Provision of Technical Assistance to Enhance Vanuatu's Market for Energy Efficient Appliances

Design and Delivery of Training on Enhancement of Monitoring, Verification, and Enforcement (MV&E)

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Acronyms and Abbreviations

AS/NZS	Australian/New Zealand Standards
CTCN	Climate Technology Centre and Network
DoE	Department of Energy
GCF	Green Climate Fund
GEMS	Greenhouse and Energy Minimum Standards
HS code	Harmonized Commodity Description and Coding System
MEPS	Minimum energy performance standard
MEPSL	Minimum energy performance standard and labelling
MV&E	monitoring, verification, and enforcement
PAD	Pacific Appliance Database
PALS	Pacific Appliance Labeling and Standards
PRS	product registration system
SOP	Standard Operating Procedures
SPC	Secretariat of the Pacific Community
VeSW	Vanuatu Electronic Single Window
WCO	World Customs Organization

1 INTRODUCTION

This *Design and Delivery of Training on Enhancement of Monitoring, Verification, and Enforcement (MV&E)* report was prepared for the Department of Energy (DoE) within the Ministry of Climate Change Adaptation, Meteorology, Geo-hazards, Energy, Environment and National Disaster Management Office under the **"Enhance Vanuatu's Market for Energy Efficient Appliances"** project, funded by the Green Climate Fund (GCF) through the Climate Technology Centre and Network (CTCN). The project objective is to support accelerating the transition to energy-efficient appliances through 1) improvement of the recently introduced standards and labelling programme; 2) enhancement of MV&E activities and a product registration system; and 3) introduction of financial mechanisms.

Implementation of the project is carried out through the following 5 tasks.

- Task 1 - Development of implementation planning and communication documents
- Task 2 - Comprehensive market and policy analysis for higher efficiency refrigerators, freezers, air conditioners, and lighting products
- Task 3 - Assessment and upgrade of the existing Vanuatu Electronic Single Window (VeSW) registration system and development of an MV&E plan
- Task 4 - Development of financing mechanisms for the incentivization towards the purchase of energy-efficient appliances
- Task 5 – Project closure

This report was prepared to provide a summary of the design of the training curriculum for the enhancement of Monitoring, Verification, and Enforcement (MV&E) within the Minimum Energy Performance Standards and Energy Labelling (MEPSL) programme, as well as the delivery of training sessions on November 9-10, 2022, at the Department of Energy (DoE) Office in Port Vila, Vanuatu.

1.1 Objectives and Methodology of Design of Training on Enhancement of Monitoring, Verification, and Enforcement (MV&E)

The main objectives of the design of MV&E training curriculum are to ensure an effective locally-led operation and progressive enhancement of MV&E and product registration under the MEPSL programme.

To design the training curriculum on the enhancement of MV&E activities and a product registration system 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.

The face-to-face meeting with the DoE and Customs officials aimed to understand the current activities (i.e., registration, import processing, and general MV&E) in relation to control of the regulated products entering Vanuatu as well as the current constraints in the registration and certification process of the existing MEPSL programme in Vanuatu. The discussions also focused on (a) what DoE and Customs officials desire in terms of knowledge gaps and (b) the project team's

thoughts on possible training topics that would be beneficial to DoE and the Customs department. The review of the inspection practices was conducted to ensure the relevance and practicality of the training sessions in day-to-day operations.

Based on the assessment, two training sessions were designed to cover product registration & certification processes under the MEPSL programme and import matters. Participants of these training sessions were set to include all relevant DoE officers responsible for the MEPSL programme and customs officials responsible for controlled products (See Annex II and III for training materials in sessions 1 and 2).

Outlines of the training sessions are shown in the table below.

Table 1-1: Outlines of Training Sessions

Training Session 1	**Training Session 2**
Participants: DoE officials	**Participants**: DoE and Customs officials
• MV&E review and recommendations • Introduction and importance of Harmonized System (HS) Codes • Principles of registration data needs for MV&E activities • Authentication and interpretation of laboratory test reports • Data verification processes for product registration • Maintenance of all databases (product registration expiries, import certificate validity, etc.) • Market surveillance activities and "chain of custody" • Accessing and applying verification results from AS & NZ standards • Analysis of import data as part of MV&E and policy review processes • Field activity - Inspections at stores	• Overview of Current Product Certification Process (from SOP) • Identifying restricted products - EE appliances • What products are in effect under the Act? • Physical Checks on restricted products • What is deemed to comply and NOT deemed to comply for lighting? • What is NOT regulated in lighting? • Using HS Codes • Surveillance: Other Activities • Inspection Guide for Lighting & Appliances

The above two training sessions were organized as part of a two-day training programme held on November 9th -10th, 2022 at the DoE office in Port Vila. A total of nine participants (8 males, 1 female), comprising DoE staff members and Customs representatives, attended the training programme (see Annex I for a list of participants).

In addition to the classroom presentations, the project team, along with DoE staff, conducted an observation of the on-site inspection of imported MEPS-regulated goods performed by Customs officials as well as the inspection of the imported used/second-hand household refrigerators (see Annex IV for the corresponding photos).

2 DELIVERY OF TRAINING

2.1 Training Sessions

On Day 1 of the training, the formal initiation was conducted by Mr. Sommai Phon-amnuaisuk, the Project Focal Point, who provided an update on the project's work plan and progress. Mr. Misel Sisi, the Manager of the Department of Energy (DoE), delivered the welcome note and introduced the DoE participants. Subsequently, Mr. Steve Coyne and Ms. Gillian Isoardi presented the training objectives and delivered the training to DoE officials, covering five main sections: MV&E Framework, MV&E Compliance, Building Capacity for MV&E, Verification, and Market Surveillance Strategies.

Day 2 commenced with an introduction to the Customs officials, followed by an explanation of the training objectives and expected outcomes. This session primarily focused on the monitoring of controlled products under the MEPSL programme. Additionally, a detailed briefing was provided on the review and inspection processes for products, including the determination of which products are covered and deemed compliant, specifically for lighting products. The use of National statistical codes, part of the World Customs Organization (WCO)'s HS Code system, was emphasized as a means to define a product's scope.

The following topics were highlighted in the training sessions:

Harmonisation of regulatory regimes and the importance of Harmonized System (HS) codes

- The Energy Efficient Lighting and Appliances Regulation and product certification processes have been in operation since 2019. Ensuring that the "*Regulation*" is *aligned with established international performance requirements, such as those in Australia, Fiji, and New Zealand, or with trading economies, including other SPC countries*, will contribute to improved efficiency in the implementation of Monitoring, Verification, and Enforcement (MV&E). This alignment will also reduce costs for manufacturers seeking lighting and appliance approvals, as well as manage the demand on laboratories for product approval testing.
- The implementation of a 4-digit National Component of HS code (Tariff or Statistical Code) for electrical appliances and lighting products will aid in the classification of products under the MEPSL program. This categorization will help differentiate between in-scope, out-of-scope, and banned product types, providing clarity and facilitating effective implementation.

MV&E framework: Supporting policies and programs

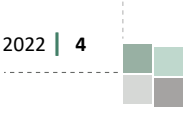
- A range of recommendations of supporting policies and programs to promote high energy efficient appliances and lighting products were explained, such as *collaborating with retailers* to educate and provide them with training packages as well as *informing consumers* about different lighting technologies, enabling them to make well-informed decisions considering the health and environmental impacts of alternative technologies.
- Promotional materials such as a lamp selection guide for point of sale, a lamp section phone app, and fact sheets on health issues can be utilized to raise awareness and indirectly promote the MEPSL program. These materials will assist in educating consumers and contribute to the overall success of the program.

MV&E compliance

- Building a compliance culture is crucial to mitigate the risks of non-compliance. It is important to ensure that relevant rules and obligations are widely known and accepted by stakeholders, making compliance everyone's responsibility.
- Encouraging transparency and honesty is also essential. Creating an environment where MV&E activities are visible serves as a deterrent and enables any non-compliance to be questioned at any level.
- The application of penalties for non-compliant products is necessary. It is important to have appropriate sanctions in place upon detection, ensuring that penalties are proportional to the extent and intent of the transgression. These penalties should be sufficient to effectively deter non-compliance.
- Enforcement strategy for addressing non-compliance includes
    1. *Creating a credible threat of discovering non-compliance in the marketplace*: It is essential to establish a robust system that effectively detects instances of non-compliance. This will serve as a deterrent and encourage adherence to the regulations, and
    2. *Implementing a public enforcement policy*: A clear and transparent enforcement policy should be established to outline the consequences of non-compliance for suppliers and retailers. For instance, retailers should be made aware of their responsibility for faults or incorrect labels. Given that retailers have fixed locations, they are more accessible than overseas suppliers. It is important to ensure that retailers are obligated to display products with the appropriate labels. This helps prevent suppliers from claiming that labels were removed without their knowledge or involvement.

Product registration database

- It is crucial to maintain records and information in compliance with the relevant requirements. These records should include essential details such as importer information, broker details (including contact information), number of units, product identifiers and descriptions (including unique registration numbers), technical product performance information, and dates related to registration, expiry, cancellation, and grandfathering.
- It is important to keep a record of the compliance histories for each product registration. This record should include any flagged suspect activities, helping to identify and address potential non-compliance issues.
- Monitoring and tracking changes in product registration/performance must be conducted to ensure compliance obligations. The following practices are recommended:
    - Regularly checking the registration period to remove obsolete products that are no longer available in the market
    - Checking partner databases for any changes in product status, such as cancellations, suspensions, or grandfathering
- It is important to establish and maintain a contact network of compliance staff in partner countries such as Australia, Fiji, and New Zealand. This network facilitates communication, collaboration, and the exchange of information related to compliance matters.
- Sharing information among compliance staff and trading partner nations is crucial. By fostering information sharing, valuable insights and updates can be exchanged, leading to enhanced coordination and enforcement efforts.



Verification

- Desktop verification should be performed for reviews and authenticity of test reports for category B products.
- For category A products, the desktop verification procedure should involve regular reviews of AS/NZ compliance check testing, publicly released at: https://www.energyrating.gov.au/documents?category=14; https://www.eeca.govt.nz/insights/eeca-insights/product-testing-results/
- In the case of category A products failing compliance, the following actions should be taken:
    1. Rectification of packaging information, if required, should be checked in-store to ensure compliance with the specified requirements
    2. Import certificates should be cancelled for products that have been deregistered in AS/NZ, aligning with the applicable regulations and standards
- The desktop verification procedure, as described above, should be properly documented and incorporated into the Standard Operating Procedures (SOP). The documentation should include details such as who conducts the review, the frequency of the review, and a step-by-step procedure for conducting the verification process.
- It is recommended to develop a regional agreement on verification testing to ensure the effectiveness of the compliance program. Periodic verification testing should be conducted after products have entered the market, thereby strengthening the monitoring and enforcement of compliance.

Market surveillance strategies

- Annual in-store inspections should be conducted to monitor various aspects, including the presence of product registrations, proper labeling, and identification of any banned products being sold.
- When selecting retail stores for sampling, the following criteria should be considered:
    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

2.2 Summary of Discussions

Discussion with DoE staff highlighted some general issues with the current database access and processes that require priority consideration. In particular:

Improvement of MV&E procedures

- Separation of the product registration procedure from the import certificate application process and clearly communicating realistic time frames for approval processes to applicants.
- Developing verification procedures and acting on any findings of non-compliance, e.g., establishing desktop verification and scheduling based on AS/NZ compliance check testing publicly released and canceling import certificates for affected products. This procedure must be documented in the DoE's Standard Operating Procedures (SOP).
- Addressing issues related to "deemed-to-comply" exceptions, particularly in the case of lighting products, to eliminate loopholes that allow for non-compliant products. This will also help resolve challenges encountered in customs processing, especially for banned products.
- Adopting and implementing market surveillance strategies and approaches, such as conducting in-store inspections. This includes:
    - Describing the methods used for store identification and selection
    - Revising tools for the structured method of in-store inspections, e.g., forms (shown in SOP, required minor amendment) and government-registered tablets with cameras can be effective tools.
    - Providing guidance on gathering evidence of the sale of products under investigation

Adjustment of the product registration system

- Enhancing registration data integrity
    - Adding technical data (e.g., energy performance value and product lifetime) for Category B product registrations
    - Adding broker and importer contact details to facilitate communication/ verification
- Maintaining data governance (ownership) of product registrations and having access to data management and maintenance - Currently, staff does not have the access required to delete duplicate registrations or modify existing registrations to reflect changes or corrections.
- Consider the benefits of transitioning to the Pacific Appliance Database (PAD).
- Implementing feature flags/toggles to control, release and specify users (product registrations) that might be useful for monitoring processes.

Creation of HS code instructions for Customs

- Consider modifying the HS Code by adding a 4-digit National Component to the existing 6 digits for improved monitoring of in-scope, out-of-scope, and banned product types.

3 CONCLUSION & RECOMMENDATIONS

The two-day training programme was deemed successful, given the majority of the participants were open to an inquiry-based discussion and exchanging their opinions about difficulties and challenges on MV&E under the MEPSL programme. This allowed the project team to provide clarifications, feedback, and suggestions during the workshops. The implemented training garnered positive feedback from the participating officers.

Recommendations include the *modification of the product registration system, improvement of MV&E procedures,* and the creation of instructions for the Customs department to *consider including statistical code into the HS Code* (creating new 4 digit National codes) in order to effectively monitor the imports for in-scope, out-of-scope, and banned product types within the MV&E system of the MEPSL programme.

4 ANNEX I – LIST OF PARTICIPANTS

Enhance Vanuatu's Market for Energy Efficient Appliances
Monitoring, Verification, and Enforcement (MV&E) for MEPSL Programme
9 November 2022
Port Vila, Vanuatu
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9					

CTCN
CLIMATE TECHNOLOGY CENTRE & NETWORK

DEPARTMENT OF ENERGY

IIEC
International Institute for Energy Conservation

Enhance Vanuatu's Market for Energy Efficient Appliances
Monitoring, Verification, and Enforcement (MV&E) for MEPSL Programme

10 November 2022
Port Vila, Vanuatu

LIST OF PARTICIPANTS

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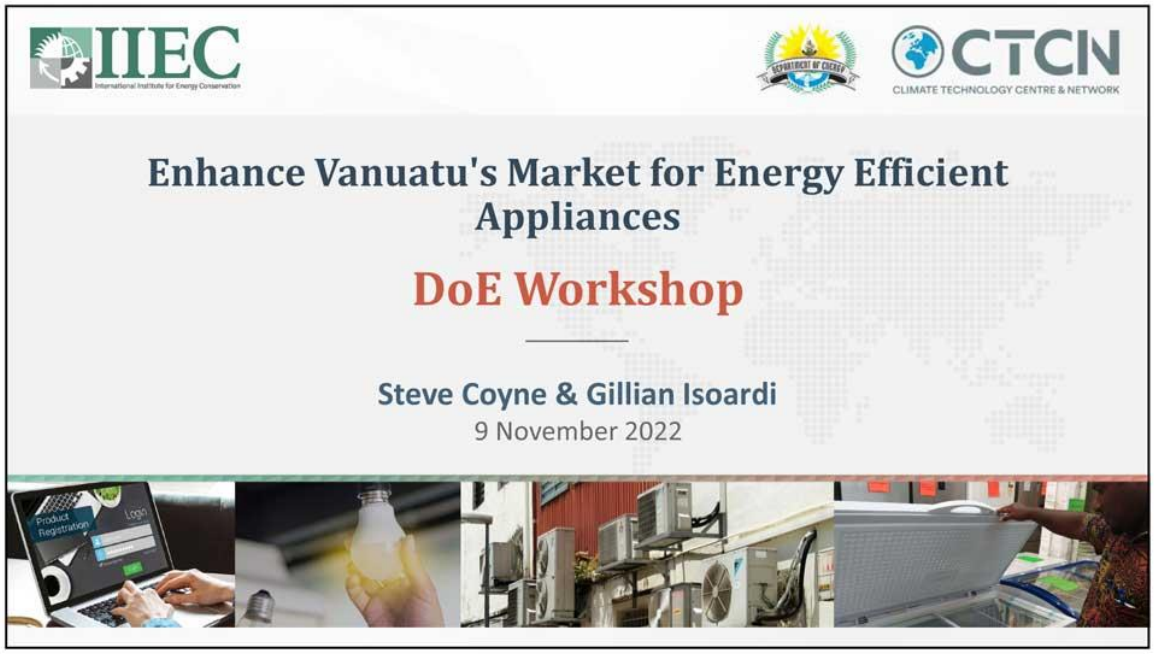
Enhance Vanuatu's Market for Energy Efficient Appliances
Monitoring, Verification, and Enforcement (MV&E) for MEPSL Programme
10 November 2022
Port Vila, Vanuatu
LIST OF PARTICIPANTS

No.	Name	Title	Company/Organization	Signature	Email
	Steve Coyne	D	Light Australia		
	Sommai Phon-amnuaisuk	Director	IIEC		

5 Annex II – Training Materials – 9 November 2022



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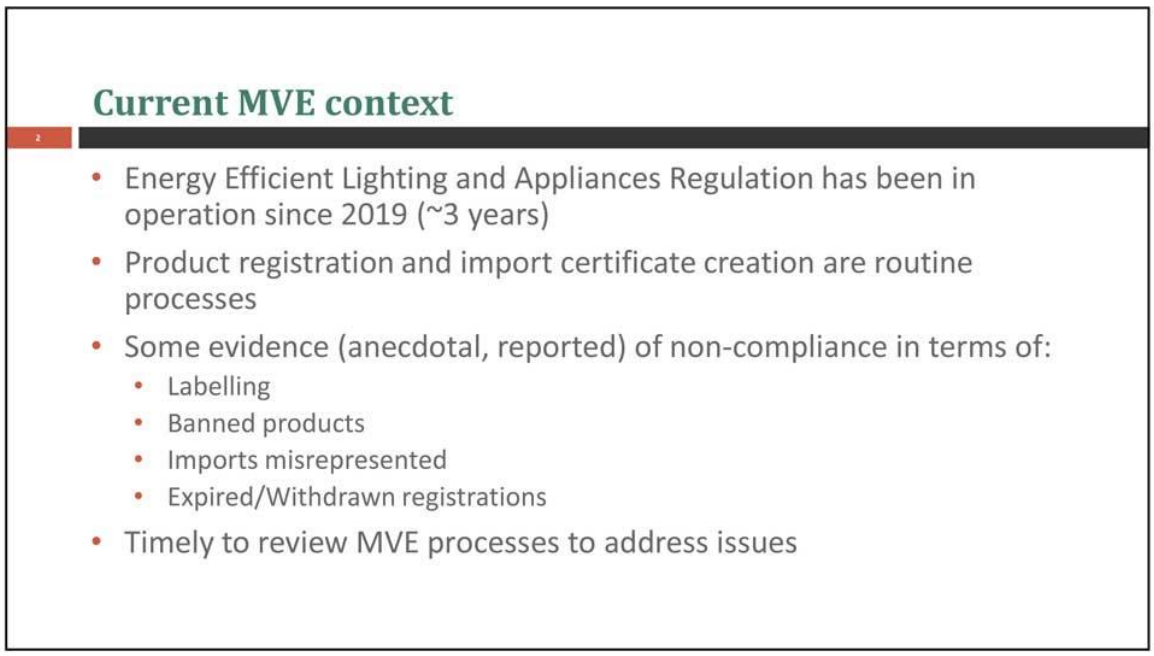

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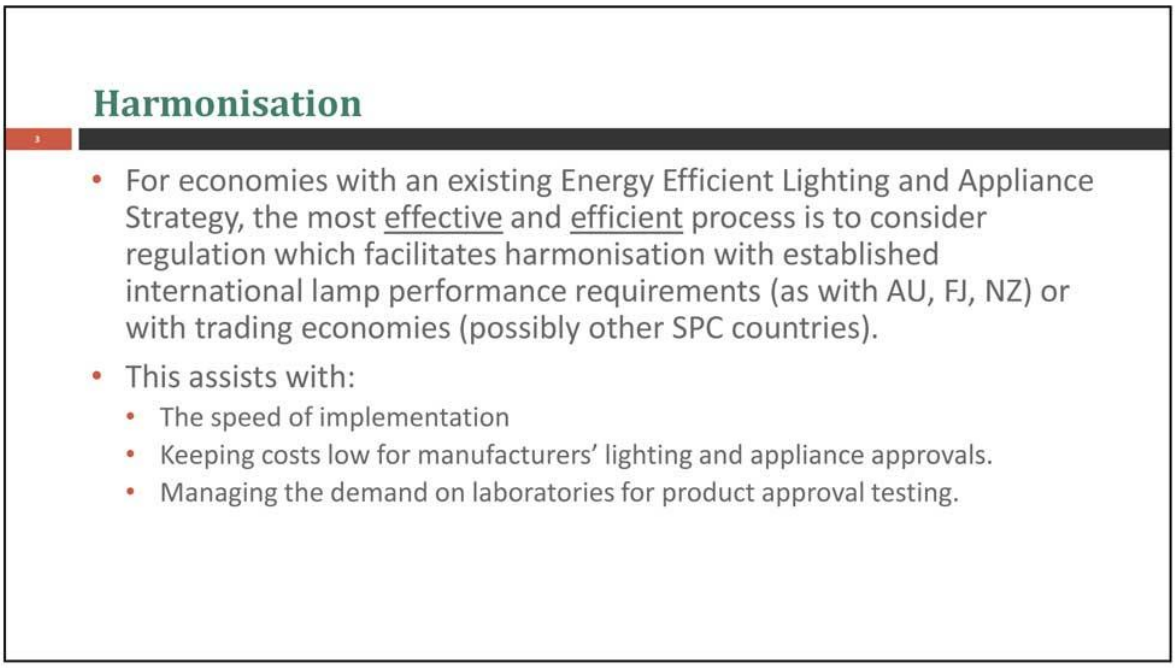

Harmonisation
3
For economies with an existing Energy Efficient Lighting and Appliance Strategy, the most effective and efficient process is to consider regulation which facilitates harmonisation with established international lamp performance requirements (as with AU, FJ, NZ) or with trading economies (possibly other SPC countries).
This assists with:
The speed of implementation
Keeping costs low for manufacturers' lighting and appliance approvals.
Managing the demand on laboratories for product approval testing.

