

CENTRALPATTANA

A supporter of the Task Force on Climate-Related Financial Disclosures



Imagining better futures for all



CENTRALPATTANA

For over four decades, Central Pattana Plc has become a household name for many Thais. We pioneered Thailand's commercial property, developing and managing it to reach the national pinnacle. We were the trailblazer in world-class mixed-use projects ranging from shopping centers, office buildings, hotels, to residences. Novel businesses are our ventures, investing in and revamping of shopping centers while relentlessly evolving new projects and sharpening every aspect of our business caliber to promptly adjust amid various disruptions of the world. Under "Imaging better futures for all" vision, Central Pattana constructs strong and sustainable business ecosystem via a "Place Maker", a developer for futures along with caring for "People" by improving quality of life and community and "Planet" by targeting to become the first mixed-use developer in Thailand to achieve Net Zero emissions by 2050.



"We PIONEER for better lives by upgrading new standard of lifestyle space for the better futures. Through two important factors – Green & Energy via new innovations and design thinking in project development for a standardization and enhancement of environmental care in every aspect; together with Health & Wellness via hygiene and safety scheme along with inclusive design for all groups of people and flexible space conforming to community preferences."

Ms. Wallaya Chirathivat

Director, Chief Executive Officer

Climate Change RISK and OPPORTUNITY



Climate change marks are submerging the operational risk landscape with overwhelming natural disasters and environmental turbulences, namely outbreaks, which see overrun properties, uncontrollable resources and trade, much less shipwrecked relations with valuable customers, partners, and stakeholders alike. Considerable sectors in Thailand with global warming intent have set Nationally Determined Contribution (NDC) goals under the Paris Accord framework and stated a commitment to climate solutions to fully realize carbon neutrality goals by 2050 and net zero emissions by 2065. This means adapting to a lowcarbon society and accelerating the development of cleaner and more efficient technologies in the backdrop of supportive regulatory bodies in reducing the impact on the market and stakeholders' expectations, facilitating corporate awareness and proactive participation in addressing this manageable risk in the process.

The rise in weather and climate extremes around the world have significant implications for Central Pattana's business value chain. A sustainability risk assessment conducted as part of our organizational risk management looked at the issue in the context of Thailand from its Nationally Determined Contribution (NDC) under the Paris Agreement to the pledge to reach carbon neutrality by 2050 and to achieve net zero emissions by 2065. Among our stakeholders including state agencies, financial institutions, investors and civil society, attention to climate change has also risen steadily.

In 2021, Central Pattana, therefore, worked in collaboration with Thailand Greenhouse Gas Management Organization under the "Science-based Target: SBT" initiative to explore greenhouse gas emissions reduction target setting based on the SBTs (Science Based Targets) approach. The outcomes of the study were then used to set our short, medium and long term targets for GHG emissions. We also partnered with external consultants to complete two scenario analyses, in line with the Task Force on Climate-related Financial Disclosures: TCFD recommendations. They included - Business as Usual Scenario (RCP 8.5), which delivers a temperature increase of about 4°C and Transition Scenario (2 degrees Scenario: 2DS), which limits warming to 2°C. Each scenario analysis took into account policy and legal risks, physical risks and risks to business operations by 2030 and 2050. The outcomes and recommendations from the analyses will subsequently be integrated into our sustainability strategy to become a net zero organization.

CLIMATE IMPACT APPROACH

Central Pattana considers the guidelines of the Task Force on Climate-Related Financial Disclosure (TCFD), taking into account climate change Physical risks and transition risks that weigh heavily on the business sector, both of which are covered in the corporate risk mitigation plan. For four pillars of TCFD recommended disclosure including Governance, Strategy, Risk Management and Matrices and targets.

TCFD Disclosure Framework

01 GOVERNANCE 02 STRATEGY

03 RISK MANAGEMENT 04 METRICS AND TARGETS

TCFD Reporting Guidance

Climate-related risk refers to the potential negative impacts of climate change on an organization. Physical risks emanating from climate change can be event-driven (acute) and relate to longer-term shifts (chronic) in precipitation and temperature and increased variability in weather patterns e.g., sea level rise, drought). Climate-related risks can also be associated with the transition to a lower carbon global economy, the most common of which relate to policy and legal actions, technology changes, market responses, and reputational considerations.

