ENERGY TRANSITION PARTNERSHIP

Powering Prosperity and Enabling Sustainability in South East Asia

BAO LOC TECHNOLOGY JOINT STOCK COMPANY

INCEPTION REPORT

PROJECT TITLE: "DEVELOPMENT OF 9 KEY NATIONAL STANDARDS FOR E-VEHICLE CHARGING INFRASTRUCTURE".

GRANT NUMBER: ETP/VIE/EEIW-6/2023

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PROJECT INFORMATION AND RESOURCES	
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I. Executive summary

In the context of increasingly serious air pollution, electric vehicles are an inevitable trend in the car industry around the world, and Vietnam is no exception. In particular, Vietnam is considered a potential electric car market in the near future (1). However, depending on the type of vehicle, the battery of an electric vehicle usually allows the vehicle to travel a distance of about 180–300 km per charge. If customers want to go long distances, they need a dense charging station to be able to go and charge on the road. Many customers using electric vehicles are still insecure when going from one province to another because of the sparse system of charging stations (2). Therefore, the development of infrastructure to support the electric car market is a great concern not only for the government but also for businesses and people who have a demand for electric vehicles.

In Vietnam, so far, only Vinfast, a Vietnamese-founded private automotive company, has built a system of public electric charging stations for electric cars and motorcycles. In addition, other brands such as Porsche, Audi, or Mercedes-Benz still have charging stations for customers, but the number is still limited, most of which are only installed at the company's showroom or factory (3). Although they differ in number, the common point of these charging stations is that they only support electric vehicles of the same brand because the government still does not have a complete set of standards for the installation of electric vehicle charging stations at service points.

Transportation is an energy-intensive sector in Vietnam, which created 45 million tons of CO2 in 2019 and has an annual growth rate of 6%–7%. It is estimated that the annual CO2 emissions of the transportation sector will reach 90 million tons by 2030. Therefore, the energy transition in the transportation sector and the reduction of greenhouse gas emissions are very important to reach the net-zero emission targets committed by the Prime Minister at COP 26. The establishment of national standards for e-vehicle charging infrastructure will remove the barriers to the expansion of the charging stations, eliminate the authorities and public's concerns over the quality and safety of the technology, leverage public and private investments in e-vehicle and charging infrastructure development, and accelerate the energy transition in the sector.

According to the 2050 Calculator 4NDCs tool funded by the UK for Vietnam, without great efforts of greening traffic in Vietnam, the total fuel consumption for transportation activities would be 83.3 TWh in 2015, increasing to 206,1 TWh in 2030 and 417.4 TWh TOE in 2050. GHG (Greenhouse Gas) emissions are 52.4 million tons in 2030 and 106.2 million tons in 2050, respectively. The construction of charging stations, although not directly reducing emissions in the transportation sector, is still an important component in the effort to build infrastructure to serve the goal of greening the transport industry in Vietnam, encouraging the use of e-vehicles, and contributing to the goal of reducing greenhouse gas emissions in Vietnam (52.4 million tons in 2030 and 106.2 million tons in 2050).

The overall goal of the project "Energy efficiency innovation window - Vietnam round - Development of 9 key national standards for e-vehicle charging Infrastructure" is to create a premise for the development of an official set of standards for electric vehicle charging stations in Vietnam. Through the development of the first 9 important standards, electric vehicle manufacturers in Vietnam will have a basis to improve the quality and safety of existing charging stations and when the entire standard is completed, the process of expanding the system of electric charging stations across the country will be implemented rapidly.

Important outcomes that the project will deliver include:

a. At least 1000 charging stations are verified by the new standards;
b. Around 3 electric vehicle manufacturers can apply the standard to the research and development of electric charging stations;
c. Introduce a basic set of standards for electric vehicle charging stations in Vietnam;
d. Creating a premise for building a complete set of standards in Vietnam. There are 63 charging station standards in total, of which 9 are built as the 9 most important standards that help charging stations to be connected to the power supply network. Once it is safe to connect to the power network, the remaining standards will be developed later.

During the pre-project period, Bao Loc Technology Joint Stock Company (BLT.Cert) with the role of project leader and coordinator has connected and built a network of technical experts, consultants, government agencies, international organizations, and other stakeholders specializing in developing a standard system for electric vehicle charging stations.

In the inception period, BLT. Cert and the consultant team of SMEDEC 2 organized a kick-off meeting with ETP on 31 May 2023. This meeting provided the general essential information, requirement,s and instructions on ETP and its working mechanism; the detailed scope of the project and work plan to implement all the

project activities as well as the relevant information exchange and discussion, which would be a good foundation to proceed with the next activities of the Assignment and facilitate for a strong collaboration with relevant stakeholders to support the implementation of the project.

