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An Analysis of PT Bank CDE's Capacity to Implement the Climate Risk and Management Scenario (CRMS)

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Abstract: Climate change has become a global issue that significantly impacts the banking sector, particularly in the management of credit portfolios that are vulnerable to both physical and transition risks. These risks may affect asset quality and the overall financial stability of banks. Therefore, it is essential for banking institutions to demonstrate the capacity in managing such risks through scenario based approaches, such as the Climate Risk Management Scenario (CRMS). This study aims to analyze the capacity of PT Bank CDE in implementing CRMS as part of its climate risk management strategy for its credit portfolio. A qualitative approach with a case study strategy was employed. Data collection was conducted through semi structured interviews as the primary data source and document analysis of regulatory guidelines and the company's sustainability reports as secondary data. The findings indicate that PT Bank CDE is at a fundamental stage in implementing CRMS. This organizational capacity is reflected in the establishment of an Environmental, Social, and Governance (ESG) Management unit, cross functional collaboration (involving ESG Management, IT, Business, and the ESG Subcommittee), and the adoption of the Three Lines Model principle, although it has not yet been formally institutionalized. These findings suggest an initial commitment to integrating climate risk into the company's risk governance system.

Keyword: Banking, Climate Risk, Climate change, Management Scenario, Risk Management.

INTRODUCTION

Climate change, from an economic and financial perspective, has a profound impact on businesses, trade, policy, and the financial system (Bressan et al., 2021). There are two types of risks associated with climate change: transition risk and physical risk. Transition risk includes risks arising from shifts in government and stakeholder policies, technological advancements, and social dynamics that may affect a company's business, reputation, and asset value (either positively or negatively). Meanwhile, physical risk is caused by natural disasters and long term shifts in climate patterns, which may increase banks' credit risk exposure (Herlianto et al., 2023).

In Indonesia, the response to climate related risks in the banking sector has been initiated by the Financial Services Authority (OJK) through the issuance of POJK No. 17/2023 concerning the Governance of Commercial Banks. Article 125 of this regulation mandates the integration of climate risk into governance, strategy, and risk management aspects of banking (OJK, 2024). On March 4, 2024, OJK issued six guidelines on Climate Risk Management and Scenario Analysis (CRMS) as a strategic framework for addressing climate risks. These guidelines identify three main elements that financial institutions must prepare for CRMS implementation: climate risk governance, business strategy and risk management framework, and scenario design and analysis (OJK, 2024). Under these provisions, several banks have been instructed to conduct piloting and stress tests to assess and evaluate their borrowers' debt repayment capabilities and to identify potential financial risks stemming from extreme climate related events in accordance with CRMS guidelines. Based on this background, it is crucial to analyze the capacity of banking sector actors in implementing CRMS.

Previous research on climate change and the financial sector, such as studies by Roncoroni et al. (2021) and Dunz et al. (2021), have focused on the impact of climate risks on global financial stability and the importance of stress testing in managing both transition and physical risks. Cucinelly et al. (2024) conducted a study on banks in Europe, emphasizing the role of risk management and corporate governance in raising banks' awareness of risks and opportunities associated with climate change and in promoting the adoption of sound environmental strategies. In the Indonesian banking context, Puspitasari and Faturohman (2024) highlighted the challenges in implementing climate risk management within the Indonesian banking industry, identifying major obstacles such as limited emissions data, uncertainty in risk measurement methodologies, and the lack of integration of climate risk into existing risk management frameworks.

However, prior studies have primarily focused on the macro level and the capacity of global banks to adopt CRMS. Research in the Indonesian banking sector, such as that by Puspitasari and Faturohman (2024), tends to emphasize general industry level challenges without providing a specific evaluation of operational capacity at the business unit level, particularly among key actors involved in CRMS implementation. In an effort to advance the literature on CRMS in the banking sector, this study focuses on Bank CDE, which is part of the national banking system and has adopted climate risk management practices in line with the 2024 CRMS guidelines issued by OJK. Accordingly, this study aims to analyze the capacity of Bank CDE as one of the banks participating in the 2024 piloting and stress test programs led by OJK in implementing CRMS as a measure to manage climate change related risks to its credit portfolio.

