiring the waste contractor to be transparent about recycling methods and agreed to pay more for that. Then we researched to find out the sorting process for these fabric types, trained the workers and implemented sorting at source. However, we hit a major roadblock: customs regulations demanded VAT invoices for recycled materials, which we could not provide as we were paying contractors to collect them as waste. We had to give up and came back to the previous disposal methods of energy recovery through incineration in cement kiln.

We learned a critical lesson: aligning internal departments, especially between import-export and EHS with strong management commitment, is essential to navigate the change through complex customs procedures.

Author: Huong Tran

Essay # 37 Upcycling - Weaving Waste into Wonders

Link to full essay in Vietnamese

These essays celebrate the upcycling of production waste, where waste becomes art, workers become creators, and any better way of worker engagement and environmental awareness raising?

Factory T: Organizes various activities to promote waste awareness, such as recycling competition with selected products gifted to workers' children. Materials waste is turned into pouches for scissors and rulers—replacing unsafe practices of leaving sharp tools on tables—and bags for personal items, reducing the use of single-use plastic bags.

Hanesbrands Phu Bai: A crochet class was launched to repurpose scrap fabric into household products, reducing waste and teaching new skills to employees with difficult circumstances - particularly single mothers - to boost their income. The revenue from these products goes to the factory's community fund, promoting sustainability and social welfare.

United Sweethearts Garment (Vietnam): Transforms paper cores, plastic, and fabric scraps into furniture and décor. Diverts 630 kilograms of plastic waste from landfills while fostering creativity and community through contests and skill-sharing sessions.

Essay # 38: Bao Minh's T2T Woven Fabric and the Yagi Typhoon

Link to full essay in Vietnamese

In 2024, Bao Minh Textile JSC joined the Waste No More initiative and launched a textile-to-textile (T2T) recycling program. Early challenges with recycled yarn quality presented significant obstacles, and we worked closely with our recycling partner, Tan Nam Trung, to address them.

The Yagi typhoon in September 2024 transformed our technical team's perspective. Experiencing nature's fury firsthand while working on the pilot, our team felt a deep responsibility to conserve resources through our efforts. What began as a task-oriented fabric development evolved into a heartfelt mission. Inspired by this shift, we produced a remarkable small batch of 34% recycled T2T woven fabric, showcased as special gift shirts at 2024 VITAS Congress.

By April 2025, building on the pilot's success, Bao Minh developed a business plan with Tan Nam Trung, the recycling partner to scale the T2T program. Clients now express strong interest in our T2T fabric capabilities. Beyond technical expertise gained from the pilot , the Yagi storm ignited a profound passion for T2T fabric within our team and a commitment to resource stewardship. Textile waste, once 'just waste', is now a valuable resource for creating fabric anew.

Author: Hau Tran -
Bao Minh Textile JSC

Chapter
07

Chemicals

The use of chemicals in a facility’s production processes and operations can pose significant risks to the environment and human health if not managed systematically and responsibly.

Essay #39: Building MRSL Awareness in the Supply Chain of a Thread manufacturer

Link to full essay in Vietnamese

Our thread manufacturing factory, operating since 2006, faced MRSL compliance challenges in 2024. While we required suppliers to sign MRSL compliance commitments, the Purchasing Team sourced local chemicals to cut costs. Many local suppliers, primarily traders, signed without understanding what it is about, leading to our failure to acquire RSL test reports from them for an audit in December 2024.

The root cause was internal: inadequate training left the Purchasing Team unaware of the need for compliance evidence. We then collected all flagged cases and provided MRSL training to our Purchasing Department, emphasizing that for each commitment, the chemical supplier must be able to provide test reports and sufficient proof of compliance.

After this training, the Purchasing Team proposed to have another workshop for our suppliers - in combination with other requirements. This is a great signal, as inter-department collaboration is crucial to conveying MRSL awareness to suppliers.

In January 2025, we held an online workshop for 12 chemical suppliers to clarify MRSL requirements, and the Purchasing Team would remind them about compliance commitments whenever we purchase new chemicals. By the end of Q1 2025, suppliers are now proactively providing test reports - even for traders. We also collaborated with a chemical manufacturer to develop a CRSL-compliant alternative, fully replacing the former non-compliant chemical in production.

