SME CLIMATE HUB REPORT

DECO ENTERPRISES

BASE YEAR 2024

Reporting Period: January-December 2024

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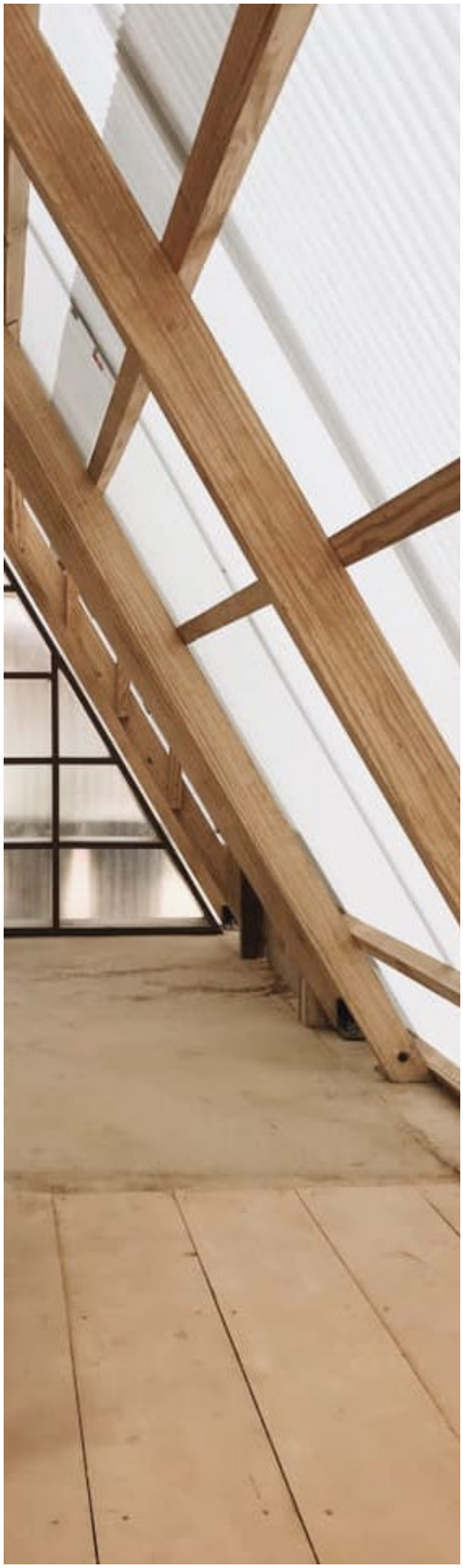
EXECUTIVE SUMMARY

Deco Enterprises Company Limited is a Thai manufacturer of engineered wood products, specializing in high-quality, customized architectural elements such as doors, flooring, decorative wall panels, and other interior solutions.

In 2024, we established our inaugural **Carbon Footprint for Organization (CFO)** baseline in strict accordance with the Thailand Greenhouse Gas Management Organization (TGO) standards.

Our comprehensive assessment reveals a total greenhouse gas (GHG) footprint of **640 tCO_2e** across all scopes. This report serves as our disclosure to the SME Climate Hub, reflecting our commitment to environmental stewardship and our strategic transition toward a net-zero future. We have identified our primary emission hotspots—specifically in raw material procurement and logistics—and are actively implementing mitigation strategies to reduce our carbon intensity.



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S T R A T E G I C C O M M I T M E N T

Deco Enterprises has committed to achieving **net-zero emissions by 2040**, moving a decade ahead of the global 2050 mandate. By aligning our strategy with the UN Race to Zero and the SME Climate Hub, we are treating the 1.5℃ warming limit as a tangible operational deadline rather than a distant aspiration. For us, this commitment is not a matter of corporate differentiation; it is a fundamental responsibility to the future. By integrating climate innovation into our core strategy, we are reinforcing proactive climate action as the most direct path to ensuring long-term economic resilience and a healthy environment for the communities we serve.

F R A M E W O R K A L I G N M E N T

To ensure consistent progress toward this mandate, Deco Enterprises has adopted a strategy governed by the following international and national frameworks:

- **Regulatory Compliance:**
  our reporting and calculation methodologies strictly adhere to the *Thailand Greenhouse Gas Management Organization (TGO)* guidelines for Carbon Footprint for Organizations (CFO). As a mandatory requirement for the CFO certification, our emission inventory must undergo a rigorous independent, third-party audit.
- **Near-Term Objective:**
  In alignment with the SME Climate Hub & UN Race to Zero, we are committed to a 50% reduction in Scope 1 and 2 emissions by 2030.
- **Performance Baseline year:**
  All progress is benchmarked against 2024, our verified base year.