3


MVE Framework
4

4

Minimum Energy Performance Standards

5

Aim is to set criteria to:

- Remove inefficient technologies
- Maintain performance of regulated products
- Regularly updating to keep up with product development/improvement

5

Supporting policies and programs - labelling

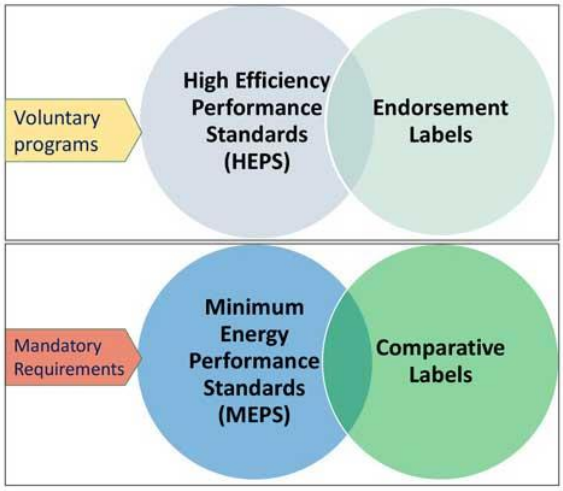
6

- Labelling of products
  - Comparative labels - allows comparison of performance between products
  - (currently no energy labelling for lighting products)

6

Standards and Labels

7

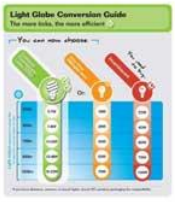


7

Supporting policies and programs – informing consumers

8

- Consumer Information – e.g. supporting technology transformation (CFL, LED)
  - Lamp selection guide for point of sale
  - Lamp selection phone App
  - Fact Sheets on health issues
    - UV
    - Flicker
    - Mercury



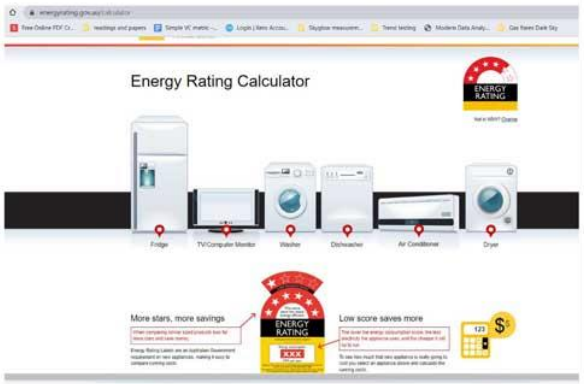
More ⇔ Less efficient

LED Brightness (Lumens)	80+	135+	250+	470+	800+	1000+	1500+
Incandescent	10W	15W	25W	40W	60W	75W	100W
Halogen	7W	11W	18W	28W	42W	53W	70W
CFL	2-3W	3-4W	4-6W	7-9W	11-14W	14-17W	19-23W
LED	0.5-1W	1-2W	2-3.5W	3.5-6W	5.5-8.5W	7-10.5W	10-15W

8

Supporting policies and programs – working with retail

- Retailer training packages
  - With examples of house lighting designs
  - Appliances - Energy Rating Calculator



9

MVE - Compliance

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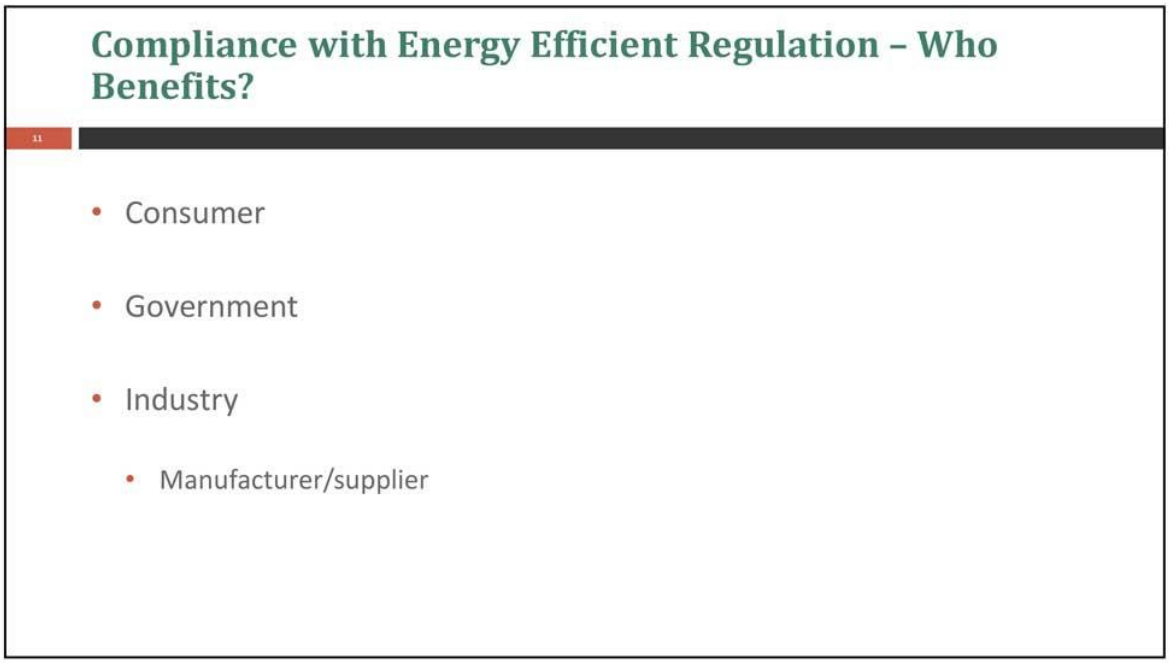
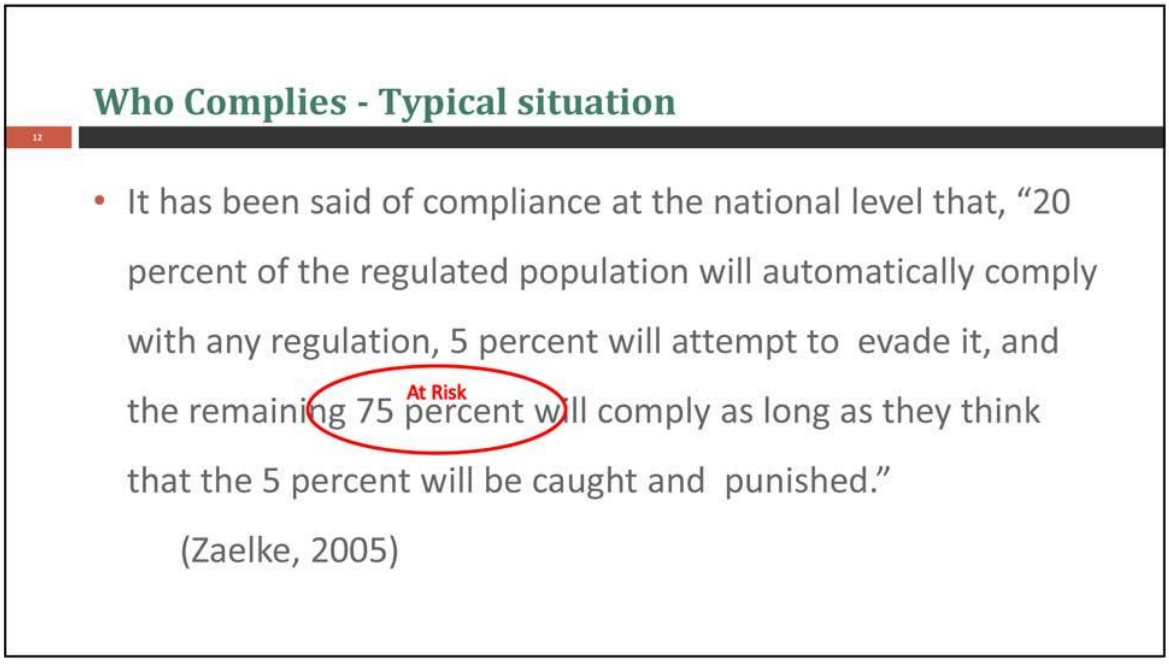

Compliance with Energy Efficient Regulation – Who Benefits?
11
Consumer
Government
Industry
Manufacturer/supplier

11


Who Complies - Typical situation
12
It has been said of compliance at the national level that, "20 percent of the regulated population will automatically comply with any regulation, 5 percent will attempt to evade it, and the remaining 75 percent will comply as long as they think that the 5 percent will be caught and punished."
At Risk
(Zaelke, 2005)

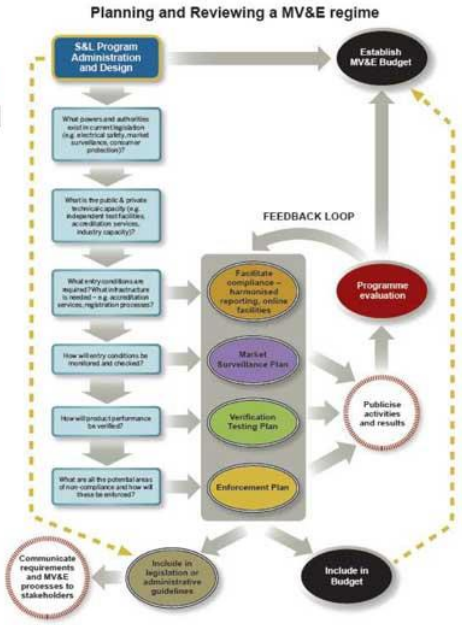
12

Key elements of compliance regimes

13

Effective compliance regimes include:

- Mechanism to facilitate compliance
- Market surveillance
- *Verification testing*
- Enforcement
- Communication, reporting, feedback
- Legal and administrative framework
- Budget and resource allocation
- Evaluation processes



13

Building a compliance culture

14

- Make it easy to comply
  - Ensure all stakeholders know their obligations
- MVE activities need to be visible to deter others
- There must be a credible likelihood of detecting violations
  - Increase the risk that instances of non-compliance will be discovered
- Swift, certain, and appropriate sanctions upon detection
  - Take corrective action quickly to minimise damage (to all)
  - Make penalties proportional to the extent of transgression but sufficient to be an effective deterrent

14

Motivation for Compliance

15

Market participants will be motivated to comply when non-compliance brings

15

Enforcement Strategy

16

An enforcement strategy is a set of responses to incidents of non-compliance depending on the:

- Severity of the non-compliance
- Range of sanctions that are available
- Type of programme (i.e. mandatory or voluntary)
- Quality of evidence supporting the claim of non-compliance
- Responsiveness of party responsible for the non-compliance
- Potential to rectify non-compliance

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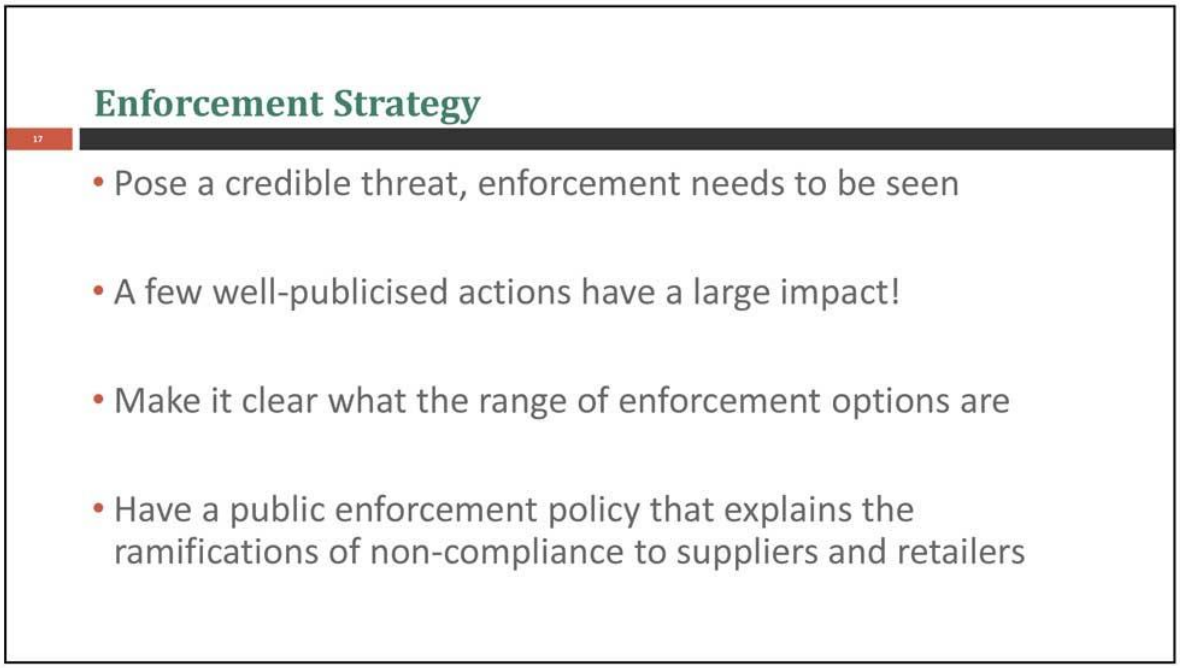

Enforcement Strategy
17
• Pose a credible threat, enforcement needs to be seen
• A few well-publicised actions have a large impact!
• Make it clear what the range of enforcement options are
• Have a public enforcement policy that explains the ramifications of non-compliance to suppliers and retailers

17


Retailers are a critical link in the supply chain
18
• Remove any ambiguities on the role of retailers
• Remove any loopholes to enforcement
• e.g. responsibility for faults or incorrect labels
• Retailers are the interface with consumers
• They are often easier to deal with than overseas suppliers

18


Why are retailers important?
19
• Changes in retailer purchasing decisions have immediate impact on suppliers
• Retailers have fixed locations – often easier for regulators to reach than overseas suppliers
• If retailers are not obliged to display products with labels in place, suppliers can claim they were removed
• Regulators have to trace who is at fault!
• How to ensure retailers are included……..

19


Building Capacity for MVE

20

Identifying needs to build MVE Capacity

21

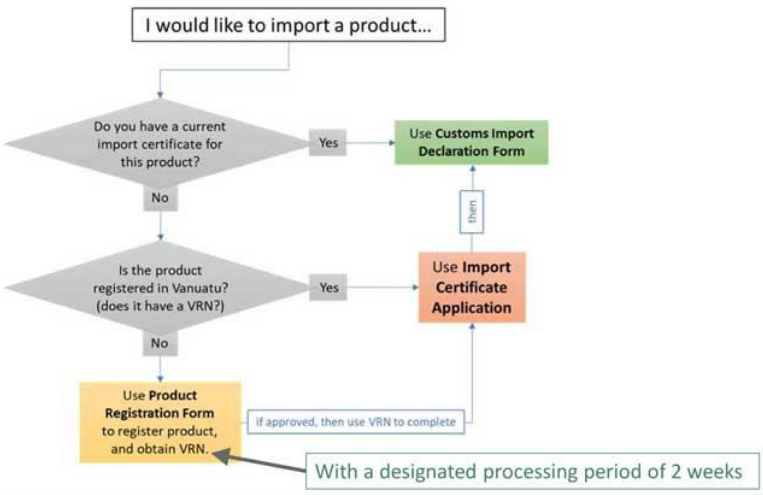
Based on team discussion on 7 November, key areas are:

- Improvements to registration data integrity
  - Adding technical data for Category B product registrations
  - Maintaining currency of product registrations (access for data maintenance)
  - Broker contact details to facilitate communication/verification
  - Consider benefits of converting to Pacific Appliance Database (PAD)
- Separation of product registration procedure from import certificate application → *highlight (to applicants) realistic time frames for approval processes*

21

Separation of product registration procedure from import certificate application

22 22



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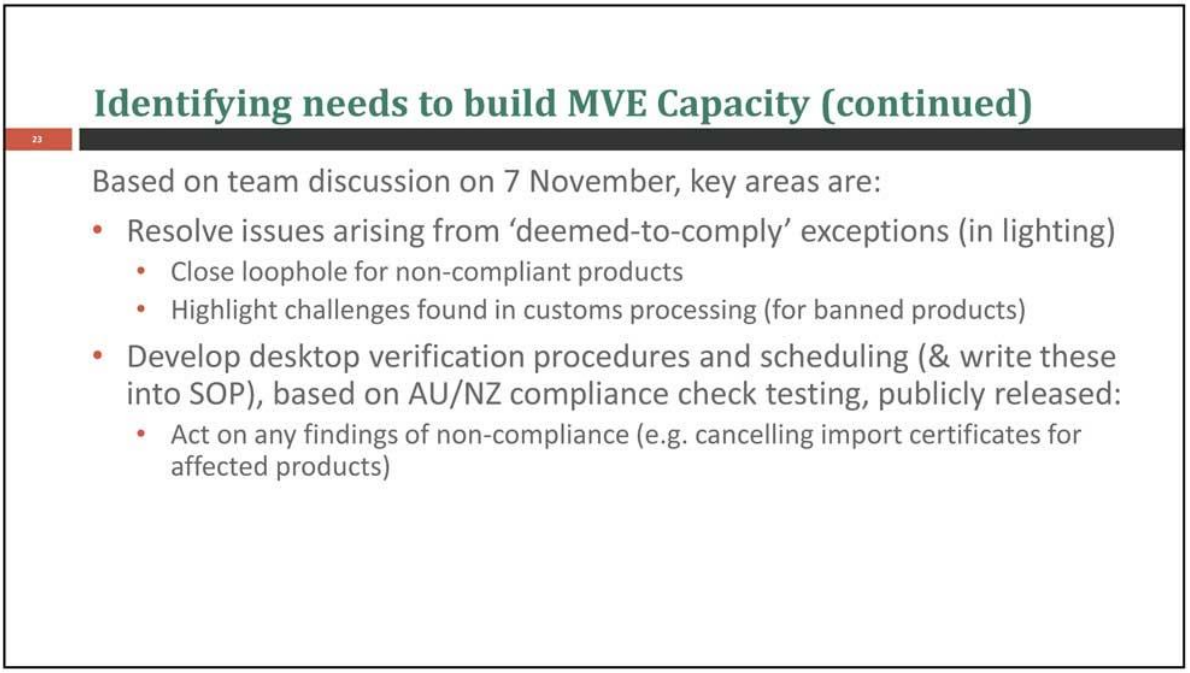
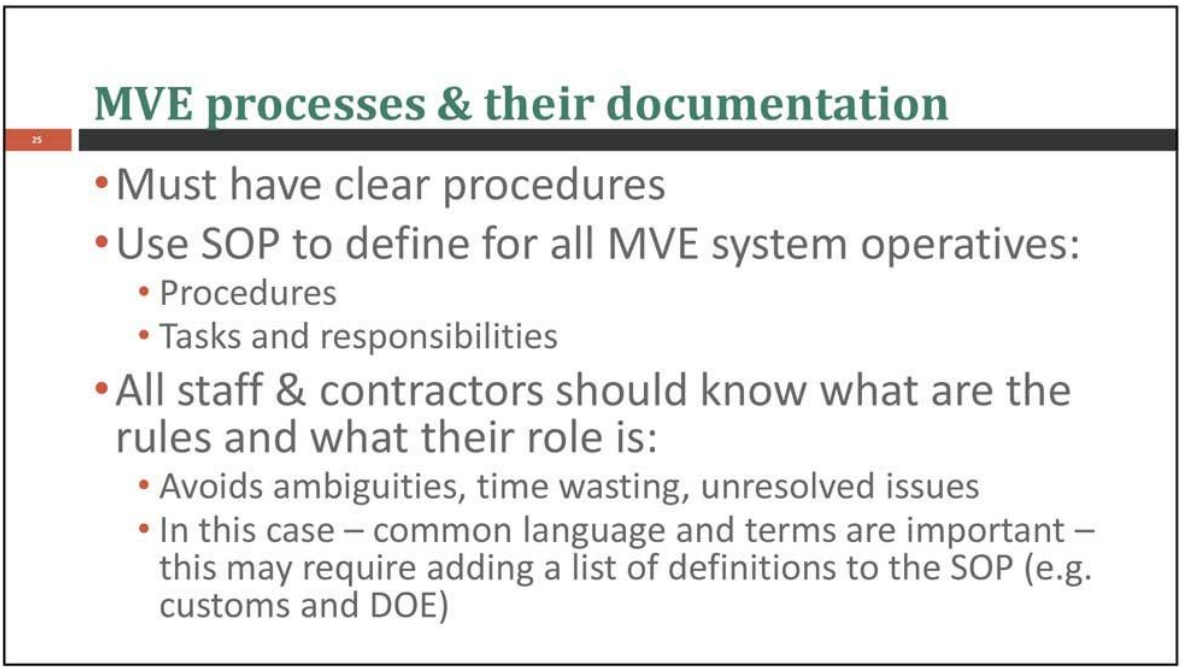

