



Osotspa TCFD Executive Summary Report 2023



Introduction

Osotspa PLC (“Osotspa”) committed to address the risks and opportunities presented by climate change, recognizing the urgent need for action to create a sustainable future. As a leading Beverage company, we understand the importance of managing climate-related risks, identify opportunities and transitioning to a low-carbon economy by setting decarbonization strategy.

The goal of this TCFD Executive Summary Report is to provide stakeholders with transparency on Osotspa's climate-related financial risks and opportunities, as well as its decarbonization strategy to achieve Carbon Neutrality by 2050. In accordance with the Task Force on Climate-related Financial Disclosures (TCFD) recommendations, we truly believe that communicating the progress of climate crisis mitigation shows our stakeholders how we are making a beneficial influence on the global environment and society. We want to use the TCFD framework to improve knowledge of our approach to climate-related challenges and to encourage effective decision-making within our organization and among our internal and external stakeholders.

Climate change poses multifaceted risks to our business operations, supply chains, and broader value chain. These risks include physical risks associated with the increasing frequency and severity of extreme weather events, as well as transition risks stemming from evolving regulations, market shifts, and technological advancements. Moreover, we recognized that climate change presents opportunities for innovation, resource efficiency, and the development of sustainable products and services.

Osotspa is committed to integrating climate-related considerations into our overall risk management and strategic planning processes. By addressing climate-related risks, we aim to enhance our resilience, protect shareholder value, and contribute to a sustainable and low-carbon economy. Additionally, we seek to capitalize on the opportunities presented by the transition to a more sustainable future, thereby driving long-term value creation.

In this report, we will outline our approach to climate-related governance, strategy, risk management, and metrics & targets. By disclosing this information, We hope that by sharing this information, stakeholders will have a clear picture of our commitment to managing climate-related risks and maximizing opportunities, as well as achieving Carbon Neutrality by 2050. We think that increased openness and communication are critical for developing collaboration and driving long-term success.

As we navigate the complex challenges of climate change, we recognize the need for collective actions. We actively engage with our stakeholders both internal and external, to collaborate on climate-related initiatives and share best practices. By working together, we can accelerate the transition to a more sustainable and resilient future.

About this Report

This is Osotspa's first TCFD report, which includes the performance of Osotspa and its subsidiaries. In this first report we chose to use an “Executive Summary” format to summarize our current climate-related disclosures and make the report more accessible for investors and other stakeholders to read. This report was published in August 2023, covering the reporting period for calendar year of 2022, and aims to update the status of Osotspa's implementation of each TCFD pillar according to TCFD's 2021 “Annex”: Governance, Strategy, Risk Management and Metrics and Targets.

We invite our stakeholders to review this report and provide feedback as we continually strive to improve our climate-related disclosure practices. Through open dialogue and collaboration, we can collectively address the challenges posed by climate change and build a more sustainable and prosperous future for all.

Please keep in mind that we will increase openness and expand report boundaries on a yearly basis in order to fully meet with the TCFD suggestion and the impending IFRS S2 and TFRS S2 standard.



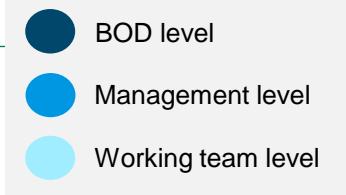
Governance

Effective climate governance is critical for Osotspa to address and incorporate climate-related risks and opportunities into our business plan. The Board of Directors (BOD) is ultimately responsible for managing and integrating the company's climate strategy into its corporate governance structure. Furthermore, the Nomination, Remuneration, Corporate Governance and Sustainable Development Committee (NRCSD) as the sustainability committee at the board level, screening significant topics or agenda items for further debate at the BOD level. Climate-related issues are considered in the context of risk management, strategy, and overall company performance at Management level weekly and at Board meetings twice a year at a least.