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BASELINE EMISSIONS

The following emissions results for the 2024 reporting period (January-December 2024) have been formally verified by **TÜV NORD (Thailand)**.

Summary of Emissions by Scope

Scope 1 Direct Emissions	73 tCO_2e	11%
Scope 2 Indirect Emissions from Purchased Energy	121 tCO_2e	19%
Scope 3 Value Chain Emissions	446 tCO_2e	70%
Total	**640 tCO_2e**	100%

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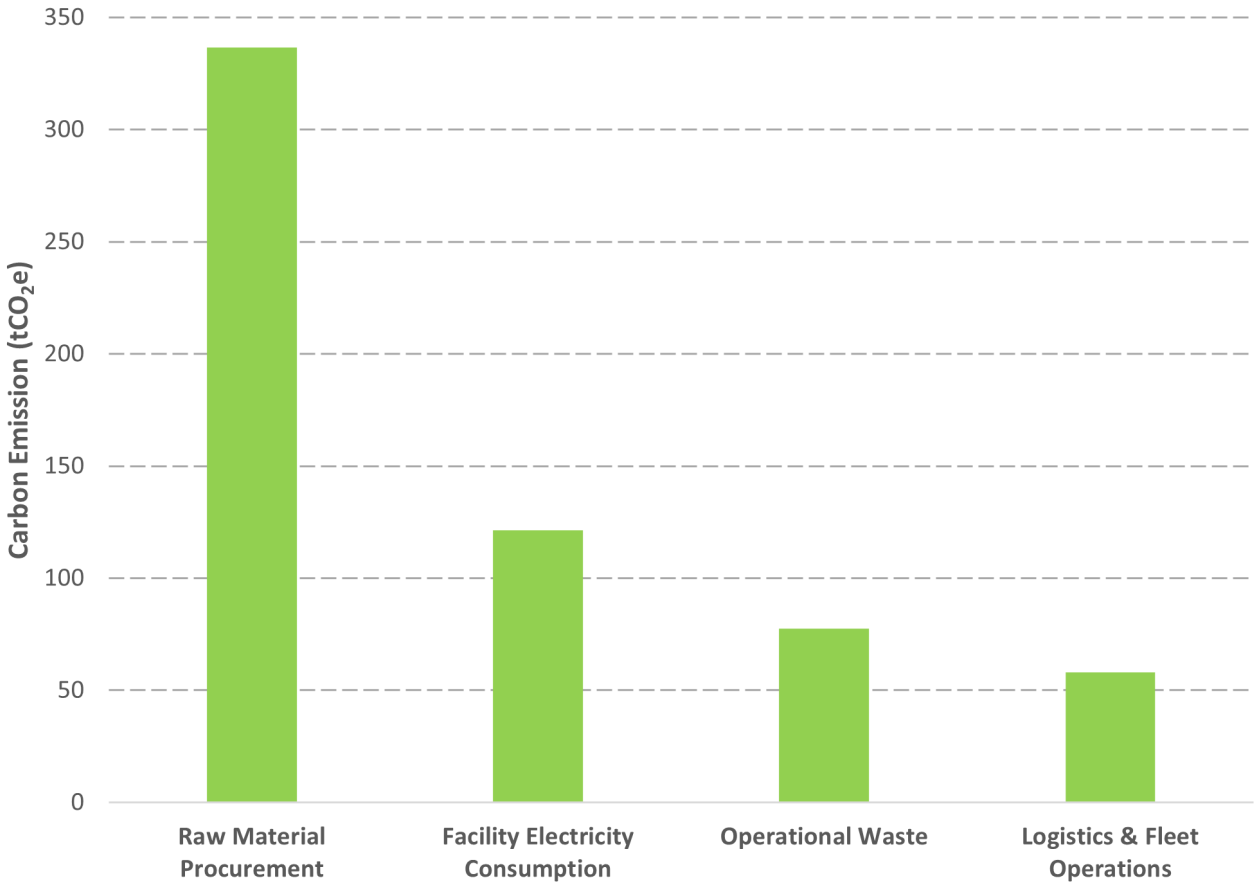
HOTSPOTS IDENTIFICATION

Based on the 2024 emissions inventory, we have identified the primary hotspots that drive the majority of Deco Enterprises' carbon footprint. These areas represent the highest potential for impact reduction and are the focal points of our 2030 and 2040 climate strategies.



