



Sustainable Development and Safeguards Assessment Report

	Thailand Voluntary Emission Reduction Program	T-VER-P-F006-SDG
	Premium T-VER	
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Project Details	
Project Title	Thailand Logistic Programme PoA02-CPA01
Name of Project participant	Thai EV Co., Ltd
Name of Co-project Participant	-
Name of Project Owner	Thai EV Co., Ltd
Project Location	The geographical boundaries of the mitigation activity are implemented within the country of Thailand.
Implementation Status	Project status on30/04/2025..... (D/M/Y) ☒ Not yet implemented ☐ Preparation for implement ☐ Implement on (D/M/Y)

Details of report preparation		
Finish date	25 March 2025	
Version	01	
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Note of Reference:

- 1) Project attach figure, document, or other evidence for consideration.
- 2) Project can add other beside to those specified by the TGO as appropriate.

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Report Certificate

Project Title Thailand Logistic Programme PoA02-CPA01

.....30/04/2025.....

This certificate certifies that Charubutr Asavaroengchai
 prepared this Sustainable Development and Safeguards Assessment Report of Project
 Thailand Logistic Programme PoA02 - CPA01 of Thai EV Co., Ltd
 located in 89, Moo 1, Racha Thewa, Bang Phli, Samut Prakan, 10540, Thailand

The report was prepared by the committee as follows:

No.	Name	Position	Signature
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2.	<u>Supeerapat Kraidech</u>	<u>Managing Consultant</u>	<u>Supeerapat k.</u>
3.	<u>Warinthorn Premrasmi</u>	<u>Consultant</u>	<u>Warinthorn P.</u>

Signature 

(Mr. Kittikorn Phinitwongwithaya)

Position Project Owner

Seal (if any)

Part 1: General information

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Issues	Details
1. Environment and natural resources	
1.1 Air pollution	Air pollution in Thailand, especially during the dry season, sees PM2.5 levels dangerously high, with certain province reaching over 200 µg/m³ in 2023, far exceeding WHO guidelines, due to transboundary haze, agricultural burning, vehicle emissions, and industry. To combat this, The Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992) sets standards, while the drafted Management of Clean Air Act aims to strengthen air quality control.
1.2 Water pollution	Not applicable
1.3 Soil pollution	Not applicable
1.4 Noise pollution	Noise pollution is prevalent in urban areas and along major transportation routes in Thailand, primarily due to traffic, construction activities, industrial operations, and entertainment venues. Excessive noise levels can negatively impact public health, leading to stress, sleep disturbances, and hearing problems. The PCD sets noise level standards and regulations under the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992). Enforcement can be challenging, particularly in rapidly developing urban environments.
1.5 Smell pollution	Not applicable
1.6 Water for consumption	Not applicable
1.7 Solid waste	Not applicable

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Issues	Details
1.8 Hazardous waste/Infectious waste/Electronic waste	The management of hazardous waste and electronic waste (e-waste) presents a complex environmental challenge. E-waste, containing toxic substances like lead, mercury, and cadmium, can contaminate soil and water if improperly disposed of. Like the transboundary haze contributing to air pollution, e-waste often crosses borders, making regulation difficult. Industrial processes, analogous to the industrial emissions in Thailand's air pollution, are significant sources of hazardous waste. To address this, robust legal frameworks are essential, mirroring the role of Thailand's Enhancement and Conservation of National Environmental Quality Act. These frameworks should establish clear standards for handling, storage, and disposal, and promote recycling and responsible e-waste management. Furthermore, like the proposed, Furthermore, proposed disposal and Management of Waste Electrical and Electronic Equipment Act dedicated legislation focused on hazardous waste is needed to strengthen control and enforcement. This includes promoting extended producer responsibility (EPR) where manufacturers take back their products at end-of-life to reduce environmental impact.
1.9 Energy (i.e. Wasted Energy, Renewable Energy)	The need to reduce vehicle and industrial emissions in Thailand's air pollution crisis highlights the importance of transitioning to cleaner energy sources. Similarly, adopting renewable energy sources like solar, wind, and biomass is crucial for mitigating the environmental impact of traditional energy production. These renewable sources produce significantly less pollution

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Issues	Details
	and greenhouse gases, addressing the root cause of many environmental issues. Just as Thailand's environmental acts aim to control air pollution, policies promoting renewable energy are necessary. This includes incentives for renewable energy adoption, investment in grid infrastructure to accommodate renewable sources, and regulations mandating a gradual shift away from fossil fuels. The transition to renewable energy requires a comprehensive strategy involving government, industry, and consumers, like the multi-faceted approach needed to combat air pollution
1.10 Land Use	Not applicable d
1.11 Biodiversity	Not applicable.
1.12 Wild/Aquatic animal ecosystem	Not applicable
2. Society	
2.1 Social and cultural	Not applicable
2.2 Public health and safety	Not applicable
2.3 Traditions, cultures and/or valuable places worthy of conservation	Not applicable
2.4 Race, religion, and ethnic group	Not applicable
2.5 Transportation	Transportation in Thailand is heavily reliant on private vehicles, particularly in urban areas, contributing significantly to traffic congestion and air pollution. Public transportation systems are developing but vary in coverage and efficiency across different regions.