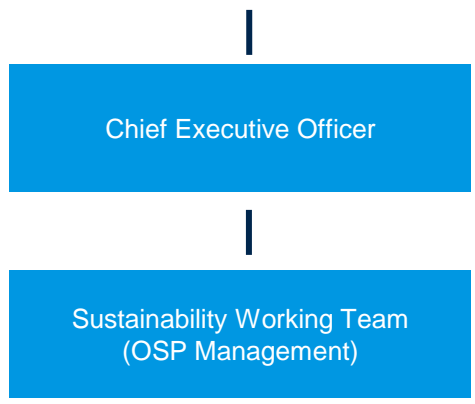
To bolster climate governance, we have established dedicated Sustainability Committee at board level and management level to ensure fast-paced transition to climate-resilience business. The Sustainability Working Team ensures that climate considerations are integrated into decision-making processes and allocates resources to support our climate-related goals. It is supported by a cross-functional Climate Task Force that collaborates with relevant departments to integrate climate considerations.



Governance

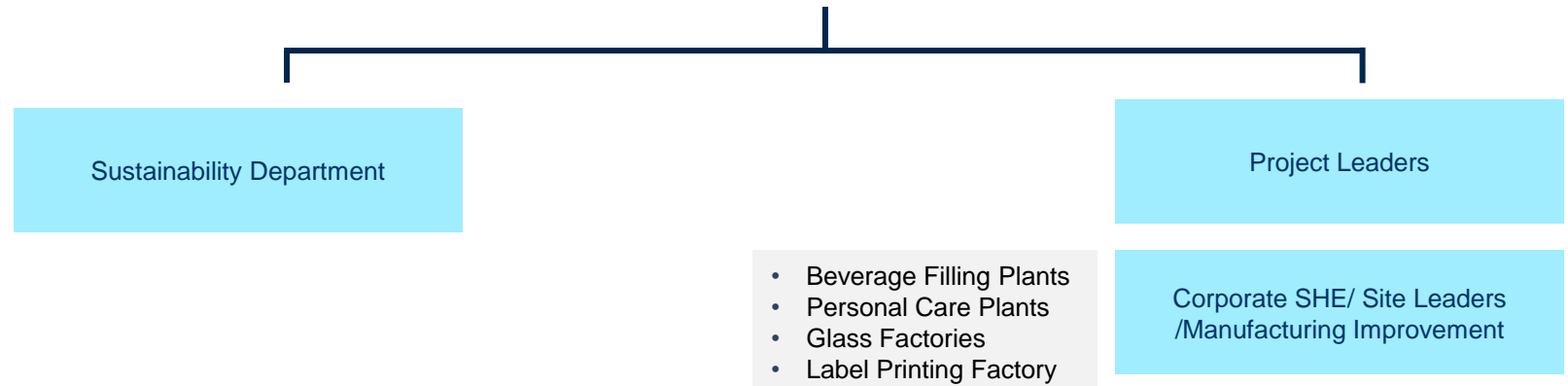


- At board level, climate related risks and opportunities as well as decarbonization strategies are overseen by the Board of Directors and NRCSD (Meeting Frequency: more than 5 times a year depending on the agenda)



- At the management level, Sustainability Working team, steered by CEO, conducts climate change policy and strategy establishment, climate-related risks and opportunities assessment, and GHG emission reductions projects and planning in order to pursue the target of Carbon Neutrality by 2050. (Meeting Frequency: Quarterly)

- Sustainability Department conducts Climate Change Strategy and manages climate-related risk and opportunities implement decarbonization tasks to achieve Carbon Neutral 2050.



Supervised by the top management of the relevant functions

- Beverage Filling Plants
- Personal Care Plants
- Glass Factories
- Label Printing Factory



Strategy

Osotspa recognizes that a robust climate strategy is essential for long-term success in a rapidly changing world. We are committed to addressing climate-related risks and capitalizing on opportunities to create a sustainable and resilient business.

Osotspa's risk team, sustainability department, corporate SHE, site leaders and manufacturing improvement team together with other related functions actively identify and assess climate-related risks and opportunities across our operations and value chain. Through comprehensive analysis, we identify vulnerabilities, evaluate emerging trends, and identify areas where we can contribute to a low-carbon economy.

We conduct thorough assessments to understand the physical and transitional risks associated with climate change. This includes analyzing the potential impacts on our operations, supply chain, and stakeholders. We engage with experts, utilize climate data, and consider different scenarios to inform our decision-making processes.

Building on the insights gained from risk assessments, we develop and implement strategies to mitigate our climate-related risks. This involves setting ambitious targets for reducing greenhouse gas emissions, increasing energy efficiency, adopting renewable energy sources, and promoting sustainable practices throughout our value chain. We continuously monitor our progress, review our strategies, and invest in innovative solutions to drive positive change.