The urgency of this study lies in addressing the gap between academic literature and practical implementation of climate risk management, with a focus on organizational capacity within Indonesian banks. The chosen case study (Bank CDE) provides an opportunity to explore real world challenges in CRMS implementation while offering relevant and practical solutions for the financial sector in facing the impacts of climate change.

METHOD

This study employs a qualitative method with a single case study strategy, focusing on the objective of explaining how PT Bank CDE is prepared to implement the Climate Risk Management Scenario (CRMS) in managing climate change related risks to its credit portfolio. According to Barnham (2015), qualitative research aims to answer "how" and "why" questions. The study adopts an interactive and subjective model (Sundari et al., 2024), combined with a qualitative analysis approach that requires further exploration of the

research questions (Kumarasiri et al., 2020). The case study design is used to examine a unique phenomenon (Barnham, 2015).

This study utilizes both primary and secondary data. Primary data were obtained directly from research informants through semi structured interviews (Sarwono, 2006). Informants were selected from the ESG Management department, which is responsible for climate risk management and CRMS implementation at Bank CDE. The interviewees included a Senior Analyst (Informant 1) and an Analyst (Informant 2). Secondary data consisted of publicly available regulatory guidelines and the company's sustainability reports.

For data analysis, the study applies the interactive model by Miles & Huberman (2014), which outlines several stages in qualitative data analysis: data collection, data reduction, data display, and conclusion drawing. Data collection was carried out before, during, and after the research process, and included both interview transcripts and documentation. Data reduction was conducted thematically using NVivo 15 to ensure relevance to predefined themes. Data were then presented narratively or in a more systematic data integration format. Conclusion drawing was achieved through a triangulation approach by integrating interview findings, document analysis, and regulatory references to enhance the validity of the results.

RESULT AND DISCUSSION

1. The Capacity in Climate Governance

In accordance with the OJK's CRMS 2024 guidelines, Bank CDE has established a dedicated unit within the ESM (ESG Management) division:

> *"…currently, the climate change impact is still managed by a department under the enterprise risk management division, namely the ESG management unit…"* (Informant 1, 2025).

This statement by Informant 1 indicates that Bank CDE has initiated its climate risk governance through the establishment of a specific organizational structure focused on ESG aspects. This step reflects a proactive measure in systematically forming an ESG implementation unit.

Furthermore, Bank CDE plans to enhance the ESG unit by dividing the ESM function into three interrelated subunits:

> *"…So later on, there will be a team to develop the framework, another department that will conduct the stress test and provide support to the business units…"* (Informant 2, 2025).

The ESG management unit will be segmented into three functions: Framework Development Unit, Analysis and Stress Testing Unit, and Business Advisory and Support Unit. This functional division was realized in 2024. Operationally, the ESM unit also coordinates with other departments such as IT and business units.

> *"…from the IT side, we are currently in the process of building a tool to conduct the stress test, which is now at the post implementation review stage or we have go live (on-going). We are now in the user testing phase and have entered the production stage, so we can use real data…"* (Informant 2, 2025).

In addition to IT collaboration, there will be future collaboration with business units:

> *"…from the business unit side, collaboration with credit risk will be established. Climate change risk has already been incorporated into the Risk Acceptance Criteria (RAC). The RAC is a set of risk guidelines that business units must adhere to in processing credit…"* (Informant 1, 2025).

The board of directors also plays a crucial role in overseeing the ESM unit's performance through reporting and approval mechanisms via the ESG subcommittee led by a deputy director:

> *"…when we need to report to OJK on how much impact climate change has on our organization's portfolio, we do so through the ESG subcommittee. This subcommittee is chaired by the Deputy Director and comprises Directors, AVPs, and our ERM division as the secretariat…"* (Informant 1, 2025).

