



Corporate Climate Transition Plan (2026–2050)

1. EXECUTIVE SUMMARY & CERTIFIED BASELINE FOOTPRINT

Khonburi Sugar Public Company Limited (KBS) presents its Corporate Climate Transition Plan, establishing an action-oriented roadmap to transition the business toward a low-carbon bio-economy. This plan addresses KBS's key climate transition risks and operationalizes a 2030 Scopes 1–3 Emissions Intensity Target, a 2030 net Carbon Neutral position, and a 2050 Net-Zero Goal, by integrating KBS's ISO 14064-1:2018 certified 2024 baseline footprint and internal Materiality Assessment priorities.

Certified 2024 Baseline Profile (Bureau Veritas Certificate TH025306)	
Direct GHG Emissions (Scope 1)	41,511 tCO ₂ e — Sugar manufacturing & bagasse power generation
Indirect GHG Emissions from Imported Energy (Scope 2)	2,710 tCO ₂ e — Grid electricity purchase
Indirect GHG Emissions from Products Used (Scope 3 Category)	118,195 tCO ₂ e — Upstream agricultural inputs & cane supply chain
Total Baseline Footprint (2024 Base Year)	162,416 tCO ₂ e — Verified under ISO 14064-1:2018 Limited Assurance; production volume 492,806 tons; GHG intensity 0.3326 tCO ₂ e per ton of product

2. SCOPE & TIME HORIZON

- **Transition Risk:** This plan addresses KBS's regulatory, financial, and operational exposure to carbon pricing and fossil fuel dependency.
- **Scope 3 Coverage:** Scope 3 coverage focuses on the 118,195 tCO₂e upstream footprint (72.8% of the 2024 baseline), primarily burnt-cane harvesting and fertilizer use.
- **Time Horizon:** This plan covers a Near-Term horizon (2026–2030) and a Long-Term horizon (2031–2050).

3. QUANTIFIED GHG REDUCTION BREAKDOWN

3.1 2030 Intensity Target

KBS's 2030 target is a reduction of at least 10% in Scopes 1–3 GHG emissions intensity, from the 2024 baseline of 0.3326 tCO₂e per ton of product to ≤ 0.299 tCO₂e per ton. KBS tracks this target on a per-unit (intensity) basis rather than an absolute-tonnage basis, because emissions are closely linked to sugarcane throughput, which varies year to year with harvest volumes.

3.2 Illustrative Initiative-Level Abatement Potential

The table below shows the estimated technical abatement potential of specific planned initiatives against the 2024 baseline, if fully realized. It is illustrative supporting evidence for the intensity target above, not itself the tracked target.

Key Action / Initiative	Scope	2024 Baseline	Est. Abatement Potential	Contribution
Bagasse Boiler & Steam Heat Recovery	Scope 1	18,147 tCO ₂ e (Stationary Combustion)	-2,722 tCO ₂ e	15.0% of Stationary Combustion (6.6% of total Scope 1)
Factory Rooftop & Ground Solar Expansion	Scope 2	2,710 tCO ₂ e	-1,900 tCO ₂ e	70.1% of Scope 2
Subtotal: Scope 1 & 2	Scope 1 & 2	44,221 tCO₂e	-8,100 tCO₂e	18.3%
Burnt Cane Elimination Programme	Scope 3	118,195 tCO ₂ e	-23,600 tCO ₂ e	19.9% of Scope 3
Precision GIS Fertilizer Optimization	Scope 3	118,195 tCO ₂ e	-9,500 tCO ₂ e	8.0% of Scope 3
Subtotal: Scope 3	Scope 3	118,195 tCO₂e	-33,100 tCO₂e	28.0%
COMBINED TOTAL	Scope 1, 2 & 3	162,416 tCO₂e	-41,200 tCO₂e	25.4%

3.3 Carbon Neutral by 2030 — Net Position



In addition to the gross intensity target above, KBS targets a net Carbon Neutral position across Scopes 1–3 by 2030, reached by offsetting residual emissions with retired carbon credits.