By integrating climate considerations into our overall business strategy, Osotspa aims to enhance our resilience, optimize resource usage, and contribute to a sustainable future. We are committed to transparently disclosing our climate strategy and progress, fostering accountability, and building trust among our stakeholders.



Strategy

Climate Related Risks and Opportunities

Osotspa, a leading beverage company, faces climate-related challenges and prospects. Climate change impacts supply chains, resource availability, and consumer behavior. Innovation, sustainable development and corporate responsibility are also opportunities. In order to ensure resilience and contribute to the sustainability of future, Osotspa will have to manage these dynamics. The company may enhance its brand image, attract consumers concerned about the environment and thrive in an ever changing climate conscious market by providing sustainable practices, renewable sources of energy and eco friendly packaging. Balancing risk management and responsible actions will secure Osotspa's long-term success amidst the ongoing climate crisis.

Risks Relevant to Osotspa		Opportunities Relevant to Osotspa
Physical	Transition	
<p>Acute</p> <ul style="list-style-type: none"> • Flood • Drought <p>Chronic</p> <ul style="list-style-type: none"> • Water scarcity • Rising mean temperature • Rising sea levels 	<p>Policy/Legal</p> <ul style="list-style-type: none"> • Carbon pricing • Exposure to litigation • Extended producer responsibility • Anti-open burning policies for suppliers <p>Technology</p> <ul style="list-style-type: none"> • Substitution of existing products and services with lower emissions options • Substitution of existing packaging with more sustainable alternatives <p>Market</p> <ul style="list-style-type: none"> • Changing customer behavior • Increased cost of raw materials <p>Reputation</p> <ul style="list-style-type: none"> • Increased stakeholder concern or negative stakeholder feedback 	<p>Resource Efficiency</p> <ul style="list-style-type: none"> • Reduced water usage and energy consumption <p>Energy Source</p> <ul style="list-style-type: none"> • Use of lower-emission sources of energy • Participation in carbon market <p>Products and Services</p> <ul style="list-style-type: none"> • Development and/or expansion of low emission goods and services (Low Carbon Product) • Shift in consumer preferences <p>Markets</p> <ul style="list-style-type: none"> • Access to new markets

Climate-Related Physical Risks

Osotspa has reviewed physical risks relevant to our business as outlined below.

Risk Categories	Climate-Related Risks	Potential Financial Impact to Osotspa
Acute	Floods	<ul style="list-style-type: none"> Revenue loss from operational disruptions due to floods
	Droughts	<ul style="list-style-type: none"> Increased operating costs (e.g. inadequate water supply)
Chronic	Water scarcity	<ul style="list-style-type: none"> Increased operating costs (e.g. inadequate water supply) Increase agricultural raw product cost from decrease of crop yield
	Rising mean temperatures	<ul style="list-style-type: none"> Reduced revenue and higher costs from negative impacts on workforce (e.g. health, safety) Increase agricultural raw product cost from decrease of crop yield
	Rising sea levels	<ul style="list-style-type: none"> Increased insurance premiums and potential for reduced availability of insurance on assets in "high risk" locations

Strategy

Physical Risk- Flood

Physical Risks

The study area is prone to **floods** due to its location, topography, and the province's insufficient drainage systems. The site is located not far from Chao Phraya River, which is likely to overflow its bank during heavy rainfall, high runoff and excessive release from the upstream dams.

Revenue Loss from flood (million THB)					
2 days	7 days	14 days	21 days	28 days	31* days
47	166	331	497	663	745
Low impact	Medium impact	Medium impact	High impact	High impact	High impact

* Represents the financial impact for plant shut down

Response Measures

Current response measures

- Every site has an emergency response plan in the event of a flood, where each response plan indicates location of detention ponds (where established) and instructions on constructing flood defense sandbags

Near term response plan (5 years)

- (Inland) flood risk assessments to be conducted to identify vulnerable key assets
- After identifying vulnerable key assets, to review existing mitigation measures and consider increasing mitigation efforts, such as storm water drainage or pumping stations
- Conduct regular trainings on emergency response plans on all production sites

New operations:

- Conduct physical risk screening of area to understand forecasted physical risks
- Assess potential financial impact of physical risks at site-level
- Implement mitigation measures, where relevant, during the construction process.