Identifying needs to build MVE Capacity (continued)
23
Based on team discussion on 7 November, key areas are:
• Resolve issues arising from 'deemed-to-comply' exceptions (in lighting)
• Close loophole for non-compliant products
• Highlight challenges found in customs processing (for banned products)
• Develop desktop verification procedures and scheduling (& write these into SOP), based on AU/NZ compliance check testing, publicly released:
• Act on any findings of non-compliance (e.g. cancelling import certificates for affected products)

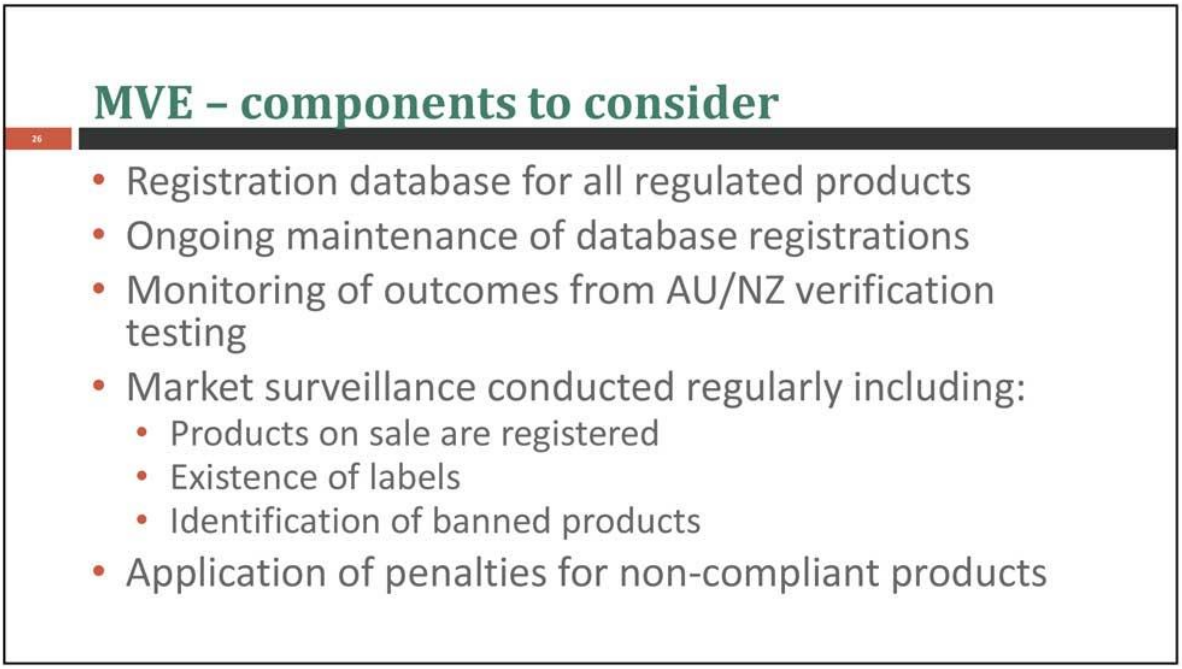
23


Identifying needs to build MVE Capacity (continued)
24
Based on team discussion on 7 November, key areas are:
• Activate market surveillance strategies (instore inspections)
• Describe store identification and selection methods
• Revise tools for structured method of instore inspections (forms require minor amendment, gov't registered tablets with cameras can be an effective tool)
• Provide guidance on evidence of sale of products under investigation

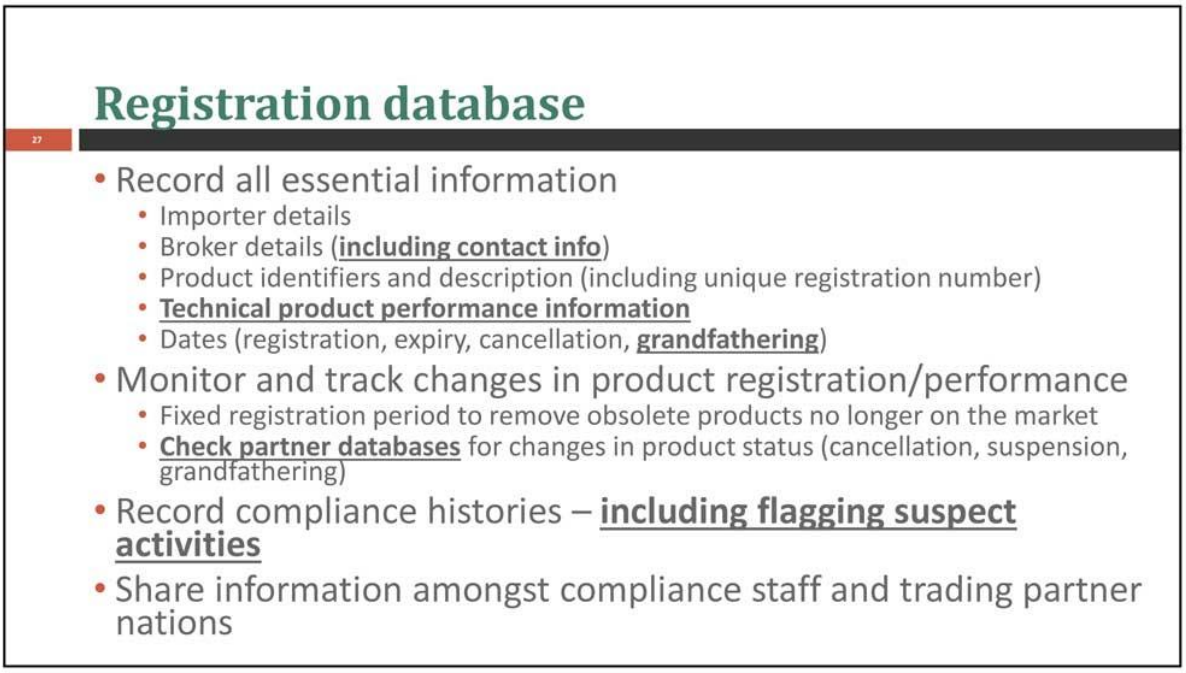
24


MVE processes & their documentation
25
• Must have clear procedures
• Use SOP to define for all MVE system operatives:
• Procedures
• Tasks and responsibilities
• All staff & contractors should know what are the rules and what their role is:
• Avoids ambiguities, time wasting, unresolved issues
• In this case – common language and terms are important – this may require adding a list of definitions to the SOP (e.g. customs and DOE)

25


MVE – components to consider
26
• Registration database for all regulated products
• Ongoing maintenance of database registrations
• Monitoring of outcomes from AU/NZ verification testing
• Market surveillance conducted regularly including:
• Products on sale are registered
• Existence of labels
• Identification of banned products
• Application of penalties for non-compliant products

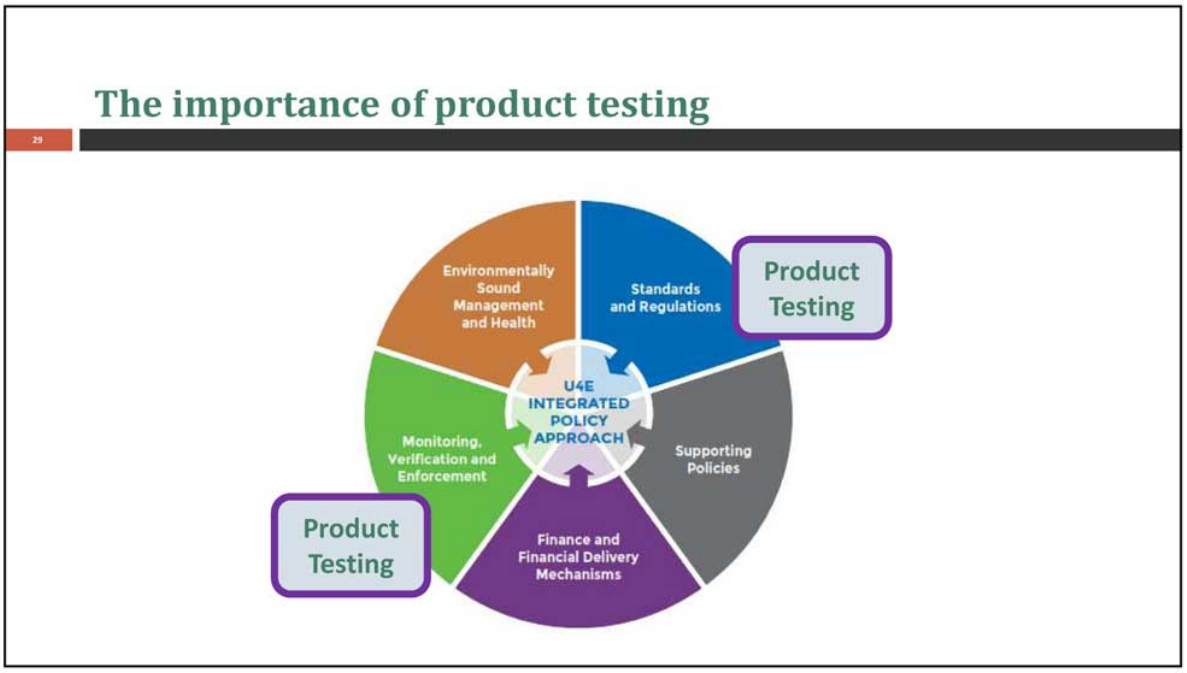
26


Registration database
27
• Record all essential information
• Importer details
• Broker details (including contact info)
• Product identifiers and description (including unique registration number)
• Technical product performance information
• Dates (registration, expiry, cancellation, grandfathering)
• Monitor and track changes in product registration/performance
• Fixed registration period to remove obsolete products no longer on the market
• Check partner databases for changes in product status (cancellation, suspension, grandfathering)
• Record compliance histories – including flagging suspect activities
• Share information amongst compliance staff and trading partner nations

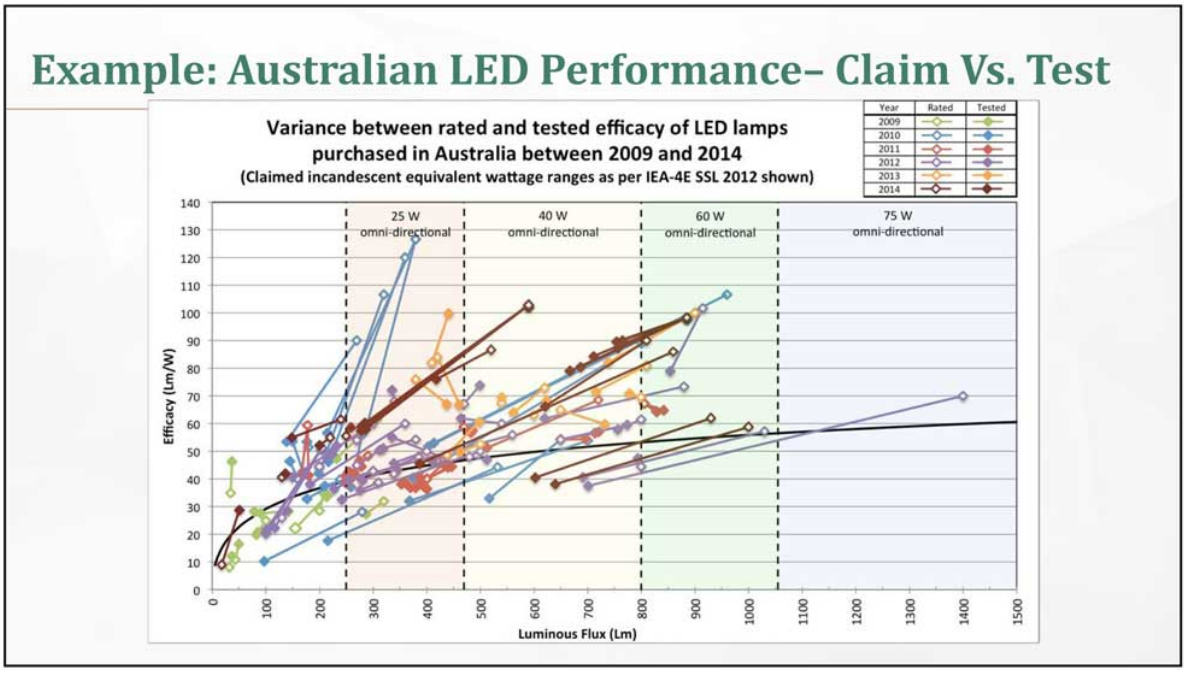
27


Verification

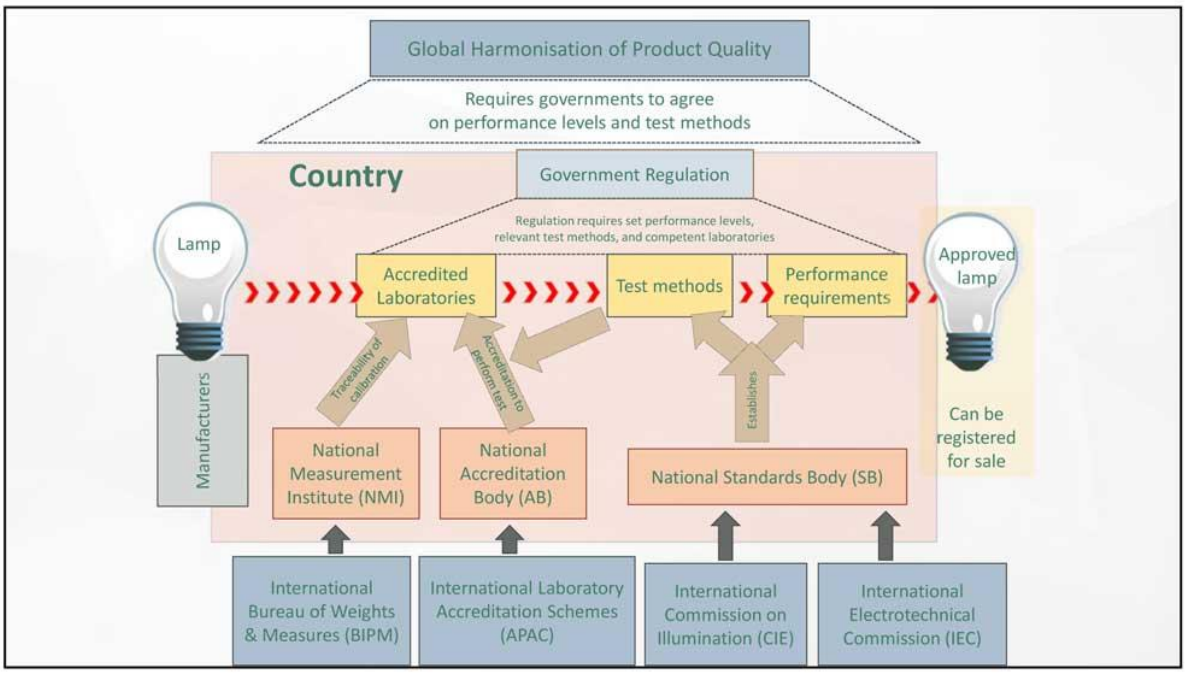
28


The importance of product testing
29
Environmentally Sound Management and Health
Standards and Regulations
Product Testing
U4E INTEGRATED POLICY APPROACH
Monitoring, Verification and Enforcement
Supporting Policies
Product Testing
Finance and Financial Delivery Mechanisms

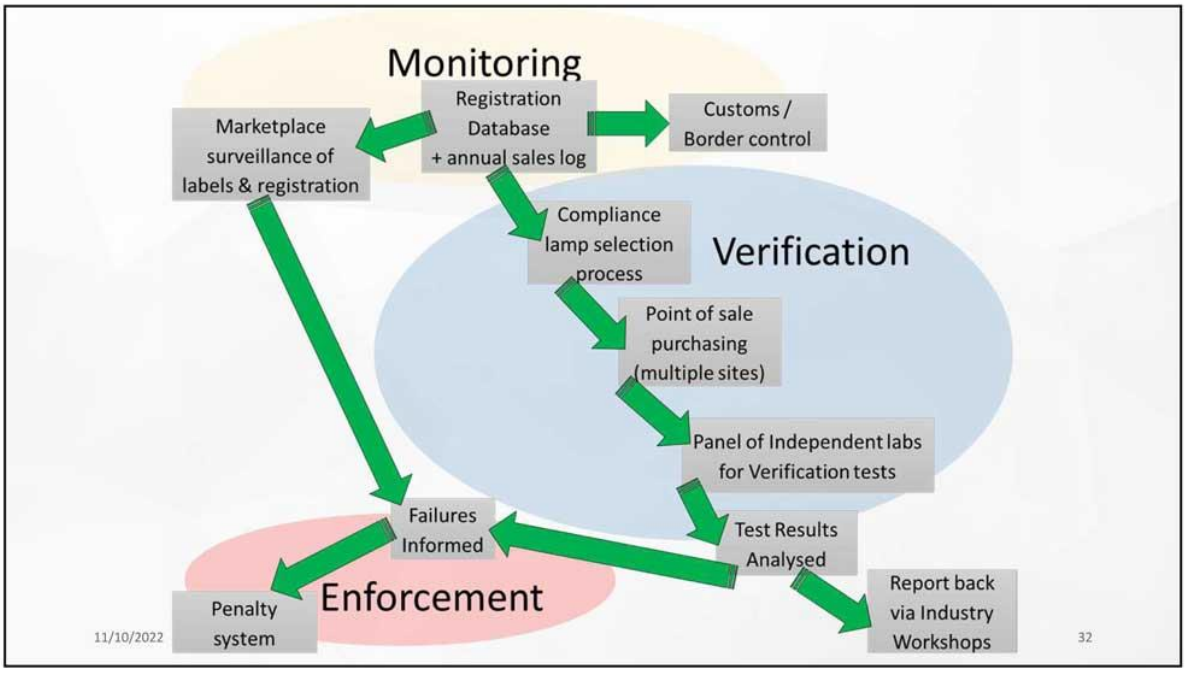
29


Example: Australian LED Performance– Claim Vs. Test
Variance between rated and tested efficacy of LED lamps purchased in Australia between 2009 and 2014
(Claimed incandescent equivalent wattage ranges as per IEA-4E SSL 2012 shown)
Year
Rated
Tested
2009
2010
2011
2012
2013
2014
25 W omni-directional
40 W omni-directional
60 W omni-directional
75 W omni-directional
Efficacy (Lm/W)
Luminous Flux (Lm)

30


Global Harmonisation of Product Quality
Requires governments to agree on performance levels and test methods
Country
Government Regulation
Regulation requires set performance levels, relevant test methods, and competent laboratories
Lamp
Accredited Laboratories
Test methods
Performance requirements
Approved lamp
Manufacturers
Traceability of calibration
Accreditation to perform test
Establishes
Can be registered for sale
National Measurement Institute (NMI)
National Accreditation Body (AB)
National Standards Body (SB)
International Bureau of Weights & Measures (BIPM)
International Laboratory Accreditation Schemes (APAC)
International Commission on Illumination (CIE)
International Electrotechnical Commission (IEC)

31


Monitoring
Registration Database + annual sales log
Marketplace surveillance of labels & registration
Customs / Border control
Compliance lamp selection process
Verification
Point of sale purchasing (multiple sites)
Panel of Independent labs for Verification tests
Failures Informed
Test Results Analysed
Report back via Industry Workshops
Enforcement
Penalty system
11/10/2022
32

32

Verification: recommended desktop option

33

Category B - Authenticating laboratory test results

34

- Traceability of calibration

- Accreditation of labs to perform test procedures

34

International Accreditation System

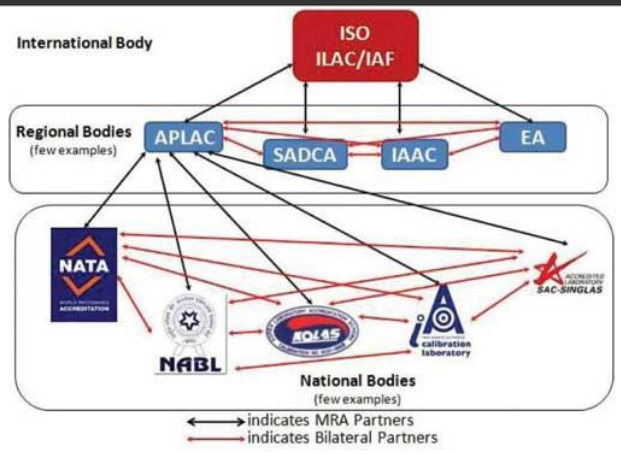
35

- International recognition of lighting testing and reports from laboratories within a country is achieved by having the national accreditation body accrediting these labs meet the requirements of a global, mutual recognition arrangement framework.
- The International Laboratory Accreditation Cooperation (ILAC)
- Asia Pacific Accreditation Cooperation (APAC) is a regional accreditation body (www.apac.org). APAC is recognized by the Asia Pacific Economic Cooperation (APEC) as one of five Specialist Regional Bodies (SRBs) that support the work of the APEC Sub-Committee on Standards and Conformance.AC) heads this arrangement framework (www.ilac.org).

