Sustainable Development and Safeguards Assessment Report

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Project Details	
Project Title	Electric Mobility Program Thailand
Name of Project participant	**Grutter Consulting AG**
Name of Co-project Participant	**None** There are individual Component Project Activities (CPAs) owned by individual project investors (PIs). These are however not project participants of the Program.
Name of Project Owner	Grutter Consulting AG
Project Location	Entire Thailand
Implementation Status	Project status on 17/02/2025 ☐ Not yet implemented ☒ Preparation for implement ☐ Implement on …….... (D/M/Y)

Details of report preparation		
Finish date	17/02/2025	
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.

Report Certificate

Project Title: Electric Mobility Program Thailand 17/02/2025

This certificate certifies that Grutter Consulting AG prepared this Sustainable Development and Safeguards Assessment Report of Project Electric Mobility Program Thailand of Grutter Consulting AG located in Thailand

The report was prepared by the committee as follows:

No.	Name	Position	Signature
1.	Jurg Grutter	CEO	.....
2.	Susana Ricaurte	Program Manager	.....
3.	Chatthep Chanyam	Program Officer	.....

Signature .....

(.....)

Position .....

Seal (if any)

Part 1: General information

Issues	Details
1. Environment and natural resources	
1.1 Air pollution	• **Reduced emissions:** EVs produce zero tailpipe emissions, reducing therefore critical air pollutants and improving air quality relative to a baseline situation. • **Increase in electricity demand:** Increased EV adoption leads to a small increase in electricity demand, potentially increasing emissions from power generation depending on the energy mix. However, this increase is less than the pollution reduction from vehicles. • **Reduced fossil fuel demand:** this results in reduced air pollution caused by fossil fuel extraction, transport and refinery. • **Manufacturing emissions:** The production of EV batteries and components generates emissions; however, the production of baseline vehicles and their maintenance also create pollution.
1.2 Water pollution	• **Reduced water contamination:** EVs eliminate the risk of oil and gasoline spills associated with traditional vehicles and with the extraction, transport and refinery of fossil fuels, protecting water resources. • **Battery production and disposal:** The manufacturing and disposal of EV batteries can pose risks to water quality if not managed responsibly.
1.3 Soil pollution	EVs themselves have minimal direct impact on soil pollution. Potential soil contamination can arise from the extraction and processing of materials used in EV batteries and components. Soil pollution of baseline fossil vehicles and fuels are however avoided.
1.4 Noise pollution	EVs are significantly quieter than traditional vehicles, leading to reduced noise pollution especially in urban areas.
1.5 Smell pollution	EVs produce no tailpipe emissions, eliminating the release of unpleasant odors associated with fossil vehicles.
1.6 Water for consumption	Same as point 1.2
1.7 Solid waste	EVs generate less waste compared to traditional vehicles due to the absence of oil changes and other maintenance activities. The disposal of EV batteries requires careful management to prevent environmental pollution and resource depletion.
1.8 Hazardous waste/Infectious	EV batteries contain hazardous materials that require specialized recycling processes to prevent. Fossil

Issues	Details
waste/Electronic waste	fuels also contain hazardous materials which are avoided.
1.9 Energy (i.e. Wasted Energy, Renewable Energy)	EVs are more energy-efficient than traditional vehicles, converting a higher percentage of energy into motion.
1.10 Land Use	The deployment of EV charging infrastructure requires minimum land-use. Less fossil vehicles result in less demand for land-use of maintenance facilities of vehicles.
1.11 Biodiversity	The production of EV batteries and components can indirectly impact biodiversity through resource extraction and habitat disruption. However, fossil fuels and their extraction have also biodiversity impacts and these negative impacts are reduced though EVs.
1.12 Wild/Aquatic animal ecosystem	Reduced air and water pollution from EVs can benefit wildlife and aquatic ecosystems.
1.13 Other (Please specify)	
2. Society	
2.1 Social and cultural	EVs can contribute to shifting social norms and promoting a more sustainable lifestyle.
2.2 Public health and safety	Reduced air pollution from EVs leads to improved public health, particularly in urban areas.
2.3 Traditions, cultures and/or valuable places worthy of conservation	EVs themselves have minimal direct impact on cultural heritage.
2.4 Race, religion, and ethnic group	EVs have no direct impact on race, religion, or ethnic groups.
2.5 Transportation	No direct impact of EVs.
2.6 Other (Please specify).....	
3. Economic	
3.1 Overall local economy (i.e. income, expenditure, etc.)	Overall reduced energy issues by EVs and over time reduced costs allows for higher disposable income for other goods and services and higher welfare levels of the people.
3.2 Employment/Career	The EV industry can create new employment opportunities in manufacturing, research and development, and infrastructure development. The major labour impact of EVs is however indirectly as less income is spent on transportation resulting in

