

Phasing out coal — Profiling the success of AIT (Myanmar) Manufacturing Co., Ltd.

Transition from Coal to Rice Husk Biomass Briquettes

Executive Summary

AIT (Myanmar) Manufacturing Co., Ltd. successfully transitioned its boiler fuel from coal to rice husk biomass briquettes following MADE's social compliance programme completed in August 2025. The conversion addressed regulatory non-compliance, significantly improved worker health and safety conditions, substantially reduced negative environmental and climate impacts, and strengthened long-term sustainability practices—without requiring any major boiler replacement. Indeed, in 2024 this factory burned 324 tonnes of coal (323,380 kg) as well as over one hundred tonnes of wood and is recently on track to burn zero coal in 2026 and possibly zero or minimal wood, after having already reduced to 229 tonnes of coal in 2025 and about half the prior volume of wood. Rice husk briquettes were adopted as the primary fuel source from July 2025 onwards.

This case study documents the drivers behind the transition, the technical and operational changes implemented, and the environmental and social benefits observed after conversion. It offers practical insights for other factories in Myanmar considering cleaner and more compliant energy alternatives.

Scope of the Case Study

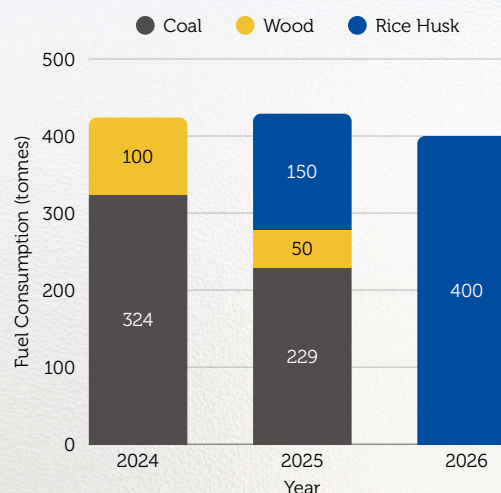
This study examines the conversion of a 2-ton coal-fired industrial boiler to rice husk biomass briquette fuel, covering:

- Baseline assessment of boiler conditions
- Identification of compliance and environmental risks
- Worker health and safety implications
- Technical and operational feasibility of biomass fuel
- Implementation process and adjustments
- Post-conversion performance and outcomes



Factory Profile

Company:	AIT (Myanmar) Manufacturing Co., Ltd.
Ownership:	100% foreign-owned (China)
Workforce:	297 workers recently; full production capacity of approx. 1,500 workers
Production:	Knitted sweaters (≈28,000 pieces/month) – but well over 100,000 at full production capacity.
Processes:	Knitting, linking, mending, ironing, quality control, packing
Export Markets:	United Kingdom, Portugal, Spain, Mexico
Buyer Portfolio:	MO Fashion, Mon Caramel, MS Mode, Cortefiel, Encuentro, previously Mango and NEXT



Note: A cost comparison is not included, as briquette usage data covers only three months and does not allow for a reliable financial comparison with historical coal usage.



BASELINE CHALLENGES IDENTIFIED

1. Regulatory and Compliance Risks

- Coal fuel was used without full awareness of regulatory restrictions.
- Recommendations issued by the Directorate of Industrial Supervision and Inspection (DISI) during the April 2024 inspection had not been fully implemented.

2. Environmental and Health Concerns

- Heavy smoke emissions and coal dust affected indoor air quality.
- Elevated radiant heat limited safe working proximity to the boiler.
- Ash handling required water cooling and pond storage, increasing contamination risks.

3. Operational Constraints

- Coal supply was inconsistent, with occasional delays.
- Storage areas were dusty and disorganised.
- Manual handling was labour-intensive and inefficient.



IMPLEMENTATION OF CHANGE

With technical guidance and follow-up under the Social Compliance Programme, AIT implemented the following improvements by August 2025:

- ✓ Improved fuel storage, handling, and housekeeping practices
- ✓ Full compliance with DISI boiler safety requirements
- ✓ Complete replacement of coal with rice husk biomass briquettes
- ✓ Increased staff awareness of environmental and legal responsibilities



SWEATER PRODUCTION & CARBON EMISSIONS – Before VS. After Comparison

2024: HIGH EMISSIONS



3.08 TONNES
CO₂ eq
PER 1,000 SWEATERS



2025: REDUCED EMISSIONS



0.73 TONNES
CO₂ eq
PER 1,000 SWEATERS



ENERGY: WOOD BURNING
UNSUSTAINABLE DEATION



ENERGY: RICE HUSK BIOMASS
RENEWABLE AGRICULTURAL BY-PRODUCT



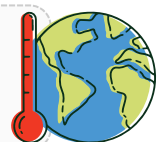
COAL → **LONG-TERM CARBON CYCLE**
(80 Millions Years)



RICE HUSKS → **SHORT-TERM CARBON CYCLE**
(Annual)









TRANSITION TO SUSTAINABLE ENERGY: Moving from coal and unsustainable wood to renewable biomass like rice husks significantly reduces carbon footprint.



