

Technical Assistance Closure Report Template

Objective of the technical assistance (TA) Closure Report:

- To communicate publicly in one document a summary of progress made and lessons learned during the TA towards the anticipated impact (sections 1-4).
- To document qualitative and quantitative data collected during TA, for use in donor and UN reporting (Annex 1).

Steps for completing the TA closure report:

1. The lead TA implementer submits the closure report at the end of the technical assistance as a final deliverable. The TA closure report will capture outputs, outcomes and impacts of all activities conducted under the TA. Please copy and summarise relevant material from previous TA outputs/deliverables and the Response Plan, as relevant.
2. A CTCN Manager will review and revise the closure report before final approval by the CTCN Deputy Director.

Important note on public and internal use of the closure report:

Once approved by the CTCN Deputy Director, the TA closure report will be a public document available on the CTCN website www.ctc-n.org. Selected content will be used for targeted communication activities. Annex 2 is for internal use only and will not be publicly available.

Closure Report for CTCN Technical Assistance

1. Basic information

Title of response plan	Enhancing Vanuatu's market for energy efficiency appliances
Technical assistance reference number	2021000011
Country / countries	Vanuatu
NDE organisation	Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and National Disaster Management
NDE focal point	Mrs. Esline Garaebiti, Director General, Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and National Disaster Management, Government of Vanuatu Tel: +678 22068
NDE contact information	gesline@vanuatu.gov.vu
Proponent focal point and organisation	Mr. Antony Garae, Director, Department of Energy, Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and National Disaster Management, Government of Vanuatu Email: gantony@vanuatu.gov.vu Tel: +678 25201
Designer of the response plan	<i>Name, organization, email To be updated by CTCN</i>

Implementer(s) of technical assistance	International Institute for Energy Conservation (IIEC)
Beneficiaries	Department of Energy, Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and National Disaster Management
Sector(s) addressed	Energy Efficiency
Technologies supported	Energy Efficient Appliances and Lighting Products
Implementation start date	08/12/2021
Implementation end date	07/06/2023
Total budget for implementation	US\$ 152,090
Description of delivered outputs and products as well as the activities undertaken to achieve them. In doing so, review the log frame of the original response plan and refer to it as appropriate	<p>Output 1: Development of implementation planning and communication documents</p> <p>This output involved the creation of various planning and communication documents to ensure the smooth execution of the project. The products delivered under this output include:</p> <ul style="list-style-type: none"> • Detailed Work Plan (Deliverable 1.1) • Monitoring and Evaluation Plan (Deliverable 1.2) • CTCN Impact Description Document (Deliverable 1.3) • Closure and Data Collection Report (Deliverable 1.4) <p>To achieve Output 1 and deliver the products, the following activities were undertaken:</p> <ul style="list-style-type: none"> • Activity 1.1: Preparation of Implementation Plan • Activity 1.2: Preparation of Monitoring and Evaluation Plan • Activity 1.3: Preparation of Impact Description Document • Activity 1.4: Preparation of Closure and Data Collection Report <p>Output 2: Comprehensive market and policy analysis for higher efficiency refrigerators, freezers, air conditioners, and lighting products</p> <p>This output focused on conducting a thorough analysis of the market and policy landscape related to energy-efficiency refrigerators, freezers, air conditioners, and lighting products in Vanuatu. The products delivered under this output include:</p> <ul style="list-style-type: none"> • Kick-off Meeting Report (Deliverable 2.1) • Market and Policy Analysis for Energy Efficient Appliances in Vanuatu (Combined Deliverable 2.2 Market Assessment, Deliverable 2.3 Evaluation Report, and Deliverable 2.4 Recommendations for the program improvement) <p>To achieve Output 2 and deliver the products, the following activities were undertaken:</p> <ul style="list-style-type: none"> • Activity 2.1: Kick-off meeting

- Activity 2.2: Detailed market assessment for refrigerators, freezers, air conditioners, and lighting products
- Activity 2.3: Analysis of the existing labelling and standards program for energy-efficient appliances
- Activity 2.4: Recommendations on the improvement of the existing standards and labelling program

Output 3: Assessment and upgrade of the existing Vanuatu Electronic Single Window (VeSW) registration system and develop an MV&E plan

This output focused on assessing and improving the VeSW product registration system and developing a Monitoring, Verification, and Enforcement (MV&E) plan. The products delivered under this output include:

- MV&E Framework and Plan for Appliances and Lighting Products in Vanuatu Report (Deliverable 3.1)
- Assessment & Upgrade of Existing Vanuatu Electronic Single Window (VeSW) Registration System Report (Deliverable 3.2)
- Design and Delivery of Training on Enhancement of Monitoring, Verification, and Enforcement (MV&E) Report (Combined Deliverable 3.3 Training curriculum & material and Deliverable 3.4 Training report)

To achieve Output 3 and deliver the products, the following activities were undertaken:

- Activity 3.1: Development of Monitoring, Verification, and Enforcement (MV&E) plan
- Activity 3.2: Assessment and upgrade of the existing VeSW product registration system
- Activity 3.3: Design of training on enhancement of MV&E
- Activity 3.4: Delivery of a training program

Output 4: Development of financing mechanisms for incentivization towards the purchase of energy-efficient appliances

This output focused on creating financing mechanisms to encourage consumers to purchase energy-efficient appliances. The products delivered under this output include:

- Financing Mechanism Options & Recommendations for the Incentivization towards the Purchase of Energy-Efficient Appliances report (Combined Deliverable 4.1 National financing mechanism options,