1. Introduction

1.1. The Assignment

In July 2022, Vietnam's Deputy Prime Minister Le Van Thanh approved an action plan to reduce carbon emissions in transportation as part of the country's wider strategy to actualize its climate change commitments made at the 26th UN Climate Change Conference of the Parties (COP26) (Decision 876/QD-TTg dated 22 July 2022).

According to the strategy, in the 2022-2030 period, fossil-fueled vehicles shall not be encouraged and be gradually reduced while the electric charging infrastructure for e-vehicles and e-motorbikes shall be developed and expanded nationwide. In the long-term (2030- 2050) period, fossil-fueled cars, motorbike production, assembly, and import shall be stopped and by 2050, 100% of road vehicles shall be fueled by electricity and green energy. The charging infrastructure shall cover the entire country by 2050 *(4)*.

The resources required to implement Vietnam's net zero strategies in the transportation sector will be raised from many sources, including the State budget, multilateral investment, private investment, and public-private partnerships. As estimated by the government, key projects to realize the strategy will require a total investment estimated at more than VND 3 quadrillion (US$128 billion) *(5)*. The project cost is roughly equivalent to half of the country's Gross Domestic Product in 2020 (US$272 billion).

The Agence Française de Développement (AFD), the Asian Development Bank (ADB), the World Bank (WB), and Hongkong and Shanghai Banking Corporation (HSBC) are among the partners that have expressed their interest in supporting Vietnam in advancing green and sustainable development, according to Vietnamese media. Many international organizations, both public and private, are mandated by their boards, investors, or agreed strategies to ensure that green investments make up a certain proportion of the investment portfolio. ADB recently approved a loan of $20 million to support VinFast to expand its e-vehicle charging network in the country *(6)*.

The government has also highlighted the need to seek closer cooperation with external partners, not just on financing issues. The policy paper highlights the desire to actively participate in the development of common international regulations and standards for the green transportation sector. The State also hopes to benefit from

advanced technology transfer and learn from peers in the industry [4]. There are clear beneficiaries of such policies – manufacturers, customers, as well as the environment. Vietnam's indigenous EV manufacturer, VinFast, is among the companies that are likely to benefit the most. The firm is investing substantially in upscaling its production. Other beneficiaries include international and local battery producers, support industry manufacturers, and renewable energy producers, who are involved in the energy transition process of Vietnam.

More broadly, the infrastructure development in Vietnam to follow through on the government's ambitious road map will generate opportunities for firms in the green energy sector, including those involved in the manufacture of photovoltaics and wind power. The current lack of national standards for the design, manufacturing, and installation of e-vehicle charging infrastructure may cause delays to the energy transition in the transportation sector as it will discourage the end-user's desire to buy e-vehicles, expose the national grids to potential technical problems, increase the health and safety risks for the end-users and create a legal and financial argument as a result of non-calibrated and verified charging stations.

1.2. The Objective

The overall objective: The development of national standards for key e-vehicle charging infrastructure is creating a legal and technical framework to ensure the safety and quality development of the e-vehicle charging infrastructure, support the development of the local supply chain, control the quality of local and imported products, create a fair playground for the e-vehicle producers and the e-vehicle charging infrastructures manufacturers, which will be expressed through our three Specific Objective (SO) as below:

+ **Specific objective 1**: Review international standards, customize and create new national standards or adopt the standards to the Vietnam context based on the government procedures.

+ **Specific objective 2**: Communicate the national standards to the vehicle manufacturers (local and international), provide training, and disseminate the standards and standard quality control processes to the policy executors.

+ **Specific objective 3**: Support the relevant government agencies of Vietnam (customs, market management inspectors, quality control authorities) to manage the industry and the sector based on the established national standards and provide the BLT. Cert and SMEDEC 2's services (verification, training, consulting, testing, technology transfer, trade promotion) to potential clients relevant to e-vehicle and charging stations production and operation.

2. Organizational structure

As the leading and coordinating organization of this Project, BLT. Cert quickly connect and built a network of prestigious and potential partners from both public and private sectors, specifically:

2.1. Sponsor organization

Southeast Asia Energy Transition Partnership (ETP) is a multi-donor partnership formed by governmental and philanthropic partners to accelerate sustainable energy transition in Southeast Asia in line with the Paris Agreement and Sustainable Development Goals. The ETP combines the best of the public and private sectors with various stakeholders to help mobilize and coordinate technical and financial resources to build the foundations for renewable energy, energy efficiency, and sustainable resilient infrastructures. On 20 May 2023, ETP and BLT. Cert had signed the Grant Support Agreement number: ETP/VIE/EEIW-6/2023 with the sponsorship value of 157,605 USD to provide support for the activity of Project "Energy efficiency innovation window - Vietnam round: Development of 9 key national standards for e-vehicle charging infrastructure*"* in the period of 2023-2024.

2.2. Project Management

Bao Loc Technology Joint Stock Company (BLT. Cert) is a Certification Body for people- management systems - products based on international standards with more than 20 years of experience in providing training, testing, assessment, and certification services in many areas including (but not limited to): Food, information assurance, information technology, service management, quality management, risk management, occupational health and safety, environment, energy, etc.