35

International Accreditation System

36



International and Regional Accreditation Bodies Relationships. (Wadhwa V, Rai S, Thukral T, Chopra M. Laboratory quality management system: Road to accreditation and beyond. Indian J Med Microbiol 2012;30:131-40)

36

Authenticity of Test Reports

37

- Confirm accreditation status
- If in doubt contact AB
- Check scope of lab


United States Department of Commerce
National Institute of Standards and Technology

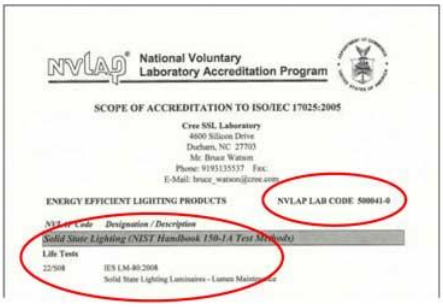
NVLAP

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 500041-0

Cree SSL Laboratory
Durham, NC

ENERGY EFFICIENT LIGHTING PRODUCTS


NVLAP National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Cree SSL Laboratory
4600 Silicon Drive
Durham, NC 27703
Mr. Bruce Watson
Phone: 9195135537 Fax:
E-Mail: bruce_watson@cree.com

ENERGY EFFICIENT LIGHTING PRODUCTS — NVLAP LAB CODE 500041-0

NVLAP Code | Designation / Description

Solid State Lighting (NIST Handbook 150-1A Test Methods)

Life Tests

22/508 | IES LM-80-2008 | Solid State Lighting Luminaires - Lumen Maint

37

Authenticity of Test Reports

38


CREE

APPLICATION NOTE

CLD-AP15 REV J

Cree® XLamp® LED
IES LM-80-2008 Testing Results

Revision: 3 (November 22, 2011)

NVLAP Lab Code 500041-0

INTRODUCTION

This document provides the results of Cree's IES LM-80-2008 ("LM-80") testing on XLamp LEDs. Cree is providing this data so that the public can verify the reliability of Cree LEDs as part of a complete LED lighting system.

Note that this document only provides the end results of the LM-80 tests. This is not a complete LM-80 report. Do not use this document to submit luminaires or lamps to an agency. Cree customers who need the full LM-80 reports should contact their Cree sales representative.

Cree's customers who wish to share LM-80 results with their customers have permission to link to this docu-

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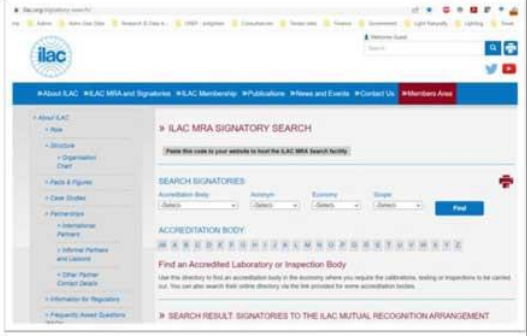
NVLAP Accreditation for LM-80-2008 Testing 2
XLamp MC-E White LEDs (Rev 1) 3
XLamp ML-B White LEDs (Rev 0) 4
XLamp ML-E White LEDs (Rev 0) 5
XLamp MP-L EasyWhite LEDs (Rev 0) 6
XLamp MT-G EasyWhite LEDs (Rev 0) 7
XLamp MX-3 White LEDs (Rev 0) 8
XLamp MX-6 White LEDs (Rev 2) 9
XLamp XM-L EasyWhite LEDs (Rev 0) 10
XLamp XM-L White LEDs (Rev 0) 11
XLamp XP-E White LEDs (Rev 3) 12
XLamp XP-E High Efficiency White LEDs (Rev 2) 13
XLamp XP-G White LEDs (Rev 4) 14
XLamp XR-E White LEDs (Rev 1) 15

https://ilac.org/signatory-search/


ilac

» ILAC MRA SIGNATORY SEARCH

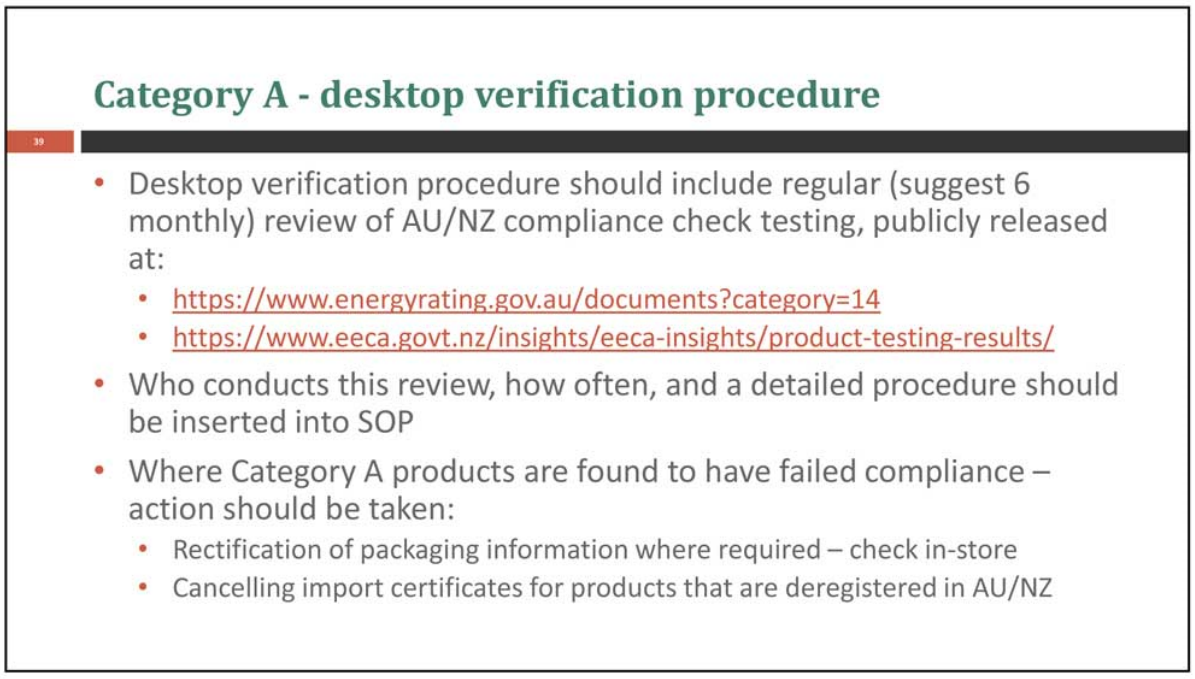
SEARCH SIGNATORIES

ACCREDITATION BODY

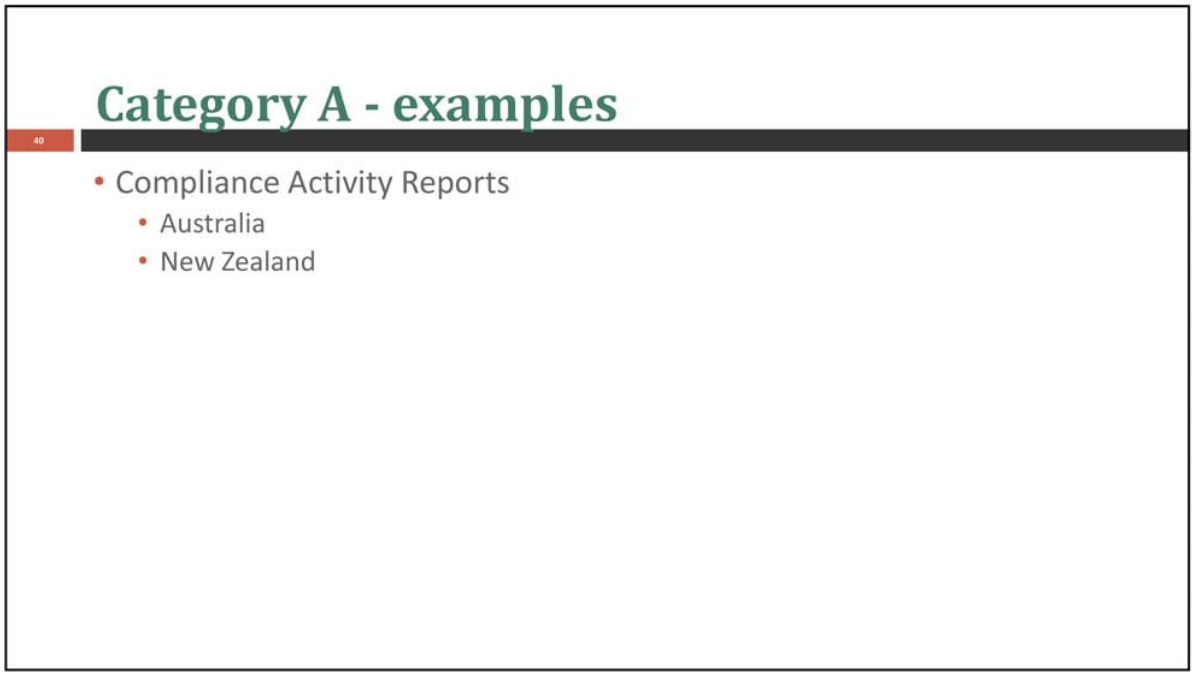
Find an Accredited Laboratory or Inspection Body

» SEARCH RESULT: SIGNATORIES TO THE ILAC MUTUAL RECOGNITION ARRANGEMENT

38


Category A - desktop verification procedure
39
Desktop verification procedure should include regular (suggest 6 monthly) review of AU/NZ compliance check testing, publicly released at:
https://www.energyrating.gov.au/documents?category=14
https://www.eeca.govt.nz/insights/eeca-insights/product-testing-results/
Who conducts this review, how often, and a detailed procedure should be inserted into SOP
Where Category A products are found to have failed compliance – action should be taken:
Rectification of packaging information where required – check in-store
Cancelling import certificates for products that are deregistered in AU/NZ

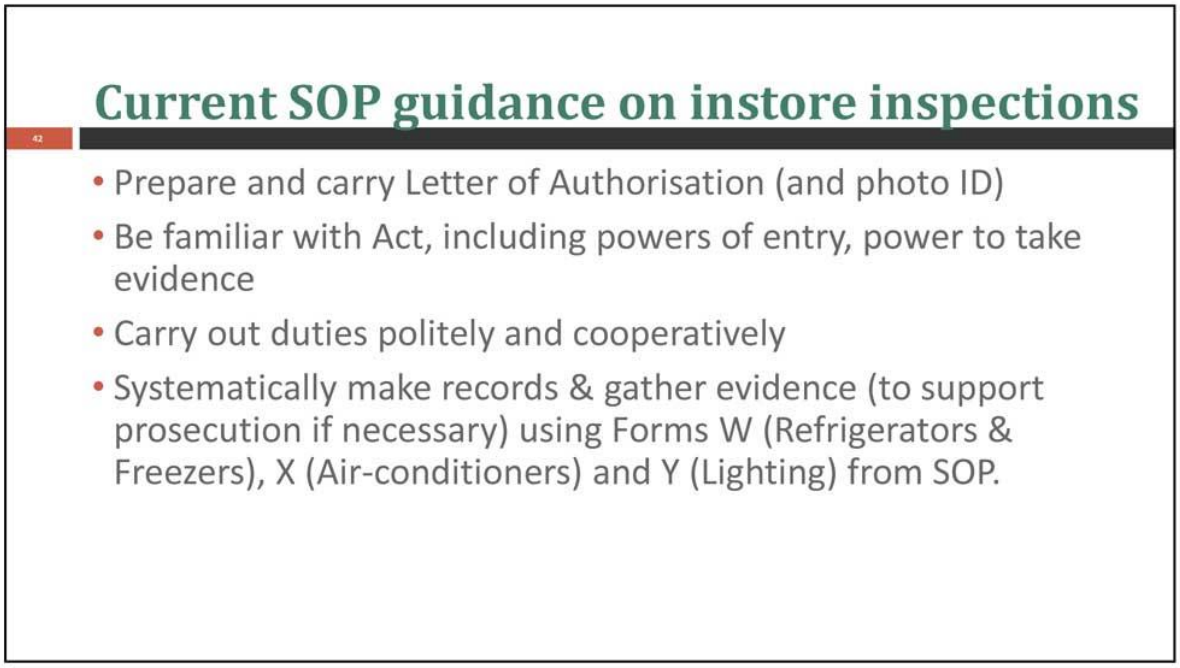
39


Category A - examples
40
Compliance Activity Reports
Australia
New Zealand

40


Market Surveillance Strategies

41


Current SOP guidance on instore inspections
42
• Prepare and carry Letter of Authorisation (and photo ID)
• Be familiar with Act, including powers of entry, power to take evidence
• Carry out duties politely and cooperatively
• Systematically make records & gather evidence (to support prosecution if necessary) using Forms W (Refrigerators & Freezers), X (Air-conditioners) and Y (Lighting) from SOP.

42

Preparations for instore inspections

43 43

- When to conduct inspection
  - Schedule → works best if observed to occur regularly (suggest annual)
- How to select a store
  - High volume stores → import data can be used for this
  - Response to complaints from consumers
  - Unusual activity or registrations (or other red flag)
  - New retailers
  - Selected stores should cover regional areas
- Who should undertake the inspections
  - Staff with high degree of familiarity with registration process
  - Work in pairs is ideal (from an evidentiary perspective)

43

Instore processes – making records

44 44

- Take a photo of the store front prior to entry (ensure this and all other photos are time stamped, *and geo stamped if possible*)
- Record store name, date, time, and name of vendor representative/onsite manager (this name is not currently on forms – but should be added)
- Do a visual observation of products on entry - identify potential targets & issues:
  - Are products registered? → *determined in the field using public database access where possible*
  - Are there standard energy labels affixed in correct location? (for Category A)
  - Do the labels match the products? (for Category A)
  - Are the label authentic?
  - Are there any non-standard labels?

44

Instore processes – making records

45 45

- Record product details on appropriate form (W/X/Y), also record number of units visible for sale (this is not currently on forms – but should be added)
- Photograph product (time stamped):
  - On all sides
  - Label (if present)
  - As offered for sale (in position on shelf/floor)
  - Showing number of units on shelf/floor (if possible)
- Collect any written information, advertising or publicly available material associated with the product (if relevant). Photograph location of this material instore.
- Take copies of any documents provided during the inspection

45

Documentation: surveillance action report

- See example

46

46

Enforcement elevation

47

Strategy includes a range of elevating enforcement responses that can be implemented, in this context:

- Notification of non-registered product (L1)
- Penalty notice – no payment required (L6)
- Penalty notice – payment required (L5)
- First Notice – Intention to Seize (L7)
- Final Notice – Intention to Seize (L8)

47

Some notes on current penalty notices

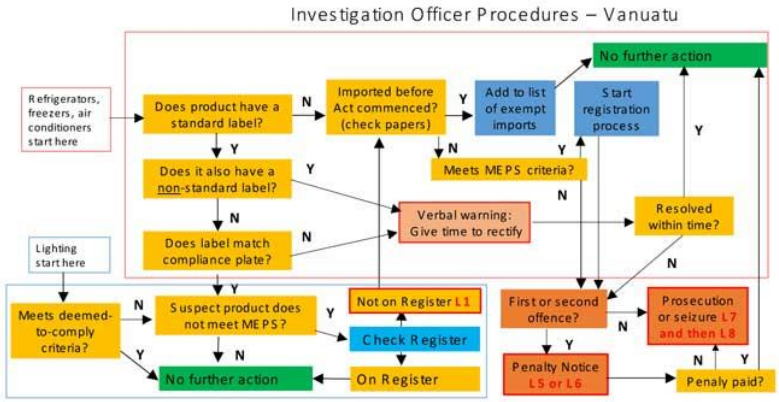
48 48

- Penalty – payment required (L5), and
  Penalty – no payment required (L6) letters:
  - Both should include requirement for recipient to provide statutory document saying they have resolved (rectified) the issue related to the offence
  - Currently, once the letter has been received (L6), or the payment made (L5), there is no stated requirement to fix the problem.
  - In fact, once you have paid the penalty related to the notice (L5), "there will be no further legal action in relation to this matter" *(this suggests they do not have to rectify issue)*

48

From SOP

49 49



49

Surveillance: Other activities

50

- Monitoring imports by HS Codes for in-scope, out-of-scope and banned product types
  - Comtrade
  - https://comtrade.un.org/data/
  - ITC Trademap
  - https://www.trademap.org/Index.
  - Example ➔ lamps ➔