Climate-Related Transition Risks

Osotspa has reviewed transition risks (i.e. risks in low carbon economy) relevant to our business as outlined below. Note that as most of products of our products are sold in Thailand and Thailand does not have any strong regulation, the risks listed here are mostly future risks.

Risk Category	Climate-Related Risks	Potential Financial Impact to Osotspa
Policy/Legal	Carbon pricing	<ul style="list-style-type: none"> Increased operating and upstream costs
	Exposure to litigation	<ul style="list-style-type: none"> Increase compliance costs
	Extended producer responsibility	<ul style="list-style-type: none"> Increased compliance costs
	Anti-open burning policies for suppliers	<ul style="list-style-type: none"> Increased indirect raw material costs
Technology	Substitution of existing products and services with lower emissions options	<ul style="list-style-type: none"> Reduced demands for products and services R&D expenditures in new and alternative technologies Cost to adopt/deploy new practices and processes
	Substitution of existing packaging with more sustainable alternatives	<ul style="list-style-type: none"> Increased cost of goods sold
Market	Changing customer behavior	<ul style="list-style-type: none"> Reduced demand for products and services
	Increased cost of raw materials	<ul style="list-style-type: none"> Increased production costs due to changing input prices (e.g. energy, water) and output requirements (e.g. waste treatment) Abrupt and unexpected energy costs
Reputation	Increased stakeholder concern or negative stakeholder feedback	<ul style="list-style-type: none"> Reduced revenue from decreased demand for goods/services Reduced revenue from negative impacts on workforce management and planning (e.g., employee attraction and retention)

Climate-Related Transition Opportunities

Osotspa has reviewed transition opportunities (i.e. opportunities in low carbon economy) relevant to our business as outlined below. Note that as most of our products are sold in Thailand and Thailand does not have any strong regulation, the risks listed here are mostly future opportunities.

Opportunities Category	Climate-Related Opportunities	Potential Financial Impact
Resource Efficiency	Reduced water usage and energy consumption	<ul style="list-style-type: none"> Reduced operating costs (e.g. through efficiency gains and cost reductions)
	Use of lower-emission sources of energy	<ul style="list-style-type: none"> Reduced operational costs (e.g. through use of lowest cost abatement) Reduced exposure to future fossil fuel price increase, less sensitivity to changes in carbon costs
Energy Source	Participation in carbon market	<ul style="list-style-type: none"> Revenue gains from selling carbon credits
	Development and/or expansion of low emission goods and services (Low Carbon Product)	<ul style="list-style-type: none"> Increased revenue through demand for lower emissions products and services Increased revenue through new solutions to adaptation needs
Products and Services	Shift in consumer preferences	<ul style="list-style-type: none"> Better competitive position to reflect shifting consumer preferences, resulting in increased revenues
	Access to new markets	<ul style="list-style-type: none"> Increased revenues through access to new and emerging markets
Markets		

Strategy

Opportunities in Using Solar PV with Battery Electricity Storage System (BESS)

Opportunities of Using Solar PV

Osotspa sees the opportunity in the use of lower emission sources of energy, such as solar PV, as it helps in reducing operational costs through the use of the lowest cost abatement as well as reducing exposure to an increase in fossil fuel prices. The alternative source of energy would reduce the sensitivity to change in carbon cost.

Renewable Electricity Transition:

- In 2030 = 25%,
- In 2040 = 50%,
- In 2050 = 100%

By 2050, with RE 100% from Solar PV, the company invests in 1-day consumption capacity of Battery Electricity Storage System (BESS) in every operational sites by applying the same cost rate as in 2030 of 220 USD/kWh for BESS in 2050 (source: International Renewable Energy Agency)

Factor in annual Business growth in Electricity consumption, Electricity cost from the grid by percentage of Renewable Electricity Transition and Electricity cost from Solar Investment based on LCOE by percentage of Renewable Electricity Transition

Factor in Carbon Tax from 2 Scenario in Carbon Tax in 2030, 2040 and 2050:

- **Scenario 1:** Using IEA data base on estimated Carbon Tax cost according to Stated Policies scenario in Chile, Colombia
- **Scenario 2:** Using IEA data base on estimated Carbon Tax cost from Emerging market and developing economies with net zero pledges scenario (Net Zero by 2050)

Potential Cost Saving is equal to [Baseline Electricity Cost from the grid + Baseline Carbon Tax] – [Cost of Solar Investment (Solar PV and BESS) + Carbon Tax after Solar Investment]