The ESG subcommittee serves as a strategic decision making body within Bank CDE for climate risk management. Institutionally, the subcommittee reports its decisions during the Board of Directors' meetings:

> *"…the ESG subcommittee is like a forum where we seek approval from the Board of Directors or Management Board for any action to be taken by the ESG Department, whether strategic initiatives or regulatory reporting. When regulators conduct inspections, they go through the Directors…"* (Informant 2, 2025).

The Board of Directors' meeting functions as a strategic decision making platform for managing sustainability issues, including climate related risks. The active involvement of the Board in following up on reports and directing ESG strategy should ideally be reflected in their Key Performance Indicators (KPI). Integrating ESG aspects into KPIs not only strengthens accountability but also enhances the board's oversight effectiveness. One important KPI component is the achievement of green loan disbursement targets:

> *"…currently, there is indeed a KPI for the board of directors concerning the realization of outstanding loans granted under Green Loan facilities. This is reported both annually for targets and quarterly for realization to the regulator…"* (Informant 1, 2025).

The alignment between sustainability related KPIs and remuneration policies indicates that the Board has incentives aligned with ESG objectives. Linking executive compensation to sustainability targets, such as carbon emissions or green loan disbursement, aligns with best governance practices, as suggested by Cucinelli et al. (2024) and reinforces strategic commitment to environmental goals.

Additionally, the Three Lines Model emerges as a key theme in the analysis. This model emphasizes clear role delineation among operational functions, risk oversight, and internal audit in ensuring effective and accountable sustainability strategy implementation (OJK, 2024). Analysis reveals that Bank CDE has adopted the principle of role separation among the first line (operations), second line (risk oversight), and third line (internal audit) in climate risk management. However, this separation is not yet fully formalized. Thematic analysis shows that the second line has actively undertaken monitoring and advisory roles, especially in supporting the business units' understanding of climate risk:

> *"…regarding the Three Lines Model, from our position as the second line, we monitor the implementation of climate change impacts. In the future, we'll also act in an advisory capacity, working closely with business unit colleagues to ensure they become more aware of the climate risks that may arise…"* (Informant 1, 2025).

As for the third line (internal audit), it has not yet been actively involved, given that climate risk policy is still relatively new. However, indications suggest that internal audit will become part of the supervisory cycle once the climate risk policy has been fully and consistently implemented:

> *"…as for internal audit, it hasn't been involved yet, because this is a new policy. But in the future, it's very likely that internal audit will be involved, just like they are with credit policies, whether internal or external auditors…"* (Informant 1, 2025).

The lack of involvement from internal audit highlights the need for increased capacity building and understanding of climate risk and sustainability issues across human resources. Consistent with the findings of Cucinelli et al. (2023), effective climate risk governance and strong risk management depend heavily on adequate training and tools. Internal audit not

only assesses compliance but also identifies knowledge gaps and policy implementation inconsistencies at the operational level (Anderson & Eubanks, 2015).

Moreover, challenges in human resource understanding remain a major barrier to integrating climate risk into risk management systems.

> *"…So, CRMS is a guideline from OJK for financial institutions to conduct stress tests. This includes timelines, methodologies, data used, and what will be stress tested. Personally, I find it quite heavy, especially since our team only has two people doing CRMS calculations. In terms of understanding, it's also quite a lot, we need to thoroughly understand the entire process, methodology, expected results, and how we report it to management and the board…"* (Informant 2, 2025).

This aligns with the findings of Puspitasari and Faturohman (2024), who revealed that understanding the linkage between climate risks, core business activities, and bank financial performance remains a major challenge. This lack of understanding includes difficulties in identifying, measuring, and assessing climate risk impacts on credit exposure, asset value, and long term profitability, making it hard to incorporate climate risk into strategic decision making. Informants emphasize that climate risk remains a relatively new issue in the banking sector, and the learning and adjustment processes are still ongoing.