	<p>Deliverable 4.2 Consultation with stakeholders on financing schemes for implementation and Deliverable 4.3 Recommendations on the design of and implementation of selected financing schemes)</p> <p>To achieve Output 4 and deliver the products, the following activities were undertaken:</p> <ul style="list-style-type: none"> • Activity 4.1: Identification of options for national financing mechanisms • Activity 4.2: Financing mechanisms consultation with stakeholders • Activity 4.3: Consultation & Recommendation of financial mechanism and related implementation plan <p>Output 5: Project Closure</p> <p>This output focused on organizing a meeting to officially conclude the project and presenting the final project outcomes and outputs to stakeholders as well as discussing lessons learned and potential future actions. The products delivered under this output include:</p> <ul style="list-style-type: none"> • Meeting report and presentation <p>To achieve Output 5 and deliver the products, the following activity was undertaken:</p> <ul style="list-style-type: none"> • Activity 5.1: Closure meeting
<p>Methodologies applied to produce outputs and products</p>	<p>Surveys and structured interviews with key stakeholders</p> <p>- The market assessment was conducted using a combination of primary and secondary data sources. The primary data was collected through small-scale household and retailer surveys, while the secondary data was obtained from various published documents and market data.</p> <p>- To design the training curriculum on the enhancement of MV&E activities for the MEPSL programme, a training needs assessment was conducted to identify and analyse what key capacities already exist and what additional capacities may be needed to reach the objectives and strengthen DoE and Customs officials. The assessment activities primarily included online and face-to-face meetings with the DoE and Customs officials and a review of the current practices in the inspection of imported MEPS-regulated goods by the DoE and the Customs department.</p>
<p>Reference to knowledge resources</p>	<p>None of the UNFCCC Technology Executive Committee (TEC) knowledge products were used in the implementation of the TA.</p>

<p>Deviations</p>	<p>The original response plan involved developing a specific training curriculum for customs officials. In practice, two training sessions were conducted: one for customs officials in collaboration with DoE officers, and another session for the DoE Team. The latter session focused on market surveillance, inspection, verification issues, and other relevant aspects related to the post-market phase after the product is sold. This approach was considered more beneficial in enhancing the MEPSL programme and building capacity for DoE officers.</p> <p>Regarding the upgrade of the existing VeSW product registration system, it deviated from the original response plan, which specified the utilization of UNEP's United for Efficiency (U4E)'s pre-developed product registration system. Instead, the project team reviewed and evaluated the "Energy Module" within the Vanuatu Electronic Single Window (VeSW) system, which is currently being used under the MEPSL programme. The Energy Module is programmed, managed, and maintained by the Vanuatu Electronic Single Window Project (VESWP) team. Therefore, recommendations were provided to the DoE and the VESWP team for the improvement and upgrade of the VeSW system, and these upgrades and enhancements will be carried out by the VESWP team.</p>
<p>Anticipated follow-up activities and next steps</p>	<p><i>Instruction: Please describe planned follow-up activities after completion of technical assistance, including information on involved stakeholders and anticipated timelines.</i></p> <p><i>The following are some examples of next steps:</i></p> <ul style="list-style-type: none"> • <i>Submission of a draft law/policy developed by the CTCN to cabinet/parliament.</i> • <i>Follow-up and formal submission of funding proposal drafted with support from the CTCN.</i> • <i>Implementation of activities designed by the CTCN.</i> • <i>Dissemination of report drafted by the CTCN.</i> <p><i>Use of new expertise acquired during training led by CTCN.</i></p> <p>This technical assistance will establish the basis for a series of activities that will lead to efficient and impactful standards and labelling programme for appliances. The future success and continuity of this initiative are underpinned by the following actions:</p> <ol style="list-style-type: none"> (a) Update performance standards and test methods to align with the Australian New Zealand Energy Rating Program. This update will ensure consistency and harmonization with international energy efficiency standards. (b) Improve the Energy Module in the VeSW system. Enhancements will support streamlining data analysis and reporting capabilities to enable effective monitoring and evaluation of EE

	<p>in appliances. This will facilitate better tracking and assessment of energy performance and support evidence-based decision-making.</p> <p>(c) Develop statistical HS codes for appliances to accurately identify regulated and banned products. The implementation of these codes will provide a standardized and efficient way to categorize appliances and differentiate between products that fall within the scope of MEPSL regulations and those that do not.</p> <p>(d) Establish a methodology for the identification of products selected for verification processes. For example, when selecting retail stores for sampling, the following criteria should be considered:</p> <ol style="list-style-type: none"> 1. High-volume stores: Stores with significant import data can provide valuable insights into the market and product compliance (import data can be used); 2. Response to consumer complaints: Stores that have received consumer complaints may warrant closer inspection to ensure compliance with regulations; 3. Unusual activity or registrations: Stores exhibiting unusual patterns of activity or registrations should be prioritized for sampling, as these may indicate potential non-compliance; 4. New retailers: Recently established retailers should be included in the sampling process to ensure compliance from the early stages of their operations; and 5. Regional area coverage: Sampling should cover a range of retail stores in different regions to ensure comprehensive monitoring of compliance across the country. <p>This methodology will provide a systematic approach for determining which products should undergo verification to ensure compliance with the MEPSL requirements. It will help prioritize resources and efforts for effective enforcement and monitoring of EE standards.</p>
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2. Lessons learned