Essay #40: 5 Steps to Boost ZDHC Compliance from 40% to 70% in 2024

Link to full essay in Vietnamese

Before 2019, Company X struggled with chemical compliance, as only 30% of our chemicals met MRSL/RSL standards, mostly due to chemical manufacturers' reluctance to incur high costs for MRSL certification, the absence of a stringent chemicals management system, and limited supply chain coordination.

From late 2019, we established a chemical management system to regulate restricted and prohibited substances, prioritizing safety for consumers, workers, and the environment.

1. **Compile a Restricted Chemicals List:** The Compliance Department gathered restricted chemical lists from laws, clients, and ZDHC MRSL, update them annually or upon client notifications, and share them via email with relevant departments such as Product Development, Purchasing, Warehouse, Usage, QA, LAB, Wastewater Treatment, and Compliance.

2. **Establish a Chemical Management Process:** We enforced strict input controls, requiring all incoming chemicals to have a valid MSDS with full composition disclosure, CAS codes for verification against restricted lists, manufacturer compliance commitments, and third-party MRSL/RSL certifications (e.g., Ecopassport, Bluesign) for chemicals applied directly in the products. Non-compliant chemicals are flagged for replacement.

3. **Assess and Classify Existing Chemicals:** We inventoried all chemicals, cross-checking their composition against restricted lists using CAS scanning in Excel, and immediately notified departments to replace any non-compliant chemicals identified.

4. **Conduct Annual Training:** We hold yearly training for relevant departments on restricted substances management, focusing on understanding, compliance procedures, and the importance of chemicals management in sustainable development.

5. **Monitor and Audit Monthly:** We perform monthly inspections across usage, storage, transport, and disposal areas to ensure compliance with the chemical management process, promptly addressing any violations.

Over three years, we have successfully developed our chemical management system. We also applied several measures to request and encourage suppliers to comply with our requirements.

By 2024, the share of compliant chemicals increased from 40% (2023) to 70%, with a target of 90% ZDHC MRSL Level 1+ by 2025.

Essay #41: No More Hiding ‘Dog Glue’ Before Client Audit

Link to full essay in Vietnamese

At our factory, staff used to purchase chemicals without oversight, bypassing Safety Department approval, and used unauthorized chemicals for bleaching despite prohibitions from clients. As a habit, non-compliant chemicals were hidden whenever there were compliance audits by brands or third parties.

This stemmed from poor policy communication, inadequate penalties for violations, weak chemical management processes, and lack of management involvement. It endangered worker safety, risked non-compliance, and eroded brand trust.

To respond, we implemented strict chemical management policies: all chemical purchases now require the Safety Department’s approval via formal requests, Director sign-off, and only then proceed to the Purchasing Department. Security teams are instructed along with random checks to identify unauthorized purchases. We also increased training through internal sessions, Group 3 safety courses, and awareness campaigns with banners and posters, while establishing a violation reporting system. By 2024, non-compliant chemical use dropped significantly, with no bleaching cases, though some minor violations (e.g., “Dog (X-66) Glue”) remain. We are still on our way to better chemicals management.

Essay #42: Replacing Hazardous Chemicals at Pacific Crystal Textile

Link to full essay in Vietnamese

In 2020, Pacific Crystal Textile Co., Ltd. identified that only 47% (55/116) of our chemicals met ZDHC MRSL standards, with no lifecycle analysis or supplier usage tracking. We launched a 5-year plan (2020-2025) to replace hazardous chemicals, starting with replacing Adipic acid dihydrazide (ADH) - a compound harmful to human health and the environment, while affecting fabric quality - in anti-yellowing agent TH-30 by collaborating with Z material company. Company Z conducted research and was able to provide a replacement without ADH by November 2020 after three months.

Driven by our management board, supported by client brands, and in collaboration with chemical suppliers, we've made significant progress over the past 5 years. By 2022, we completed life cycle assessments and successfully replaced R360R dye. By 2024, 96% (108/112) of our chemicals achieved ZDHC Level 1+ standards, with annual Oeko-Tex certifications and no RSL failures since 2022. Through client-led MRSL/RSL training and supply chain integration - covering upstream chemical suppliers - we increased our MRSL-compliant chemical purchases, streamlining supplier sourcing. This collaboration has enhanced safety for workers and consumers.