Impact & Performance Analysis

Before vs. After Comparison

Category	Coal (Before)	Rice Husk Briquette (After)
 Emissions	High smoke and pollutants (toxic heavy metals such as mercury and cadmium)	Significantly reduced emissions
 Fuel Quality	Uneven burning, heavy smoke	Cleaner combustion, easy ignition
 Worker Safety	High radiant heat, toxic dust exposure	Safer proximity, reduced heat stress
 Storage	Dirty, dusty, disorganised	Cleaner, structured storage
 Ash Disposal	Large volume, water-cooled, no clear solution for proper toxic ash disposal	Ash is safely reusable for gardening and road paving as a partial replacement for carbon-intensive cement
 Supply Stability	Occasional delays in delivery; inconsistent	Stable and reliable supply



Worker Health & Safety Improvements

- Reduced exposure to smoke and dust
- Operators can work closer to the boiler without excessive heat stress
- Cleaner storage areas improved hygiene
- Easier fuel handling reduced physical strain
- Improved morale and comfort among boiler operators



Environmental Impact Improvements

Following the conversion:

- Visible smoke emissions were substantially reduced
- Coal dust accumulation was eliminated
- Cleaner ash reduced environmental contamination
- Use of agricultural waste supported circular economy principles
- Overall air quality in the boiler area improved



When we were using coal, we thought switching to rice husk briquettes would be difficult because of fuel availability. But after making the change, we found that briquettes are actually easy to source and very convenient to use.

Ms. Zhou BangLian, Factory Manager



After switching to rice husk briquettes, the boiler area is no longer as hot as before, and the fuel storage area is much cleaner and more organised.

U Htay Win Hlaing, Boiler Operator

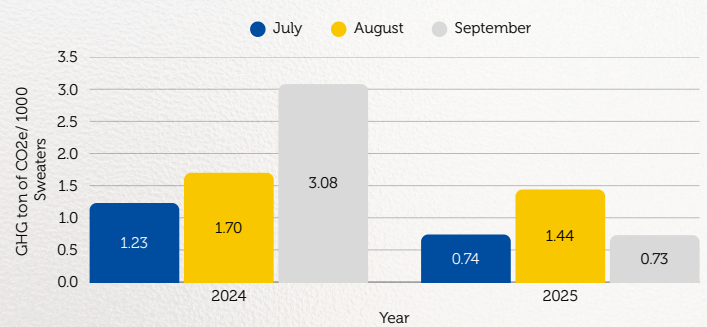


Broader Social and Community Benefits

- Improved internal safety culture and awareness.
- Alignment with buyer sustainability expectations and climate action goals.
- Re-use of briquette ash by monasteries and construction groups for road paving helps further reduce climate impact and saves money for the local community.
- Reduced environmental burden on surrounding communities, vis-à-vis less smoke and no more toxic smoke and hazardous flue ash waste.



Total Emission of 1000 Sweaters (GHG ton of CO₂e)



Key Takeaways

- Lack of awareness—not resistance—was the main barrier to compliance.
- Fuel switching delivers immediate worker health benefits.
- Management commitment is critical for sustainable change.
- Biomass briquettes are a practical, cleaner alternative to coal.
- Structured social compliance programmes can drive lasting operational improvements.

Recommendations

- Monitor boiler performance closely during the initial transition period.
- Provide targeted training for boiler operators on briquette handling.
- Establish long-term partnerships with reliable briquette suppliers.
- Maintain dry, protected storage areas.
- Document environmental improvements for audits and buyer reporting.
- Review regulatory requirements annually

Conclusion

The transition from coal to rice husk biomass briquettes at AIT (Myanmar) Manufacturing Co., Ltd. demonstrates that cleaner energy solutions are both technically feasible and operationally beneficial in Myanmar's manufacturing sector. By addressing compliance gaps, improving worker health and safety, and reducing environmental impact, the factory has established a strong foundation for responsible and sustainable production—serving as a practical model for other factories pursuing similar improvements.

RESULT
Success