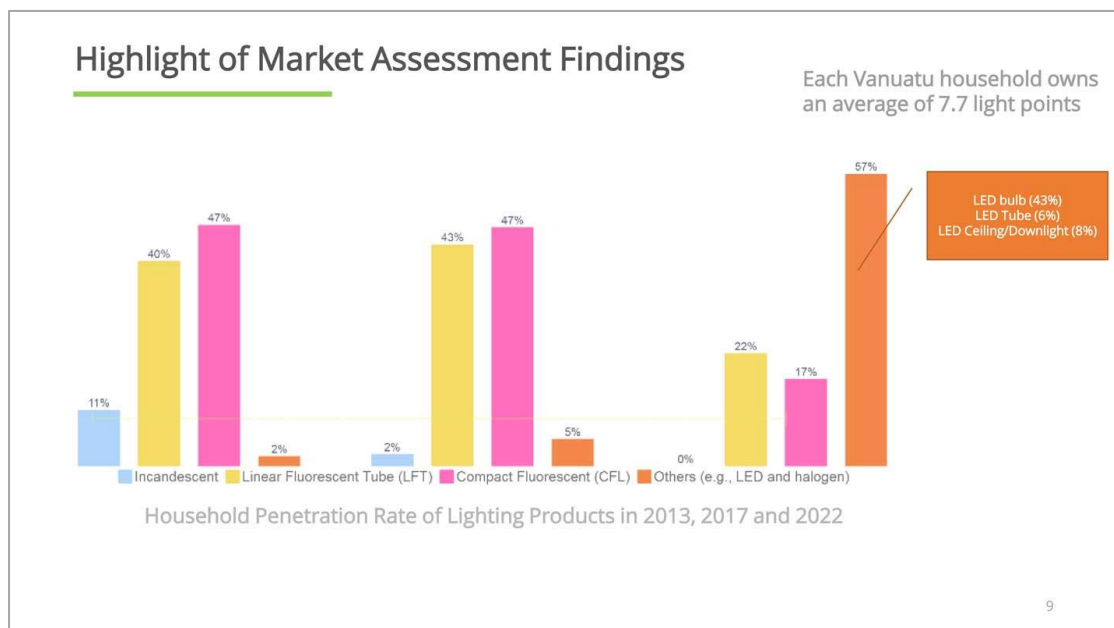
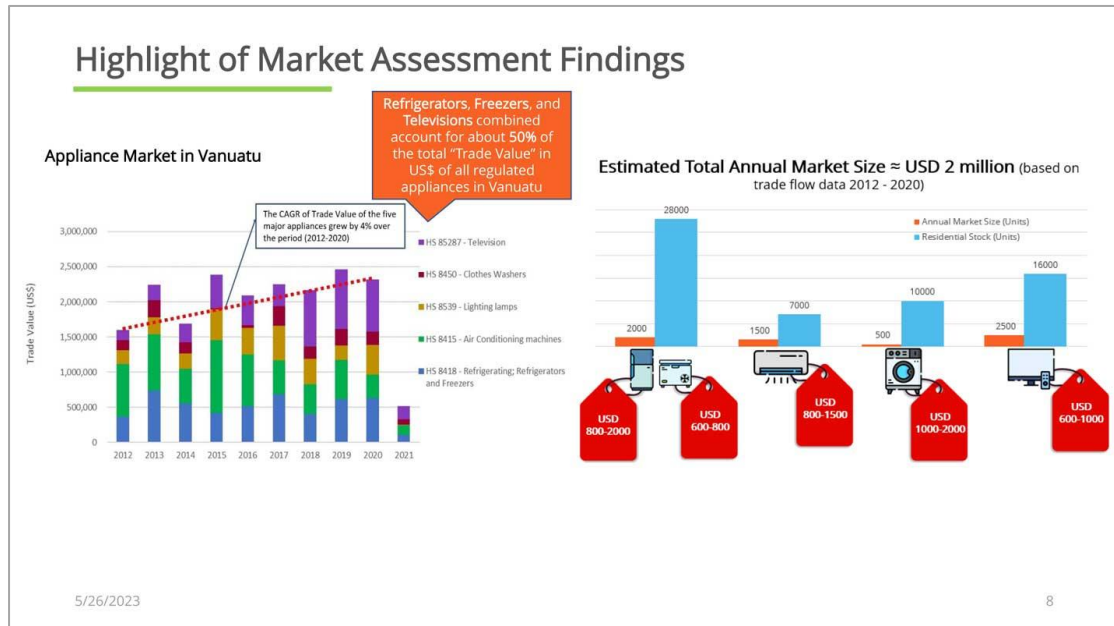
	Lessons learned	Recommendations
Lessons learned from the CTCN TA process	<i>Describe lessons learned from following the steps of the TA process and interacting with the CTCN Secretariat. What were</i>	<i>Recommendations include</i> <ul style="list-style-type: none"> • <i>Steps which could be taken to improve the CTCN TA process</i>

	<p><i>the challenges and essential factors contributing to successful implementation</i> It is crucial to promptly identify the support and data required from local stakeholders. Communication with local stakeholders, including retailers and the local government, was key to the successful implementation of this TA.</p>	<ul style="list-style-type: none"> • Considerations for increased success of similar efforts (i.e. regulatory, legal, stakeholders, communication, etc.) <p>During the kick-off meeting, it is crucial to identify the clear support needs of local stakeholders upfront and thoroughly discuss the work plan.</p>
<p>Lessons learned related to climate technology transfer</p>	<p><i>Describe lessons learned, opportunities, and barriers for the use and deployment of the technology or technologies supported by the TA. The objective is to identify specific success factors for technology transfer</i></p> <p>The MEPSL programme regulation in Vanuatu recognises the MEPS and test method requirements in Australia, New Zealand, and Fiji. However, the MEPS and test methods in these countries are periodically updated. Vanuatu has not updated its MEPS and test method requirements since 2017, rendering the MEPSL programme in Vanuatu outdated. As a result, the data on certified products maintained by these countries may not be entirely beneficial for Vanuatu, and this also creates confusion for the DoE and importers/retailers during the certification process.</p> <p>The absence of detailed import data for regulated products has been hindering the DoE's ability to monitor and evaluate the effectiveness of the MEPSL programme. To address this issue, under the TA, export data from countries of origin was used as proxies for import data in Vanuatu. To improve the situation, the DoE can collaborate with the Customs</p>	<p><i>Recommendations include</i></p> <ul style="list-style-type: none"> • Risk mitigation measures • Identified opportunities for over-coming barriers • Long-term sustainability (e.g. building endogenous capacities, funding opportunities, etc.) <p>Vanuatu must update its regulations to address any inconsistencies in MEPS and test methods with countries where the same MEPS programmes are recognised, namely Australia, New Zealand, and Fiji. The DoE should also develop a work plan to ensure regular updates of the MEPSL programme in Vanuatu, aligning it with the requirements stipulated in those recognised countries.</p> <p>The DoE and Customs should consider utilizing an additional 4-digit National Component of the HS code (Tariff or Statistical Code) specifically for electrical appliances and lighting products. This implementation would assist in distinguishing between in-scope, out-of-scope, and banned product types under the MEPSL programme. Moreover, it will facilitate the collection of import data for all regulated products by the DoE.</p>