Author: Dang Dinh Duong – *Pacific Crystal Textile*

Essay #43: Enhancing Worker Safety and Resource Efficiency with Eflow Technology at Viet Thang Jean

Link to full essay in Vietnamese

Viet Thang Jean, operating since 1989, employs 800+ workers to export millions of jeans annually to the US, Japan, and Canada. To reach such capacity for various products, we are required to use a large amount of chemicals.

Previously, the manual chemical spraying stage dispersed toxic chemicals into the working environment, directly affecting workers' health. This step also relied on workers' skills, leading to inefficient control of chemical amounts, causing waste and impacting product quality due to inconsistent fashion effects.

In response, in 2017 we invested in Eflow technology - an automatic and closed spraying system - to reduce chemical exposure and improve products' consistency, while reducing the amount of water and chemicals used. By 2024, EIM data showed a significant drop in health risks and environmental impact.

Author: Chu Minh Hieu – *Viet Thang Jean*

Keynote

Manufacturers, Make Yourself Heard

Manufacturers, Make Yourself Heard

Manufacturers, what is your story? Are you powerful enough to make yourself heard?

The textile sector faces many challenges in today's world. But how can you, as a manufacturer, meet these challenges? How can you raise your voice and be effective in your sustainability efforts?

Challenges

We are all well aware of the challenges. We face pollution and climate change disruptions, which can lead to droughts, water scarcity, heat waves, and severe storms. To maintain good working conditions in the supply chain is both a complex, volatile and challenging topic.

Furthermore, and most recently, we face the challenges of disrupting market actors, for example in respect to the new tariff rounds currently taking place.

As a manufacturer supplying brands, there is often a power imbalance, making open and honest conversations difficult. Very often, the sourcing of brands is managed by purchasing departments that are not well connected with their sustainability counterparts and therefore not aligned with better buying practices. Another challenge lies in the many diverse and sometimes fragmented programs within the supply chain, leading to audit fatigue and, ultimately, a loss of focus on remediation and improvement.

What Is Possible?

In a recent project, we conducted interviews with hundreds of suppliers. The feedback we received was highly reflective, valuable, and focused on the topics that matter most to manufacturing facilities. This demonstrates what is possible in terms of manufacturer engagement and quality guidance. The client organization will soon publish more information about the project.

Over the past 10–15 years, we have seen leading manufacturing groups taking action, raising their voices about sustainability, implementing strong sustainability programs, and reaping the benefits of doing so. However, we need more than just large groups to engage - we need all of you to get involved, at least in some way, and to act as spokespersons and role models for other manufacturers. For manufacturers to create the critical mass, we need even more engagement and commitment, also from your management, thereby influencing the management within brands.

A New Era of Partnership

As a manufacturer, you can advocate for a new era of partnership - one in which your perspectives, concerns, and contributions are even more valued and actively sought by the brands. This means pushing for industry change, sharing insight, and collaborating with brands and their associations. Here are some opportunities for you:

- Invest in your people and their capabilities.
- Speak up, use your voice, and engage.
- Take ownership, bridge the power gap, and contribute to industry-wide solutions.
- Engage with policymakers and trade organizations.
- Engage with and support brands in developing realistic standards for sustainability and at the leadership level for purchasing practices.
- If multiple brands source from you, advocate for aligned sustainability requirements.

Manufacturers, Make Yourself Heard

- Join industry organizations such as Cascale, Textile Exchange, and ZDHC. Within these organizations, let manufacturer representatives on the respective boards coordinate collaboration among all manufacturers and raise their collective voice.
- For smaller manufacturers we can recommend to join events and conferences to keep you updated.

Take Ownership of Your Sustainability Performance

To become successful in your work on sustainability and have an impact on the industry, you must also lead by example (even if it is in a smaller context) and take ownership of your sustainability performance by:

- Clearly communicating your expectations to brands and advocating for measures that create the biggest impact and make the most sense.
- Requesting better business conditions based on your sustainability performance and focusing on long-term partnerships.
- Integrating sustainability into your daily operations.
- Focusing on significantly reducing your environmental and social impact.
- Preparing for certifications and traceability.
- Publishing sustainability reports. Publishing a sustainability report helps you organize your sustainability work and give a stronger structure to it. Even if you are a smaller manufacturer, you can include sustainability information on your website.
- Last but not least, keeping your costs under control.