Cost Saving	Unit	2030	2040	2050
Cost Savings (STEPS)	(million Baht)	117	683	953
	%	15	38	63
Cost Savings (Net Zero by 2050 Scenario)	(million Baht)	207	671	1,832
	%	19	42	88
Forecasted EBITDA	(million Baht)	7,127.98	9,579.40	12,873.92



Risk Management

Osotspa is dedicated to effective climate-related risk management to protect our business and contribute to a sustainable future. In this section, we outline our strategies and initiatives for addressing the identified risks associated with climate change and integrating climate issues into our COSO: Enterprise Risk Management Framework.

In order to efficiently manage risks and possibilities, we recognize that climate change issues need to be included in our framework. We've been updating our risk management practices and procedures to make it explicit that climate change risks are taken into account alongside business risks, so they aren't ignored. This integration allows for a holistic approach to risk assessment, scenario analysis, and decision-making, enabling us to proactively address climate risks within our overall risk management framework.

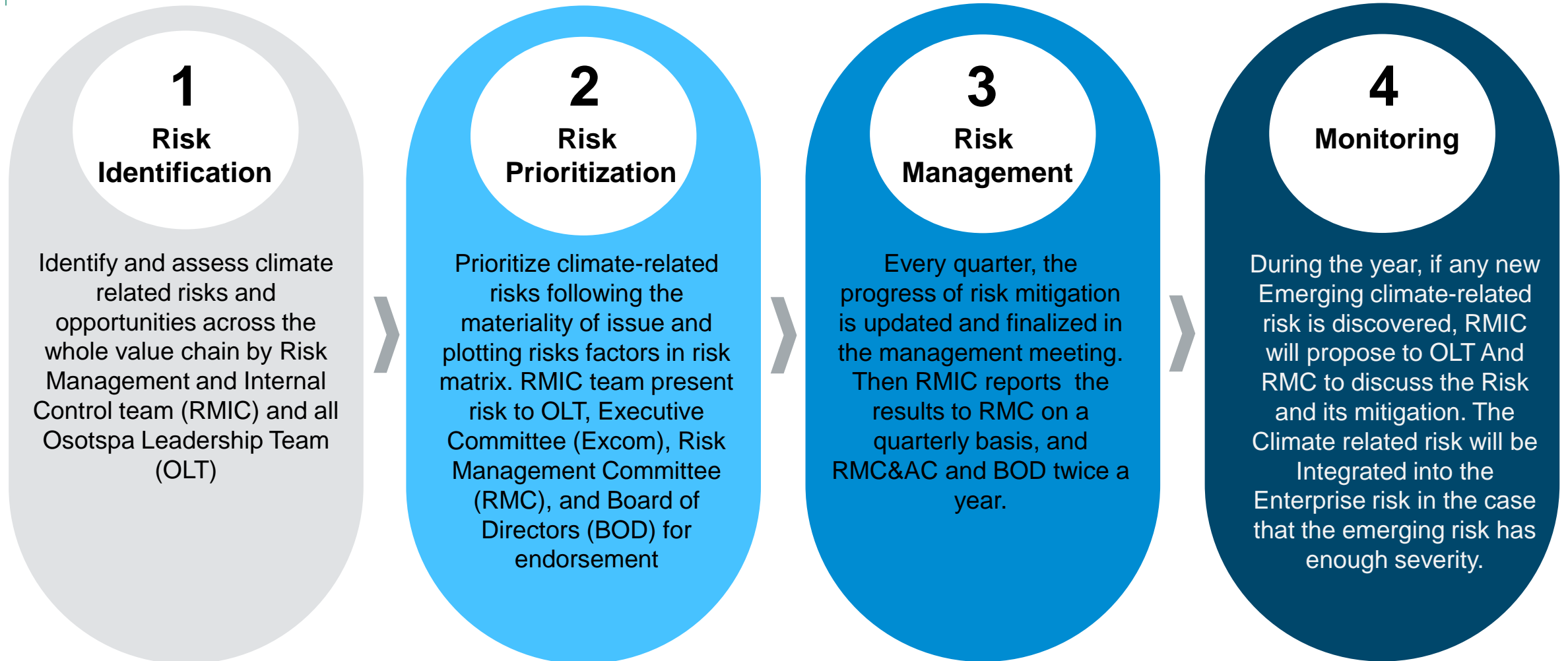
Osotspa is committed to regularly reviewing and improving our risk management strategies and integrating climate issues into our ERM processes. We engage with stakeholders to foster collaboration, share best practices, and drive collective action in addressing climate-related risks.