BLT. Cert supports experts/organizations to demonstrate their commitment and competence to the standards recognized by international, through training, assessment, and certification activities that meet strict requirements for capacity. Our mission is to provide our customers with comprehensive services that inspire, continuously improve, demonstrate assurance, and bring benefit to society.

Key business activities of BLT.Cert. include:

- Verification and Certification of management systems according to the ISO 9001:2015

- Certification of automobile manufacturing quality control process according to IATF16949

- Verification of Environment Protection Solutions according to ISO 14001

- Verification of Health and Safety Protection Processes according to ISO 45001

- Verification of Data security according to ISO 27001 and ISO 20000-1

- Verification and certification of food safety and quality according to ISO 22000/GMP/FSSC22000 /HACCP

- Verification of energy management system according to ISO 500001

- Certification of health equipment quality according to ISO 13485:2016

- Certification and verification of various industrial products and equipment according to Vietnam and International Standards.

2.3. Project co-sponsor and strategy technical partner

SMEs Development Support Center 2 (SMEDEC 2) is under the Directorate for Standards, Metrology, and Quality (Ministry of Science and Technology), which was established in 1995 under the Decision No. 2217/QD- TCCBKH signed on December 22nd, 1995, by the Minister of Science, Technology, and Environment, and the Decision 1588/QD-BKHCN, operating under the Decree 115/ND-CP and performs the State's function of serving standards, technical regulations, measurement, productivity, and quality, goods.

SMEDEC 2 has 27 years of experience in developing national standards for various industries as well as providing consulting services for enterprises on how to apply standards in their manufacturing and production processes. SMEDEC 2 also has experience working with various local and international organizations, including the Ministry of Science and Technology, Ministry of Industry and Trade, The Asia Foundation (TAF), USAID, ASEM SMEs Eco-Innovation Center (ASEIC), Korea Testing Laboratory (KTL), Taiwan External Trade Development Council (TAITRA), Shinhan Bank, Jangseon County, GIZ, Danish International Development Agency (DANIDA), and International Labour Organization (ILO), etc.

SMEDEC 2 operates as a government agency but is financially independent of the Ministry of Science and Technology. The budget for the operation of SMEDEC 2 is generated through providing consultancy services for both public (government) and private (businesses) clients.

Key business activities of SMEDEC 2 include:

1. National standards for measurement, quality control, and productivity: standards development and consulting service for application of local and international standards.

2. Trade promotion and investment: provide trade promotion and match-making services for local and international enterprises.

3. Sustainable development: provide training and consulting services for green productivity (MFCK, GHK, 3R), energy saving, and climate change adaptation.

4. Technology transfer, machinery, and equipment import-related services: calibration, verification, testing, and measurements.

5. Quality verification service: verify product quality/production process according to international /local standards for public and private clients.

2.4. Other partners and collaborators

2.4.1. Government authority

The Ministry of Science and Technology (MOST) is a government agency of Vietnam, with the function of State management of Science & Technology activities, development of Science & Technology potential; quality measurement standards; intellectual property (IP); atomic energy, radiation and nuclear safety; State management of public services in the fields under the management of the Ministry; to represent the owner of the State's capital in enterprises under the management of the Ministry. Within the scope of this project, the Ministry of Science and Technology will be responsible for coordinating with relevant ministries, branches and organizations in formulating and approving the development plan and publishing the standards after the parties have completed the implementation steps in the correct order and procedure for elaborating, appraising and publishing of standards proposed by organizations or individuals.

The Directorate for Standards, Metrology, and Quality (STAMEQ) is an agency directly under the Ministry of Science and Technology, performing the function of state management of standards, measurement and quality of products and goods. Within the scope of this project, STAMEQ is the focal point of the Ministry of Science and Technology to organize and coordinate with relevant parties to collect comments on finalizing the draft, appraise the draft standards, transfer the standards to the Technical Committee for completeness (if necessary), and submit the application for the Ministry of Science and Technology to approve the announcement (the Ministry of Science and Technology is the publishing unit), preside over or assign the implementing unit to organize a training/ dissemination program on the application of standards, print and promulgate.

2.4.2. External consultants

In this project, BLT.Cert is expected to cooperate with experts from leading organizations in Vietnam (research institutes, universities, etc.) with in-depth experience in fields such as Technical Physics, Electronic Engineering - Telecommunications, Mechanical Engineering, Information Technology, Electrical Systems, Technical Cybernetics, etc. to ensure the product quality and the given standards will meet the main requirements in Vietnam.

