

JCM Sustainable Development and Safeguards Assessment Report

Project description	
<u>Title</u>	Introduction of Heat Recovery Heat Pumps to a Chicken Slaughtering Plant in Thailand
Project participant (Thai)	CPF(Thailand) Public Company Limited
Project participant (Japanese)	CPF Japan Co.,Ltd.
Project location	333,333/1-2 Moo 9, Sikhiu-Det Udom Road, Tha Yiem
Latitude, longitude	Latitude: N 14°44'34.10" Longitude: E 102°12'50.82"
Project status	Status on 31 January 2025 <input type="checkbox"/> not started yet <input type="checkbox"/> expected to complete in Month/Year <input checked="" type="checkbox"/> operated since 1 January 2018

Report description		
Date of report completion	20/06/2025	
Version	1.0	
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	Organization	CPF Japan Co., Ltd.
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Note:


- Related figures, documents, evidence related to the description may be attached as attachment.
- In the case where there is any other relevant issue that needs to be considered, it is be specified in the last row of each area of assessment.

Certification letter

20/06/2025

I, the undersigned, hereby certify that CPF Japan Co., Ltd. is the author of the “Introduction of Heat Recovery Heat Pumps to a Chicken Slaughtering Plant in Thailand” of the project titled Introducing heat recovery heat pumps with natural refrigerants for the food manufacturing industries developed by CPF(Thailand) Public Company Limited and CPF JAPAN CO., LTD. located at 333,333/1-2 Moo 9, Sikhiu-Det Udom Road, Tha Yiem, Thailand.

The report was prepared by the team members as follows:

No.	Name	Position	Signature
1	Atsushi Fudeta	Senior General Manager (CPF Japan)	
2	Voravaran Akarapongpisak	Section Manager (CPF Japan)	
3	Patama Wasiksiri	Section Manager (CPF Japan)	
	Sompong Vanichwattanavorrachai	Supervisor (CPF Thailand, Korat factory)	

Signature ..

(Nobutada Onishi)

President & CEO

Seal (if any)

Part 1: General information of the project area before project implementation

Provide baseline information describing the conditions before project implementation. This data is essential for assessing the project's environmental, social, and economic impacts. Ensure the details are accurate and comprehensive to support a thorough evaluation.

Area of Assessment	Description
1. Environment and natural resources	
1.1 Air pollution	The project is located in Korat, Nakhon Ratchasima province, northeastern region of Thailand, approximately 260 kilometers northeast of Bangkok, which has no point source of air pollution found in the area. The ambient air quality consistently met the standards, except for occasional PM2.5 levels exceeding the standards during the dry season.
1.2 Water pollution	No surface water and ground water pollution problem were reported in the area.
1.3 Soil pollution	No soil pollution was reported in the area.
1.4 Noise pollution	No point sources of noise pollution were found in the area.
1.5 Odor pollution	No odor was reported in the area.
1.6 Water consumption	The project area is located at a reasonable distance from residential and commercial buildings, yet remains within a zone that is not isolated from urban development. The local infrastructure relies primarily on the municipal tap water supply, and no surface water or groundwater is extracted or used within the project site.
1.7 Solid waste/municipal solid waste	The Nakhon Ratchasima (Korat) regularly collects solid waste from the area, including government-related facilities. As a result, there are no issues with waste accumulation or leftover garbage in the project area.
1.8 Hazardous waste/infectious waste/electronic waste	No pollution from hazardous waste/infectious waste /electronic waste was reported in the area.
1.9 Energy (i.e. Wasted Energy, Renewable Energy)	The project area in Korat utilizes electricity supplied by the regional power grid, with some facilities incorporating solar power systems to supplement