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Issues	Details
	The government has been promoting public transport, investing in infrastructure projects (e.g., mass transit in Bangkok), and exploring alternative transportation modes.
3. Economic	
3.1 Overall local economy (i.e. income, expenditure, etc.)	Not Applicable
3.2 Employment/Career	Not applicable
3.3 Main agriculture in the area	Not applicable
3.4 Main industry in the area	Not applicable
3.5 Main service sector in the area	Not applicable
3.6 Basic infrastructure (i.e. road, school, etc.)	Not applicable

**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.*

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Part 2: Sustainable Development Goals

2.1 Sustainable Development Goals Assessment

Please mark ✓ in the box ☐ has related with Sustainable Development Goals that the project will contribute to support **at least 2 topics besides SDG13: Climate Action**

Sustainable Development Goals: SDGs	Relevant indicators (Please specify)	Details of indicators
☐ GOAL 1: No Poverty		
☐ GOAL 2: Zero Hunger		
☐ GOAL 3: Good Health and Well-being		
✓ GOAL 4: Quality Education	participants who receive Thai EV training session	The number of participants who join Thai EV training session
☐ GOAL 5: Gender Equality		
☐ GOAL 6: Clean Water and Sanitation		
✓ GOAL 7: Affordable and Clean Energy	Renewable energy generation and consumption	Tracked by the increase in renewable energy generation and consumption from participant's truck fleets collected via telemetric boxes.
☐ GOAL 8: Decent Work and Economic Growth		
☐ GOAL 9: Industry, Innovation and Infrastructure		
☐ GOAL 10: Reduced Inequality		
✓ GOAL 11: Sustainable Cities and Communities	Reduction of Emission reductions per capita in cities	Tracked by study demonstrating the effect of EVs substitution and reduction of urban pollution. The decrease of urban pollution is calculated on the difference between level of

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Sustainable Development Goals: SDGs	Relevant indicators (Please specify)	Details of indicators
		fine particles (PM 2.5 and PM 10 in g/km) produced by project's EVs and baseline ICE vehicles.
☐ GOAL 12: Responsible Consumption and Production		
☒ GOAL 13: Climate Action	GHG Reduction from project activity from increasing EVs and displacing ICE vehicles	GHG Reduction contribute to Global GHG emission
☐ GOAL 14: Life Below Water		
☐ GOAL 15: Life on Land		
☐ GOAL 16: Peace and Justice Strong Institutions		
☐ GOAL 17: Partnerships to achieve the Goal		

**Project Participant describes the related indicators to support the selected Sustainable Development Goals. and present to currently available datasets along with supporting documents.*

2.2 Monitoring Sustainable Development Goals

Specify the details follow by the impacts in section 2.1

(able to be copy the table by number of SDGs)

SDG Target	GOAL 3: Quality Education
SDG Indicator	Target 4.3: By 2030 ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university
Project's Contribution	Increase in participant MRV knowledge
Period/frequency	Once per year

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Methodology/Tools	Thai EV will record the number of participants every training session.
Responsible person	Thai EV Company Limited
Expected results	Increase in number of participants who understand MRV system including technology implementation and data collection.

SDG Target	GOAL 7: Affordable and Clean Energy
SDG Indicator	Target 7.2: Increase the share of renewable energy in the global energy mix.
Project's Contribution	Renewable energy generation and consumption
Period/frequency	Once per year
Methodology/Tools	Increase in renewable energy generation and consumption measured by Telematic tool
Responsible person	Thai EV Company Limited
Expected results	Increase in share of renewable energy in logistic sectors

SDG Target	GOAL 11: Sustainable Cities and Communities
SDG Indicator	Target 11.6: Reduce the adverse per capita environmental impact of cities, including air quality.
Project's Contribution	Emission reductions per capita in cities
Period/frequency	Once per year

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Methodology/Tools	Published studies on substitution effect of EVs and its connection to pollution reduction.
Responsible person	Thai EV Company Limited
Expected results	Replacing an ICE truck with an EV truck reduces air pollution (PM 2.5), leading to cleaner air in urban area.