A Word of Encouragement

You can do it! Engage with brands and help them understand your business operations. When adopting your sustainability work, use a plan do check act (PDCA) approach. It will pay off!

To other stakeholders

As a brand, you can make your contribution by listening even more to your suppliers, by joining efforts to focus on the most important topics as outlined above. Furthermore, we need your management teams at the table!

As an industry organization, such as Cascale, we see you expanding your role and inviting more manufacturers to join and to give them the room to speak up. And we wish to see meeting formats where the management teams from brands and suppliers can engage in a way that is effective for them!

Karin Ekberg
March 2025, Leadership & Sustainability

Op-Ed

The Voice of Manufacturers in Learning Community

Coming from a factory background, with 6 years of hands-on experience in sustainability, I deeply understand and value actions with positive impacts on workers, regardless of their scales. Later, when I had the opportunity to take on a brand-side role, I strived to be worker-centric, driving changes from the smallest practical actions, and working closely with the manufacturers to find solutions and ways to improve.

The practical knowledge and experience of factory teams are invaluable. They work hard and creatively. However, in some cases, due to the overwhelming number of standards that they are expected to meet and limited resources, they do not thoroughly comprehend the intention behind such standards. That is when the role of the brands becomes prominent: not just setting requirements, but also guiding, fostering motivation and commitments to prosper together.

I still remember, about 8 years ago, when I was with my former company, we launched the Learning Community - Learning Together initiative. Manufacturers shared their good practices, collectively analyzed problems, learned, and exchanged ideas, while brands played the role of facilitator and guide. Gone were the conferences where only brands spoke and manufacturers only listened. Instead, during the Learning Community sessions, brands shared their expectations, and manufacturers collaboratively discussed challenges and obstacles to arrive at concrete solutions and action plans to meet those expectations. The atmosphere of these sessions gradually evolved into lively, sometimes "heated", discussions where everyone felt their contribution was valued. To give is to enrich ourselves.

In that same spirit, I worked alongside TFL and WNM in 2024, where the voices of manufacturers are truly respected. One standout example is the e-Café event: Navigating the 2024 Social Insurance Law held on January 16, 2025. The law updates significantly impact manufacturers, workers, and governance systems. This topic was chosen not only because of its urgency but also to create an opportunity for the community to learn together and prepare for upcoming waves of change. The e-Café session featured contents co-created by manufacturers, brands, and industry experts - reflecting TFL's ethos: co-creating together, learning for action.

Sustainable development is a long journey. Manufacturers and brands share the same goals, yet while manufacturers must respond to diverse demands from different brands, their internal teams remain limited in size and capacity. To communicate and collaborate efficiently, we must walk this path together. To go far, we need to go together. That is why we need Learning Communities, where factory voices are on the spotlight.

Hue Pham, Technical Advisory Committee Member, TFL 2024/2025

TFL Programme in the Eye of a Brand

Amer Sports is a global group of the world's most recognized and respected sports and outdoor brands. Our purpose is to elevate the world through sport.

Viet Nam is an important sourcing region for us. We are delighted to partner with Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) since 2023, delivering together a comprehensive capacity building program "To the Finish Line (TFL)". The program is designed to train vendors in Viet Nam on various sustainability topics, for example, enhancing their knowledge on Higg FEM 4.0, as well as energy and waste management. The program supports our production partners gaining a better understanding on sustainability topics, enabling them to meet our targets and expectations.

After two years of running, we are proud to say that the program has empowered our apparel and footwear manufacturers in Viet Nam to transform their environmental performance. Through the Higg Facility Environmental Module (Higg FEM 4.0), the program has offered a deep dive in waste management, advancing disposal methods to reduce environmental impacts and GHG emissions. It combines expert-led training, peer learning, and actionable tools to drive measurable sustainability outcomes, which are widely recognized by our production partners.

In total, over 70 of our manufacturers across Viet Nam have joined the TFL program, establishing an interactive network to share experience, best practices, and collaborate on applicable sustainability topics. Participants are also benefiting from over 100 experts in this program to advance their knowledge on Higg FEM, energy and waste management.