3. Partners and Stakeholders

Name	Type	Role

Energy Transition Partnership **(ETP)**	International Organization	The main sponsor of the project.
Ministry of Science and Technology **(MOST)**	Government Institution	Formulating and approving the development plan and publishing the standards.
The Directorate for Standards, Metrology, and Quality **(STAMEQ)**	Government Institution	Assist the MOST in accessing and finalizing the Draft and submit for approval and announcement.
Relevant government agencies such as the Ministry of Industry and Trade, Ministry of Transport, etc.	Government Institution	Provide comments to develop the standards.
Bao Loc Technology Joint Stock Company (BLT.Cert)	Project Management	Ensure the project is implemented according to the Agreement
SMEs Development Support Center 2 **(SMEDEC 2)**	Co-sponsor and strategy technical partner	Provide support in developing the standards.
Active manufacturers of e-vehicles, such as Vinfast, Toyota, Kia, and Vietnam Automobile Association (Private)	National organizations	Provide comments to develop the standards.

4. Risk and Mitigation

4.1. Risk

The success of any project is influenced by a variety of factors, including the ability to effectively identify and manage potential risks. Risk management is a crucial aspect of project planning and execution, as it allows for proactive measures to mitigate or minimize the impact of unforeseen events. For this project, there are some risks that may arise in the implementation process, including:

- Coordination and communication among stakeholders might be a challenge.
- Cost risk

- Organizational changes (duty and function, leadership, coordinator…)
- Drafting Standards: Compiling Standard documents requires extensive research time.
- Seeking feedback on the draft of Standards (TCVN): The entities interested in TCVN electric charging stations are primarily automobile manufacturers, motorcycle manufacturers, and petroleum companies. Due to limitations in the number of participants, venue, and duration of workshops, the feedback received may not fully capture all responses and contributions from the companies.

4.2. Risk Mitigation

To ensure project success, we have developed comprehensive mitigation strategies for the identified risks. Each strategy is tailored to address the specific risk and minimize its potential impact. Mitigation approaches include:

- Regular project meetings will be implemented, also using visual aids, such as charts, graphs, or diagrams to keep stakeholders informed, engaged, and reassured.
- Cost risks are often caused by unforeseen circumstances so we need to determine if any risks could cause costs to increase or decrease unexpectedly and identify ways to mitigate those risks such as creating contingency plans if any of those risks come true.
- We work closely with stakeholders to be updated and ensure all changes that could happen are under control.
- STAMEQ, BLT, and SMEDEC2 collaborate with industry experts both domestically and internationally to gather feedback and input for the draft development of Standards.
- The organizing unit establishes an online feedback link for collecting opinions. After receiving the feedback, the council will convene a meeting to review and propose solutions within one week.

5. Gender Equality

The following strategies will be incorporated to that gender equality considerations are embedded throughout the development of national standards for e-vehicle charging infrastructure, creating a more inclusive and equitable sector.

- Inclusive stakeholder engagement: Ensure that the voices and perspectives of both women and men are included in the decision-making process. Engage with diverse stakeholders, including women's groups, community organizations, and women entrepreneurs, to gather their input and incorporate their needs into the development of national standards. In the project’s events, workshops and training

will be distributed to both male and female invitees, ensuring that at least 30% of the participants are women.

- Gender-responsive standards development: Integrate gender considerations into the development of national standards. This can include addressing the specific safety concerns or accessibility requirements of women and other marginalized groups. Consider factors such as lighting, security, proximity to public transportation, and inclusive design features to ensure the charging infrastructure is safe and accessible for all users. The message of gender inclusion should be included in the workshops and other events.

- Promote women's participation in the e-vehicle industry: Encourage the participation of women in the e-vehicle and charging infrastructure sector. Support women entrepreneurs, engineers, and technicians by providing training, mentoring, and networking opportunities. Promote gender diversity in the workforce and create an inclusive environment that fosters equal opportunities for women in the industry. This key message should be embedded in the workshops and events.

II. Methodology and Work Plan

The methodology for implementing a project on developing national standards in Vietnam involves a systematic approach to ensure the effective establishment and adoption of standards across various sectors. The key steps involved in the methodology are as follows:

- Needs Assessment: Conduct a comprehensive assessment of the current standards landscape in Vietnam and identify the gaps and areas requiring standardization. This involves engaging stakeholders, including industry experts, government representatives, and relevant organizations.

- Stakeholder Engagement: Actively involving stakeholders throughout the project lifecycle to gather insights, solicit feedback, and foster collaboration. This includes conducting workshops, consultations, and regular communication to ensure diverse perspectives and consensus building.

- Technical Committee Formation: Establishing technical committees comprising experts from relevant industries, academia, and regulatory bodies. These committees are responsible for developing and reviewing draft standards, ensuring technical accuracy, and considering international best practices.

- Drafting and Review: Developing draft standards based on the identified needs and international benchmarks. The drafts undergo rigorous review and validation by technical committees and other relevant stakeholders to ensure their relevance, clarity, and applicability to the Vietnamese context.