SDG Target	GOAL 13: Climate Action
SDG Indicator	Target 13.2: Integrate climate change measures into national policies, strategies and planning
Project's Contribution	Reduction of greenhouse gas emission resulting from increasing EVs adoption and replacing ICE vehicles
Period/frequency	Once per year
Methodology/Tools	Project's emission reduction calculated according to T-VER premium
Responsible person	Thai EV Company Limited
Expected results	Project's GHG Reduction contributes to a decrease in global GHG

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Part 3: Safeguards and Do-No-Harm

Project Safeguard assessment

Thailand Logistic Programme aims to increase the adoption of electric vehicles and promote transitioning to a cleaner energy. Supporting logistic sectors transition to EVs could create positive impacts such as reducing greenhouse gas emission and air pollution, indirectly contributing to the decreasing respiratory sickness and other air pollution related diseases and helping to achieve climate goal and sustainability in the long run. However, there might be potential negative impacts regarding electronic waste. Following SD safeguard guidelines, the programs consider laws involving land transport, pollution, and waste treatment. The result of the initial assessment indicates that the program does not violate regulations listed below:

- Enhancement and Conservation of National Environmental Quality Act, B.E. 2535 (1992):
 - Relevance: This act provides the overarching framework for environmental protection in Thailand. It emphasizes control of air and noise pollution. For EV deployment, this means that the operation of EVs must comply with the noise standards set under this act. Additionally, its broader scope on waste disposal and maintaining environmental quality is relevant to the eventual disposal and management of EV-related waste, although it doesn't specifically address batteries.
- Hazardous Substance Act, B.E. 2535 (1992)
 - Relevance: This act plays a crucial role in managing the hazardous components found in electronic waste, including EV batteries. It regulates the handling, storage, transportation, treatment, and disposal of substances classified as hazardous. Given that EV batteries contain materials like lithium, cobalt, and nickel, which can be hazardous if not managed properly, this law provides a framework for controlling these aspects throughout the lifecycle of the battery, from manufacturing to end-of-life management.

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- Ministry of Commerce Notification on Determination of Electronic Waste as Prohibited Good for Importation into the Kingdom B.E. 2563
 - Relevance: This notification directly impacts the sourcing of materials and the management of end-of-life EVs and their components. By prohibiting the import of electronic waste for use as raw materials, it aims to prevent Thailand from becoming a dumping ground for e-waste and encourages the development of domestic recycling and material recovery capabilities. This is relevant to the long-term sustainability of EV deployment, as it pushes for responsible domestic management of EV waste rather than relying on imports for recycling or disposal solutions.

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3.1 Establishing Safeguards and Do-No-Harm Risk Assessment

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Impact of Project Activity	Impact severity level				Details of impacts	Preventive and mitigative impacts measure (registration)
	No	Low	Moderate	High		
1. Environmental and natural resources						
1.1 Physical resources						
Water pollution	x				Main activity of the project is to convince fleet operator to switch from ICE truck to EV truck. Water usage and effluence does not involve in project activity.	Project does not create related impacts
Soil pollution	x				Chemical usage in the soil, resulting in soil pollution, is not present in the project activity.	Project does not create related impacts
Air pollution	x				Thailand has periodically affected by air pollution from various sources such as, smog from agricultural burning, and emission from fossil fuel. The project intends to introduce EV truck, which produces zero air emission, and does contribute to lessening air pollution.	Project does not create related impacts

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Noise pollution	x				EV trucks generally produce minimal sound relative to traditional ICE trucks due to electric motors having less parts in combination with an absence of exhaust system. Thus, the noise does not exceed noise pollution limits.	Project does not create related impacts
Smell pollution	x				EV trucks lack an exhaust system, which emits pollution and unpleasant smell. Thus, there is no identifiable smell -related impacts	Project does not create related impacts
Soil erosion, coastal/river erosion	x				Project does not regard soil erosion or river erosion since project activity does not involve land leveling, or coastal modification.	Project does not create related impacts
vulnerability to natural disasters	x				Project is not implemented in the area where natural disaster would rarely affect its continuity.	Project does not create related impacts
1.2 Waste management						

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The increase in solid waste	x				Project does not generate solid waste as the level of solid waste is the same as what they are	Project does not create related impacts
An increase in the amount of hazardous waste, such as waste contaminated with oil, chemicals, used oil, etc.	x	x			Project may increase the amount hazard waste, especially the chemical substance from the expired EV's battery.	Follow the Hazardous Substance Act and guidelines from the draft of WEEE regulations to ensure that the batteries are stored appropriately.
The increase in infectious waste	x				The project does not generate infectious waste. The transition from ICE trucks to EV trucks is focused on transportation and logistics operations and does not involve activities that generate infectious waste, such as healthcare or laboratory work.	Project does not create related impacts
The rise of electronic waste		x			Project may increase the amount electronic waste due to having electric components. Expired electronic parts might degrade environment, and its toxic material can lead to contamination problem.	Follow the guidelines from the draft of WEEE regulations to ensure that the batteries are stored appropriately.