Climate-related opportunity refers to the potential positive impacts related to climate change on an organization. Efforts to mitigate and adapt to climate change can produce opportunities for organizations, such as through resource efficiency and cost saving, the adoption and utilization of low-emission energy sources, the development of new products and services, and building resilience along the supply chain.

Physical risks are climate-induced cumulative geographic shifts to sudden natural disasters, such as earthquakes, thunderstorms, floods, droughts, and wildfire, which affect human activities and thus the climate in return. Each region in Thailand is exposed to a unique combination of geographic forces; for example, the North is more likely to experience earthquakes and dust, while sudden floods and monsoon thunderstorms are more frequent in the South. The Company has established measures to mitigate these threats, closely monitoring opportunities to minimize impacts to the organization in the events of crises.

This involves reinforcing the strength of buildings and infrastructure, preparing, and procuring mitigation apparatuses, reserving water resources in advance in case of drought, reviewing structural building assessments of specialists to evaluate the impact of potential disasters, and establishing a protocol to handle different incidents accordingly. Regular and effective communication, training, and rehearsing crisis management protocol can help the Company cope should any risk transpire.

Among transition risks are solvency pressures on a business adapting to low-carbon requirements, regulatory or legal risks imposed by governments or international agencies to mitigate global warming, or technological risks where replacing legacy systems leads to increased costs or investments and a widening organizational-digital talent gap. Market and reputational risks occur from customers and society demanding tangible environmental-friendly adjustments. The Company realizes the scale of these impacts and has formulated strategies and guidelines to adopt renewable energy by installing solar panels to corporate structures and its affiliates. Plans are also in place for reducing greenhouse gas emissions through machinery modification, namely air conditioning and upgrades to electric-efficient systems. And on the other hand, applying green building standards and circular economy practices, such as reusing-reducing-recycling materials, alongside green campaigns, promoting mindful energy consumption and awareness of waste separation, waste management, recycling, and landfills across the organization, can all lead the Company to achieve net zero greenhouse gas emission by 2050.

01 GOVERNANCE

Central Pattana's corporate governance and sustainable development structure support the purpose-led organization and the importance of sustainability, which ensures that climate-related issues are addressed at board and takes ownership at managements levels.

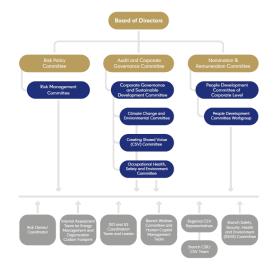
Board of Director has appointed sub-committees to help fulfill its responsibilities, screen specific key operational aspects as assigned, give opinions to the Board, and decide certain matters as authorized by the Board. Followings are the sub-committees which related to climate change issue.

Board Level including Board of Directors, Risk Policy Committee and Audit and Corporate Governance Committee. Responsible to Establish involved policy and facilitating organization-wide implementation and have a review climate related risks and opportunities at least once a year.

- 1) Risk Policy Committee deliberate and make recommendations on the policy, strategies, structure, and scope to develop all types of the risk management scope. Screen and approve acceptable risk levels (risk appetite). Review the Company's overall risk management by considering shareholders' total returns on investment (both short-term and long-term) and comparing them with the acceptable risk levels. Provide risk management direction for the management and oversee the definition of targets to measure performance and key risk indicators. This includes monitoring of climate change risks and opportunities.
- 2) Audit and Corporate Governance Committee to review the financial report, connected transactions, transactions that may cause conflict of interest, internal control system, transactions that may cause financial fraud, internal audit, external audit, compliance with law and relevant regulation, and relevant materials ESG issues under sustainability framework.

Management Level including Risk Management Committee and Corporate Governance and Sustainable Development Committee with the CEO the chairman of committee Climate Change & Environmental Committee, Creating Shared Value Committee and Occupational Health & Safety Committee. Responsible establish strategies, frameworks, guidelines, and ESG, including achievement climate-related indicators and monitoring movement of risks national and global standards. The review and monitoring are conducted as quarterly basis.

Derational Level including Risk and ISO working groups are bringing the guidelines into practice and responsible for day-to-day operationalization of activities to mitigate climate risks and build climate resilience across the company. Risk management togethers with Sustainable Development team regular review and monitor ESG and risk indicators including climate-related risks and opportunities through scenario



02 STRATEGY

We are committed to creating long term value for all stakeholders. We believe in growing sustainably and doing good for the environment, people, the community and for business. Our goal is to become the first mixed-use developer in Thailand that achieve Net Zero emissions by 2050. The Target covers all properties managed by the group, across all funds and all asset classes including retail, office, hotel and residential.