Area of Assessment	Description
	energy needs.
1.10 Land Use	The project area is located at a reasonable distance from residential and commercial buildings but still remains within an area that is not far from urban development.
1.11 Biodiversity	The project area is located in a developed zone near urban communities. Therefore, biodiversity concerns are minimal and not directly relevant to the commercial and residential buildings in the vicinity.
1.12 Wild animal/ Aquatic ecosystem	No wild animal or aquatic ecosystem is found in the area.
1.13 Other (Please specify...)	-
2. Society	
2.1 Socio-cultural characteristics	The socio-cultural characteristics reflect those typical of a major provincial city in northeastern Thailand. The community largely consists of working-class residents involved in trade, agriculture, and government or official work. With ongoing urban development, the population includes a mix of local residents and some migrants from nearby provinces and neighboring countries.
2.2 Health and safety	There are no major health and safety concerns reported in the area. Local healthcare facilities provide adequate services to residents.
2.3 Traditions, cultures and/or valuable places worthy of conservation	The traditions and cultural values in the area align with the Isan region's unique heritage, including local festivals, cuisine, and religious practices. While there are some culturally significant temples and heritage sites nearby, there are no places of exceptionally high conservation value directly within the project area.
2.4 Race, religion, and ethnic group	The majority of the population are ethnic Thais who primarily practice Theravada Buddhism. There is a small group informal foreign workers from neighboring countries.
2.5 Transportation	The primary modes of transportation are private vehicles such as cars, trucks, and motorcycles. Public transportation options include local buses and songthaews (shared pickup trucks), with regional train

Area of Assessment	Description
	services connecting Korat to other provinces.
2.6 Other (Please specify...)	-
3. Economic	
3.1 Overall local economy (i.e. income, expenditure, etc.)	The local economy in Korat is diverse, with significant contributions from commerce, services, and agriculture in surrounding areas. The city hosts office buildings, hospitals, and hotels. According to 2021 provincial data, the average monthly income is approximately THB 28,000 to 35,000, with typical household expenditures slightly lower.
3.2 Employment/Career	Employment includes government officials, merchants, factory workers, farmers, and service industry employees.
3.3 Major agricultural activity in the area	While the immediate project area is urbanized, the broader Korat region is known for agriculture, including rice farming, sugarcane, and cassava cultivation.
3.4 Major industry in the area	The industrial sector includes food processing, automotive parts manufacturing, and textile factories.
3.5 Major service sector in the area	Hospitality, especially restaurants and local markets, along with retail trade and healthcare services, are major contributors to the service sector.
3.6 Basic infrastructure (i.e. road, school, etc.)	Basic infrastructure includes a developed road network, public transportation options, utilities such as electricity and water supply, waste management systems, educational institutions (schools and vocational colleges), healthcare facilities, and telecommunications.
3.7 Other (Please specify...)	-

**Project Participant explains in detail of provenance and importance of issue consider about before project implement and specify if the project is rightful/environmental law, social, and economy. To have Negative impact assessment (Do-no-net-harm) with supporting documents.*

Part 2 Sustainable Development Goals

2.1 Sustainable Development Contributions Assessment

Please mark ✓ in ☐ to identify the contributions of the proposed project to specific SDG. The project is required to contribute to **at least two SDGs, in addition to SDG13: Climate Action.**

Project Contributions to SDGs	Indicator (Please specify)	Description of Indicator
<input type="checkbox"/> SDG 1: No Poverty		
<input type="checkbox"/> SDG 2: Zero Hunger		
<input type="checkbox"/> SDG 3: Good Health and Well-being		
<input type="checkbox"/> SDG 4: Quality Education		
<input type="checkbox"/> SDG 5: Gender Equality		
<input type="checkbox"/> SDG 6: Clean Water and Sanitation		
<input type="checkbox"/> SDG 7: Affordable and Clean Energy		
<input checked="" type="checkbox"/> SDG 8: Decent Work and Economic Growth	Amount of energy saved (Unit Mwh)	Energy saving reduces costs and contributes to economic outputs.
<input type="checkbox"/> SDG 9: Industry, Innovation and Infrastructure		
<input type="checkbox"/> SDG 10: Reduced Inequality		
<input type="checkbox"/> SDG 11: Sustainable Cities and Communities		
<input type="checkbox"/> SDG 12: Responsible Consumption and Production		
<input type="checkbox"/> SDG 13: Climate Action		
<input type="checkbox"/> SDG 14: Life Below Water		
<input type="checkbox"/> SDG 15: Life on Land		

Project Contributions to SDGs	Indicator (Please specify)	Description of Indicator
<input type="checkbox"/> SDG 16: Peace and Justice Strong Institutions		
<input checked="" type="checkbox"/> SDG 17: Partnerships to achieve the Goal	Last annual progress report submission date	Operational continuity of the JCM project, which mobilizes additional financial resources, disseminates low-carbon technologies, and reduces GHG emissions in Thailand.