By effectively managing climate-related risks and integrating climate issues into our ERM framework, Osotspa strives to protect shareholder value, ensure business continuity, and contribute to a more sustainable and resilient future.



Risk Management

Integrating climate issues into COSO: Enterprise Risk Management Framework





Metrics & Target

Osotspa is committed to achieving carbon neutrality in 2050, with a view to reducing our impact on the environment and contributing to an equitable future. We have put in place a complete set of metrics and targets that will be used to assess and coordinate our progress towards this objective.

We measure and report our GHG emissions across our operations, including direct emissions (Scope 1) and indirect emissions from purchased electricity (Scope 2). These metrics allow us to identify emission hotspots, prioritize reduction efforts, and monitor our progress towards carbon neutrality.

In alignment with our commitment to carbon neutrality by 2050, we have set interim reduction targets to ensure progress is made in a measurable and transparent manner. These targets are designed to drive emission reductions in line with Thailand NDC. We regularly review and update these targets as we strive to achieve our long-term carbon neutrality goal.

By setting clear metrics and targets, Osotspa aims to hold itself accountable and drive continuous improvement in our efforts to achieve carbon neutrality by 2050. We're regularly monitoring our progress, reporting transparently on performance and seeking opportunities to accelerate the transition towards a sustainable, low carbon future.



Targets

Osotspa Public Company Limited has established a goal to achieve carbon neutrality by the year 2050. Additionally, they have set specific targets for different timeframes: an interim target to be reached by 2025, a short-term target to be achieved by 2030, and a long-term target for the year 2050.

This carbon neutrality goal and its associated targets were thoroughly reviewed and approved by various key stakeholders, including the Sustainability working team, the Executive Committee, and the NRCSD committee. Finally, in August 2023, the Board of Directors conducted a comprehensive review and officially ratified the establishment of these targets.

We use the following methodologies to quantify and track our GHG emissions:

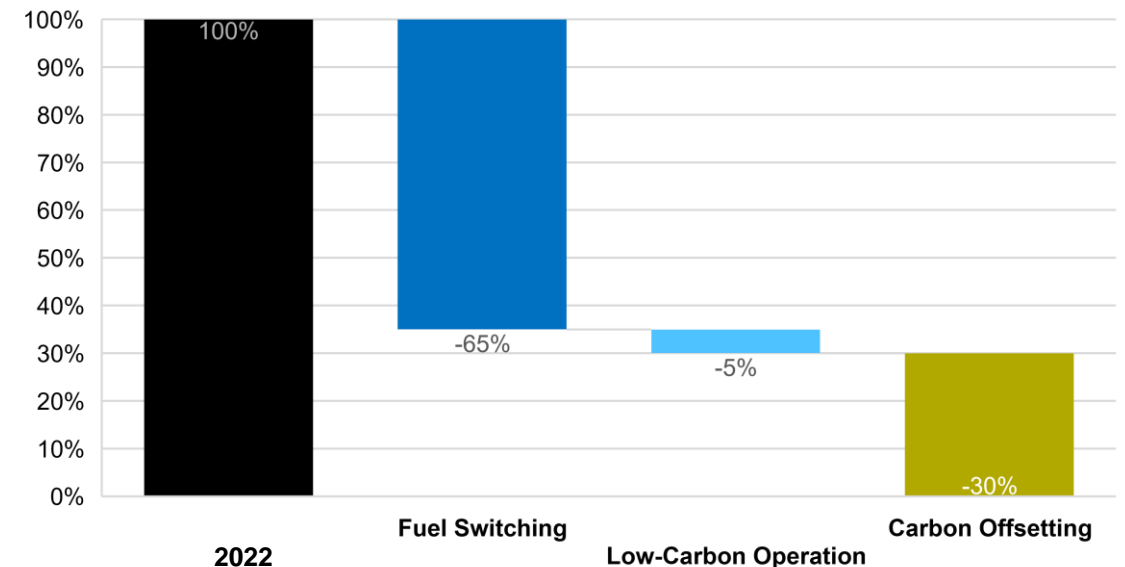
- Baseline year for target: 2022
- Boundary of GHG reported: 1) Beverage Filling Plants, Personal Care Plants, Glass Factories and Label Printing Factory in Thailand 2) Beverage Filling Plants in Myanmar
- Scopes included: Scope 1 and 2
- Emission factor and methodology source: ISO 14064-1:2018, The Greenhouse Gas Protocol, The Thai CFO quantification standard by (TGO)