- **Credit Source:** KBS's own T-VER-registered biomass cogeneration project at the KBSP facility generates 156,749 tCO₂e/yr in verified carbon credits (crediting period 2024–2030), by displacing grid electricity with renewable biomass power.
- **Avoiding Double-Counting:** KBS does not retire its own KBSP-generated credits against its own footprint, since the underlying benefit is already reflected in its Scope 2 inventory; the Carbon Neutral position instead uses market-sourced or in-kind-traded third-party credits, subject to confirmation by KBS's assurance provider.

3.4 Indicative Pathway to 2050

Horizon	Target	Primary Levers
Near-Term (to 2030)	≥10% gross intensity reduction vs. 2024 baseline; net Carbon Neutral via credits	Bagasse efficiency, solar, burnt-cane elimination, fertilizer optimization
Long-Term (2031–2050)	Net-Zero (Scopes 1–3) by 2050 — residual emissions neutralized	Full farmer mechanization, supply-chain logistics decarbonization, expanded bio-fertilizer substitution, CCUS deployment (subject to feasibility), high-integrity market-sourced offsets/RECs, full bio-circular integration

4. MULTI-HORIZON STRATEGIC ROADMAP (NEAR-TERM & LONG-TERM)

Near-Term Horizon (2026–2030)

- **Scope 1 Focus:** Improve high-pressure biomass boilers for steam efficiency, and improve wastewater treatment measurement and CH₄ management.
- **Scope 2 Focus:** Advance rooftop and ground-mounted solar PV, and a renewable electricity tariff or virtual PPA, to reduce reliance on grid electricity.
- **Scope 3 Focus:** Burnt Cane Elimination Programme — transition from fire-harvested to fresh cane (abatement potential quantified in Section 3.2).
- **Carbon Credits:** T-VER-registered biomass cogeneration at KBSP (crediting period 2024–2030), supporting the Carbon Neutral position in Section 3.3.
- **Carbon Pricing & ETS Readiness:** Align with Thailand's draft Climate Change Act and the planned Pilot Emissions Trading Scheme (ETS) from 2029, including internal carbon pricing mechanisms.



Long-Term Horizon (2031–2050): Net-Zero Value Chain

- **Scope 3 Agriculture Focus:** Scale mechanical sugarcane harvester access and farmer incentive funds ('Ngoen Kiao') to sustain elimination of sugarcane field burning, and expand satellite GIS crop monitoring and bio-fertilizer substitution to optimize fertilizer-related emissions.
- **Supply Chain Decarbonization:** Require key transport and logistics vendors to adopt low-emission vehicle fleets and optimized routing.
- **Net-Zero Execution (2050 Target):** Transition all residual Scope 1, 2, and 3 emissions to Net-Zero through full-scale bio-economy integration.
- **Advanced Bio-Circular Tech:** Evaluate Carbon Capture, Utilization, and Storage (CCUS) on biomass power plant flue gases to produce negative-emissions bioenergy.
- **High-Integrity Carbon Offsets:** Leverage market-sourced or in-kind-traded T-VER project credits and Renewable Energy Certificates (RECs) to neutralize hard-to-abate residual emissions, consistent with the double-counting safeguard in Section 3.3.

5. GOVERNANCE, RISK MANAGEMENT & STAKEHOLDER ALIGNMENT

- **Management Oversight:** The ESG Committee maintains oversight over risk mitigation, capital allocation, and annual ISO 14064-1 third-party audit verifications.
- **Climate Risk Management:** Mitigates physical risks (sugarcane C.C.S. losses from unseasonable rain) through irrigation infrastructure, and transition risks (sugar export market carbon taxes, Thailand's Pilot ETS from 2029) via accredited decarbonization, informed by recognized climate scenario analysis (e.g., IPCC SSP-based pathways).
- **Just Transition & BWR Community Alignment:** Integrates community resilience through the 'BWR' (Baan, Wat, Rongrian) social framework and supports farmer livelihoods via fair financing ('Ngoen Kiao').
- **Public Policy Position:** KBS's position on climate-related public policy and regulatory engagement is disclosed in the Corporate Policy on Climate Change & Environmental Stewardship (POL-ENV-2026-01, Section 4).