	<p>Department to establish specific HS codes (Tariff or Statistical Codes) for regulated products. This initiative would facilitate the collection of relevant import data and enhance the DoE's monitoring and evaluation capabilities.</p> <p>While the online product registration and certification system (the Energy Module under VeSW) has been beneficial in streamlining coordination between the DoE and the Customs Department for the importation of regulated products, there are still certain features and user authorities that need to be refined to enhance the effective implementation of the MEPSL program.</p> <p>The implementation of the proposed financing mechanisms for the update of energy-efficient appliances is contingent upon securing seed funding, which, at present, is not available from the DoE and the National Green Energy Fund (NGEF) for the operationalization phase of these mechanisms. The final design and implementation approach of the financial mechanisms will depend on the availability of funding, although the financial contributions from the Vanuatu Government are minimal. For instance, approximately a minimum of US\$50,000 is required to operationalize the portfolio credit guarantee mechanism (see <i>Annex B of Financing Mechanism Options & Recommendations for the Incentivization towards the Purchase of Energy-Efficient Appliances report</i> for the estimation of guarantee fund size and loan portfolio).</p>	<p>Multiple recommendations to enhance the Energy Module were proposed by this TA. To implement these improvements, the DoE should establish a close collaboration with the VESWP team in order to carry out the necessary system updates.</p> <p>It is recommended for DoE and NGEF to explore potential funding avenues and secure seed funding before carrying out the detailed design phase of the selected financial mechanism. One potential avenue for funding could involve a bilateral agreement on climate change cooperation that was signed between Vanuatu and Switzerland on November 11, 2021, during the COP26 climate conference. This cooperation aims to implement private sector-driven low-carbon initiatives in Vanuatu, aligning with the national sustainable development goals and the targets outlined in Vanuatu's Nationally Determined Contribution (NDC). These objectives are fully aligned with the proposed EE financial mechanisms. In addition, various potential climate finance sources in Vanuatu have been compiled and published by the Ministry of Climate Change Adaptation. DoE/NGEF can utilize the directory to initiate formal funding requests to fulfil their funding requirements.</p>
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3. Illustration of the TA and photos

For communication purposes, please provide 2-4 Power Point slides, including illustrations or charts, describing barriers, opportunities, methodology, activities, outputs and achieved results. The illustrations must be copied into the TA Closure report but must also be delivered as power point files. Also, please provide at least five high-resolution pictures in jpg format, capturing technical assistance. The pictures should illustrate how the TA has impacted the lives of the beneficiaries in particular and the communities in general.



Key Recommendations for Existing MEPSL Programme Improvement

1. Review and update registration procedures and database

Stakeholder(s): DoE & Customs Officials

- Regulation Order No. 126 of 2017 provides application forms and templates for certification of registration. These documents have not been updated over the past five years
- Update the Pacific Appliance Database (outdated data) and perform updates as necessary

2. Develop and implement a market surveillance program for MEPSL

Stakeholder(s): DoE & Importers/Retailers

MV&E activities have not yet been implemented by DOE, and it is recommended that DOE start developing a market surveillance program focusing on initial compliance checks such as checking that the products offered for sale have been registered and are correctly labeled.

3. Review and update the scope of MEPSL Programme

Stakeholder(s): DoE

Due to the increasing prevalence of LED lamps, it is strongly recommended that DoE commence monitoring the MEPS and labeling requirements for LED lamps being developed by the AS/NZS Energy Rating program

Key Recommendations of Development of MV&E Plan

1. Maintain up-to-date MEPS for lighting and appliances in line with AS/NZ revisions

Stakeholder(s): DoE

Updating the Vanuatu regulation to resolve any inconsistencies in MEPS and test methods with recognised countries' MEPS programs (Australia, New Zealand, and Fiji)

2. Separate product registration & import certificate application processes

Stakeholder(s): DoE & Customs Officials

It is recommended to separate the capture of product data (product registration) from the application for import certificates (certificate application) into two separate processes in order to simplify the processing of information and support the traceability of product registration and import certificate creation.

3. Update the Vanuatu register

Stakeholder(s): DoE

A process needs to be implemented for updating the Vanuatu register to include information regarding:

- Category A products with expired registration in other countries
- Category B and C products with performance levels (to assess against any updated MEPS)

This will require changes to the product registration forms to allow for the collection of product performance data

4. Removal of the "Deemed-to-Comply" provision from SOP & from practice

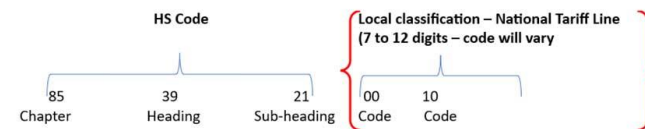
Stakeholder(s): DoE & Customs Officials

"Deemed-to-Comply" provision, as stated in MEPSL Regulation, applies specifically to lighting products. It poses a challenge for surveillance officers in determining if a non-registered product falls under the category of deemed-to-comply or non-compliant. This process consumes valuable time and resources that could be better utilized for cases where the determination of registration status is more straightforward.

Key Recommendations of Development of MV&E plan

- Statistical HS Codes for Appliances in Vanuatu** - Using an additional 4-digit National Component of HS code (Tariff or Statistical Code) for electrical appliances and lighting products to help distinguish between in-scope, out-of-scope, and banned product types under the MEPSL programme
 - A set of proposed Statistical Codes for the regulated lighting, air-conditioner, and refrigerator/freezer products provided to DoE.