Deco Enterprises are prioritizing the four areas that account for over 90% of our total impact:

1. **Raw Material Procurement (52.6%):** the primary driver is the embedded carbon in purchased materials (LVL, Plywood, MDF etc.)
2. **Electricity Consumption (19%):** Energy used to power our facility.
3. **Operational Waste (12.1%):** Emissions from the disposal of wood scraps and general waste.
4. **Logistics Fleet (9.1%):** Diesel consumption from our transport fleet.

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CHALLENGES

While we have identified our primary hotspots, reducing their impact involves navigating several complex hurdles.

4.1 RAW MATERIAL PROCUREMENT DILEMMA

Our largest challenge lies in the trade-off between sustainable forest management and transport distance:

- **Species Suitability & Engineering Requirements:**
  The primary hurdle is that domestic Thai wood species—predominantly rubber wood—often lack the physical properties required for high-performance architectural products. The structurally-stable-grade materials are not yet available in the domestic market with the necessary dimensions and density consistency required for our precision manufacturing.
- **FSC Certification Gap**:
  While Thailand has launched new standards for smallholders (FSC-STD-THA-01-2024), domestic certification remains in a transitional phase as of 2025-2026. To meet our own standards, Deco Enterprises must source certified wood from international markets, where large-scale FSC infrastructure is already mature.
- **The Transport Efficiency Paradox**:
  A common misconception in carbon counting is that shorter distances always equate to lower emissions. However, while importing from international markets increases distance, the carbon intensity of international sea freight is often lower per ton-kilometer than domestic road transport via Diesel trucks.
- **Upstream Data Visibility**:
  A significant barrier to accurate reporting is that many suppliers do not yet measure or disclose their environmental impact. Consequently, Deco Enterprises must implement the secondary emission factors (IPCC/TGO averages), which are often less accurate and greater generalized.

4.2 SOLAR-SYNC AND ENGAGEMENT TRAP

Our second-largest hotspot is purchased electricity to power our facility. While Deco Enterprises successfully invested in and installed a solar PV system midway through the 2024 reporting period, we face specific challenges in reflecting this transition.

- **The synchronization technical gap:**

We currently lack a management system to bridge the gap between variable solar generation and our fixed production schedules. The lack of alignment between our high-energy production phases and our peak solar generation hours could have led to underutilized solar power.

- **The workforce knowledge barrier:**
  Technical synchronization is impossible without the active participation of our workforce, which is predominantly composed of migrant employees. Climate terminology does not translate effectively across language.

4.3 OPERATIONAL WASTE HURDLE

While Deco Enterprises is committed to the Action and Impact, our operational waste management is uniquely constrained by the technical nature of the materials specified by our clients and designers.

- **Limited material control:**
  As a bespoke manufacturer, Deco Enterprises must adhere to the specific material finishes like HPL requested by architects, designers, and general contractors; we currently lack the market leverage to substitute these for more circular alternatives.
- **The Recyclability Gap:**
  We recognize that these composite scraps are not impossible to upcycle into secondary products. However, we currently lack the workforce capacity to creatively design and reform these materials into new high-value components.

4.4 LOGISTICS CHALLENGES

The final prioritized hotspot is our logistics fleet, which consists of primarily diesel-powered vehicles used for the transport of heavy architectural components and raw materials.

- **The heavy-duty electric transition:**
  While passenger Electric Vehicles (EVs) have become more common, the transition for industrial logistics remains difficult. Our logistics require the transport of heavy products, which demand high torque and sustained power. Currently, the market availability of affordable, heavy duty electric trucks with sufficient range is limited.
- **High Capital Expenditure:**
  Replacing a fleet of 10 functional diesel vehicles represents a significant financial investment. For an SME, the highest costs of EVs compared to traditional vehicles remains a major barrier to a rapid fleet modernization.

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MITIGATION STRATEGIES

To address the 90% of our total impact identified in our hotspots, Deco Enterprises has developed a comprehensive mitigation roadmap.