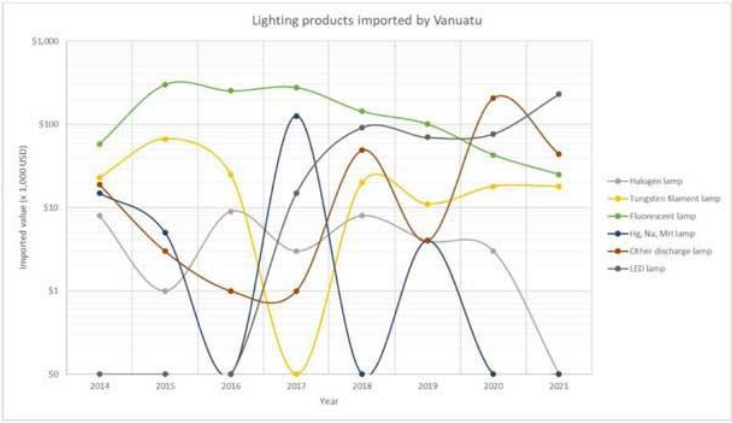
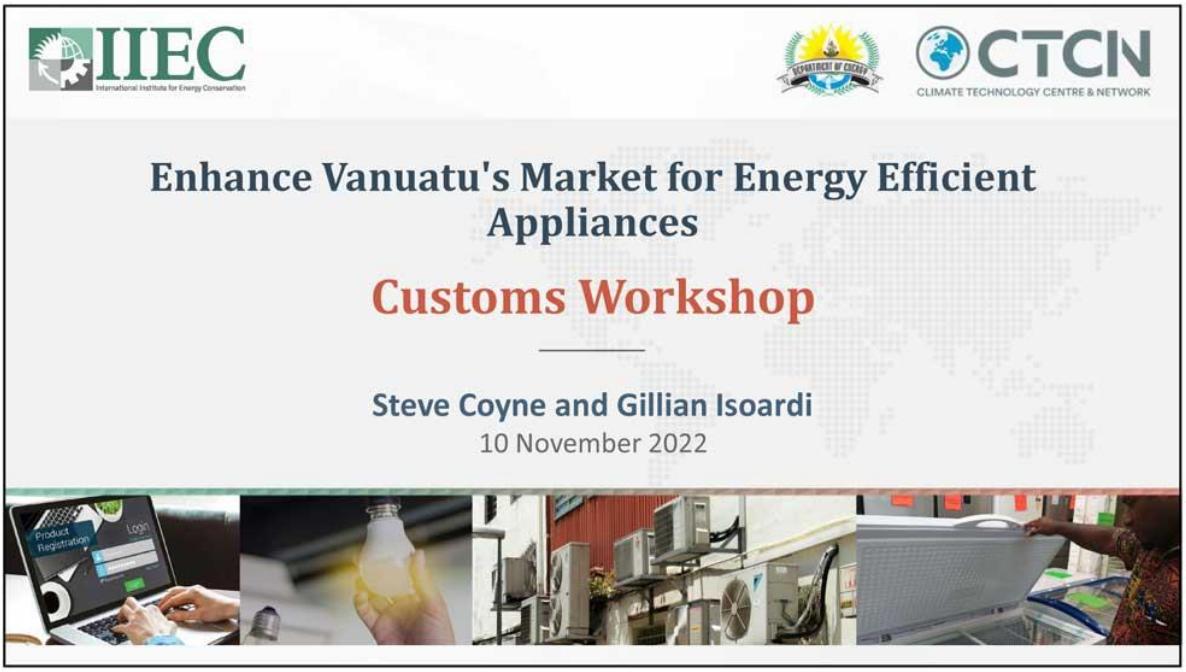
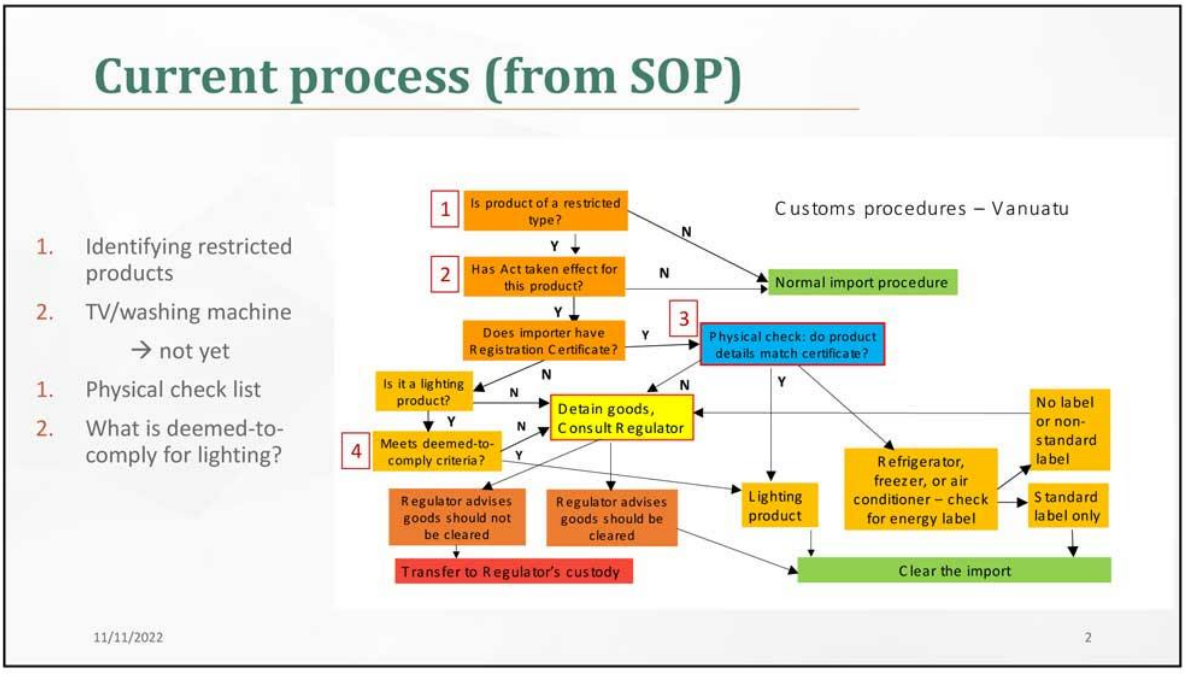


Figure 3: Graph of Vanuatu lamp import data by HS code from 2014 - 2021 (Data from trademap.org)

6 ANNEX III – TRAINING MATERIALS – 10 NOVEMBER 2022



1



2


1. Identifying restricted products - EE appliances
• HS codes trigger an alert → then require further visual check to see if restricted or exempt
11/11/2022
3

3


2. What products are in effect under the Act?
• Currently in effect (from 2019)
• Air conditioners
• Refrigerators
• Freezers
• Lighting products
• In effect from February 2023 (implemented August 2022, with grace period of 6 months)
• Televisions
• Washing machines
11/11/2022
4

4

3. Physical Checks on restricted products

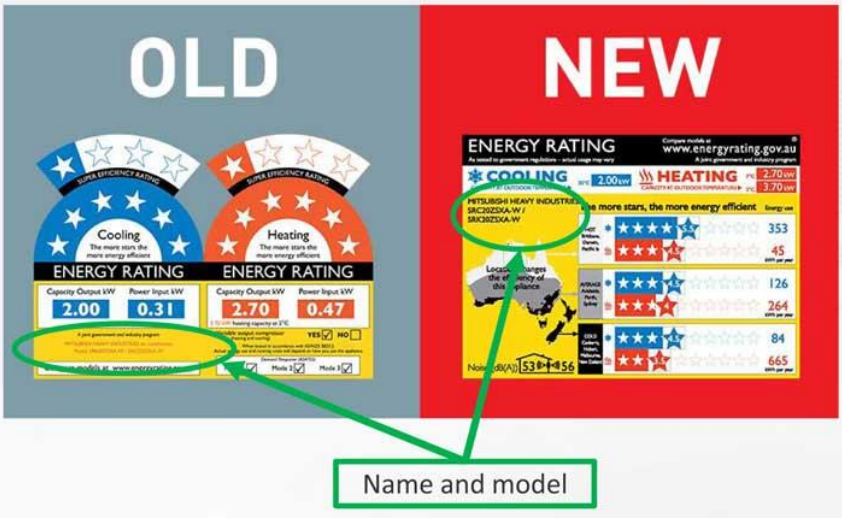
- Brand and model number match certificate
- Energy label – is it standard and matches product?

- If no label, request DoE check if registration is category A or B
  - If Cat B – no label is accepted *(discussion)*
  - If Cat A – must have standard label
- Are there any other (non-standard) labels? Should be removed

11/11/2022 5

5

Air conditioner standard energy label



6

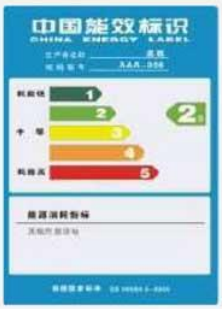
Refrigerator, Freezer (& TV, washing machine) standard energy label

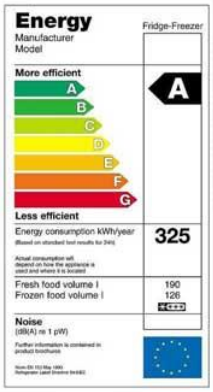
2 types

- Normal 6-star label *(left)*
- 10-star label for appliances rated as 7 stars or above *(right)*

7

Non-standard energy labels





8

4. What is deemed-to-comply for lighting?

- Regulated, registered AND deemed-to-comply

Incandescent Lamps				Compact Fluorescent Lamps	Linear or Circular Fluorescent		
MV Halogen	Decorative Filament	Fancy candle	ELV Halogen	Integrated Ballast (CFLi)	T5 Lamps	T8 Lamps	Electronic Ballasts
					 T5: tube diameter 16mm T8: tube diameter 24mm		

9

4. What is NOT deemed-to-comply for lighting?

- Regulated, registered and NOT deemed-to-comply

Linear or Circular Fluorescent	
T12 Lamps	Magnetic Ballasts
 T12: tube diameter 38mm	

10

4. What is NOT regulated in lighting?

- Not regulated (and therefore not requiring to be registered)

Incandescent Lamps		Compact Fluorescent Lamps	LED Lamps and Products
MV Tungsten Filament Reflector	Halogen Reflector	Externally Ballasted (CFLn)	All types
			

11/11/2022 11

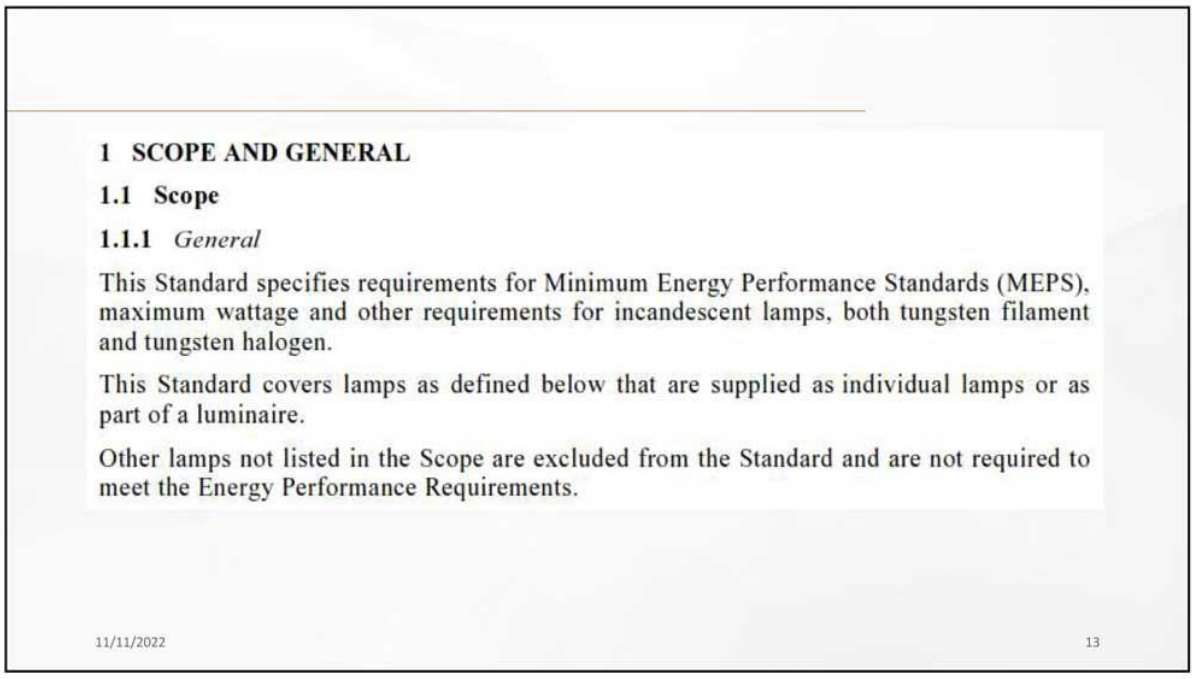
11

4. What is NOT deemed-to-comply for lighting?

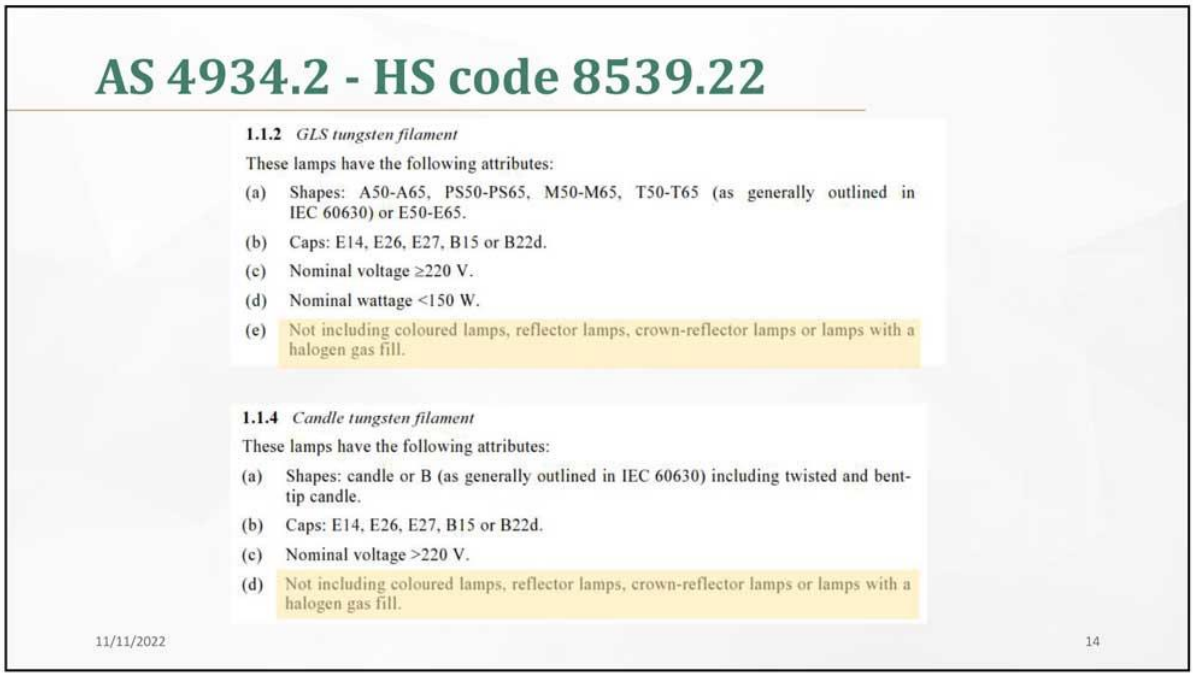
- Incandescent Lamps – tungsten filament
- HS 853922
- How to identify:
  - Glass bulb (clear/frosted)
  - Common wattages >25W
    - 40/60/75/100W
    - No "halogen" on package
    - No capsule inside bulb

11/11/2022 12

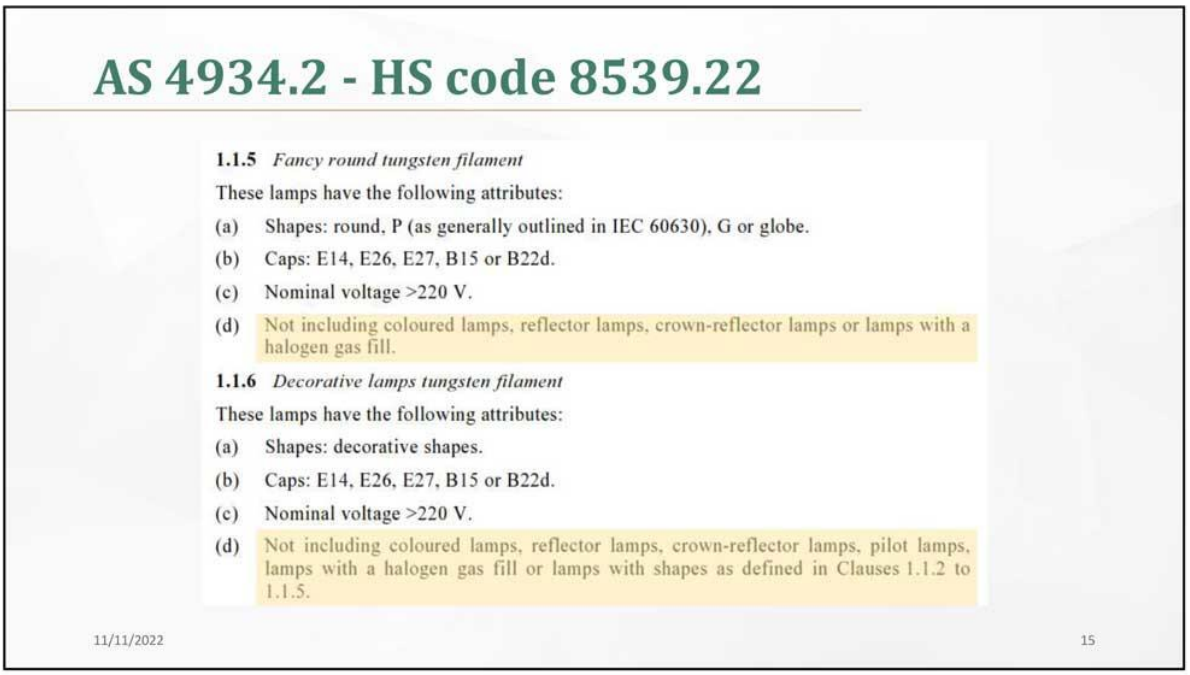
12


1 SCOPE AND GENERAL
1.1 Scope
1.1.1 General
This Standard specifies requirements for Minimum Energy Performance Standards (MEPS), maximum wattage and other requirements for incandescent lamps, both tungsten filament and tungsten halogen.
This Standard covers lamps as defined below that are supplied as individual lamps or as part of a luminaire.
Other lamps not listed in the Scope are excluded from the Standard and are not required to meet the Energy Performance Requirements.
11/11/2022
13

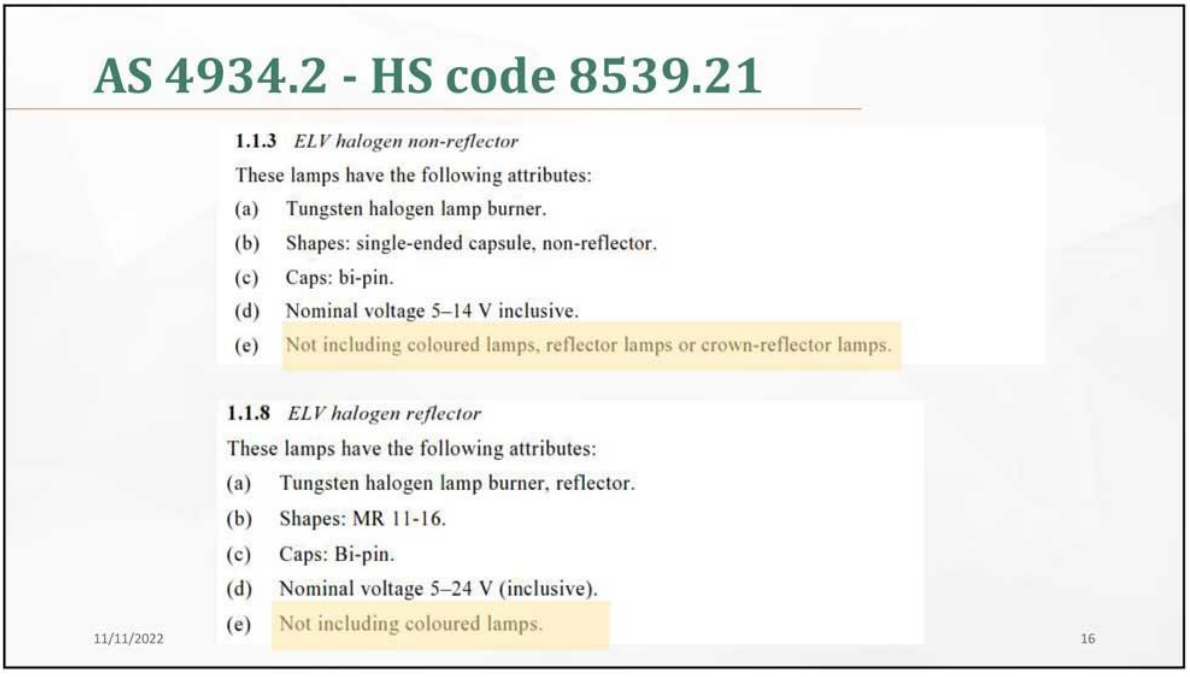
13


AS 4934.2 - HS code 8539.22
1.1.2 GLS tungsten filament
These lamps have the following attributes:
(a) Shapes: A50-A65, PS50-PS65, M50-M65, T50-T65 (as generally outlined in IEC 60630) or E50-E65.
(b) Caps: E14, E26, E27, B15 or B22d.
(c) Nominal voltage ≥220 V.
(d) Nominal wattage <150 W.
(e) Not including coloured lamps, reflector lamps, crown-reflector lamps or lamps with a halogen gas fill.
1.1.4 Candle tungsten filament
These lamps have the following attributes:
(a) Shapes: candle or B (as generally outlined in IEC 60630) including twisted and bent-tip candle.
(b) Caps: E14, E26, E27, B15 or B22d.
(c) Nominal voltage >220 V.
(d) Not including coloured lamps, reflector lamps, crown-reflector lamps or lamps with a halogen gas fill.
11/11/2022
14