A program survey assessing its impacts found that 63% of participating manufacturers enhanced their energy management, 76% applied TFL knowledge to improve operations and 78% confirmed that the training directly supported on-ground actions.

With these strong results, TFL has become one of Amer Sports' key programs in Viet Nam enhancing our production partners' capacity to handle various kinds of sustainability topics.

Jeff Chan, Environmental Improvement Specialist - Amer Sports

Higg FEM and Solutions for SMEs

Bien Vu,
Strategy Director - To the Finish Line

Thai Nguyen - TKG Taekwang Vina, Technical Advisory Committee Member, TFL 2024/2025

Higg FEM – An Important Tool in the Fashion Industry

Higg FEM (Facility Environmental Module) is a global tool used to assess the environmental impact of product manufacturing at facilities in the fashion supply chain. It has been widely applied in Viet Nam. According to Cascale's 2022 report, 1,086 out of 1,600 Higg FEM modules were verified, reaching a rate of 68%. By 2023, the number of verified facilities increased to 1,288, a 19% year-over-year rise.

Benefits of Higg FEM verification:

For Manufacturers:

1. Ensures compliance with legal environmental regulations and brand requirements.

2. Provides data to benchmark against industry standards, thus identifying opportunities to improve environmental metrics.

3. Assists management in developing data-backed strategies and transparent communication with brands.

4. Enhances brands' trust in the manufacturer's environment management competency.

For brands: Ensures reliable data for sustainability and/or due diligence reporting.

Why some manufacturers have not applied or verified Higg FEM

Several reasons may explain the hesitation, especially among small and medium enterprises (SMEs):

1. Brands have not mandated its application, particularly for accessories manufacturers or facilities that are not

included in their strategic/prioritized list.

2. Tier 1 manufacturers have not encouraged their suppliers and subcontractors to participate in environmental protection, which is outlined in How to Higg, mainly because brands have not required them to.

3. High cost: 899 USD for the platform and approximately 1,500 - 2,500 USD annually for verification.

4. Enterprise leadership has not viewed environmental protection as a competitive strategy.

5. Workforce limitations to implement the tool.

Solutions by TFL

TFL - a non-profit community dedicated to enhancing the competitiveness of Viet Nam's textile and garment industry through elevating the manufacturers' sustainability capabilities, proposes the following solutions:

1. **Action from Tier 1:** Tier 1 manufacturers should guide their suppliers and subcontractors in adopting Higg FEM or similar systems. TFL is ready to support Tier 1 manufacturers with this initiative.

2. **Join the TFL Learning Community:** Thanks to the financial support from brands and development organizations, the TFL. Higg FEM & beyond program has reached hundreds of manufacturers annually, offering free training, consulting, and peer-learning opportunities. In 2025, TFL will run a pilot program tailored for SME manufacturers.

3. **1PLUS1 model:** A factory currently applying FEM introduces and mentors another factory not yet using FEM, expanding the tool's adoption. The TFL community provides an ideal platform for implementing this model.

Certification Overload: It is not just my factory

The issue of "certifications overloaded" in the garment industry is a real and pressing challenge - not only for my factory, but for many of our peers.

We are a garment manufacturing group in Viet Nam, producing exclusively for exports and serving major global brands. To meet the requirements from each client, we are obligated to comply with an array of different certifications and standards, including:

- Environmental certifications: ISO 14001, Higg FEM, LEED
- Social responsibility and safety: SA8000, Better Work, Higg FSLM, SLCP, FairTrade.
- Quality management: ISO 9001.
- ESG compliance: B.Corp.
- Brand-specific standards for traceability and material: OEKO-TEX, GOTS, RCS, GRS, OCS, Cradle to Cradle, Bluesign and Regenagri

In 2024, our company welcomed over 50 audits and verifications from third parties, brands, certification bodies, and government agencies. Each audit demands significant cost, time, and human resources. This leaves little time to implement the projects that brands expect from us, like greenhouse gas reduction, Fair Wear initiative, the Carbon Toolkit, GTW, and so on.