Example of HS Classification: parts of lighting products, HS code 853921



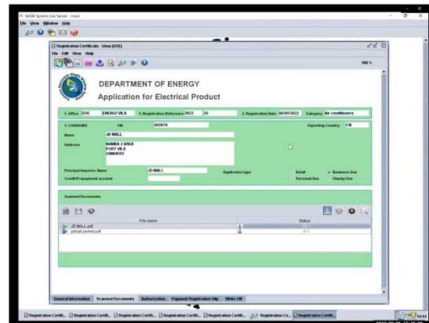
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Key Recommendations of Assessment and upgrade of the existing VeSW product registration system

Limitations of data analysis and reporting still exist due to insufficient information collection from the product registration process

- Adding Data Tracking** below for each imported model/product and allowing DoE to export from the system to support tracking and analysing the impact of the MEPSL programme. This also aims to provide DoE with a record of baseline data to support policymaking and serves as a storehouse of ancillary information and data about products on the market.
 - Number of imported units of each model
 - Energy efficiency data
 - Sub-categorization of each product type
 - HS Codes (6 digits)
 - Linking expired registration data with new registration



Online Application Form of the "Appliance Registration Certificate" in the VeSW System

5/26/2023

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Photos



Project Team Deliver a Training Session 1 on MV&E to DoE Officers, held on November 9, 2022, at the Department of Energy, Port Vila, Vanuatu



Training Session 2 – DoE and Customs Officials, held on November 10, 2022, at the Department of Energy, Port Vila, Vanuatu



Project Team Observed Physical Inspection of Imported MEPS-Regulated Goods with the Customs Department Officers



Project Team with DoE Officials Inspected the Imported Used Household Refrigerator



Mr. Eyal Tendler, Director, Computer World (Electrical Appliance Retail Store), Exchanging Opinions about the MEPSL Programme and Financing of Energy Efficient Appliances with DoE Officers and the Project Team



Project Team and DoE Discussed with Sales Manager on Appliance Financing at Rapid Electrical (Retail Store)

4. Impact Statement

The information in the table below will be used to communicate results and anticipated impacts of this technical assistance publicly. Please copy information from impact statement developed in the M&E Plan and update as relevant.

<p>Challenge</p>	<p>The appliance energy standards and labelling (S&L) program in Vanuatu is hindered by a few barriers. In terms of technical means, there are limited capacities to conduct technical assessments on the national impacts of energy S&L and no prior knowledge of introducing appropriate guidelines and plans for monitoring, verification, and enforcement of the S&L. In terms of financial means, there is a lack of financial instruments to drive the uptake of energy-efficient appliances in Vanuatu.</p>
<p>CTCN Assistance</p>	<ul style="list-style-type: none"> • Conduct a comprehensive market and policy analysis for higher efficiency refrigerators, freezers, air conditioners (ACs), and lighting products. • Assess and upgrade the existing Vanuatu Electronic Single Window (VeSW) registration system and develop an MV&E plan. • Develop financing mechanisms for the incentivization towards the purchase of energy-efficient appliances
<p>Anticipated impact</p>	<p><i>Summarize the problem statement and desired impact. Describe how the TA is expected to lead to the desired impact. Include description of stakeholders, deliverables and timelines. As a minimum, please include at least one of the core impact indicators from the closure report Annex.</i></p> <p>The standards and labelling (S&L) regulations were adopted in 2017 and have since been implemented and enforced. However, the impact of the programme on the nation has not been evaluated, and the effectiveness has been undermined by missing monitoring, evaluation, and enforcement (MV&E) plan as well as missing financial schemes to incentivize the uptake in households.</p> <p>The appliance energy S&L programme in Vanuatu is hindered by a few barriers. In terms of technical means, there are limited capacities to conduct technical assessments on the national impacts of energy S&L and no prior knowledge of</p>

introducing appropriate guidelines and plans for monitoring, verification, and enforcement of the S&L. In terms of financial means, there is a lack of financial instruments to drive the uptake of energy-efficient appliances in Vanuatu.

This CTCN technical assistance aims to support accelerating the transition to energy-efficient appliances through 1) improvement of the recently introduced MEPSL (minimum energy performance standards and labelling) programme; 2) introduction of Monitoring, Verification, and Enforcement (MV&E) activities including improvement of a product registration system; and 3) introduction of financial mechanisms.

The key stakeholders involved in the implementation of the technical assistance (TA) activities include the Department of Energy (DoE), Customs Department, National Green Energy Fund (NGEF), Vanuatu Electronic Single Window Project (VESW), importers/retailers, and financial institutions [National Bank of Vanuatu (NBV), Bank South Pacific (BSP), ANZ Bank, and BRED Bank].

The deliverables of this TA included:
D1 - Development of implementation planning and communication documents

D2 - Comprehensive market and policy analysis for higher efficiency refrigerators, freezers, air conditioners, and lighting products

D2.1 - Kick-off meeting report - 30 March 2022 (Completed)

D2.2 - Market assessment- August 2022 (Completed)

D2.3 - Evaluation report - August 2022 (Completed)

D2.4 - Recommendations for the program improvement - August 2022

*Combined Deliverables D2.2, D2.3 and D2.4 as one single report

D3 - Assessment and upgrade of the existing Vanuatu Electronic Single Window (VeSW) registration system and development of an MV&E plan

D3.1 - MV&E Plan - January 2023 (Completed)

	<p>D3.2 - Recommendations on product registry system upgrade - April 2023 (Completed)</p> <p>D3.3 - Training curriculum and material - January 2023 (Completed)</p> <p>D3.4 - Training report - January 2023 (Completed)</p> <p>*Combined Deliverables D3.3 and D3.4 as one single report</p> <p>D4 - Development of financing mechanisms for the incentivization towards the purchase of energy-efficient appliances</p> <p>D4.1 - National financing mechanism options - June 2023 (Completed)</p> <p>D4.2 - Interviews with stakeholders on financing schemes - June 2023 (Completed)</p> <p>D4.3 - Recommendations on financial mechanism - June 2023 (Completed)</p> <p>*Combined Deliverables D4.1, D4.2 and D4.3 as one single report</p> <p>D5 – Project Closure</p> <p>As the energy sector is the primary source of GHG emissions in Vanuatu. In order to achieve the adoption of 100% renewable energy by 2030, 15% of energy savings must be achieved through the adoption of energy efficiency measures.</p> <p>This TA will contribute to the transition to energy-efficient appliances (household refrigerators, freezers, air conditioners, and lighting products) by making the current standards and labelling programme for appliances more effective. Through the implementation of MV&E and improvement of the product registration system (output 3), Vanuatu will be able to increase the enforcement of and compliance with standards and labelling legislations. The identified financing mechanisms (output 4) will accelerate the purchase of energy-efficient appliances through the incentivization of consumers.</p>
<p>Co-benefits: Achieved or anticipated co-benefits from the TA</p>	<p><i>Instruction: Please indicate expected co-benefits as described in the response plan and in the relevant deliverables</i></p> <p>The financial mechanisms to be established as part of the feasibility study will result in financial and economic</p>

