



ENERGY  
TRANSITION  
PARTNERSHIP



UNOPS

# EXECUTIVE SUMMARY FIRST MILESTONE REPORT

## Inception Report on the Development of the National Standards

### for Battery Energy Storage System (BESS) - Vietnam



Hanoi, 13 June 2024





## COLOPHON AND DISCLAIMER

### Beneficiaries

Southeast Asia Energy Transition Partnership

14th Floor, 208 Wireless Road Building Lumpini, Bangkok 10330, Thailand | +669 8832 1614 | [etp@unops.org](mailto:etp@unops.org)

ISSQ

52/46 Lien Mac Bac Tu Liem, Hanoi | 0981851111 | [tcvnissq@gmail.com](mailto:tcvnissq@gmail.com)

Pondera

Amsterdamseweg 13, 6814 CM Arnhem | 088 – pondera (088-7663372) | [info@ponderaconsult.com](mailto:info@ponderaconsult.com)

7th Floor, Serepok Building, 56 Nguyen Dinh Chieu Street, Da Kao Ward, District 1 Ho Chi Minh City, Vietnam

### Key Experts:

Vu Van Dien, Team lead & standard expert

Ngo Kien Cuong, Deputy team lead & energy expert

Jeroen de Veth, Team member: Energy Storage System Expert

Willem Bonnes, Team member: Engineering Expert

Dennis Geutjes, Team member: Energy Storage System Expert

Pho Duc Son, Team member: Quality Management Expert

Luong Van Phan, Team member: Standard Expert

Le Tien Thanh, Team member: Conformity/ Certification expert

Ha Duy Hieu, Team member: Quality management system expert

### Contributors:

*ISSQ:* Phung Thi Thu Hang, Nguyen Minh Ngoc

*Pondera:* Joost Starmans

### Acknowledgments

We would like to thank the following individuals and organizations for their collaboration and support, insightful comments, and advice for the completion of this Report: the Consortium Institute for Standard and Quality Development Studies (ISSQ) - Pondera Consult B.V. (PONDERA) - Phenikaa University (PHENIKAA), the Directorate for Standards, Metrology, and Quality (STAMEQ).



## Disclaimer

This report is prepared based on the Contract Agreement with the Southeast Asia Energy Transition Partnership (ETP) managed by the United Nations Office for Project Services (UNOPS) and its beneficiary Directorate of Standards, Metrology and Quality (STAMEQ) of the Ministry of Science and Technology (MOST). The study makes use of generally accepted principles, models, and information that were available at the time of writing this report. Adjustments in the principles, models, or data used may lead to different outcomes. The nature and accuracy of the data used for the study largely determines the accuracy and uncertainties of the calculated results. ISSQ is not liable for lost income or damage suffered by client(s) and/or third parties from claims based on data not originating from ISSQ. This report has been prepared with the intention that it will solely be used by the client and the project beneficiary only for the purpose for which the report was drawn up. The information contained in this report may not be used for any other purpose without written permission from ISSQ. ISSQ is not responsible for any consequences that may arise from the improper use of the report. The responsibility for the use of (the analysis, results, and findings contained within) the report lies with the client and its beneficiary.

Suggested citation: Inception Report of Development of National Standards BES in Vietnam - First Milestone Report, prepared for the Energy Transition Partnership for Southeast Asia (ETP), Hanoi- Viet Nam.

## Executive Summary

### Introduction and Project Background:

BESS (Battery Energy Storage System) is an advanced energy storage system that utilizes high-capacity batteries. The primary technology of BESS involves the use of lithium or vanadium batteries, enabling the storage of large amounts of electrical energy and flexible distribution. BESS helps stabilize the electrical system, efficiently allocate electricity, and support power supply in areas without grid access such as remote regions, rural areas, or islands.

Compared to traditional energy storage systems, BESS offers several significant advantages:

- Ensuring a stable power source that can store and supply electricity for extended periods.
- Supporting cost reduction in electricity consumption and efficiently managing excess electricity from systems such as rooftop solar panels.
- Environmentally friendly and cost-effective.
- Easy installation and operation, opening up opportunities to access electricity for areas lacking grid connections.