Interim target in 2025 (Intensity target)	Short-term target in 2030 (Absolute target)	Long-term target in 2050 (Absolute target)
15% Intensity reduction on Scope 1 and 2	30% Absolute reduction on Scope 1 and 2	Carbon Neutrality with 70% Absolute reduction on Scope 1 and 2

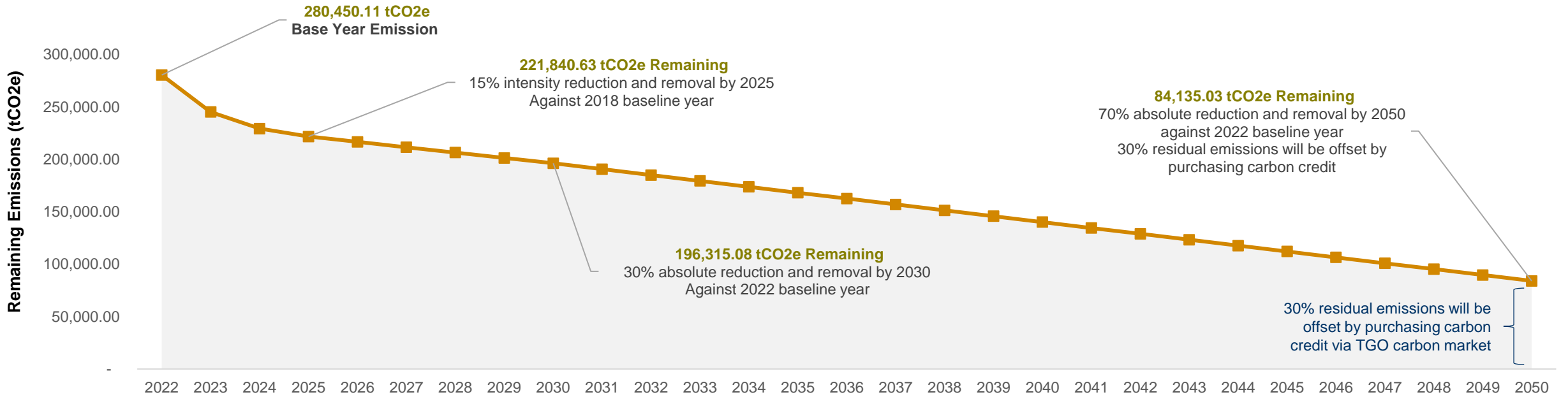
Carbon Neutral by 2050

We aim to reduce 70% of Scope 1 and 2 emissions and offset residual emissions with carbon credit by 2050 through:

- Fuel Switching: Using more renewable source of energy to operate beverage and glass production which will contribute around 65% of total reduction
- Low-carbon operation: Efficiency programs, process improvement and promoting circular economy which will contribute around 5% of total reduction
- Carbon Offsetting: Purchasing Carbon Credit to offset 30% residual emissions



OSP Carbon Neutral Roadmap



Fuel Switching



- Switch to biomass boiler and waste heat boiler
- Hybrid furnace to combine the use between natural gas and electricity boost up
- Cullet preheating
- Absorption chiller
- EV fleet transition with RECs*
- Solar PV installation
- Feasibility study on the use of bio-oil with sustainable sourcing, oxy-fuel and hydrogen fuel options

Low-carbon operation



- Machine modification to reduce energy consumption
- Buildings and facilities with energy-efficiency technologies (e.g., IoT, Sensors, etc.) and Implementing energy saving program*
- To use the best option for low-carbon or zero GWP refrigerants in 2050*
- 90% cullet ratio up and light weight bottle
- Partnering with external parties on circular economic programs
- Carbon Removal technology and Nature based solution*

Carbon Offsetting



- Purchasing RECs to support renewable energy generation and consumption*
- Purchasing carbon credit to support reduction and removal activities in Thailand and to reach Carbon Neutral by 2050*