	<p>benefits through the utilization of energy-efficient appliances.</p>
<p>Gender aspects of the TA</p>	<p><i>Instruction: Please indicate if technical assistance was supported by a gender analysis. Describe gender aspects identified and additional considerations taken to mainstream gender (e.g. equal participation in trainings, gathering of gender-disaggregated data, etc.).</i></p> <p>A gender perspective was integrated into the activities of this technical assistance transversally. The market assessment and policy review encompassed the gathering of gender-disaggregated data, specifically incorporating a gender perspective to evaluate the benefits and challenges associated with the current standards and labelling programme. Considering that women tend to hold a more significant decision-making role in the purchase of electrical appliances, it is crucial to target this specific group for promotion, communication, education, and financial support.</p> <p>Throughout the development of the MV&E Plan and the identification of financial mechanisms, a gender expert was consulted to actively identify and develop solutions that foster gender equality. The representation of women in all capacity-building and training activities, as well as decision-making processes, was a primary focus. As a result, women will benefit from improved knowledge and access to energy-efficient appliances through innovative and inclusive financial mechanisms. Additionally, women in the Department of Energy (DoE) underwent training on standards, appliances, MV&E, and the product registration system.</p>
<p>Anticipated contribution to NDC</p>	<p><i>2 to 4 bullet points. Approximately 350 characters with spaces</i></p> <p>Vanuatu has submitted mitigation actions as part of their NDC of which energy is a key sector (adoption of 100% renewable energy target for electricity generation by 2030). Achieving Vanuatu’s mitigation targets requires energy efficiency measures to be pursued to enable 15% savings in the energy sector. The expected contribution from this TA aims to achieve this by utilizing financial</p>

	<p>mechanisms to make energy-efficient appliances accessible to all consumers, and by leveraging effective MV&E strategies to accelerate the uptake of energy efficient appliances while safeguarding against the presence of non-compliance or substandard appliances in the market.</p>
<p>The narrative story</p>	<p><i>Approximately 1200 characters with spaces</i></p> <p><i>Please provide a brief description of the background and context for the technical assistance. Describe the main problems and barriers for climate change mitigation and/or adaptation in terms of climate technologies that the CTCN technical assistance will address</i></p> <p>The urban household appliance and energy use survey in 2013 indicated that many appliances currently used in households, including refrigerators, freezers, air conditioners, and lighting products are outdated and highly inefficient. Therefore, Vanuatu has introduced legislation on standards and labelling (S&L) for appliances with the assistance of the Pacific Community (SPC), Pacific Appliance and Labelling Standards (PALS) Project (2012 – June 2019). The S&L regulations were adopted in 2017 and have since been implemented and enforced. However, the impact of the programme on the nation has not been quantified, and the effectiveness has been undermined by missing monitoring, evaluation, and enforcement (MV&E) plan, as well as missing financial schemes to incentivize the uptake in households.</p> <p>The CTCN technical assistance aims at conducting a technical market and policy assessment to identify challenges and bottlenecks to the effectiveness of the S&L programme, and will support the introduction of a comprehensive MV&E plan as well as of targeted financial mechanisms to accelerate the uptake of energy efficient appliances in Vanuatu.</p> <p>The impact of this TA includes:</p> <p><i>Enhanced Energy Efficiency and Compliance:</i> The implementation of an improved and effective Monitoring, Verification, and Enforcement (MV&E)</p>

	<p>framework, along with upgrading the product registration system, will have a positive impact on the Minimum Energy Performance Standards and Labelling (MEPSL) program. This impact is expected to result in increased efficiency in the program’s operations and greater compliance with energy efficiency standards by importers/suppliers. The MV&E measures will help identify non-compliant products, enabling prompt actions to ensure that only energy-efficient appliances are available in the market.</p> <p>Accelerated Adoption of Energy-Efficient Appliances: The identified financing mechanisms are expected to stimulate the adoption of energy-efficient appliances. By providing financial incentives and support, these mechanisms will encourage consumers to purchase energy-efficient products. As a result, the overall demand for energy-efficient appliances is likely to increase, leading to a positive impact on energy savings, reduced greenhouse gas emissions, and a more sustainable consumption pattern.</p>
<p>Contribution to SDGs</p> <p>A complete list of SDGs and their targets is available here: https://sustainabledevelopment.un.org/partnership/register/</p>	<p><i>To the extent possible, please describe contribution to approximately 3 SDGs, including SDG13, with a few sentences for each SDG concerned.</i></p> <p>Goal 7: Affordable and clean energy</p> <ul style="list-style-type: none"> • Make energy-efficient appliances more accessible to everyone through innovative financial mechanisms • Accelerate the adoption of energy-efficient appliances through the implementation of effective MV&E and financial mechanisms <p>Goal 13: Climate action</p> <ul style="list-style-type: none"> • Increase the enforcement of and compliance with Standard and labelling legislations. <p>Goal 5: Gender equality</p> <ul style="list-style-type: none"> • Improve the access of women to energy-efficient appliances

Annex 1 Technical assistance data collection

Please add quantitative and qualitative values for the indicators selected in the M&E plan and monitored throughout the technical assistance in the tables below. Indicators which have been monitored in addition to the proposed indicators below may be added at the end of table A. Non-relevant indicators should be left blank.