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1.3 Biological resources						
Forest areas and land use change	x				The project does not contribute to deforestation or land use change, as it focuses on replacing existing internal combustion engine (ICE) trucks with electric vehicles (EVs) within existing transportation and logistics infrastructure. No new land development or forest clearing is required.	Project does not create related impacts
Loss of land and wildlife ecosystems	x				The project does not affect the loss of land and wildlife ecosystem as its activity does not concern transforming land or developing infrastructure which disrupts the ecosystems.	Project does not create related impacts
Aquatic ecosystems and water loss	x				The project won't negatively impact aquatic ecosystem and water loss since replacing ICE trucks with EVs requires no water or aquatic resources to implement.	Project does not create related impacts

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Forest product harvest	x				The project will not exacerbate forest products since the entire activity involves transportation infrastructure. Wood harvest and timber extraction are not in activity boundary.	Project does not create related impacts
Food	x				The project does not affect food production or security. The replacement of ICE trucks with EVs pertains to transportation and logistics and does not involve agricultural activities or food supply chains.	Project does not create related impacts
1.4 Human resource utilization value						
Draining or changing waterways	x				The project does not involve draining or altering any waterways. The transition from ICE trucks to EVs occurs within existing transportation networks and logistics operations and has no	Project does not create related impacts

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					impact on watercourse modification or drainage patterns.	
Changes in water consumption	x				The project will not result in any significant changes in water consumption. The operation of EV trucks requires minimal water compared to the manufacturing and fuel extraction processes associated with ICE trucks. Any minor water usage for vehicle washing or maintenance will be consistent with existing operational practices and will not create a substantial increase in overall water demand.	Project does not create related impacts
Change in land ownership	x				The project does not entail any changes in landownership. The replacement of ICE trucks with EVs is an operational change within existing logistics and transportation businesses and	Project does not create related impacts

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					does not involve the acquisition, transfer, or modification of land titles.	
2. Society						
Public safety (i.e. crime risk)		x			The project will not increase crime risk or negatively impact public safety. The transition to EV trucks is an operational change within existing logistics and transportation activities and does not introduce any new factors that would contribute to criminal activity.	Project does not create related impacts
Health effects		x			The project is expected to have positive health effects. Replacing ICE trucks with EVs will reduce air pollution, leading to improved air quality and a decrease in respiratory health risks for communities along transportation routes. Reduced noise pollution	Project does not create related impacts

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					from EVs may also contribute to improved public health.	
Temporary or permanent loss of land	x				The project will not result in any temporary or permanent loss of land. The replacement of ICE trucks with EVs occurs within existing transportation networks and logistics operations and does not require any land acquisition or modification.	Project does not create related impacts
Income/career loss	x				The project is not expected to result in income or career loss. While some maintenance skills may need to be updated, the transition to EVs is more likely to create new opportunities in EV maintenance and related sectors. Overall, the project aims to improve operational efficiency without causing job displacement.	Project does not create related impacts

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Utilities such as electric power, telephone	x				The project will increase demand for electric power for EV charging. However, this demand will be managed through existing and planned charging infrastructure and will not significantly disrupt other utilities such as telephone services.	Project does not create related impacts
Traffic	x				The project does not contribute to the traffic congestion as the project activity is done through the displacement of ICE trucks. The transition to EVs will not significantly alter existing traffic patterns during the initial stages. The project does not involve any road construction or modifications that would directly impact traffic flow.	Project does not create related impacts
Community conflict	x				The project is not expected to generate community conflict. The	Project does not create related impacts

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					transition to EVs is a positive environmental initiative that aligns with broader sustainability goals.	
Employment and Labor	x				The project will not result in significant job displacement. While some maintenance roles may evolve, new opportunities in EV maintenance and charging infrastructure are expected.	Project does not create related impacts
Race, Religion, and Ethnic Group	x				The project does not have any discriminatory impact on any race, religion, or ethnic group. The transition to EVs is an operational change that applies equally to all transportation and logistics activities, regardless of the demographics of the workforce or affected communities.	Project does not create related impacts
causing damage to areas of high conservation value (i.e. religious places, historical sites, monuments, important places of the community etc.)	x				The project does not cause damage to areas of high conservation value. The transition	Project does not create related impacts