2. The Capacity of Business Strategy and Risk Management

One of the critical dimensions of "capacity" relates to business strategy and risk management. This sub-theme is central to understanding the extent to which Bank CDE has integrated climate risk management into its business framework. Based on interview results, Bank CDE has assessed the impact of climate change on its portfolio and developed organizational business strategies accordingly.

> *"…in terms of business strategy, we started with climate risk itself, which has already been included in the RAC (risk acceptance criteria), and our colleagues in the business units have begun consulting us in more detail about the elements defined in the RAC…"* (Informant 1, 2025).

According to Bank CDE's Sustainability Report (2024), the Risk Acceptance Criteria (RAC) is a form used by business units to process credit applications by considering various categories of risk. In 2024, Bank CDE strengthened its climate risk management by expanding sectoral coverage in risk assessments, spanning 22 corporate sectors, 18 commercial sectors, and 10 productive retail sectors, including palm oil, mining, chemicals, transportation, and construction. The mapping was based on debtors' emission levels and referred to POJK Regulation No. 60/POJK.04/2017. Informants noted that Bank CDE had begun classifying debtors according to climate risk potential and prioritizing low emission sectors in credit expansion, in line with Indonesia's Sustainable Finance Taxonomy and the CRMS guidelines issued by OJK.

> *"…POJK 60 defines 11 green loan categories, plus MSMEs as KKUB…"* (Informant 1, 2025).

However, the dissemination of climate risk information to business units remains uneven due to limited human resources within the ESG Management division to carry out stress testing and related processes.

> *"…we're starting periodically by segment, start from corporate, then enterprise, commercial, and eventually down to small scale, as we assess where the largest outstanding debt lies. Because when those borrowers are affected, it has the greatest impact on us…"* (Informant 1, 2025).

This uneven communication results in inconsistent understanding across departments, creating integration barriers and potentially undermining interdepartmental coordination.

Thus, an effective outreach strategy becomes essential for successful climate risk mitigation, which requires the active participation of all working units.

Another concrete effort in enhancing climate risk management lies in the integration of sustainability aspects into credit policies. According to Bank CDE's Sustainability Report (2024), the RAC has been updated to include climate change risk mitigation requirements, such as minimum standards for prospective borrowers in environmentally high risk sectors. For instance, in the palm oil industry, prospective borrowers must commit to No Deforestation, No Peat, and No Exploitation (NDPE) policies, and submit mandatory documents such as Environmental Impact Assessments (AMDAL), Environmental Management and Monitoring Efforts (UKL-UPL), or PROPER ratings as applicable.

In line with CRMS guidance from OJK (2024), financial institutions must conduct multi-horizon scenario analyses to remain resilient to climate risks. Bank CDE's Sustainability Report (2024) outlines short, medium, and long term strategies. The short term strategy (2024) focuses on infrastructure development, Net Zero Emission (NZE) goals, and establishing a carbon budget. The medium term strategy (2025–2026) aims to enhance RAC for borrowers, improve climate risk management infrastructure, and optimize data loss prevention. The long term strategy (2027) focuses on embedding climate risk management into bank operations.

> *"…in the short term, our business strategy is to reduce operational emissions to net zero. In the long term, we're committed to reducing financed emissions to net zero, in line with Indonesia's international commitments…"* (Informant 1, 2025).

This short term target aligns with the bank's internal goals to achieve NZE by 2028 for operations and by 2060 for financing. Climate Risk Stress Testing (CRST) was conducted on 50% of the credit portfolio in 2024 and is targeted for full coverage (100%) in 2025, along with integrating RAC by economic sectors using climate risk parameters.

> *"Last year it was only 50%, but this year we're targeting 100%, and it's quite demanding due to the large amount of required data…"* (Informant 2, 2025).