A. Output and outcome indicators

Indicator	Quantitative value <i>Numerals only; disaggregates must sum to the total</i>	Qualitative description <i>List the various elements corresponding to the quantitative value as well as timelines and responsible institutions</i>
Please note indicators below highlighted as anticipated		
Total number of events organized by proponents and implementing partners	3	<ul style="list-style-type: none"> • Event 1 – Mar 2022 (kick-off meeting), • Event 2 – May 2023 (financing consultation meeting), • Event 3 – May 2023 (closure meeting – results of the TA)
Number of participants in events organized by proponents and implementing partners	48 Event 1 – 20 Event 2 – 16 Event 3 – 12	<i>Disaggregate by country</i> Events 1 to 3 above were directed primarily to stakeholders in Vanuatu, project team members were from Thailand, Australia, and the Philippines, and one participant from Fiji was a retailer. <ul style="list-style-type: none"> • Event 1 – Australia – 2; Thailand – 4; Philippines – 1 • Event 2 – Thailand – 3; Fiji – 1 • Event 3 – Australia – 2; Thailand – 3
a) Number of men	32	Event 1 – 13 participants Event 2 – 11 participants Event 3 – 8 participants
b) Number of women	16	Event 1 – 7 participants Event 2 – 5 participants Event 3 – 4 participants
Number of climate technology RD&D related events		
Number of participants in climate technology RD&D events		
a) Number of men		
b) Number of women		

Number of training organized by proponents and implementing partners	2	<i>List the title of the training sessions and capacity strengthening activities</i> <ul style="list-style-type: none"> • Training Session 1 on MV&E to DoE Officers • Training Session 2 on MV&E to Customs Officials & DoE Officers
Number of participants in trainings organized by proponents and implementing partners	20	Session 1 – 8 participants Session 2 – 12 participants
a) Number of men	13	Session 1 – 5 participants Session 2 – 8 participants
b) Number of women	7	Session 1 – 3 participants Session 2 – 4 participants
Total number of institutions trained	2	
a) Governmental (national or subnational)	2	<ul style="list-style-type: none"> • Department of Energy • Customs Department
b) Private sector (bank, corporation, etc.)		
c) Nongovernmental (NGO, University, etc.)		
Percentage of participants reporting satisfaction with CTCN training (from CTCN training feedback form)		
Percentage of participants reporting increased knowledge, capacity and/or understanding as a result of CTCN training (from CTCN training feedback form)	100%	* Due to a very small group, a feedback form was not used, but instead, discussions were conducted to understand what participants had taken in, and to address any issues that were not clear or understood.
a) Percentage of men	65%	
b) Percentage of women	35%	
Total number of deliverables produced during the assistance (excluding mission, progress and internal reports)	11	This number excludes documents required by CTCN (detailed workplan, etc.). Some of these deliverables are included in combined reports (with 6 separate reports covering the total of 11 deliverables)
a) Number of communication materials, including news releases, newsletters, articles, presentations, social media postings, etc.		
b) Number of tools and technical documents strengthened, revised or developed	7	D2.2 - Market assessment D2.3 - Evaluation report D2.4 - Recommendations for the program improvement D3.1 - MV&E Plan D3.2 - Recommendations on product registry system upgrade D4.1 - National financing mechanism options D4.3 - Recommendations on financial mechanism

c) Number of other information materials strengthened, revised or created (For example training and workshop reports, Power Points, exercise docs etc.)	5	Kick-off meeting report Training report – MV&E Power Point presentations for <ul style="list-style-type: none"> • Training workshop – MV&E • Consultation meeting – financing • Recommendations for improvement of Energy module within VeSW product registration system
Total number of policies, strategies, plans, laws, agreements or regulations supported by the assistance	1	
a) Adaptation related		
b) Mitigation related	1	Energy Efficiency of Electrical Appliances, Equipment's and Lighting Products Act No. 25 of 2017¹ Electrical Appliance, Equipment and Lighting Products (Importation Control) Regulation Order No. 126 of 2017² (MEPS and labelling regulations)
c) Both adaptation- and mitigation related		
Anticipated number of policies, strategies, plans, laws, agreements or regulations proposed, adopted or implemented as a result of the TA	1	
a) Adaptation related		
b) Mitigation related	1	Energy Efficiency of Electrical Appliances, Equipment's and Lighting Products Act No. 25 of 2017 Electrical Appliance, Equipment and Lighting Products (Importation Control) Regulation Order No. 126 of 2017 (MEPS and labelling regulation)
c) Both adaptation- and mitigation related		
Anticipated number of technologies transferred or deployed as a result of CTCN support	4	<i>Instruction: List the type of technologies supported by this assistance. Technologies must be identified from the CTCN taxonomy of climate sectors and technologies (download in pdf format and choose from column C):</i> https://www.ctcn.org/resources/ctcn-taxonomy Lighting

¹ [https://doe.gov.vu/images/mepsl-pad/Official_Act_No.%2025_of_2017_\(dated_29%20March_2017\).pdf](https://doe.gov.vu/images/mepsl-pad/Official_Act_No.%2025_of_2017_(dated_29%20March_2017).pdf)

² [https://doe.gov.vu/images/mepsl-pad/Official_Regulations_No.%2076_of_2017_\(dated_3_October_2017\).pdf](https://doe.gov.vu/images/mepsl-pad/Official_Regulations_No.%2076_of_2017_(dated_3_October_2017).pdf)

		Appliances Appliance Standards Energy Labelling
Anticipated number of collaborations facilitated or enabled as a result of technical assistance		
a) Number of South-South collaborations		
b) Number of RD&D collaborations		
c) Number of private sector collaborations		
Number of countries with strengthened National System of Innovation as a result of CTCN support	1	Vanuatu
Insert any additional indicators here		

B. Core impact indicators

Please fill in the tables for anticipated impacts of the CTCN assistance. Every technical assistance should contribute to at least one of the indicators below. For guidance on how to report on core indicators see the [‘M&E Guidance Document for TA Implementers’](#).