During the process to identify and prioritize ESG material issues, our Senior and Executive Management have identified climate-related issues as the corporate risks and to-be net zero organization is the sustainability issue. The Company issues policies and implementing guidelines under Climate and Environment Policy, Biodiversity Management Policy and Society, Communities and the Environment Policy (www.centralpattana.co.th/en/sustainability/corporate-governance/policies-implementing-guidelines). Our policies encompass energy and water efficiency, climate resilience, environmental management, biodiversity, and effective and sustainable waste management and incorporates a number of international standards including ISO 14001 Environmental Management System (EMS), ISO 14064-1 Greenhouse Gases, ISO 50001 Energy Management, LEED: Leadership in Energy & Environmental Design and the evaluation criteria for the Ministry of Energy's Thailand Energy Award and ASEAN Energy Award, SBTs (Science Based Targets) and TCFD (Task Force on Climate Related Financial Disclosure) recommendations, with objectives to maximize resource efficiency, increase the share of alternative energy and achieve net zero emissions. These policies and key environmental elements are available on Central Pattana's website at www.centralpattana.co.th/en/sustainability

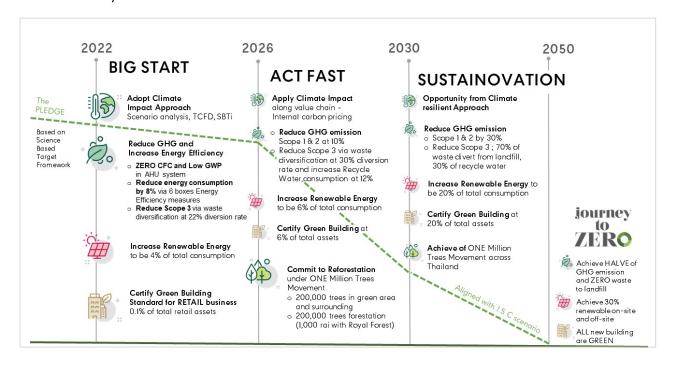
The management of climate-related risks and opportunities is integrated into remuneration outcomes at all levels of the business through Corporate OKRs. The OKR or Objectives and Key Results is implemented companywide to set our sustainability indicators cascading down to division, department and individual contributor levels with the progress tracked and measured by relevant committees.

The Journey to Net Zero Strategy Development

Central Pattana aligns organization's operating model to drive the transformation and deliver net zero and creates share value for key stakeholders, includes investment decisions, people and talent development, products and service, and customer experience design. The Journey to Net Zero plan has spread into short term (1-5 years), medium term (5-10 years), and long-term (10-30 years) plans. The commitment has been integrated into business actions and strategies which have been oversight mainly by Climate change and Environment Committee and govern by Corporate Governance and Sustainable Development Committee-management level and Audit and Corporate Governance Committee-board level.



The Journey to Net Zero Plan



03 RISK MANAGEMENT

Climate-related risks are managed in accordance with the Central Pattana Risk Management Framework which is aligned to the principles of COSO ERM 2017 framework. Climate change is listed on the Company emerging risk register, which has resulted in the development of Net Zero Plan and the detailed discussion of climate risks at Sustainable Development sub- and committees and Board levels.

Climate Risks Assessment Overview

Central Pattana assess risks and opportunities using the Trucost's database from Sustainable1, that is part of S&P Global- a leader in carbon and environmental data and risk analysis. Sustainable 1 assesses risks relating to climate change, natural resource constraints, and broader environmental, social, and governance (ESG) factors.

The risk assessment overview

Major Characteristics	Metrics Considered		
Transition risk: Policy risk exposure			
Risk policy action to	Carbon pricing risk at		
encourage low-carbon	CPN facilities		
transition in direct operations			
or upstream supply (e.g.			
through carbon taxes)			
Transition risk: Market risk exposure			
Increased costs for key	Carbon pricing risk of		
suppliers	key suppliers		
Transition risk: Reputation risk exposure			
Increased scrutiny from	Benchmark assessment		
investors, lenders, and	of: Carbon intensity of		
insurers towards	industry group, Paris		
business/industry	alignment of Scope 1&2		
	GHG transition pathway,		
	Climate strategy score		
	(S&P Global)		
Transition risk: Technology risk exposure			
Possible early retirement of	Benchmark assessment		
existing products or	of; Exposure to revenue,		
technologies to mitigate	Evidence of low-carbon		
climate impacts	goods/service and		
	Capex/R&D		
Physical risk: Physical risk exposure			
Increased frequency of	Physical risk scores at		
extreme weather events (e.g.	CPN's facilities		
heatwaves, drought, flood			
risk etc.) or long-term shifts			
in physical condition (e.g.			
sea-level rise)			