Some issues emerged:

- Overlapping standards: Many certifications cover similar ground, with different names and no mutual recognition. We often joke, "same same but different."
- High costs: Certification fees, consulting, training, and audit/verification preparation cost us billions of VND annually.
- Staff burden: Our compliance team is completely overwhelmed with paperwork, leaving little time for practical improvements or continuous learning. This becomes increasingly difficult for the company amid the ongoing workforce volatility.
- Lack of alignment: Some brands still insist on proprietary standards, refusing to accept commonly recognized ones.

Root cause: Major brands are trying to demonstrate their commitment to environmental and social responsibility by imposing their own strict sets of standards. While we fully support this spirit,

Oanh Nguyen, Technical Advisory Committee Member, TFL 2024/2025

the lack of alignment and uniformity creates a heavy burden for manufacturers. We may work with many brands, but we are still just one factory.

Instead of focusing on real improvements, our resources are increasingly consumed by “paper compliance”.

What we manufacturers hope for:

Call for **harmonization of standards**: Organizations and associations are advocating for the adoption of commonly recognized toolkits like the Higg Index (FEM and FSLM), and ZDHC protocols, etc.

We are not against certificates. They are inevitable trends for raising quality and sustainability. However, the current approach tends to be peripheral, inefficient, and costly. Brands should establish a clear list of accepted certifications to streamline expectations and reduce the resource wastage for enterprises at the beginning of the collaboration on compliance.

At our factory, we have created peer-learning groups on social media platforms to support one another with questions and knowledge-sharing. We deeply appreciate brands for sponsoring programs like To the Finish Line, which give us space to speak up, exchange ideas, and learn together.

Our factory has also applied internal digital management systems and integrating reports, which eases the workload for our teams. We hope that digitization and data alignment will help us work smarter together, not harder.

Acknowledgement

"To Walk the Talk" *is a collection of essays curated from nearly 1,200 submissions for the 2024 To the Finish Line (TFL) examination. These essays tell the stories of the daily efforts of manufacturers in Viet Nam's textile and footwear supply chains to minimize their environmental impact. These manufacturers are located along the basins of rivers such as the Red River, the Mekong River, the Dong Nai River, and many others across the country. Their environmental work does not stay within their factories but is deeply connected with our lands and rivers.*

First and foremost, we sincerely thank ***the authors*** *for generously sharing their authentic "real factory, real work" stories and experiences with colleagues in the TFL Learning Community, and for their time working closely with us to complete and refine each story before it reaches you - who is reading. Without them, this collection would not exist.*

We also extend our heartfelt thanks to ***brands*** *- the Lead Firms of the global supply chain. Your guidance, technical and financial support, along with your recognition of the TFL Community's efforts are invaluable. The success of manufacturers is also the success of brands.*

Over three TFL seasons, the manufacturers have given and received knowledge as well as inspirations from their peers and experts. Many ***experts*** *from Leadership & Sustainability, Bureau Veritas, ENERTEAM, TÜV Rheinland, SAYA,... as well as associations and development organizations, such as VITAS, GIZ, WWF, Cascale... have co-created the program. They are special members of TFL - a community where learning is the focus, and fun is the bonus. Many stories in this book attribute their inspiration to TFL.*

We sincerely thank ***GIZ*** *for bringing Viet Nam's textile and footwear supply chain a practical and effective learning community.*

Ms. Mai, Deputy Secretary General of ***the Vietnam Textile and Apparel Association (VITAS)*** *and a consistent supporter of TFL's activities, shared: "I admire you - the young people working tirelessly in the manufacturers on the journey toward sustainable development. Your passion, creativity, and spirit of innovation strongly inspire and contribute to a greener, cleaner, and more humane textile industry. Keep your faith strong, and keep spreading your positive spirit, for the future of Vietnam's textile industry is shaped from your actions today."*

Lastly, we would also like to express our gratitude to the ***management teams of the participating manufacturers****. Each essay from this collection is the fruit from their strategic vision, investment, oversight, and encouragement.*

We hope these voices from factory floors will carry the message of "Learning for Action" to thousands more manufacturers. This collection is a beginning that does not end at the last page. We hope manufacturers will continue to tell their stories, and we look forward to working with you in future seasons of "To Walk the Talk".

With sincere appreciation,

On behalf of the "To Walk the Talk" Curatorial Team

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