This demonstrates Bank CDE's commitment to gradually and systematically enhancing resilience to climate risks. In addition to reactive stress testing, Bank CDE has taken preventive steps by updating its credit policy to reflect climate risk exposure at the sectoral level. However, there is no clearly defined success indicator to assess the effectiveness of RAC implementation. Without measurable metrics, it is difficult to determine whether these strategies have improved the credit portfolio's resilience. This underscores the need for full integration of climate risks into the bank's risk management system.

In addition, banks are expected to manage climate affected financial risks such as credit, market, liquidity, and operational risks. As Cucinelli et al. (2024) argued, robust climate risk integration not only supports institutional resilience but also fosters innovation in financial products and services. Bank CDE (2024) outlines four pillars of sustainable finance risk management: (1) Active Oversight by the Board of Commissioners and Directors, (2) Adequate Policies, Procedures, and Limits, (3) Internal Control Systems and Sufficient Risk Identification, Measurement, Monitoring, and Control Processes, and (4) Risk Information Systems and Mitigation Tools. These pillars provide a strong foundation for building a climate risk management framework that goes beyond compliance and encourages adaptive product innovation for a low carbon economy.

As part of its climate risk governance efforts, after Bank CDE establishing a dedicated unit, they also implemented CRST to evaluate climate impacts on its credit portfolio. Stress testing was performed on 50% of the portfolio in 2024, with a target of 100% in 2025. CRST offers insights into potential losses under extreme scenarios, enabling financial institutions to prepare sufficient capital and liquidity buffers (Scott et al., 2024). Furthermore, Bank CDE

periodically integrates climate risk into the RAC to guide credit assessments by business units. However, as mentioned by Informant 1, the formal climate risk management framework is still under development. As a result, strategies currently in place remain subject to change pending formal approval from the ESG Subcommittee.

> *"This year, we're developing our climate risk framework. Once finalized, the strategy could change, depending on the decisions made within the ESG Subcommittee…"* (Informant 1, 2025).

This highlights strategic uncertainty, as the absence of a finalized framework poses a risk to consistent execution. Furthermore, the framework lacks documented success indicators and implementation timelines critical elements in strategic risk management. Without clear milestones, the organization risks stagnation or execution delays, weakening its resilience to physical and transition risks. Additionally, Bank CDE has already conducted CRST and submitted reports to OJK despite not having a formal guiding framework, creating an execution gap where actions precede policy. In risk management literature, such misalignment can cause inconsistencies between strategic objectives and technical execution (CRO Forum, 2019).

Despite these challenges, Bank CDE has taken practical technical steps to support systematic CRST implementation. During framework development, it also invested in technology and data infrastructure to ensure accurate and sustainable climate risk assessments. One of the key findings from thematic analysis is that Bank CDE is developing an IT based application to support CRST.

> *"…From the IT side, we're currently building a tool. We're the users, but IT provides support to ensure the tool functions properly. If issues arise during stress testing, the IT team is ready to assist…"* (Informant 1, 2025).

The tools developed with a vendor, will eventually serve as an early warning system to detect potential climate risk impacts on both prospective and existing borrowers. This finding affirms the centrality of technology and data infrastructure in Bank CDE's climate risk preparedness. The tool has reached the post implementation review phase, with several users already operating it using real data. This is significant, given findings by Puspitasari and Faturohman (2024), who highlighted the lack of standardized regulatory tools as a major obstacle in integrating climate risk into banking systems. Sustainability efforts like tool development are sometimes perceived as cost burdens. Sustainable strategies are often seen as reducing profitability in the long term (Puspitasari and Faturohman, 2024). Therefore, this initiative is a strategic move that reflects Bank CDE's efforts to build internal capacity and institutional resilience to climate risk.

> *"We are in discussions to build a stress testing tool, which is already at the post implementation review stage. We've gone live and are currently testing it in the production environment using real data…"* (Informant 1, 2025).

Once the tool is finalized, training will be delivered across all departments covering climate change awareness, risk understanding, relevant policies, and how to operate the system.