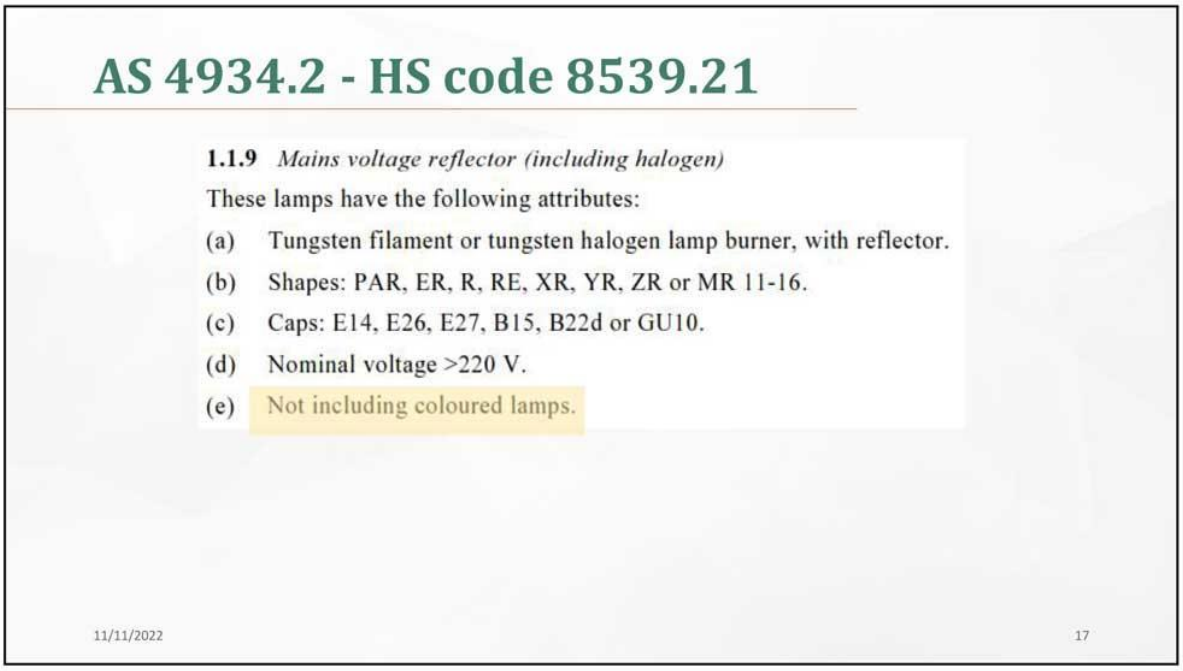
14


AS 4934.2 - HS code 8539.22
1.1.5 Fancy round tungsten filament
These lamps have the following attributes:
(a) Shapes: round, P (as generally outlined in IEC 60630), G or globe.
(b) Caps: E14, E26, E27, B15 or B22d.
(c) Nominal voltage >220 V.
(d) Not including coloured lamps, reflector lamps, crown-reflector lamps or lamps with a halogen gas fill.
1.1.6 Decorative lamps tungsten filament
These lamps have the following attributes:
(a) Shapes: decorative shapes.
(b) Caps: E14, E26, E27, B15 or B22d.
(c) Nominal voltage >220 V.
(d) Not including coloured lamps, reflector lamps, crown-reflector lamps, pilot lamps, lamps with a halogen gas fill or lamps with shapes as defined in Clauses 1.1.2 to 1.1.5.
11/11/2022
15

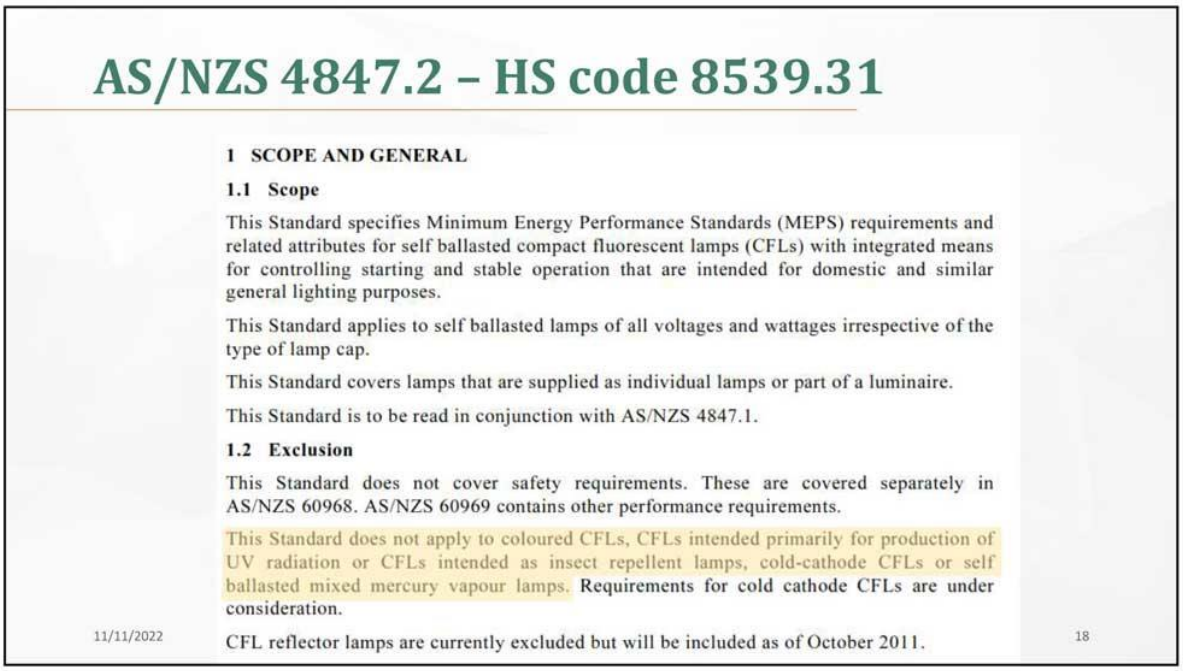
15


AS 4934.2 - HS code 8539.21
1.1.3 ELV halogen non-reflector
These lamps have the following attributes:
(a) Tungsten halogen lamp burner.
(b) Shapes: single-ended capsule, non-reflector.
(c) Caps: bi-pin.
(d) Nominal voltage 5–14 V inclusive.
(e) Not including coloured lamps, reflector lamps or crown-reflector lamps.
1.1.8 ELV halogen reflector
These lamps have the following attributes:
(a) Tungsten halogen lamp burner, reflector.
(b) Shapes: MR 11-16.
(c) Caps: Bi-pin.
(d) Nominal voltage 5–24 V (inclusive).
(e) Not including coloured lamps.
11/11/2022
16

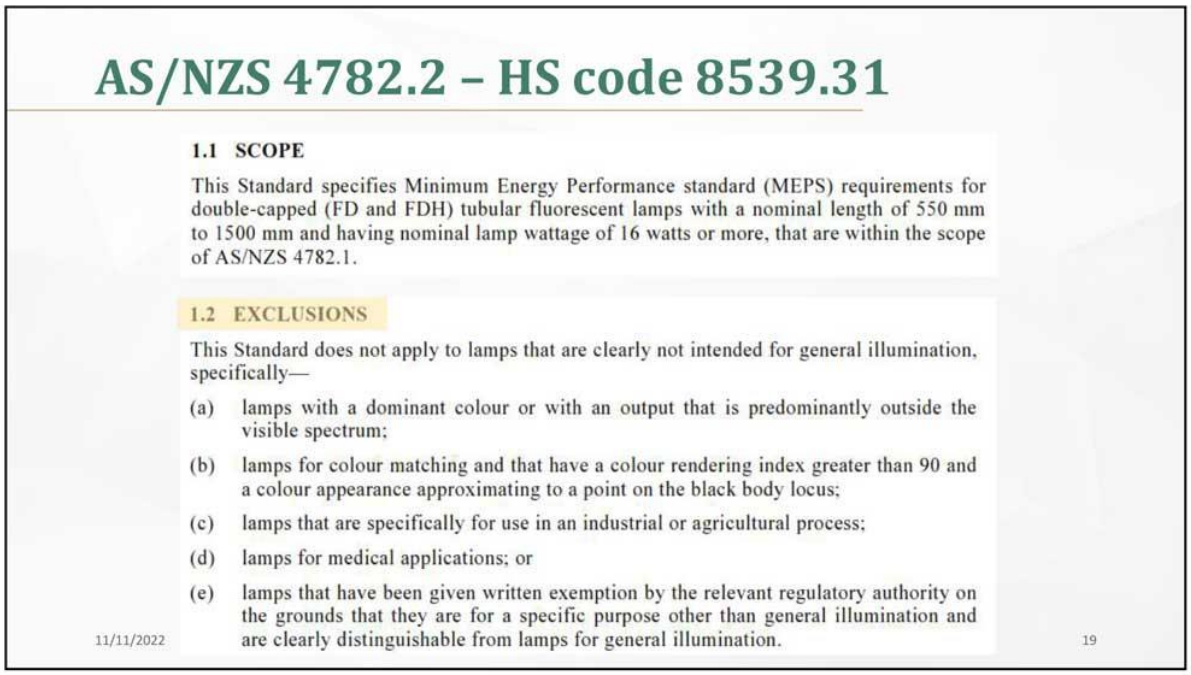
16


AS 4934.2 - HS code 8539.21
1.1.9 Mains voltage reflector (including halogen)
These lamps have the following attributes:
(a) Tungsten filament or tungsten halogen lamp burner, with reflector.
(b) Shapes: PAR, ER, R, RE, XR, YR, ZR or MR 11-16.
(c) Caps: E14, E26, E27, B15, B22d or GU10.
(d) Nominal voltage >220 V.
(e) Not including coloured lamps.
11/11/2022
17

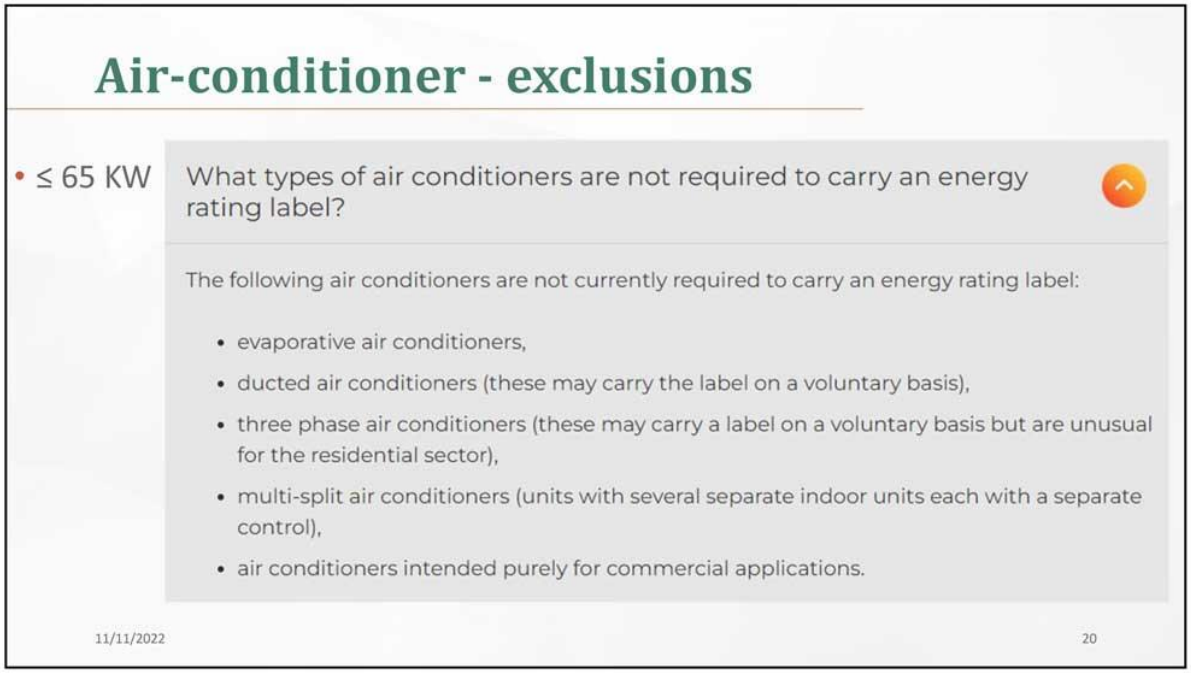
17


AS/NZS 4847.2 – HS code 8539.31
1 SCOPE AND GENERAL
1.1 Scope
This Standard specifies Minimum Energy Performance Standards (MEPS) requirements and related attributes for self ballasted compact fluorescent lamps (CFLs) with integrated means for controlling starting and stable operation that are intended for domestic and similar general lighting purposes.
This Standard applies to self ballasted lamps of all voltages and wattages irrespective of the type of lamp cap.
This Standard covers lamps that are supplied as individual lamps or part of a luminaire.
This Standard is to be read in conjunction with AS/NZS 4847.1.
1.2 Exclusion
This Standard does not cover safety requirements. These are covered separately in AS/NZS 60968. AS/NZS 60969 contains other performance requirements.
This Standard does not apply to coloured CFLs, CFLs intended primarily for production of UV radiation or CFLs intended as insect repellent lamps, cold-cathode CFLs or self ballasted mixed mercury vapour lamps. Requirements for cold cathode CFLs are under consideration.
CFL reflector lamps are currently excluded but will be included as of October 2011.
11/11/2022
18

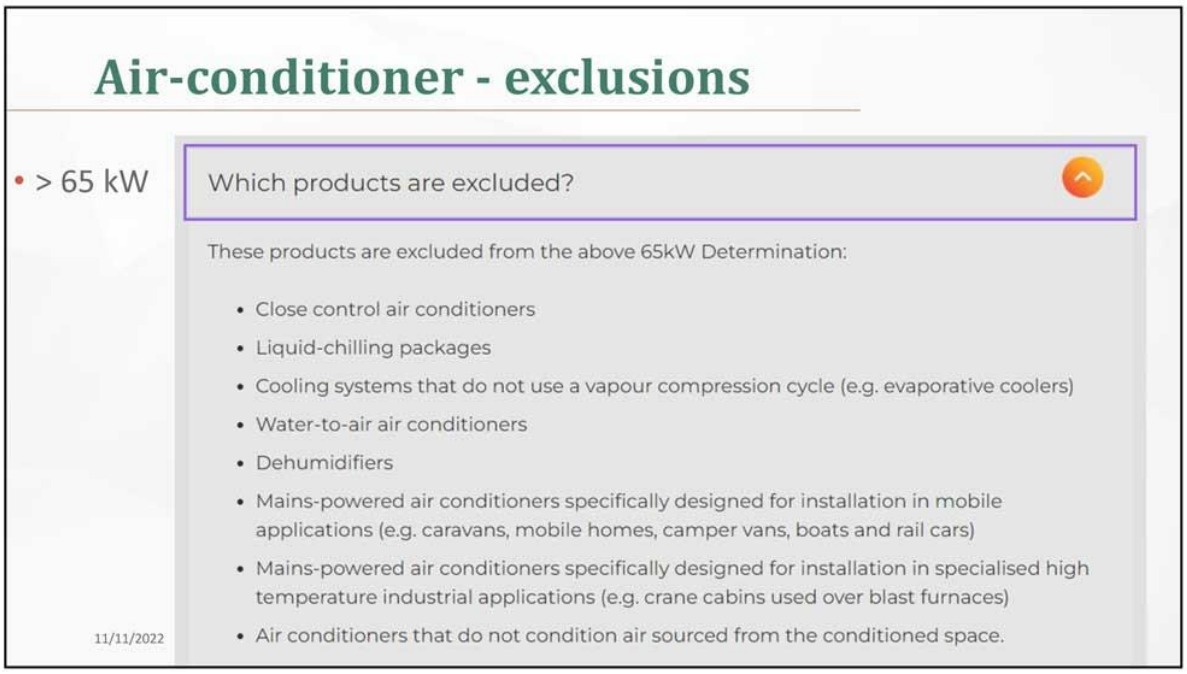
18


AS/NZS 4782.2 – HS code 8539.31
1.1 SCOPE
This Standard specifies Minimum Energy Performance standard (MEPS) requirements for double-capped (FD and FDH) tubular fluorescent lamps with a nominal length of 550 mm to 1500 mm and having nominal lamp wattage of 16 watts or more, that are within the scope of AS/NZS 4782.1.
1.2 EXCLUSIONS
This Standard does not apply to lamps that are clearly not intended for general illumination, specifically—
(a) lamps with a dominant colour or with an output that is predominantly outside the visible spectrum;
(b) lamps for colour matching and that have a colour rendering index greater than 90 and a colour appearance approximating to a point on the black body locus;
(c) lamps that are specifically for use in an industrial or agricultural process;
(d) lamps for medical applications; or
(e) lamps that have been given written exemption by the relevant regulatory authority on the grounds that they are for a specific purpose other than general illumination and are clearly distinguishable from lamps for general illumination.
11/11/2022
19

19


Air-conditioner - exclusions
• ≤ 65 KW
What types of air conditioners are not required to carry an energy rating label?
The following air conditioners are not currently required to carry an energy rating label:
• evaporative air conditioners,
• ducted air conditioners (these may carry the label on a voluntary basis),
• three phase air conditioners (these may carry a label on a voluntary basis but are unusual for the residential sector),
• multi-split air conditioners (units with several separate indoor units each with a separate control),
• air conditioners intended purely for commercial applications.
11/11/2022
20

20


Air-conditioner - exclusions
• > 65 kW
Which products are excluded?
These products are excluded from the above 65kW Determination:
• Close control air conditioners
• Liquid-chilling packages
• Cooling systems that do not use a vapour compression cycle (e.g. evaporative coolers)
• Water-to-air air conditioners
• Dehumidifiers
• Mains-powered air conditioners specifically designed for installation in mobile applications (e.g. caravans, mobile homes, camper vans, boats and rail cars)
• Mains-powered air conditioners specifically designed for installation in specialised high temperature industrial applications (e.g. crane cabins used over blast furnaces)
• Air conditioners that do not condition air sourced from the conditioned space.
11/11/2022

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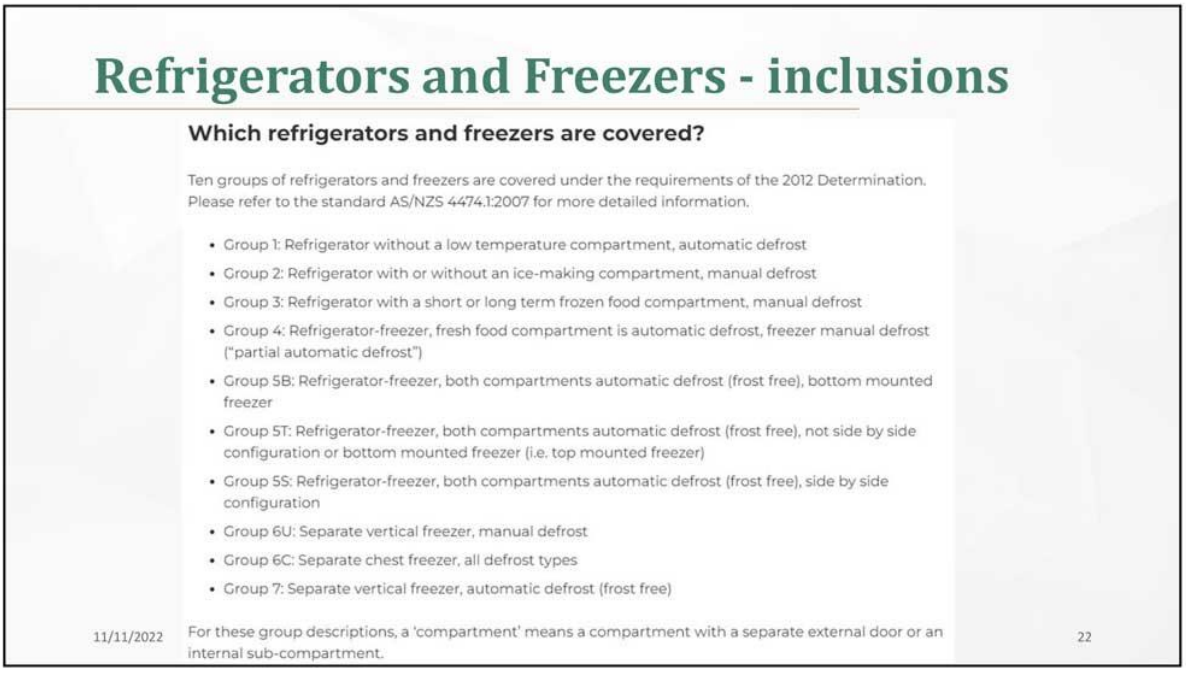
Refrigerators and Freezers - inclusions
Which refrigerators and freezers are covered?
Ten groups of refrigerators and freezers are covered under the requirements of the 2012 Determination. Please refer to the standard AS/NZS 4474.1:2007 for more detailed information.
• Group 1: Refrigerator without a low temperature compartment, automatic defrost
• Group 2: Refrigerator with or without an ice-making compartment, manual defrost
• Group 3: Refrigerator with a short or long term frozen food compartment, manual defrost
• Group 4: Refrigerator-freezer, fresh food compartment is automatic defrost, freezer manual defrost ("partial automatic defrost")
• Group 5B: Refrigerator-freezer, both compartments automatic defrost (frost free), bottom mounted freezer
• Group 5T: Refrigerator-freezer, both compartments automatic defrost (frost free), not side by side configuration or bottom mounted freezer (i.e. top mounted freezer)
• Group 5S: Refrigerator-freezer, both compartments automatic defrost (frost free), side by side configuration
• Group 6U: Separate vertical freezer, manual defrost
• Group 6C: Separate chest freezer, all defrost types
• Group 7: Separate vertical freezer, automatic defrost (frost free)
For these group descriptions, a 'compartment' means a compartment with a separate external door or an internal sub-compartment.
11/11/2022
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Using HS codes