- Public Consultation: Facilitating public consultation to gather input from a broader range of stakeholders, including industry representatives, consumers, and the general public. This helps ensure transparency, accountability, and broad acceptance of the proposed standards.

- Finalization and Publication: Incorporating feedback from public consultation and finalizing the standards. The approved standards are then published and disseminated through appropriate channels to make them accessible to relevant stakeholders.

- Implementation and Adoption: Supporting the implementation and adoption of the developed standards through awareness campaigns, training programs, and capacity-building initiatives. Collaboration with industry associations, regulatory bodies, and certification agencies can further facilitate adoption and compliance.

- Monitoring and Review: Establishing a monitoring mechanism to assess the effectiveness and impact of the implemented standards. Regular reviews and updates are conducted to address emerging needs, technological advancements, and evolving industry requirements.

According to the proposal, the national standards shall be created/ approved through the government's procedures including the following steps with different characteristics and goals, therefore, it is necessary to have a separate implementation methodology for each activity. Specifically, each activity will be implemented as below.

1. Activity 1: Submit the proposal to the relevant ministry for approval

1.1. Gather information to draft the proposal

Deliverable(s): 1 draft proposal

Methodology:

- To be consulted by experts (from both public and private sectors) about the current situation of the national standards on E-vehicle charging station
- To collect information on the development of standards for E-vehicle from reliable sources.

Time of action:

- To recruit the expert team: June to July 2023
- To finish the draft proposal: June 2023

Place of Action: Hanoi, Vietnam

Implementing body**:** BLT.Cert & SMEDEC2

1.2. Submission of proposal for the development of the national standards

Deliverable(s): 01 proposal and 01 confirmation

Methodology:

- Analyze the problem statement stated by the Prime Minister on reducing carbon emissions in transportation to finalize the proposal for the development of national standards.
- Discuss with experts to set up the development schedule.
- Set up a meeting with the Directorate for Standards, Metrology and Quality (STAMEQ) and the Ministry of Science and Technology (MOST) to submit the proposal and schedule the standard development project.

Time of action:

- Submit the proposal: June to July 2023

Place of Action: Hanoi

Implementing body**:** BLT.Cert & SMEDEC2

1.3. Approval of the standard development project and its development schedule

Deliverable(s): 1 plan for national development.

Methodology:

- To be consulted by experts if there is any problem with the proposal
- Submit additional documents related to the project if requested by STAMEQ
- Announce the information on the official website of BLT. Cert and SMEDEC 2

Time of action:

- Approval plan for national development: July to August 2023

Place of Action: Hanoi

Implementing body**:** STAMEQ, SMEDEC 2, BLT.Cert

2. Activity 2: Technical development of the draft standards

2.1. Collecting and analysis of data and documents

Deliverable(s): 01 complete document on necessary information about the 9 standards

Methodology**:**

- To be consulted by experts;
- Collecting information on the development situation of charging stations.

- Collecting current legal documents in Vietnam such as Decision 876/QD-TTg dated 22 July 2022 action plan to reduce carbon emissions in transportation; Circular 11/2021/TT-BKHCN for development and application standards, etc.
- Collecting information on Standards for Technical Requirements of Vehicle to the grid communication interface, including:

+ (1) Road vehicles - Vehicle to grid communication interface - Part 1: General information and use-case definition;
+ (2) ISO 15118-2:2014 Road vehicles — Vehicle-to-Grid Communication Interface - Part 2: Network and application protocol requirements;
+ (3) ISO 15118-3:2015 Road vehicles - Vehicle to grid communication interface - Part 3: Physical and data link layer requirements;
+ (4) ISO 15118-4:2018 Road vehicles - Vehicle to grid communication interface - Part 4: Network and application protocol conformance test;
+ (5) ISO 15118-5:2018 Road vehicles - Vehicle to grid communication interface - Part 5: Physical layer and data link layer conformance test;
+ (6) ISO 15118-8:2020 Road vehicles - Vehicle to grid communication interface - Part 8: Physical layer and data link layer requirements for wireless communication;
+ (7) ISO 15118-9:2020 Road vehicles - Vehicle to grid communication interface - Part 9: Physical and data link layer conformance test for wireless communication;

- (8) ISO 15118-20:2022 Road vehicles — Vehicle to grid communication interface — Part 20: 2nd generation network layer and application layer requirements
- (9) ISO/AWI 15118-21 Road vehicles — Vehicle to grid communication interface — Part 21: Common 2nd generation network layer and application layer requirements conformance test plan – this standard has not yet been announced to the public.

Time of action:

- Collect, analyze, and synthesize data: August 2023

Place of Action: Hanoi

Implementing body**:** BLT.Cert, SMEDEC2

2.2. Translation of relevant information about international standards

Deliverable(s): 1 translated document

Methodology**:**

- Work with a translation and expert team to translate the collected data from reliable international sources.

Time of action:

- Translating all necessary data from international sources: July 2023 to August 2023.