5.1 MATERIAL PROCUREMENT

An immediate and total replacement of our raw material supply is operationally unfeasible because of the aforementioned constraints. Despite this, we remain committed to prioritizing domestic wood wherever possible, actively seeking local sources that meet our engineering and certification standards to support regional sustainability and reduce indirect transport impacts.

Building on this localized focus, we will also be initiating formal communications with our global and domestic partners to integrate them into our 2040 Net-Zero journey. We recognize that a truly resilient supply chain is a collaborative one; therefore, we are launching a Circular Procurement Initiative aimed at closing the loop on logistics waste. This program involves coordinating the systematic pickup and reuse of empty cartons and pallets, ensuring these materials remain within a productive cycle rather than entering the waste stream.

Furthermore, as part of our commitment to data transparency, we will begin encouraging our suppliers to provide verified carbon measurements for the materials they provide. By moving away from generalized averages toward primary data, we can more accurately measure our collective progress. We encourage our suppliers to view these requirements not as a burden, but as an invitation to align with international standards and become active participants in creating a more sustainable industry and a better world for future generations.

5.2 ENERGY-TIERED WORKFLOW

Rather than a rigid solar-first queue, we will try to categorize our production stages into three energy tiers to better align with our solar generation curve.

- **Tier 1: High-intensity:** we will prioritize heavy hitter batches—such as bulk CNC cutting, heavy-duty sawing etc.—during the peak solar window. By concentrating these high-torque tasks when solar yield is highest, we shave the most expensive and carbon-intensive peaks off our grid demand.

- **Tier 2: Medium-Intensity:** lower-draw machinery such as edge-banding, sanding, and small power tools, will be scheduled later in the day.
- **Tier 3: Low-Intensity/Manual:** Assembly, quality control, hand finishing, and packaging could be scheduled for early mornings or late afternoons. These tasks rely on base load energy, which can be largely covered by the tail-ends of solar production, ensuring the factory stays productive without spiking grid usages.

5.3 CIRCULARITY & WASTE RECOVERY

Our primary mitigation strategy for operational waste is to minimize the generation of these scraps through material optimization and available nesting software. The optimization ensures that carbon-heavy boards are utilized to their absolute physical limit for any waste is created.

Recognizing that upcycling these materials is technically possible but hindered by a current lack of creative design and workforce capacity, DECO is laying the groundwork for a future circular economy model. We are implementing a Visual Waste-Stream Mapping system, using icon-based, bilingual (Thai/Burmese) segregation stations to help our production team separate scraps by material type at the source. By training our team to treat specific off-cuts as "upcycle-ready" feedstock rather than general refuse, we ensure that as our internal design and reforming capacity grows, we will have a clean, sorted inventory ready for high-value secondary production. This strategic shift aims to eventually reduce the 52 truck trips per year required for external energy recovery, keeping the carbon and value of our materials within our own production loop.

Beyond source reduction, DECO is bridging the "creative capacity gap" by launching dedicated "Waste Revival" pilot projects. These initiatives are designed to breathe new life into composite and HPL off-cuts by transforming them into high-value secondary products, such as architectural accessories, interior cladding, or structural sub-components.

5.4 LOGISTICS EFFICIENCY & MODERNIZATION

Given the high capital expenditure and the current lack of heavy-duty EV infrastructure availability in the region, we plan to deploy Route and Load Consolidation initiative. This ensures every delivery is at maximum capacity, minimizing empty miles and reducing the total fuel consumption required for our inter-provincial logistics.

Moreover, we will also execute a phased transition, replacing light-duty vehicles with EVs first, while monitoring the development of heavy-duty electric trucks that can meet the torque and range requirements of our engineering-grade architectural products.

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F U T U R E O U T L O O K

The 2024 baseline of 640 tCO_2e marks the transition of DECO Enterprises from environmental aspiration to verified accountability. With over 90% of our impact now mapped across four critical hotspots, we have moved beyond theoretical goals into the operational phase of our 2040 Net-Zero mandate.

By integrating an energy-tiered workflow, launching Circular Procurement agreements, and initiating "Waste Revival" projects, we are actively decoupling our manufacturing from carbon intensity. Deco Enterprises remains committed to the SME Climate Hub and the UN Race to Zero, ensuring that our pursuit of a 1.5°C future serves as a catalyst for long-term economic resilience and industrial innovation.