Based on thematic analysis and data triangulation, Bank CDE has demonstrated initial capacity to integrate climate risk into its business strategy and risk management framework. This is evidenced by the identification and mapping of climate related credit risks, the strengthening of sector based RAC, and the progressive implementation of CRST. The development of short and long term strategies, including NZE targets, indicates a commitment to institutional resilience. However, notable gaps remain, specifically the lack of a formally approved climate risk framework, absence of performance indicators or milestones, and uneven internal outreach, all of which may undermine the overall effectiveness of climate risk mitigation efforts.

3. The Capacity of Kesiapan Desain dan Analisis Skenario

Bank CDE's capacity in scenario design and analysis constitutes one of the fundamental pillars in strengthening institutional resilience to climate related risks. This component encompasses the identification of risk profiles, the establishment of risk appetite, and full integration into the bank's risk management framework. Scenario analysis is used to evaluate various climate and economic conditions (short, medium, and long term) in order to assess portfolio resilience and inform strategic business decisions. In implementing CRST, Bank CDE refers to methodologies outlined in the CRMS scenario analysis guidelines issued by the Financial Services Authority (OJK), which are based on the Network for Greening the Financial System (NGFS) framework.

> *"We follow the methodology used by OJK, which itself refers to or adopts the methodology developed by NGFS, the Network for Greening the Financial System…"* (Informant 1, 2025).

Bank CDE's 2024 Sustainability Report states that the bank has refined its financed emissions accounting methodology not only in accordance with OJK requirements but also by adopting the PCAF (Partnership for Carbon Accounting Financials) standard. This covers 70.3% of the corporate segment, including international enterprise, commercial, and productive retail portfolios. PCAF is a global initiative launched by a group of banks and financial institutions aiming to create a consistent, transparent, and comparable carbon accounting framework. Currently coordinated by the Global Alliance for Banking on Values (GABV), PCAF has become a widely adopted approach for disclosing Scope 3 emissions, particularly financed emissions under the GHG Protocol (PCAF, 2022).

In alignment with OJK guidelines, Bank CDE uses three main climate scenarios in its analysis that is Net Zero 2050 (Orderly), Delayed Transition (Disorderly), and Current Policies (Hot House World). In 2024, CRST was applied to 50% of the credit portfolio and is targeted to reach 100% coverage in 2025. Supporting this analysis requires extensive data, including borrowers' GHG emissions (Scopes 1, 2, and 3), business sector, credit financials, and physical and operational data. However, a major challenge remains: the limited availability of emissions data from borrowers. Consequently, Bank CDE applies sector based proxy approaches in several cases. PCAF classifies financed emissions into asset categories such as corporate loans, listed equity and bonds, mortgages, vehicle loans, project finance, and others. Each category involves calculations using both absolute emissions (tCO_2e) and emission intensity (tCO_2e per million dollars financed). Required data include: borrower emissions data (Scopes 1, 2, and if possible, 3), borrower financials (total assets, enterprise value), and portfolio data (loan value, instrument type). If unavailable, PCAF permits the use of proxy estimates (PCAF, 2022).

> *"If there's additional data, we still discuss it internally and with OJK. If some data is missing such as emissions, we may adjust using other data. Emissions data is mandatory for CRST, but many of our borrowers have not yet calculated their emissions, so we apply proxies…"* (Informant 1, 2025).

This indicates that the collection of borrower emissions data (Scopes 1, 2, and 3) remains incomplete due to the lack of readiness on the borrowers' side. As a result, financial institutions like Bank CDE must use estimation or proxy approaches, which essentially rely on assumptions based on comparable parameters such as industry sector, company size, or geographic location. Under the PCAF methodology, proxies are accepted within a data quality hierarchy, though this introduces concerns regarding accuracy, consistency, and transparency. PCAF explicitly warns that lower quality data (such as proxies) must be accompanied by clear disclosures about the level of uncertainty involved (Atlason et al., 2023).