Transition Risk: Policy Risk Exposure

The impact from climate change will affect the cost to run businesses mostly from the government policy and global address through collective decarbonization.

Thailand Carbon pricing mechanism through Carbon pricing is considered part of the core policy in a climate-energy policy package, as it assigns the costs of carbon emissions to those emitting them. The increased costs on emissions are expected to gradually change the balance of the market in energy consumption and incentivize the market to favor low-carbon solutions. The two main types of carbon pricing are emission trading systems, such as cap-and-trade programs, and carbon taxes.

Thailand has updated its Nationally Determined Contribution (NDC) under the Paris Agreement, confirming the target of reducing GHG emissions by 20% by 2030 from the projected business-as-usual level, with a potential to increase this target up to 25%. Thailand recognizes the role that carbon pricing and market-based mechanisms can play to support the country in meeting its GHG emissions reduction target. Policies that set out the national direction on carbon pricing instruments can be found in the National Economic and Social Development Plans and the Climate Change Master Plan (2015-2050). Thai government has also set up the Thailand Greenhouse Gas Management Organization (TGO) led by the Ministry of Natural Resources and Environment in 2007 to promote the market for GHG emissions trading and manage GHG emissions projects. There are two programs and one scheme established:

- The Thailand Voluntary Emission Reduction Program (T-VER)
- The Thailand Carbon Offsetting Program (T-COP)
- The Thailand Voluntary Emissions Trading Scheme (T-ETS)

Despite the climate-related policy risk from Thailand Carbon pricing mechanism, another model we used to assess exposure is the Climate-related carbon pricing risk & Trucost carbon pricing model. Trucost has assembled a database of publicly available information on current carbon prices across over 100 geographies. The database includes information on prices and sector coverage (the proportion of sector emissions covered by the policy) for emissions trading schemes, carbon taxes and fuel taxes in each geography. The methodology for measuring carbon pricing consists of the following key components:

- Carbon price data
- Carbon price scenario
- Revenue expenditure and emissions projections
- Pass Through Modelling
- Analysis tools

The Trucost Carbon pricing risk is dependent on both the total amount of GHG emissions from a location and potential carbon price increases at that location. The Carbon Pricing Scenarios include three future carbon price scenarios:

- High Carbon Price Scenario: This scenario represents the implementation of policies that are considered sufficient to reduce greenhouse gas emissions in line with the Inge to 2°C by 2100¹.
- Moderate Carbon Price Scenario: This scenario assumes that policies will be implemented to reduce greenhouse gas emissions and limit climate change to 2°C in the long term, but with action delayed in the short term.
- Low Carbon Price Scenario: This scenario represents the full implementation of Local's Nationally Determined Contributions under the Paris Agreement.

Under the scenario where the Company reduces its total GHG emissions, including Scope 1, 2 and 3 to zero by 2050, Central Pattana's total carbon pricing risk will peak in 2030. Total carbon pricing risk would account for 1.2% to 4.6% of Central Pattana's operating expenditure in 2030.

If the Company reduces only Scope 1 and Scope 2 GHG emissions to zero by 2050, however, the carbon pricing risk would be significantly higher due to the substantial amount of Scope 3 carbon pricing risk. The Company's total carbon pricing risk is expected to continue rising by 2050 under a 2°C-aligned Scenario. These could represent 11% of CPN's operating expenditure by 2050.

Transition Risk: Market Risk Exposure

While the ways in which markets could be affected by climate change are varied and complex, one of the major ways is through shifts in supply and demand for certain commodities, products, and services as climate-related risks and opportunities are increasingly taken into account. The TCFD identifies changes in revenue mix and sources as an example of climate-related market risk. To measure and quantify market risk exposure, we calculate the increased carbon pricing risk associated with our suppliers and customers under different carbon pricing scenarios. By using a metric "EBITDA at risk", allows us to calculate forward-looking estimate of the financial risk of our suppliers and customers and assess the potential impact to a companies' earning today if companies had to pay a future price for their greenhouse gas emission.