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					to EV trucks occurs within existing transportation routes and logistics operations and does not involve any activities that would impact religious places, historical sites, monuments, or important community areas.	
Human rights (i.e. education, freedom of thought, religion, etc.)	x				The project does not generate negative impact on human rights. The replacement of ICE trucks with EVs is an operational change that does not affect education, freedom of thought, religion, or any other fundamental human rights. The project operates within the framework of existing labor and human rights laws.	Project does not create related impacts
Gender equality (i.e. employment, promotion, salary, welfare, termination of contract, etc.)	x				The project does not cause negative impact on gender equality. The transition to EV trucks is an operational change	Project does not create related impacts

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					that applies equally to all employees, regardless of gender. The project adheres to equal opportunity employment principles and does not discriminate in employment, promotion, salary, welfare, or termination of contract.	
Other.....						
3. Economy						
Financial support for community	x				The project does not directly provide financial support to communities. However, by promoting the adoption of EV trucks, the project contributes to improved air quality and reduced noise pollution, which indirectly benefits community well-being.	Project does not create related impacts
Employment and Labor	x				The project will not result in significant job displacement. While some maintenance roles may evolve, new opportunities in EV	Project does not create related impacts

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					maintenance and charging infrastructure are expected. The project will support workforce training and development to facilitate a smooth transition. The project itself does not directly hire new employees.	
Domestic investment support					The project supports domestic investment by promoting the adoption of EV technology and infrastructure. This can stimulate demand for EV charging stations, maintenance services, and related industries, thereby encouraging domestic investment in these sectors. The project also works to increase domestic EV truck sales.	Project does not create related impacts
Other.....						

**Criteria for assessing the severity of the impact*

1. No impact: It does not cause any changes or direct or indirect impacts on the environment or society or economy.

2. Low impact: There was a change in the status quo but does not affect environmental and social quality and economy. The extent of the affected area is not large. It occurs for a short time and is temporary (around 1 km.)

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3. *Moderate impact: There was a change in the status quo that affected the values or quality of the environment and society and economy. The extent of the affected area is large but confined to the relevant area only. It occurs for a long time, but temporarily (around 2 kilometers).*
4. *High impact: There was a change in the status quo. That affects the values or quality of the environment and society and economy and may affect the ecosystem. The extent of the affected area is extensive and permanent (around 3 kilometers)*

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3.2 Monitoring negative impact

Negative impact category	Environment	
Subcategory-negative impact	Toxic and e-waste	
Risk group	Environment and people in the society	
Possible negative impact	Promotion of electric vehicles (EVs) brings many benefits such as reduced GHG emissions, decreased air pollution, and contribution to EV transition. However, the end-of-life phase of EVs might cause an increase in toxic and e-waste, especially from batteries. To mitigate the adverse impact, the programme aims to deploy 3 waste management approaches, considering the Pollution Control Department guidelines on electronic appliances waste management, draft of the Disposal and Management of Waste Electrical and Electronic Equipment Act, international Extensive Produce Responsibility frameworks for batteries, and other industry practices as follows: 1) Reuse: In case the expired battery, after refurbished, has capacity more than or equal to 80%, the activity owner will sell the battery back to the market, extending its value. In contrast, batteries with less than 80% capacity will be transferred to partners, to transform them into stationary energy storage; 2) Recycle: In case of damaged batteries, the programme proponent will offer recycle partners; 3) Disposal: if the battery is expired and must be disposed, the programme proponent will sell it to trusted battery recycling plants To ensure that the battery will be effectively managed, the programme set up waste management team comprised of Thai EV employees who have experience in the auto industry, circular economy and waste	

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	management. They will establish plans and guidance to communicate with project participants about life-cycle assessment and e-waste management including collaborating with waste management partners and SMEs to guarantee that waste is addressed properly, reducing the negative outcomes.	
Parameter/indicator	Weight of toxic and e-waste from end-of-life vehicle	
Reference	Describe the reference or parameter or indicator Data and statistics from Pollution Control Department Thai EV owned data collection of end-of-life vehicle under the programme	
Period/frequency	Annually	

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Methodology/Tools	Guideline on electronic waste management appliances Draft of the Disposal and Management of Waste Electrical and Electronic Equipment Act	
Responsible person results	Mr. Chatchawan Chuleekeit from Thai EV	
Expected results	Weight of toxic and e-waste from programme's vehicle are reduced and managed	