From a risk management perspective, reliance on proxy data may reduce the precision of climate risk analysis, particularly when used for strategic decision making or sectoral credit limit setting. The absence of actual borrower data also impedes the bank's ability to develop a reliable early warning system or define a clear risk appetite for high emission sectors. Moreover, this situation illustrates that Bank CDE has yet to fully encourage borrowers to conduct independent emissions measurement and reporting an essential component of climate aligned financing. This gap not only affects the accuracy of portfolio risk assessments but also highlights the need for broader strategies involving borrower education and ESG capacity building incentives.

> *"We've begun requesting data directly from borrowers. But if they haven't done the calculations, we still rely on proxies, because emissions accounting is quite complex and data isn't always readily available…"* (Informant 2, 2025).

To improve the quality of emissions data from borrowers, Bank CDE has started to take a more active role in building collaborative relationships with the business sector. A notable initiative was held in December 2024, where Bank CDE organized an engagement event with the energy sector, positioning the bank not only as a financier but also as a transition partner supporting borrowers in building awareness of climate risks and the importance of emissions measurement. This reflects a long term strategy to enhance borrower participation in ESG reporting and strengthen data quality in climate based risk analysis. Nevertheless, the strategy still faces significant technical hurdles, particularly in comprehensive emissions data collection. This challenge is consistent with the findings of Puspitasari and Faturohman (2024), who noted that one of the key issues in climate risk management in Indonesia is the availability and validity of climate specific data.

> *"The biggest challenge is data collection, we're not just talking about one or two data points; it's quite a large volume of data that we have to gather. Last year we covered 50%, but this year it's 100%..."* (Informant 2, 2025).

This statement highlights that the data collection burden has increased significantly in parallel with the expansion of CRST portfolio coverage. The scale up from 50% to 100% signals a strong ambition to integrate climate risk, but this ambition is not automatically matched by technical capacity or human resources on the ground. Without enhanced supporting systems, such as data digitization, automated reporting tools, and ESG skilled personnel, this can lead to operational pressure, reporting delays, and lower analytical quality.

CONCLUSION

From the series of discussion points presented, PT Bank CDE's readiness to implement the Climate Risk and Management Scenario (CRMS) in managing climate related risks to its credit portfolio can be categorized into three key aspects of preparedness: climate governance capacity, business strategy and risk management framework capacity, and scenario analysis capacity. In terms of climate governance, Bank CDE has reached a fundamental level of readiness, as reflected in: (1) the establishment of a dedicated division/unit for climate governance, namely ESM (ESG Management); (2) cross functional collaboration involving both the information technology unit and business units to strengthen an integrative approach to managing climate risks in line with the TCFD (2017) recommendations; and (3) the implementation efforts of the Three Lines Model within the structure and process of climate risk management, although formal clarification is still needed regarding the roles and responsibilities of each line.

Based on the business strategy and risk management aspect, Bank CDE demonstrates early stage readiness in integrating climate related risks into its business strategies and risk management framework. This is evident through (1) efforts to identify and map climate risk within the credit portfolio and strengthen the Risk Acceptance Criteria (RAC), (2) the

implementation of Climate Risk Stress Testing (CRST), and (3) the development of multi-horizon business strategies, including the establishment of a Net Zero Emission (NZE) target. As for the scenario design and analysis readiness, Bank CDE shows strong commitment to integrating climate risk into its risk management system, as demonstrated by the adoption of CRMS based methodologies issued by OJK and the NGFS framework, along with the expanded use of the PCAF approach in calculating financed emissions.

Despite the positive indications of Bank CDE's readiness, there remain areas that need to be strengthened, such as the implementation of the Three Lines Model, which has not yet been formally institutionalized; the climate risk management framework, which remains tentative; and persistent challenges such as limited borrower emissions data, reliance on proxy data, and technical capacity limitations which continue to hinder the bank's ability to fully and effectively implement climate risk management practices.

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