**Project Participant provides the description for each indicator of the selected SDGs and presents currently available datasets along with supporting documents.*

2.2 Details on Monitoring Parameters for Demonstrating SDG Contributions

Provide details on how to monitor the indicators identified in Section 2.1.

(Tables can be added based on the number of selected SDGs.)

SDG Number	8
SDG Target	Decent work and Economic Growth
Variable or Indicator	Amount of energy saved (Unit Mwh)
Duration/Frequency	Monthly
Method/Tool	Power maeter
Responsible person	CPF Japan Co.,Ltd.

Part 3 Do no net harm

3.1 'Do no net harm' Risk Assessment and Safeguards

Specify impacts and mitigation plans to mitigate negative impacts.

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
1. Impacts on Environment and Natural Resources						
1.1 Physical resources						
Water pollution	✓					
Soil pollution	✓					
Air pollution	✓					
Noise pollution	✓					
Odor pollution	✓					
Soil erosion, coastal/river erosion	✓					
Vulnerability to natural disaster	✓					
Other	✓					
1.2 Waste management						
Increase in solid waste/municipal solid waste	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Increase in hazardous waste such as waste contaminated with oil, chemicals and used oil etc.	✓				Heat pump units use CO2 refrigerants and lubricants, which become hazardous waste at the end of their useful life.	The project strictly requires a specialized company to manage the transportation and disposal of both waste lubricant oil and CO2 refrigerant, ensuring full compliance with all environmental laws and safety regulations.
Increase in infectious waste	✓					
Increase in electronic waste	✓					
Other	✓					
1.3 Biological resources						
Impacts on forest areas and land-use change	✓					
Loss of land and wildlife ecosystem	✓					
Loss of water resources and aquatic ecosystem	✓					
Foraging	✓					
Food	✓					
Other	✓					
1.4 Human livelihood						

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Water drainage or waterway diversion	✓					
Change in water consumption	✓					
Change in land ownership	✓					
Other	✓					
2. Social impacts						
Public security such as increase in crime risks	✓					
Health impacts	✓					
Relocation or temporary/permanent loss of land	✓					
Loss of housing	✓					
Impact on public utilities such as electricity, telephone service etc.	✓					
Impact on traffic	✓					
Community conflict	✓					
Employment and labor	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Impact on people of certain race, religion and ethnic groups	✓					
Damage to areas of high conservation value, such as religious sites, historic sites, monuments, important places of the community etc.	✓					
Impact on human rights such as education, freedom of thought, religion etc.	✓					
Gender inequality such as in employment opportunities, salary, promotion, benefits, termination of contract etc.	✓					
Other	✓					
3. Economic impacts						
Increase unemployment /loss of income of people in local communities	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Other	✓					

*Criteria for assessing the level of impact severity

1. None: The proposed activity has no direct/indirect impacts on the environment, society and economy.
2. Low: The proposed activity causes some changes to the existing conditions but has no implication on the quality of the environment, society and economy. The impact is short-lived and temporary, and the extent of the affected area is not large (1km perimeter).
3. Moderate: The proposed activity causes some changes to the existing conditions and has implications on values or qualities of the environment, society and economy. The impact is short-lived and temporary. The extent of the affected area is large but confined to the related area (2km perimeter).
4. High: The proposed activity causes some changes to the existing conditions and has implications on value or quality of the environment, society, economy, and potentially the ecosystem. The impact is permanent and the extent of the affected area is extensive (3km perimeter).

3.2 Details on Monitoring Parameters for Ensuring No Negative Impacts

Provide details on how to monitor the impacts identified in Section 3.1.

(Tables can be added based on the number of negative impacts identified)

Category of negative impact	Impacts on Environment and Natural Resources
Subcategory of negative impact	Solid waste/municipal solid waste
Vulnerable group	Maintenance worker
Possible negative impact	Industrial waste disposal
Parameter/indicator	Deadweight ton
Reference	N/A
Duration/frequency	Irregular
Method/Tools	Outsourcing the disposal of refrigerants and waste to a licensed contractor.
Responsible person	Engineer Staff of CPF Thailand, Korat factory
Expected outcome	Waste is disposed of properly.