Core indicator 1	Anticipated metric tons of CO₂ equivalent (CO₂e) emissions reduced or avoided as a result of CTCN TA	
	<i>Please add your calculations in word or excel format as an Annex to this Closure Report, where applicable.</i>	
	Anticipated metric tons of CO ₂ e reduced or avoided as a result of the TA on annual basis	Anticipated metric tons of CO ₂ e reduced or avoided as a result of the TA in total
Quantitative value (emissions reductions)	<i>Total number (numerals only, no rounding or abbreviations)</i>	<i>Total number (numerals only, no rounding or abbreviations)</i>
Unit	136 tCO₂e	1,365 tCO₂e (cumulative over 10 years from 2024 to 2033)
GHG assessment boundary (project emissions) Identify expected post-TA activities, associated effects and assess boundary for quantification of GHG emission reductions	<ul style="list-style-type: none"> Regulated products (Refrigerators and Freezers, Air conditioners, Clothes Washers and Televisions) purchased by consumers in Vanuatu. Lighting products are not included due to high penetration of LED lighting products % of annual sales benefited from the implementation of the pilot financial mechanism 	Same as calculation on an annual basis
Baseline emissions Describe baseline scenario, baseline candidates, emission factors and emissions calculated	Consumers purchase least efficient models and appliances' energy consumption and GHG emissions follow the current trend of MEPS without any significant changes.	Same as calculation on an annual basis

<p>Methodology</p> <p>Explain the method or process of verifying the indicator and how data was gathered</p>	<p>The method of calculation uses a bottom-up approach involving the estimated annual market size, annual market growth rate, emission factor, and guarantee fund size. Data for individual appliances (e.g., refrigerators, freezers, air conditioners, clothes washers, and televisions) were collected, and these data points were combined to estimate the annual market size for each appliance category. The data used for this estimation was gathered from a market assessment. The estimation relies on the assumptions that DoE and NGEF can secure seed funding of US\$260,000 to implement a portfolio guarantee to facilitate the purchase of EE refrigerator/freezers, air conditioners, clothes washers, and televisions by residential consumers in Vanuatu.</p>	<p>Same as calculation on an annual basis</p>
<p>Assumptions</p> <p>Describe assumptions made during calculation and quantification of GHG reductions</p>	<p>Estimated Annual Market Size (Units)</p> <p>(A) Refrigerators and Freezers: 2,011</p> <p>(B) Air conditioners: 1,465</p> <p>(C) Clothes Washers: 520</p> <p>(D) Televisions: 2,665</p> <p>Economic, Operation and Emission Factors</p> <p>(A) Annual Market Growth: 4%</p> <p>(B) Utilization of Financial Mechanism: 100%</p> <p>(C) Emission Factor (tCO₂/MWh): 0.572</p> <p>Guarantee Fund Size (US\$) in 2024</p> <p>(A) Refrigerator/ Freezer: 50,000</p> <p>(B) Air Conditioner: 80,000</p> <p>(C) Clothes Washer: 40,000</p> <p>(D) TV: 90,000</p>	<p>Same as calculation on an annual basis</p>

<p>Core indicator 2</p>	<p>Anticipated increased economic, health, well-being, infrastructure and built environment, and ecosystems resilience to climate change impacts as a result of technical assistance</p> <p><i>Please provide a qualitative description of the anticipated impacts on the categories below</i></p>
<p>Infrastructure and built environment</p> <p>Anticipated increased infrastructure resilience (avoided/mitigated climate</p>	<p>N/A</p>

induced damages and strengthened physical assets)	
Ecosystems and biodiversity Anticipated increased ecosystem resilience (areas with increased resistance to climate-induced disturbances and with improved recovery rates)	
Economic Anticipated increased economic resilience (e.g. less reliance on vulnerable economic sectors or diversification of livelihood)	<p>The technology (appliance standard and energy labelling) supported in the TA, together with the financial mechanisms to be established, will lead to financial and economic advantages by promoting the use of energy-efficient appliances. Energy-efficient appliances consume less energy, resulting in lower electricity bills for consumers and businesses. By reducing energy consumption, appliance standards, and energy labelling help households and businesses save money in the long run, leading to increased financial resilience.</p> <p>In addition, promoting energy efficiency, appliance standards, and energy labelling contribute to enhanced energy security. This reduces the vulnerability of economies to energy supply disruptions and price fluctuations, thereby improving economic resilience.</p> <p>Energy-efficient appliances also have a lower environmental impact due to reduced energy consumption and greenhouse gas emissions. Therefore, mitigating climate change, appliance standards, and energy labelling, this will support sustainable development.</p>
Health and wellbeing Anticipated increased health and wellbeing of target group (e.g. improved basic health, water and food security)	N/A

Core indicator 3	Anticipated number of direct and indirect beneficiaries as a result of the TA	
	Quantitative value	Means of verification
Total beneficiaries	<i>Total number</i>	
Number of adaptation beneficiaries		<i>Describe calculation methods and assumptions made</i>
Number of mitigation beneficiaries	8	The number of DoE and Customs Officials gained knowledge from the training
Number of adaptation-and mitigation beneficiaries		

Core indicator 4	Anticipated amount of funding/investment leveraged (USD) as a result of TA (disaggregated by public, private, national, and international sources, as well as between anticipated/confirmed funding)			
	Quantitative value confirmed in USD	Quantitative value anticipated in USD	Qualitative description <i>List the institutions, timelines, and description or title of the investment</i>	Methods <i>Describe methods used for quantification of funds leveraged</i>
Total funding	<i>Total number in USD (numerals only, no rounding or abbreviations)</i>	<i>Total number in USD (numerals only, no rounding or abbreviations)</i>		
Anticipated amount of public funding mobilised from national/domestic sources				
Anticipated amount of public funding mobilised from international/ regional sources				
Anticipated amount of private funding mobilised from national/domestic sources				
Anticipated amount of private funds mobilised from international/regional sources				