- Using National Component of HS code (Tariff or Statistical Code) can separate, in-scope products from out-of-scope products:

11/11/2022 23

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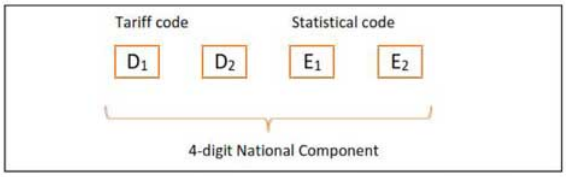
Statistical codes

- Provide opportunity to separate in-scope and out-of-scope products

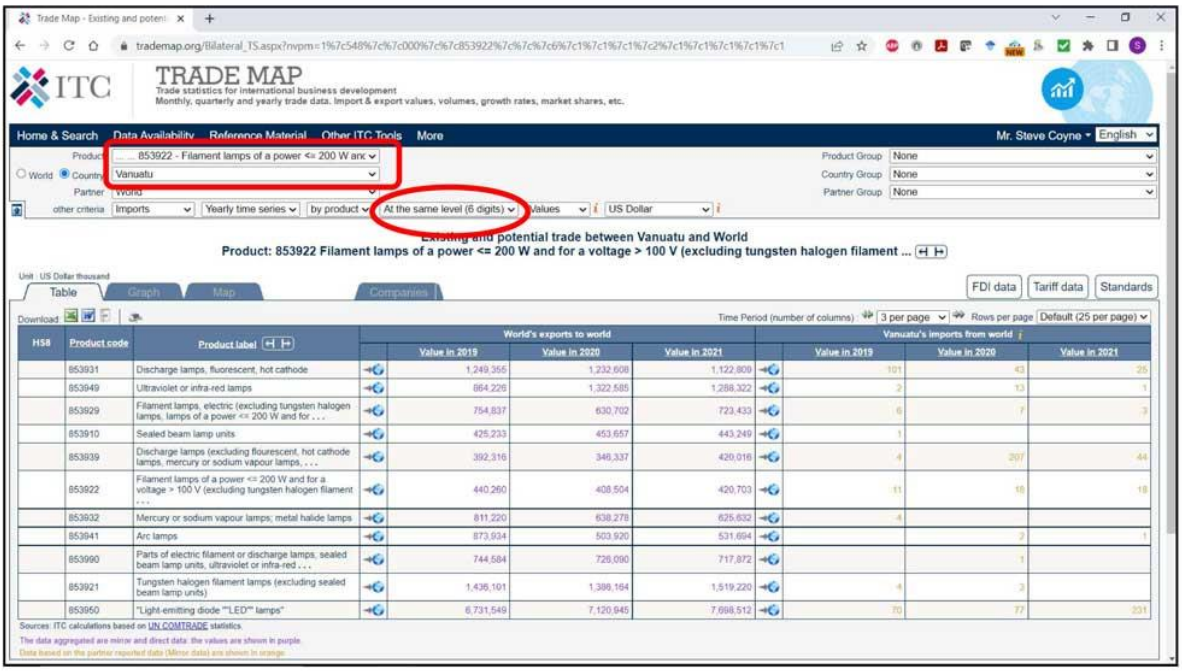
Figure 1: 10-digit HS structure

Figure 3: Identification of the two groups of paired digits of the 4-digit National Component

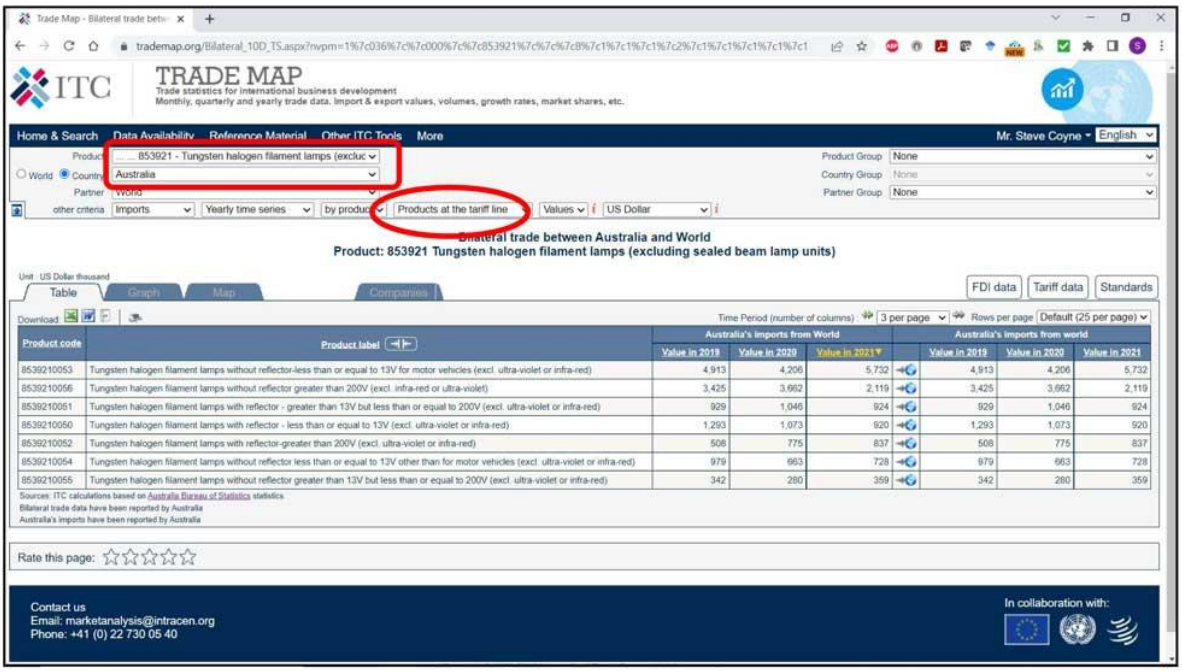


11/11/2022

24


TRADE MAP
Trade statistics for international business development
Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
Home & Search
Data Availability
Reference Material
Other ITC Tools
More
Mr. Steve Coyne
English
853922 - Filament lamps of a power <= 200 W and
Vanuatu
World
Imports
Yearly time series
by product
At the same level (6 digits)
Values
US Dollar
Product Group None
Country Group None
Partner Group None
Existing and potential trade between Vanuatu and World
Product: 853922 Filament lamps of a power <= 200 W and for a voltage > 100 V (excluding tungsten halogen filament ...
Unit : US Dollar thousand
Table
Graph
Map
Companies
FDI data
Tariff data
Standards
Download
Time Period (number of columns) 3 per page
Rows per page Default (25 per page)
HS8
Product code
Product label
World's exports to world
Vanuatu's imports from world
Value in 2019
Value in 2020
Value in 2021
853931 Discharge lamps, fluorescent, hot cathode 1,249,355 1,232,608 1,122,809 101 43 25
853949 Ultraviolet or infra-red lamps 864,226 1,322,585 1,288,322 2 13 1
853929 Filament lamps, electric (excluding tungsten halogen lamps, lamps of a power <= 200 W and for ... 754,837 630,702 723,433 6 7 2
853910 Sealed beam lamp units 425,233 453,657 443,249 1
853939 Discharge lamps (excluding flourescent, hot cathode lamps, mercury or sodium vapour lamps, ... 392,316 346,337 420,016 4 207 44
853922 Filament lamps of a power <= 200 W and for a voltage > 100 V (excluding tungsten halogen filament ... 440,260 408,504 420,703 11 18 18
853932 Mercury or sodium vapour lamps; metal halide lamps 811,220 638,278 625,632 4
853941 Arc lamps 873,934 503,920 531,694 2 1
853990 Parts of electric filament or discharge lamps, sealed beam lamp units, ultraviolet or infra-red ... 744,584 726,090 717,872 1
853921 Tungsten halogen filament lamps (excluding sealed beam lamp units) 1,436,101 1,386,164 1,519,220 4 3
853950 "Light-emitting diode ""LED"" lamps" 6,731,549 7,120,945 7,698,512 70 77 231
Sources: ITC calculations based on UN COMTRADE statistics
The data aggregated are mirror and direct data: the values are shown in purple
Data based on the partner reported data (Mirror data) are shown in orange

25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Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
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Data Availability
Reference Material
Other ITC Tools
More
Mr. Steve Coyne
English
853921 - Tungsten halogen filament lamps (excluc
Australia
World
Imports
Yearly time series
Products at the tariff line
Values
US Dollar
Product Group None
Country Group None
Partner Group None
Bilateral trade between Australia and World
Product: 853921 Tungsten halogen filament lamps (excluding sealed beam lamp units)
Unit : US Dollar thousand
Table
Graph
Map
Companies
FDI data
Tariff data
Standards
Download
Time Period (number of columns) 3 per page
Rows per page Default (25 per page)
Product code
Product label
Australia's imports from World
Value in 2019
Value in 2020
Value in 2021
8539210053 Tungsten halogen filament lamps without reflector-less than or equal to 13V for motor vehicles (excl. ultra-violet or infra-red) 4,913 4,206 5,732 4,913 4,206 5,732
8539210056 Tungsten halogen filament lamps without reflector greater than 200V (excl. infra-red or ultra-violet) 3,425 3,662 2,119 3,425 3,662 2,119
8539210051 Tungsten halogen filament lamps with reflector - greater than 13V but less than or equal to 200V (excl. ultra-violet or infra-red) 929 1,046 924 929 1,046 924
8539210050 Tungsten halogen filament lamps with reflector - less than or equal to 13V (excl. ultra-violet or infra-red) 1,293 1,073 920 1,293 1,073 920
8539210052 Tungsten halogen filament lamps with reflector-greater than 200V (excl. ultra-violet or infra-red) 508 775 837 508 775 837
8539210054 Tungsten halogen filament lamps without reflector less than or equal to 13V other than for motor vehicles (excl. ultra-violet or infra-red) 979 663 728 979 663 728
8539210055 Tungsten halogen filament lamps without reflector greater than 13V but less than or equal to 200V (excl. ultra-violet or infra-red) 342 280 359 342 280 359
Sources: ITC calculations based on Australia Bureau of Statistics statistics
Bilateral trade data have been reported by Australia
Australia's imports have been reported by Australia
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Phone: +41 (0) 22 730 05 40
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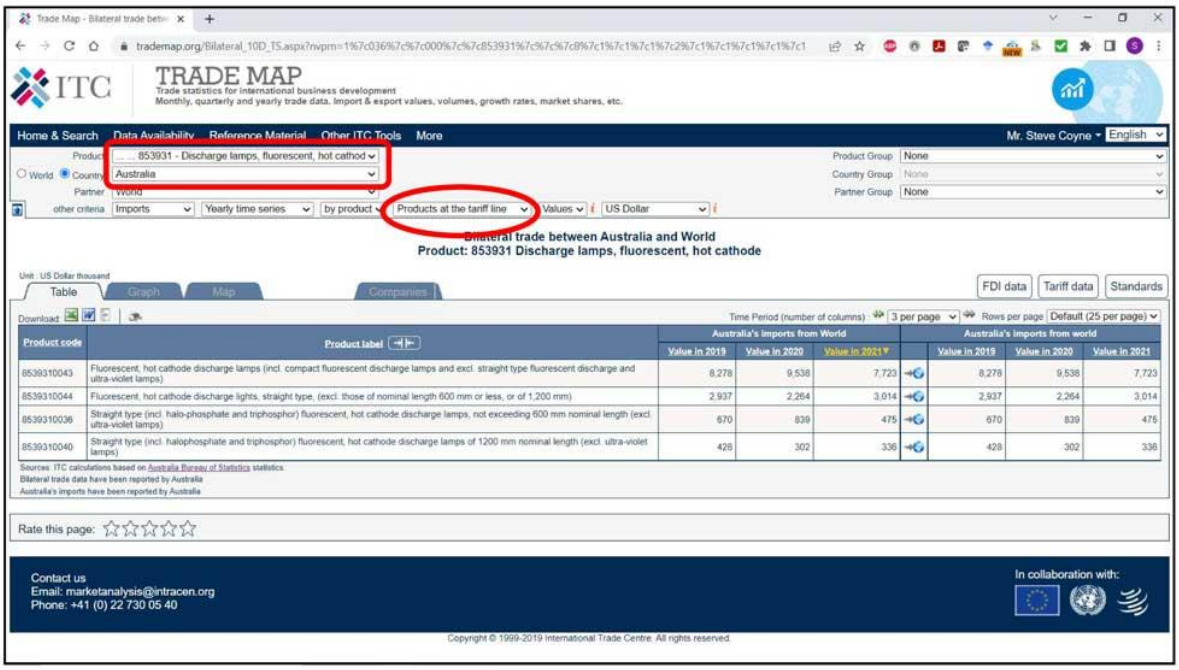
TRADE MAP
Trade statistics for international business development
Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
Home & Search
Data Availability
Reference Material
Other ITC Tools
More
853931 - Discharge lamps, fluorescent, hot cathod
Australia
Imports
Yearly time series
Products at the tariff line
US Dollar
Bilateral trade between Australia and World
Product: 853931 Discharge lamps, fluorescent, hot cathode
Table
Graph
Map
Companies
FDI data
Tariff data
Standards
Product code
Product label
Australia's imports from World
Australia's imports from world
Value in 2019
Value in 2020
Value in 2021
8539310043 Fluorescent, hot cathode discharge lamps (incl. compact fluorescent discharge lamps and excl. straight type fluorescent discharge and ultra-violet lamps) 8,278 9,538 7,723 8,278 9,538 7,723
8539310044 Fluorescent, hot cathode discharge lights, straight type, (excl. those of nominal length 600 mm or less, or of 1,200 mm) 2,937 2,264 3,014 2,937 2,264 3,014
8539310036 Straight type (incl. halo-phosphate and triphosphor) fluorescent, hot cathode discharge lamps, not exceeding 600 mm nominal length (excl. ultra-violet lamps) 670 839 475 670 839 475
8539310040 Straight type (incl. halophosphate and triphosphor) fluorescent, hot cathode discharge lamps of 1200 mm nominal length (excl. ultra-violet lamps) 428 302 336 428 302 336
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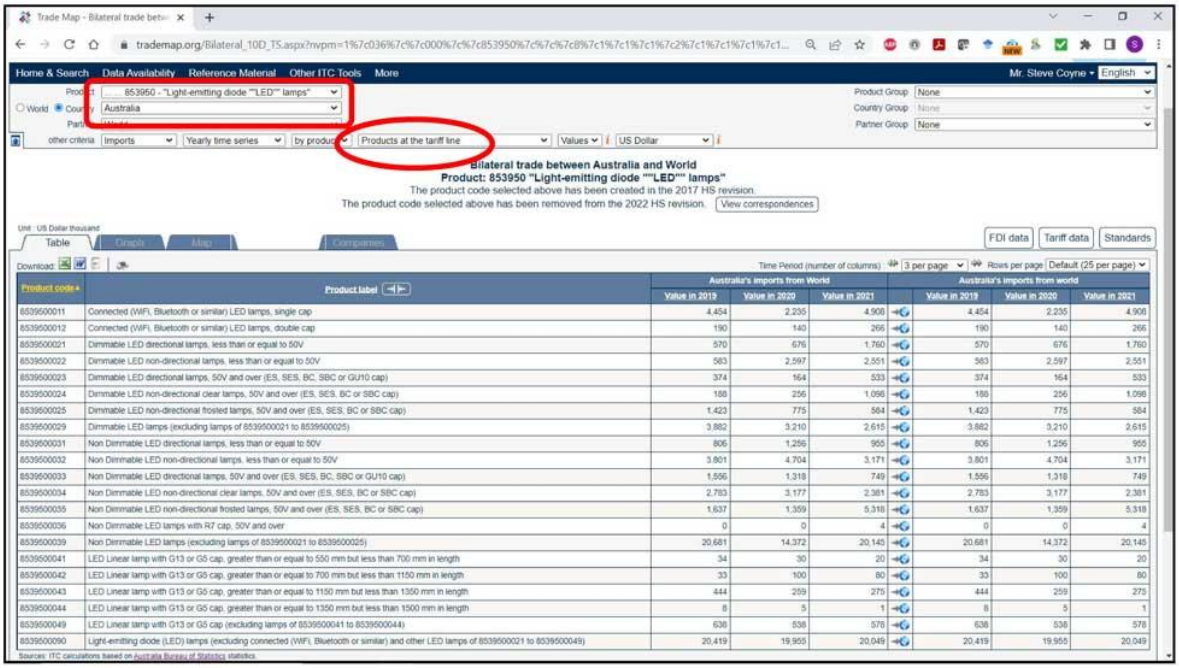
Home & Search
Data Availability
Reference Material
Other ITC Tools
More
853950 - "Light-emitting diode ""LED"" lamps"
Australia
Imports
Yearly time series
Products at the tariff line
US Dollar
Bilateral trade between Australia and World
Product: 853950 "Light-emitting diode ""LED"" lamps"
The product code selected above has been created in the 2017 HS revision.
The product code selected above has been removed from the 2022 HS revision.
View correspondences
Table
Graph
Map
Companies
FDI data
Tariff data
Standards
8539500011 Connected (WiFi, Bluetooth or similar) LED lamps, single cap 4,454 2,235 4,908 4,454 2,235 4,908
8539500012 Connected (WiFi, Bluetooth or similar) LED lamps, double cap 190 140 266 190 140 266
8539500021 Dimmable LED directional lamps, less than or equal to 50V 570 676 1,760 570 676 1,760
8539500022 Dimmable LED non-directional lamps, less than or equal to 50V 583 2,597 2,551 583 2,597 2,551
8539500023 Dimmable LED directional lamps, 50V and over (ES, SES, BC, SBC or GU10 cap) 374 164 533 374 164 533
8539500024 Dimmable LED non-directional clear lamps, 50V and over (ES, SES, BC or SBC cap) 188 256 1,096 188 256 1,096
8539500025 Dimmable LED non-directional frosted lamps, 50V and over (ES, SES, BC or SBC cap) 1,423 775 584 1,423 775 584
8539500029 Dimmable LED lamps (excluding lamps of 8539500021 to 8539500025) 3,882 3,210 2,615 3,882 3,210 2,615
8539500031 Non Dimmable LED directional lamps, less than or equal to 50V 806 1,256 955 806 1,256 955
8539500032 Non Dimmable LED non-directional lamps, less than or equal to 50V 3,801 4,704 3,171 3,801 4,704 3,171
8539500033 Non Dimmable LED directional lamps, 50V and over (ES, SES, BC, SBC or GU10 cap) 1,556 1,318 749 1,556 1,318 749
8539500034 Non Dimmable LED non-directional clear lamps, 50V and over (ES, SES, BC or SBC cap) 2,783 3,177 2,381 2,783 3,177 2,381
8539500035 Non Dimmable LED non-directional frosted lamps, 50V and over (ES, SES, BC or SBC cap) 1,637 1,359 5,318 1,637 1,359 5,318
8539500036 Non Dimmable LED lamps with R7 cap, 50V and over 0 0 4 0 0 4
8539500039 Non Dimmable LED lamps (excluding lamps of 8539500021 to 8539500025) 20,681 14,372 20,145 20,681 14,372 20,145
8539500041 LED Linear lamp with G13 or G5 cap, greater than or equal to 550 mm but less than 700 mm in length 34 30 20 34 30 20
8539500042 LED Linear lamp with G13 or G5 cap, greater than or equal to 700 mm but less than 1150 mm in length 33 100 80 33 100 80
8539500043 LED Linear lamp with G13 or G5 cap, greater than or equal to 1150 mm but less than 1350 mm in length 444 259 275 444 259 275
8539500044 LED Linear lamp with G13 or G5 cap, greater than or equal to 1350 mm but less than 1500 mm in length 8 5 1 8 5 1
8539500049 LED Linear lamp with G13 or G5 cap (excluding lamps of 8539500041 to 8539500044) 638 538 578 638 538 578
8539500090 Light-emitting diode (LED) lamps (excluding connected (WiFi, Bluetooth or similar) and other LED lamps of 8539500021 to 8539500049) 20,419 19,955 20,049 20,419 19,955 20,049