Under 2°C scenario, Construction Materials and Electric Utilities are the two major sectors that have high average EBITDA at risk due to carbon costs which will impact the Company's supplychain risk. On the other hand, Textiles, apparel & Luxury goods sector has the highest EBITDA at risk which will cause market risk across customers sectors.

This scenario is based on research by OECD and IEA (2017).

Transition Risk: Technology Risk Exposure

Central Pattana has a moderate level of overall exposure to technology risk, based on:

- The company's relative exposure to revenues from business activities considered candidate sectors for and enablers of low-carbon transition, based on the EU Taxonomy for Sustainable Activities.
- Evidence of low-carbon transition goods/services in the company's product offerings.
- Evidence of CapEx and/or R&D linked to low-carbon transition product offerings or operations.

The Company has provided low-carbon buildings and products, such as improving buildings efficiency by using renewable electricity and green technologies. Therefore, technology presents opportunities for Central Pattana's business. Enhancing energy efficiencies, lowering carbon intensity of building and meeting green building standards enable the real estate industry to remain competitive.

Transition Risk: Reputation Risk Exposure

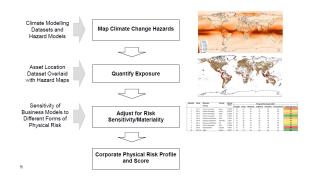
The increased stakeholder concern or negative stakeholder feedback as an example of climate-related reputation risk. The higher the overall reputation risk exposure facing a company, the more likely it is to face challenges regarding talent attraction and retention, long-term customer relationships, license to operate and access to capital. The Company has been assessed by Sustainable1 to have a medium level of overall reputation risk, based on:

- The company's GICS Industry Group Impact Classification (high, medium or low).
- The company's carbon intensity decile ranking, relative to the S&P Carbon Global Standard.
- The company's Paris Alignment, based on an assessment of its GHG Transition Pathway.
- The company's existing Climate Strategy Score, based on SAM S&P Global ESG Scores.

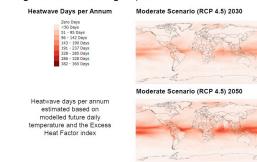
Physical Risk: Physical Risk Exposure

Central Pattana assesses physical climate hazard indicator including water stress, flood, heatwave, coldwave, hurricane, wildfire and sea level rise under three scenarios:

- High Climate Change Scenario (RCP 8.5): Continuation of business as usual with emissions at current rates. This scenario is expected to result in warming in excess of 4 degrees Celsius by 2100.
- Moderate Climate Change Scenario (RCP 4.5):
 Strong mitigation actions to reduce emissions to half of current levels by 2080. This scenario is more likely than not to result in warming in excess of 2 degrees Celsius by 2100.
- Low Climate Change Scenario (RCP 2.6): Aggressive mitigation actions to halve emissions by 2050. This scenario is likely to result in warming of less than 2 degree Celsius by 2100.



Modelling Future Climate Change Impacts



Overall, Central Pattana faces moderate physical risk with greatest risk exposure to sea level rise and water stress. Composite risk levels are comparably high in 2050 than in 2020 and 2030 under three scenarios, as sea level rise and water stress are driven mostly by long-term climate change impact.