In the context of increasing energy demand and the rise of renewable energy sources such as wind and solar power, the development of energy storage systems has become more urgent than ever. Integrating renewable energy sources into the power grid requires flexibility and reliability, something that BESS can provide.

While BESS systems have played a crucial role in enhancing the efficiency and reliability of the power system, the lack of national standards (TCVN) can pose risks related to safety, quality, and system compatibility. The absence of national standards for BESS leads to delays in the development, confirmation, and assessment of investment activities and BESS deployment. Conversely, it will slow down the growth rate and penetration rate of RE in the power system.

Establishing TCVN national standards for BESS not only ensures that these devices meet the highest safety and quality standards but also creates conditions for the sustainable development of the renewable energy industry, especially in the context of the increasing importance and prevalence of renewable energy sources such as wind and solar power. In doing so, we not only create a safer environment for BESS deployment but also promote greater access to and utilization of clean energy on a global scale. Therefore, building national standards (TCVN) for BESS is extremely important and necessary.

The Consortium, comprising ISSQ and Pondera has commenced the project "Development of the National Standards for Battery Energy Storage System (BESS)", an initiative under the Southeast Asia Energy Transition Partnership (ETP). This report encompasses the first deliverable: the Inception Report. It aims to revise, update, and further detail the work plan as presented in the proposal, as well as align the project's expectations and understanding with the Client. The Inception Report is compiled by adhering to the proposed structure and contents listed in the Client's Terms of Reference (ToR).

### Scope of the Services:

The main objective of this project is to develop a comprehensive set of national standards for BESS by regulations to comply with the government's procedures of developing and approving national standards issued by the MOST. The promulgation of the national standards will facilitate the deployment of renewable energy in Vietnam. To reach the overall objective, the following deliverables will be provided under the project:

1. Inception Report
2. Comprehensive Study Report
3. Draft of the national standards (TCVN) for BESS
4. Two hybrid-mode consultation meetings for feedback
5. Two 5-day Trips (study tour) to European and Asia countries with strong experience in BESS
6. Reports on testing principles, practicality of TCVNs, and categorization of mandatory and optional standards
7. Final draft national standards for BESS to the Appraisal Council
8. Full dossier of national standards for BESS to MOST for promulgation



9. Final event to disseminate project results
10. Final Report

### **Methodology and Project Work Plan:**

The methodology and work plan to execute the scope of work are elaborated in detail for each deliverable. The Consortium describes how activities are executed and choices are motivated. A Gantt chart is included to visualize all activities as a function of time.

### **Project Management:**

The project management strategy includes the Consortium's organizational chart, expertise allocation, management structure, and key consultants. It highlights the project board's role in oversight, and the project management team's function in maintaining control and collaboration. Key consultants' roles and characteristics are also summarized.

### **Donor Coordination Strategy:**

The Donor Coordination Strategy is essential for aligning efforts among key stakeholders including the Donor and the Consortium. It involves regular communication, bi-weekly meetings, attendance at beneficiary meetings, formal communication channels, professional documentation, feedback incorporation, collective capacity-building, and occasional additional Donor support.

### **Media Channels:**

The project's media plan focuses on leveraging reputable Vietnamese online platforms to disseminate key findings to stakeholders. The approach aligns with the communication plan outlined in the ToR, ensuring broad exposure for project outcomes. Communication materials include social media posts, press releases, and online presentations.

### **Gender Equality and Diversity:**

The project aims at enhancing gender equality and diversity. Measures include ensuring 40% female representation in stakeholder engagements, tracking gender-disaggregated attendance, and prioritizing diversity within the Consortium team.

### **Risks, Mitigations, and Assumptions:**

The Consortium ensures quality, data integrity, and risk management throughout the project, following ISO standards and a Quality Management System. Trusted data undergoes thorough quality checks, and standardized procedures ensure data integrity. Regular meetings include risk assessment sessions for proactive risk management. Initial hazard assessments identify risks, allowing for preventive and corrective actions.

### **Monitoring and Evaluation Framework:**

The project will utilize the client's tailored Results-Based Monitoring Framework (RBMF) to ensure transparent and inclusive monitoring of results. This framework will assess whether project outputs meet expectations and contribute to predefined fields, using client-defined indicators and targets. Regular updates to the RBMF will maintain its relevance throughout the project's duration, fostering continuous learning and improvement.