Issues	Details
	higher remaining disposable income being spent more on services and other goods which have higher employment rates than capital intensive vehicle manufacturing and energy production.
3.3 Main agriculture in the area	Not applicable
3.4 Main industry in the area	The EV industry can drive the transformation of traditional automotive industries and related sectors.
3.5 Main service sector in the area	Vehicle maintenance with other skills required than in fossil fuel vehicle maintenance
3.6 Basic infrastructure (i.e. road, school, etc.)	Vehicle charging infrastructure
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 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)	Detail of indicators
☐ GOAL 1: No Poverty		
☐ GOAL 2: Zero Hunger		
X GOAL 3: Good Health and Well-being	The relevant SDG indicator is mortality rate attributed to household and ambient air pollution. PM2.5 and NOx are critical air pollutants which result in increased morbidity. These output indicators are used by the program.	3.1. PM2.5 emissions reduced by 10 tons cumulative by 2030 3.2. NOx emissions reduced by 717 tons cumulative by 2030
☐ GOAL 4: Quality Education		
☐ GOAL 5: Gender Equality		
☐ GOAL 6: Clean Water and Sanitation		
X GOAL 7: Affordable and Clean Energy	The relevant SDG indicator is energy intensity relative to primary energy or GDP. The improved energy intensity of EVs is used to calculate the indicator of reduced energy usage.	7.1. 33,000 TJ of energy saved cumulative by 2030
☐ GOAL 8: Decent Work and Economic Growth		
☐ GOAL 9: Industry, Innovation and Infrastructure		
☐ GOAL 10: Reduced Inequality		

Sustainable Development Goals: SDGs	Relevant indicators (Please specify)	Detail of indicators
X GOAL 11: Sustainable Cities and Communities	The SDG indicator is annual mean levels of fine particulate matter (in cities (population weighted).	PM2.5 reductions are monitored through indicator 3.1. above
☐ GOAL 12: Responsible Consumption and Production		
■ GOAL 13: Climate Action		
☐ 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

SDG Target	SDG 3: Good Health and Well-Being
SDG Indicator	3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
Project's Contribution	EVs reduce combustion related air pollution. Air pollution causes premature deaths, morbidity increases and high economic costs in Thailand. The relevant SDG indicator is mortality rate attributed to household and ambient air pollution. PM2.5 and NOx are critical air pollutants which result in increased morbidity. These output indicators are used by the program.
Period/frequency	Annual

Methodology/Tools	Ex post measurement / calculation
Responsible person	Jurg Grutter
Expected results	3.9.1. PM2.5 emissions reduced by 10 tons cumulative by 2030 3.9.2. NOx emissions reduced by 717 tons cumulative by 2030

SDG Target	SDG 7: Affordable and Clean Energy
SDG Indicator	7.3 By 2030, double the global rate of improvement in energy efficiency
Project's Contribution	EVs are 2-3 times more energy efficient than internal combustion engines The relevant SDG indicator is energy intensity relative to primary energy or GDP. The improved energy intensity of EVs is used to calculate the indicator of reduced energy usage.
Period/frequency	Annual
Methodology/Tools	Ex post measurement / calculation
Responsible person	Jurg Grutter
Expected results	7.3.1. 33,000 TJ of energy saved cumulative by 2030

SDG Target	SDG 11: Sustainable Cities and Communities
SDG Indicator	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
Project's Contribution	EVs reduce air pollution. The SDG indicator is annual mean levels of fine particulate matter (in cities (population weighted).
Period/frequency	Annual
Methodology/Tools	Ex post measurement / calculation

Responsible person	Jurg Grutter
Expected results	PM2.5 reductions are monitored through indicator 3.9.1. above

Part 3: Safeguards and Do-No-Harm

3.1 Establishing Safeguards and Do-No-Harm Risk Assessment

Impact of Project Activity	Impact severity level				Detail of impacts	Preventive and mitigative impacts measure (registration)
	No	Low	Moderate	High		
1. Environmental and natural resources						
1.1 Physical resources						
Water pollution	X				E-mobility vehicles do not produce water pollution from tailpipe emissions, unlike traditional vehicles that can leak oil or other fluids.	
Soil pollution		X			While the vehicles themselves do not directly pollute soil, the manufacturing process of batteries and other components can potentially lead to soil contamination through the extraction and processing of raw materials	
Air pollution		X			E-Mobility vehicles significantly reduce air pollution compared to traditional vehicles, but the generation of electricity used for charging can still contribute to emissions depending on the energy mix.	