Place of Action: Hanoi

Implementing body**:** Experts, BLT.Cert, SMEDEC 2.

2.3. Drafting the national standards and technical specification

Deliverable(s): 1 draft report on charging station standards

Methodology**:**

- To be consulted by experts in relevant fields such as Electrical and electronics, IT, etc.
- Develop the draft national standards and technical specifications based on information from collected data and analysis with international standards and current regulations in Vietnam.

Time of action: September 2023 to December 2023

Place of Action: Hanoi

Implementing body**:** Experts, BLT.Cert, SMEDEC 2

2.4. Testing prototypes and/ or products available in the market if necessary.

Deliverable(s): Test reports.

Methodology**:**

- Identify the criteria that are necessary to be tested.
- Select testing lab.
- Send the samples for testing and get the test report.

Time of action: December 2023 to January 2024

Place of Action: Hanoi, Hai Phong

Implementing body**:** BLT.Cert, SMEDEC 2, Experts

2.5. Site surveys of local factories or countries where the products are produced.

Deliverable(s): 1 survey report

Methodology**:**

- Develop the questionnaire and conduct interviews and on-site surveys at local factories where the products are produced.

Time of action: January 2024

Place of Action: Hanoi, Hai Phong

Implementing body**:** BLT.Cert, SMEDEC 2, Experts

2.6. Internal technical consultations and finalization of the draft.

Deliverable(s): Draft on 9 standards for charging stations.

Methodology**:**

- Organize and facilitate various discussions, dialog,ues, and consultations with key members identified in the mapping, such as internal and external experts, etc.
- Collect feedback and inputs to finalization of the draft.

Time of action: February 2024

Place of Action: Hanoi

Implementing body**:** BLT.Cert, SMEDEC 2, Experts

3. Activity 3: Consultation workshops with experts, manufacturers, and relevant stakeholders for comment on the Draft

Deliverable(s): 1 report on 1 workshop and comments on the draft report from relevant stakeholders.

Methodology**:**

- Send the draft standards to receive comments from relevant agencies, organizations, and individuals.
- Synthesis comments after the draft is published on the web portal of the STAMEQ. The time for receiving comments on the draft is 60 (sixty) days from the date the draft is posted on the Portal.
- Organize and facilitate various discussions, dialogues, and consultations with key members of the project who are identified in the mapping, such as experts, manufacturers, relevant stakeholders, governmental ministries and agencies, etc.
- Collect initial feedback and input to complete the draft standards.
- Invite relevant media units, industry newspapers, and report on newspapers (Journal of Quality Measurement Standards - VietQ, Saigon Entrepreneur Newspaper) to inform about the highlights of the project. At least 3 articles will be published.

Time of action:

- Conduct 1 workshop: February 2024

- Finalize and submit the draft: March 2024

Place of Action: Hanoi

Implementing body**:** BLT.Cert, SMEDEC 2

4. Activity 4: Appraisal: the draft standards shall be appraised by the National Appraisal Committee.

Deliverable(s): 1 report

Methodology**:**

- Conducted by the National Appraisal Committee.
- The Committee includes representatives from Ministries, academia, individual experts, private businesses, manufacturers, and importers. The standards are only approved if more than 60% of the Committee members agree.

Time of action: April 2024
Place of Action: Ha Noi
Implementing body**:** STAMEQ

5. Activity 5: Dissemination of the standards to the relevant parties (manufacturers, importers, ministries)

Deliverable(s): 3 reports on 3 workshops
Methodology:

- Set up and invite participants from provincial departments of science and technology, market management and quality control authorities, custom clearance authorities, and relevant stakeholders (local and international manufacturers, importers, automobile producers, VCCI, and professional communities) to participate in the workshop.
- Conduct 3 workshops with around 150 participants in three regions of Vietnam.
- Invite relevant media units, industry newspapers, and report on newspapers (Journal of Quality Measurement Standards - VietQ, Saigon Entrepreneur Newspaper) to inform about the highlights of the project. At least 3 articles will be published.

Time of action: April to May 2024
Place of Action: Hanoi, Hai Phong, Ho Chi Minh
Implementing body: BLT, SMEDEC 2

6. Activity 6: Conduct training workshop for relevant parties (manufacturers, importers, ministries)

Deliverable(s): 3 reports on 3 workshops

Methodology:

- Set up and invite participants from provincial departments of science and technology, market management and quality control authorities, custom clearance authorities, and relevant stakeholders (local and international manufacturers, importers, automobile producers, VCCI, and professional communities) to participate in the workshop.
- Provide training sections and contact information for further questions on the new 9 standards.
- Conduct 3 workshops with around 150 participants in three regions of Vietnam.
- Invite relevant media units, industry newspapers, and report on newspapers (Journal of Quality Measurement Standards - VietQ, Saigon Entrepreneur Newspaper) to inform about the highlights of the project. At least 3 articles will be published.