Climate-related risks and potential financial impacts

Potential climate-related risk impact	Time frame	Mitigation and Execution plan	
Transition issues: Policy, Technology, Market and Reputation risks	_		
Increased expenditure and costs associated with the inability to achieve The Journey to Net Zero as plan.	Long term	Appropriate integration of climate-related issues into corporate risks and adopt carbon pricing impact valuation model. Identify ways to reducing exposure of carbon pricing risk over time and exerting influence over suppliers / tenants and encourages them to reduce their own GHG emissions. Align operating model to The Journey to Net Zero strategy and transform organization to be purpose-led organization to archive net zero in 2050.	
 Changed in operating expenditure and impact from carbon- adjusted operating profit margin due to the Thai Ministry of Finance introduced excise carbon emission tax or emissions trading systems (ETS) across country. 	Medium term		
 Increased expenditure associated with the use of non-renewable energy. 	Long term		
 Increased expenditure associated with the use of renewable energy due to the uncontrollable situation impact the prices of material i.e., shortage of rare earth 	Short term		
 Increased expenditure to retrofit existing buildings (and design new buildings). 	Short and Long term		
 Lack of capability to apply green technology or improve building efficiency to reduce operating cost nor produce low-carbon products for high customer's demands. 	Long term	Providing low-carbon buildings and products and improve building efficiency by using green technology and collaborating and partnerships.	
 Loss of tenants potentially in the textiles, apparel and luxury goods sector who also exposed to carbon pricing risk or reduced downstream demand and hence revenue streams for Central Pattana. 	Short and Long term	Introduce green partnership programs i.e., green lease and Journey to zerowaste management programs.	
 Loss of customers, if unable to incorporate circular principles into business as usual nor unable to provide alternative or green service such as EV charger station. 	Short term	Dedicate budget allocated for R&D and collaboration & partnerships.	
 Loss of global investors consequently from unclear climate-risks disclosure and inability to lower carbon-to-revenue footprint aka carbon efficient index when benchmarked to peers. 	Short term	Align climate-risks disclosure with TCFD disclosures and benchmark with peer group.	
Physical issues: Physical risks			
 Assets decline in value because they are emissions intensive and/or they are in areas exposure to high physical climate risks under three scenarios, as sea level rise, water stress and cold wave caused operational disruption as properties exposure. 	Long term	Consider materiality of physical risks for highly exposed sites. Identify pathways that could connect physical impacts to tangible business impacts in early stage before site selection for new projects.	
 Increased costs associated with building repairs/rectification Lose revenue because surrounding populations suffer economic hardship. 	Short term Short term		

04 METRICS AND TARGETS

In 2021, Central Pattana has expanded our environmental and social commitments – achieving net zero greenhouse gas (GHG) emissions by 2050, under "The Journey to Net Zero", in alignment with the UN SDGs by focusing on the following key elements with clearly defined sustainability targets.

An ambition of The Journey to Net Zero is to achieve net zero emissions across the group-managed portfolio by 2050. This ambition will be achieved through

 Reduce GHG - Green House Gas emission and enhancing portfolio energy efficiency in accordance with Science Based Targets initiative.

By 2030:

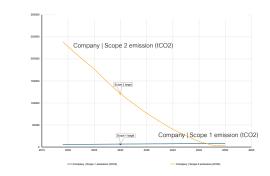
- O Annual GHG emissions reduced/avoided (tCO2e): reduce 20% of Scope 1&2 and 30% of Scope 3
- O Annual energy reduced/avoided in MWh: reduce 20% from base year
- O 70% Diversion rate (from landfill)



- Increase RENEWABLE energy and targeting to consume 20% from onsite production within the next ten years and 30% from offsite production within the next 30 years.
- Build in-house GREEN Standard and apply 100% companywide within 10 years. Enhance resilient portfolio and certify 20% of all asset classes by global green or correlate standards within the next 10 years.



 Enhance biodiversity and REFORESTATION programs by committing to allocate 10% green spaces / areas for every new design projects. Invest in planting 1 million trees across the country and where we belong within the next 10 years.



SDA absolute emission (ETP B2DS)

We report our climate-related metrics and progress against targets in our Sustainability Performance Report on company's website and in our annual report aligned to global frameworks including; Global Reporting Initiative, Task Force on Climate-related Financial Disclosures, CDP Climate Change, Science Based Targets Initiative.

(www.centralpattana.co.th/storage/download/sustainability/reporting-library/en/2021-sustainability-performance-en.pdf)

In order to pursue our commitment to Net Zero in 2050, Central Pattana has join member with national and international network, for instance:

- ESG Network-Thai Listed Companies Association
- Thailand Carbon Neutral Network (TCNN)
- RE 100 Thailand Club
- Circular Economy in Construction Industry (CECI)
- Task Force on Climate-related Financial Disclosures (TCFD)

We welcome all feedback and desire to gain collaboration and partnerships to co-create better lives and reach our Net zero goal by 2050. To engage with us about The Journey to Net Zero, email us at sd.ho@centralpattana.co.th.



CENTRAL PATTANA

Central Pattana Public Company Limited

10th, 30th – 34th Floor, The Offices at centralwOrld 999/9 Rama 1 Road, Patumwan Sub-District, Patumwan District Bangkok 10330, Thailand Tel. + 66 (0) 2667 5555 www.centralpattana.co.th