Noise pollution		X			E-Mobility vehicles produce less noise pollution than traditional vehicles, particularly at low speeds	N/A
Smell pollution	X				E-mobility vehicles do not produce any tailpipe emissions, eliminating smell pollution associated with traditional vehicles.	N/A
Soil erosion, coastal/river erosion	X				The project is unlikely to have any direct impact on soil erosion or coastal/river erosion.	N/A
vulnerability to natural disasters	X				The project is unlikely to have any direct impact on vulnerability to natural disasters.	N/A
Other……						
1.2 Waste management						
The increase in solid waste		X			E-Mobility vehicles generate less solid waste than traditional vehicles due to the absence of oil changes and other maintenance activities and due to less wastes from fossil fuel extraction, transport and refinery.	Implement proper waste management practices for vehicle components and batteries at the end of their life cycle.

An increase in the amount of hazardous waste, such as waste contaminated with oil, chemicals, used oil, etc.		X			The batteries used in e-mobility vehicles contain hazardous materials that require specialized recycling processes	Implement safe and responsible battery recycling programs.
The increase in infectious waste	X				The project is unlikely to have any direct impact on infectious waste	N/A
The rise of electronic waste		X			The increasing use of electronic components in e-mobility vehicles can contribute to the rise of electronic waste	Promote the recycling and proper disposal of electronic components.
Other……						
1.3 Biological resources						
Forest areas and land use change	X				No direct impact	N/A
Loss of land and wildlife ecosystems	X				No direct and minimal indirect impact	N/A
Aquatic ecosystems and water loss	X				The project is unlikely to have any direct impact on aquatic ecosystems or water loss	N/A
Forest product harvest	X				The project is unlikely to have any direct impact on forest product harvest	N/A
Food	X				The project is unlikely to have any direct impact on food production	N/A
Other……						
1.4 Human resource utilization value						

Draining or changing waterways	X				The project is unlikely to have any direct impact on draining or changing water ways	N/A
Changes in water consumption	X				The project is unlikely to have any direct impact	N/A
Change in land ownership	X				The project is unlikely to have any direct impact on land ownership	N/A
Other……						
2. Society						
Public safety (i.e. crime risk)	X				The project is unlikely to have any direct impact on crime risks	N/A
Health effects		X			Reduced air pollution from e-mobility vehicles can lead to improved public health	N/A
Temporary or permanent loss of land	X				The project is unlikely to result in any significant loss of land	N/A
Income/career loss		X			The transition to e-mobility may lead to some job losses in traditional automotive industries, but new jobs opportunities will be created in the e-mobility sector and especially in other sectors due to increased disposable income	Provide training and support for workers in traditional automotive industries to transition to the e-mobility sector
Utilities such as electric power, telephone		X			Increased electricity demand from e-mobility vehicles may require upgrades to existing power grid	Invest in upgrading and expanding power grids to accommodate increased electricity demand
Traffic	X				No impact	N/A

Community conflict	X				No impact	N/A
Employment and Labor		X			The e-mobility sector can create new employment opportunities, but it is important to ensure fair labor practices and decent working conditions	Promote fair labor practices and decent working conditions in the e-mobility sector
Race, Religion, and Ethnic Group	X				The project is unlikely to have any direct impact on race, religion, or ethnic groups.	N/A
causing damage to areas of high conservation value (i.e. religious places, historical sites, monuments, important places of the community etc.)	X				The project is unlikely to case any significant damage to areas of high conservation value	N/A
Human rights (i.e. education, freedom of thought, religion, etc.)	X				The project is unlikely to have any direct impact on human rights	N/A
Gender equality (i.e. employment, promotion, salary, welfare, termination of contract, etc.)	X				The project is unlikely to have any direct impact on human rights	N/A
Other……						
3. Economy						
Financial support for community		X			The project can provide financial support for communities through the creation of new jobs and businesses	N/A
Employment and Labor		X			The e-mobility sector can create new employment opportunities, but it is important to ensure fair labor practices and decent working conditions	Promote fair labor practices and decent working conditions in the e-mobility sector

Domestic investment support		X			The project can attract domestic investment in the e-mobility sector	N/A
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.)

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)

3.2 Monitoring negative impact

Specify the parameters or indicators have related with preventing negative impact (able to be copy the table for use with another parameter or indicator)

Negative impact category	Environment / Society / Economy
Subcategory-negative impact	i.e. water pollution, public health etc.
Risk group	
Possible negative impact	Describe the negative impact want to decrease/prevent
Parameter/indicator	
Reference	Describe the reference or parameter or indicator
Period/frequency	
Methodology/Tools	
Responsible person results	
Expected results	