Time of action: April to May 2024
Place of Action: Hanoi, Hai Phong, Ho Chi Minh
Implementing body: BLT, SMEDEC 2

7. Activity 7: Announcement and Publication of the national standards

Deliverable(s): 2 reports

Methodology**:**

- When the draft standards meet the requirements according to the appraisal results, Directorate for Standards, Metrology, and Quality (STAMEQ) shall submit it to the Ministry of Science and Technology for consideration and publication.
- The national standards will be published on the website of MOST, STAMEQ, and BLT.Cer t, SMEDEC 2, and Vietnam Quality Magazine (VietQ) (at least 1 article on the official website of each organization).

Time of action: May 2024
Place of Action: Hanoi
Implementing body**:** STAMEQ, MOST.

Table 1: Project activities detailed work plan

ACTIVITY	SPECIFIC ACTIVITY	DELIVERABLE	DUE DATE
Result 1 Submit the proposal to the relevant ministry for approval	1.1. Gather information to draft the proposal	1 draft proposal	June 2023

ACTIVITY	SPECIFIC ACTIVITY	DELIVERABLE	DUE DATE
	1.2. Submission of proposal for the development of the national standards	1 proposal and 1 confirmation	June to July 2023
	1.3. Approval of the standard development project and its development schedule	1 plan for national development.	July to August 2023
Result 2 Technical development of the draft standards	2.1. Collecting and analysis of data and documents	1 complete document on necessary information about the 9 standards	August 2023
	2.2. Translation of relevant information about international standards	1 translated document	July 2023 to August 2023
	2.3. Drafting the national standards and technical specification	1 draft report on charging station standards	September 2023 - December 2023
	2.4. Testing prototypes and/ or products available in the market if necessary	Test report	December 2023 to January 2024
	2.5. Site surveys of local factories or countries where the products are produced	1 survey report	January 2024
Result 3 Consultation workshops with experts, manufacturers, and relevant stakeholders for comment on the Draft.	- Send the draft standard to receive comments from relevant parties. - Synthesis comments on the draft - Organize and facilitate various meetings with key members - Conduct 1 workshop - Collect initial feedback and input to complete the draft standards - Finalize and submit the Draft for appraisal	1 report on 1 workshop and comments on the draft report from relevant stakeholders.	February – March 2024
Result 4 Appraisal: the draft standards shall be appraised by the National Appraisal Committee	- Conducted by the National Appraisal Committee	1 report	April 2024

ACTIVITY	SPECIFIC ACTIVITY	DELIVERABLE	DUE DATE
Result 5 Dissemination of the standards to the industry (manufacturers, importers, ministries)	- Set up and invite participants from relevant parties - Conduct 3 workshops with around 150 participants.	3 reports on 3 workshops	April to May 2024
Result 6: Conduct training workshops for relevant parties (manufacturers, importers, ministries)	- Provide training sections and contact information for further questions on the new 9 standards. - Conduct 3 workshops with around 150 participants in three regions of Vietnam.	3 reports on 3 workshops	April to May 2024
Result 7 Announcement and Publication of the national standards	- STAMEQ shall submit it to the MOST for consideration and publication. - The national standards are announced on media platforms.	2 reports	May 2024

Table 2: Project Workplan

		DURATION OF ACTIVITIES											
ACTIVITY	SPECIFIC ACTIVITY	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24
Result 1 Submit the proposal to relevant ministry for approval	1.1. Gather information to draft the proposal												
	1.2. Submission of proposal for the development of the national standards												
	1.3. Approval of the standard development project and its development schedule												
Result 2 Technical development of the draft standards	2.1. Collecting and analysis of data and documents												
	2.2. Translation of relevant information about international standards												
	2.3. Drafting the national standards and technical specification												
	2.4. Testing prototypes and/ or products available in the market if necessary												
	2.5. Site surveys to local factories or countries where the products are produced												
Result 3 Consultation workshops with experts, manufacturers, and relevant stakeholders for comment on the Draft	- Send the draft standard to receive comments from relevant parties.												
	- Synthesis comments on the draft												
	- Organize and facilitate various meetings with key members												
	- Conduct 1 workshops												
	- Collect initial feedback and input to complete the draft standards												
	- Finalize and submit the Draft for appraisal												
Result 4 Appraisal: the draft standards shall be appraised by the National Appraisal Committee	- Conducted by the National Appraisal Committee												
Result 5: Dissemination of the standards to the industry (manufacturers, importers, ministries)	- Set up and invite participants from relevant parties												
	- Conduct 3 workshops with around 150 participants.												
Result 6: Conduct training workshop to relevant parties (manufacturers, importers, ministries)	- Provide training sections and contact information for further questions on the new 9 standards.												
	- Conduct 3 workshops with around 150 participants in three regions of Vietnam												
Result 7 Announcement and Publication of the national standards	- STAMEQ shall submit it to the MOST for consideration and publication.												
	- The national standards are announced on media platforms.												

Table 3: Results-based monitoring framework (RBMF)

Impact Level: - The development of 9 standards for communication between the charging stations and the electricity grid will allow the charging station to be installed and the station owners can get licenses from the government authorities to install their charging stations. - Directly impact on the green transport development in Vietnam and indirectly contribute to the reduction of 52.4 million tons and 106.2 million tons of greenhouse gas in 2030 and 2050 respectively.					
Long-Term Outcome: - The national standards for e-vehicle charging stations establish the foundation for the long-term development of the green transport sector, reduce emissions and accelerate the energy transition.					
Intermediate Strategic Outcomes	**Project Indicator**	**Baseline**	**Target**	**Actual/ Accomplishment**	**Data Source and Means o Verification**
Strategic Outcome 1. Strengthened Enabling Policy Environment					
Select Outcomes applicable to your project and indicate your project-specific output.	Indicate the project-specific indicator for the selected outcome	Indicate the baseline for your specific output	Set target (quantitative preferably)	Provide the actual as part of the progress report	Specify means to verify the target
Short-Term Outcome 1.1 Standards for e-vehicle charging infrastructure are developed.	Standards for e-vehicle charging infrastructure are in place	There are no national standards for creating, manufacturing, or installing e-vehicle charging infrastructure.	9 key national standards for communication and connection between the charging stations and electricity network are developed out of the 63 standards.		Adoption and publication of the national standards by the Ministry of Science and Technology
	The				

Short-Term Outcome 1.2 National standards of e-vehicle charging infrastructure are disseminated to the industry (manufacturers, importers, ministries) and relevant stakeholders.	number of people that attended the workshop on applying the standards.	Standards for e-vehicle charging infrastructure have not been established and disseminated in Vietnam.	50 participants in the workshop in person.		Reports on a post-workshop (Documentary Review)
Short-Term Outcome 1.3 Safety and quality of charging infrastructure are ensured	The number of certified and verified charging stations	Safety and quality of charging infrastructure have not been established and assured.	100 charging stations are set up in Vietnam by the end of 2024.		-Annual sector reports; - Publications of manufacturers and automobile associations (Documentary review).

Table 4: Donor Mapping

Donor	Project	Detailed Activities	Timeframe
German Ministry for the Environment, Nature Conservation and Nuclear Safety (BMWK)	Support to Vietnam for the Implementation of the Paris Agreement" (VN-SIPA) [7]	Consulted and supported line ministries to develop a measuring, reporting, and verification system for national-level mitigation in land use, forestry transport, construction, and waste management.	2023 to 2050
ADB	Climate Financing Package to Support Electric Mobility[6]	Manufacturing Viet Nam's first fully-electric public transport bus fleet and first national electric	2022 to 2030

		vehicle (EV) charging network.	
WORLD BANK	Vietnam's Emission Reductions Program [8]	Address the underlying causes of forest loss in the country's North Central Region and by so doing reduce emissions from deforestation and forest degradation. The program will also support forest restoration.	2020 to 2025
UNDP	Supporting the adoption and development of 03 Vietnamese national standards on charging systems and batteries for E-vehicles.	Development of 3 standards about Low-voltage electrical installations, Low-voltage switchgear and control-gear assemblies, and Electric vehicle conductive charging system.	2022 to 2023

Reference:

(1) Van Xuyen, 2023. Link: https://www.vietnamplus.vn/co-hoi-vang-phat-trien-thi-truong-xe-oto-dien-tai-viet-nam/849154.vnp#source=link.gov.vn.
(2) Cong Trung, 2023. Link: https://cuoituan.tuoitre.vn/ha-tang-sac-pin-o-to-dien-vn-tram-sac-chua-nhieu-quy-chuan-chua-du-20230315090910036.htm
(3) Vinh Phuc, 2023. Link: https://cuoituan.tuoitre.vn/ha-tang-sac-pin-o-to-dien-vn-tram-sac-chua-nhieu-quy-chuan-chua-du-20230315090910036.htm.
(4) Prime Minister, 2022. Link:https://vanban.chinhphu.vn/?pageid=27160&docid=206188
(5) Song Ha, 2022. Link: https://vneconomy.vn/chuyen-doi-sang-nang-luong-xanh-thach-thuc-lon-nhat-la-nguon-luc-thuc-hien.htm.
(6) ADB, 2022. Link: https://www.adb.org/news/adb-leads-135-million-climate-financing-package-support-electric-mobility-viet-nam
(7) VNS, 2023. Link: https://vietnamnews.vn/environment/1504360/german-funded-project-supports-viet-nam-in-implementing-paris-agreement.html
(8) WB, 2023. Link: https://www.worldbank.org/en/news/press-release/2020/10/22/vietnam-signs-landmark-deal-with-world-bank-to-cut-carbon-emissions-and-reduce-deforestation