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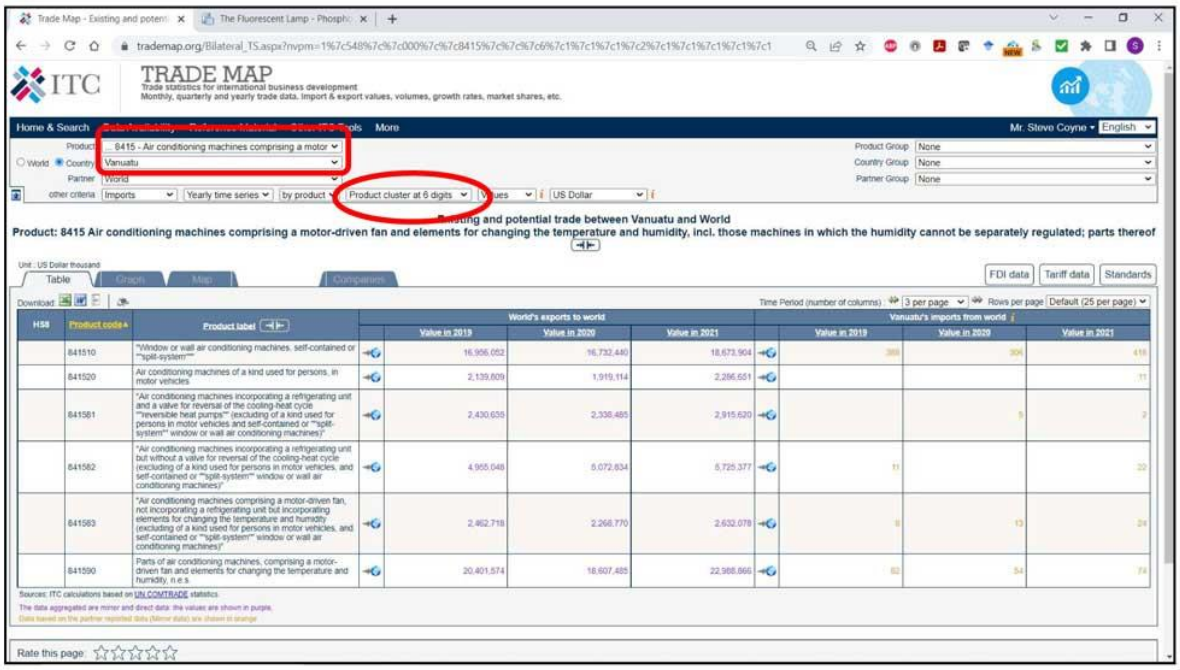
TRADE MAP
Trade statistics for international business development
Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
Home & Search
More
Mr. Steve Coyne
English
Product: 8415 - Air conditioning machines comprising a motor
Country: Vanuatu
Partner: World
Product Group: None
Country Group: None
Partner Group: None
other criteria: Imports
Yearly time series
by product
Product cluster at 6 digits
US Dollar
Product: 8415 Air conditioning machines comprising a motor-driven fan and elements for changing the temperature and humidity, incl. those machines in which the humidity cannot be separately regulated; parts thereof
Unit : US Dollar thousand
Table
Graph
Map
Companies
FDI data
Tariff data
Standards
Time Period (number of columns):
3 per page
Rows per page:
Default (25 per page)
HS8
Product code
Product label
World's exports to world
Vanuatu's imports from world
Value in 2019
Value in 2020
Value in 2021
841510 "Window or wall air conditioning machines, self-contained or ""split-system""" 16,906,052 16,732,440 18,673,904 388 304 418
841520 Air conditioning machines of a kind used for persons, in motor vehicles 2,139,609 1,919,114 2,286,651 11
841581 "Air conditioning machines incorporating a refrigerating unit and a valve for reversal of the cooling-heat cycle (""reversible heat pumps"") (excluding of a kind used for persons in motor vehicles and self-contained or ""split-system"" window or wall air conditioning machines)" 2,430,635 2,338,485 2,915,620 5 2
841582 "Air conditioning machines incorporating a refrigerating unit but without a valve for reversal of the cooling-heat cycle (excluding of a kind used for persons in motor vehicles, and self-contained or ""split-system"" window or wall air conditioning machines)" 4,955,048 5,072,834 5,725,377 11 22
841583 "Air conditioning machines comprising a motor-driven fan, not incorporating a refrigerating unit but incorporating elements for changing the temperature and humidity (excluding of a kind used for persons in motor vehicles, and self-contained or ""split-system"" window or wall air conditioning machines)" 2,462,718 2,268,770 2,632,078 8 13 24
841590 Parts of air conditioning machines, comprising a motor-driven fan and elements for changing the temperature and humidity, n.e.s. 20,401,574 18,607,485 22,988,866 62 54 74
Sources: ITC calculations based on UN COMTRADE statistics.
The data aggregated are mirror and direct data: the values are shown in purple.
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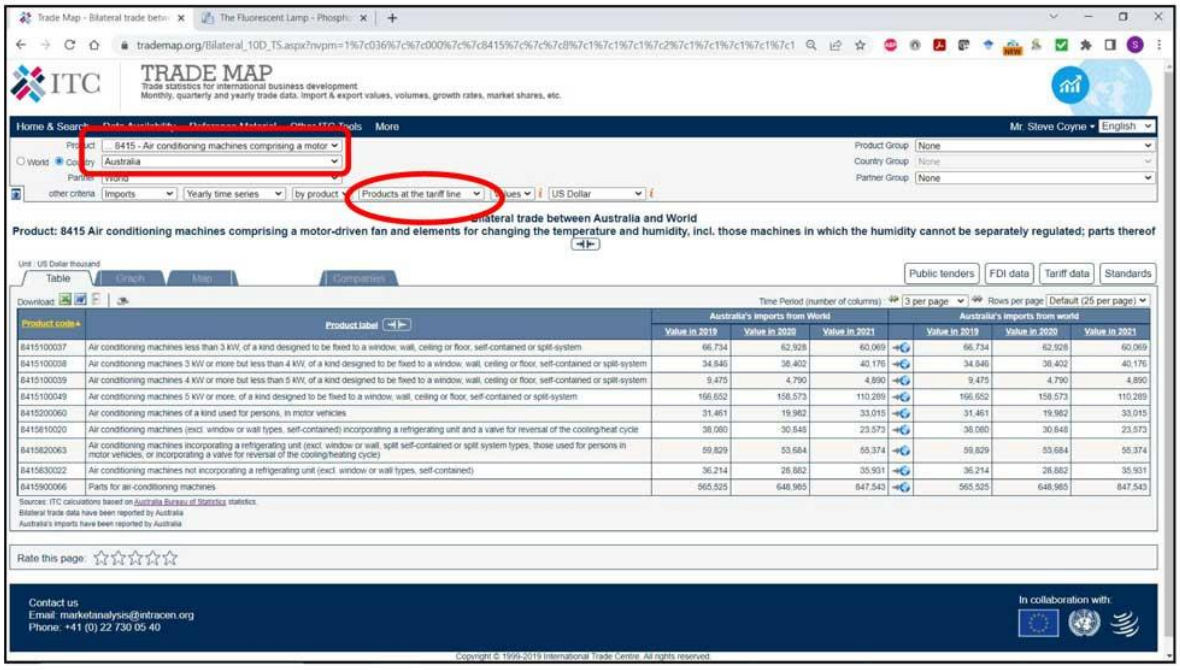
TRADE MAP
Trade statistics for international business development.
Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
Home & Search
More
Mr. Steve Coyne
English
Product: 8415 - Air conditioning machines comprising a motor
Country: Australia
Partner: World
Product Group: None
Country Group: None
Partner Group: None
other criteria: Imports
Yearly time series
by product
Products at the tariff line
US Dollar
Bilateral trade between Australia and World
Product: 8415 Air conditioning machines comprising a motor-driven fan and elements for changing the temperature and humidity, incl. those machines in which the humidity cannot be separately regulated; parts thereof
Unit : US Dollar thousand
Table
Graph
Map
Companies
Public tenders
FDI data
Tariff data
Standards
Time Period (number of columns):
3 per page
Rows per page:
Default (25 per page)
Product code
Product label
Australia's imports from World
Australia's imports from world
Value in 2019
Value in 2020
Value in 2021
8415100037 Air conditioning machines less than 3 kW, of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or split-system 66,734 62,928 60,069 66,734 62,928 60,069
8415100038 Air conditioning machines 3 kW or more but less than 4 kW, of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or split-system 34,846 38,402 40,176 34,846 38,402 40,176
8415100039 Air conditioning machines 4 kW or more but less than 5 kW, of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or split-system 9,475 4,790 4,890 9,475 4,790 4,890
8415100049 Air conditioning machines 5 kW or more, of a kind designed to be fixed to a window, wall, ceiling or floor, self-contained or split-system 166,652 158,573 110,289 166,652 158,573 110,289
8415200060 Air conditioning machines of a kind used for persons, in motor vehicles 31,461 19,982 33,015 31,461 19,982 33,015
8415810020 Air conditioning machines (excl. window or wall types, self-contained) incorporating a refrigerating unit and a valve for reversal of the cooling/heat cycle 38,080 30,848 23,573 38,080 30,648 23,573
8415820063 Air conditioning machines incorporating a refrigerating unit (excl. window or wall, split self-contained or split system types, those used for persons in motor vehicles, or incorporating a valve for reversal of the cooling/heating cycle) 59,829 53,684 55,374 59,829 53,684 55,374
8415830022 Air conditioning machines not incorporating a refrigerating unit (excl. window or wall types, self-contained) 36,214 28,882 35,931 36,214 28,882 35,931
8415900066 Parts for air-conditioning machines 565,525 648,965 847,543 565,525 648,965 847,543
Sources: ITC calculations based on Australia Bureau of Statistics statistics
Bilateral trade data have been reported by Australia
Australia's imports have been reported by Australia
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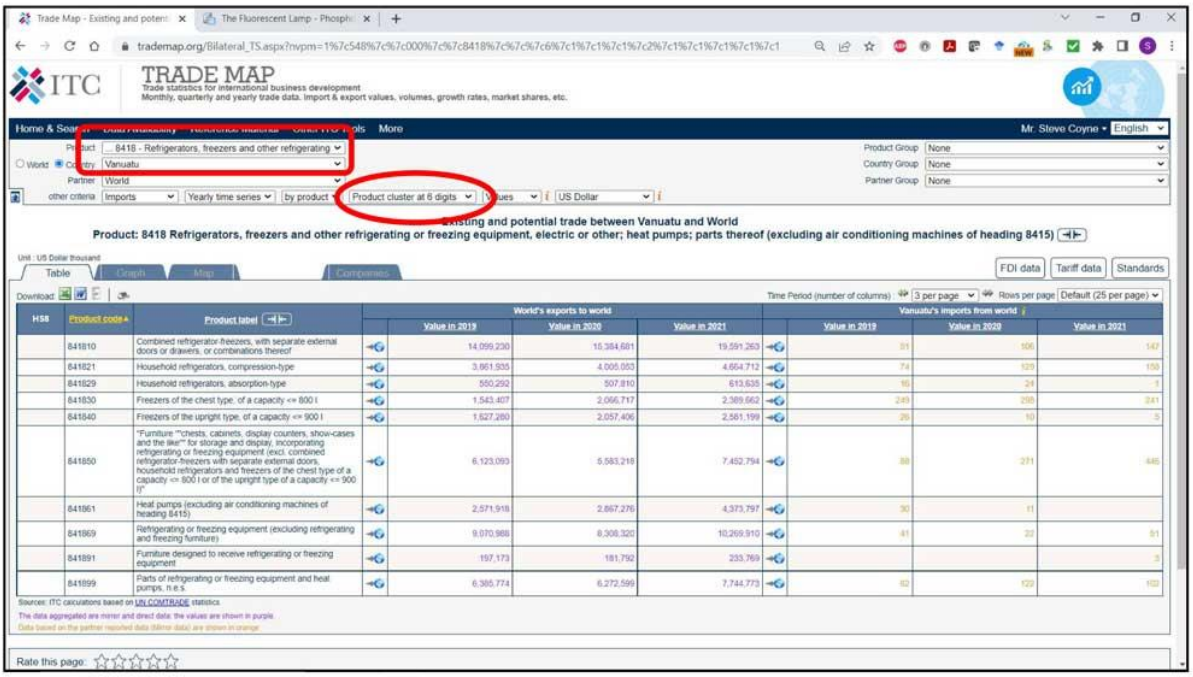
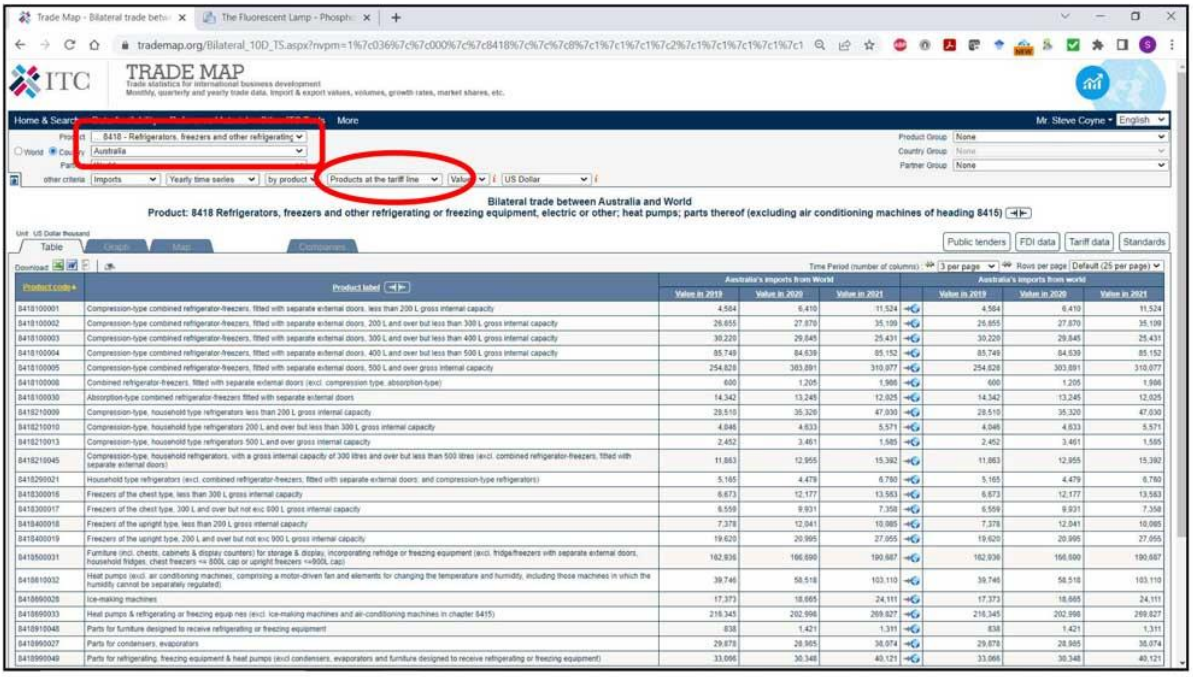

TRADE MAP
Trade statistics for international business development
Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
Existing and potential trade between Vanuatu and World
Product: 8418 Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps; parts thereof (excluding air conditioning machines of heading 8415)

31


TRADE MAP
Trade statistics for international business development
Monthly, quarterly and yearly trade data. Import & export values, volumes, growth rates, market shares, etc.
Bilateral trade between Australia and World
Product: 8418 Refrigerators, freezers and other refrigerating or freezing equipment, electric or other; heat pumps; parts thereof (excluding air conditioning machines of heading 8415)

32

Surveillance: Other activities

33

- Monitoring imports by HS Codes for in-scope, out-of-scope and banned product types
  - Comtrade
  - https://comtrade.un.org/data/
  - ITC Trademap
  - https://www.trademap.org/Index.
  - Example ➔ lamps ➔

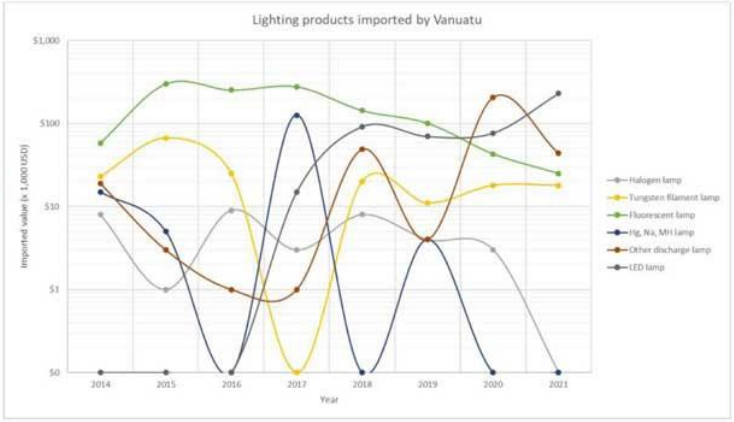


Figure 3: Graph of Vanuatu lamp import data by HS code from 2014 - 2021 (Data from trademap.org)

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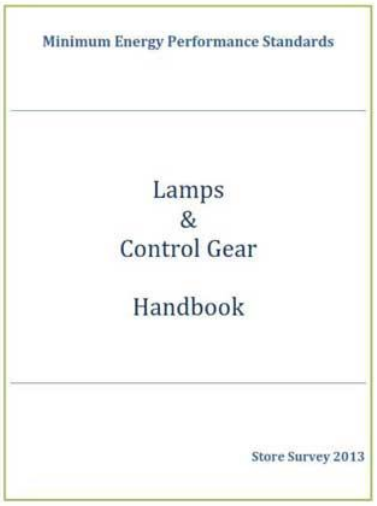
Inspection Guide for Lighting & Appliances

- Example



Definitions

1. Lumen output or Luminous flux (lumens)
The lumen is a unit of luminous flux, a measure of the total amount of visible light emitted by a lamp. It is akin to power in an electric heater, but the quantity is weighted to reflect varying sensitivity of the human eye to different wavelengths of light.

2. Efficacy (lumens/ Watt)
Efficacy is a word specifically referring to how *efficiently* the light source converts electrical energy into visible light. This word was chosen to separate this process from any other form of efficiency, such as the efficiency of the light fitting reflector system or how efficient the control gear is. It is important to understand that efficacy only refers to the power consumed by the light source and the visible light the lamp produces from this consumption. The units of efficacy are lumens/watt, literally how much light is generated per unit of power consumed.

3. Intensity (candela)
Intensity is the amount of light radiated in a given direction. The superseded GLS lamp or its compact fluorescent equivalent will radiate light pretty much equally in all directions, much like the sun. So looking at it from any direction the lamp appears to have the same 'brightness' or intensity. If we now consider a reflector lamp such as the low voltage tungsten halogen MR16, we can see that it radiates in a specific direction. The reflector gathers light from non-useful directions and projects it in directions that are useful. Intensity becomes a more useful characteristic when we consider directed light such as that from reflector lamps.

The unit of intensity is the Candela (Cd).

4. Illuminance (lux)
As luminous flux travels outward from a source, it ultimately interacts with surfaces, where it will reflect, transmit, and/or be absorbed. Illuminance on a surface is a portion of emitted luminous flux that is incident on a surface area. This yields lumens per square metre, or lux the most common name for the unit of illumination.

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7 ANNEX IV – TRAINING PHOTOS

Mr. Misel Sisi, Manager, Department of Energy, Delivered Welcoming Remarks on MV&E Training Workshop for the "Enhance Vanuatu's Market for Energy Efficient Appliances" Project and Discussed with the Project Team on Progress and Challenges

DoE Participants Engaged in Training Activity

Mr. Tony, Controller Enforcement Manager, Vanuatu Customs and Inland Revenue Department, Discussing Needs on Training and Sharing Current Practices on Inspection Procedures and Import Application Processing of Regulated Products under MEPSL Programme

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

Project Team and DoE Officers Visited and Inspected MEPSL Regulated Products at Computer World (Retail Store)

Inspected MEPSL Regulated Products at Computer World (Retail Store)

Inspected MEPSL Regulated Products at Wilco (Retail Store)

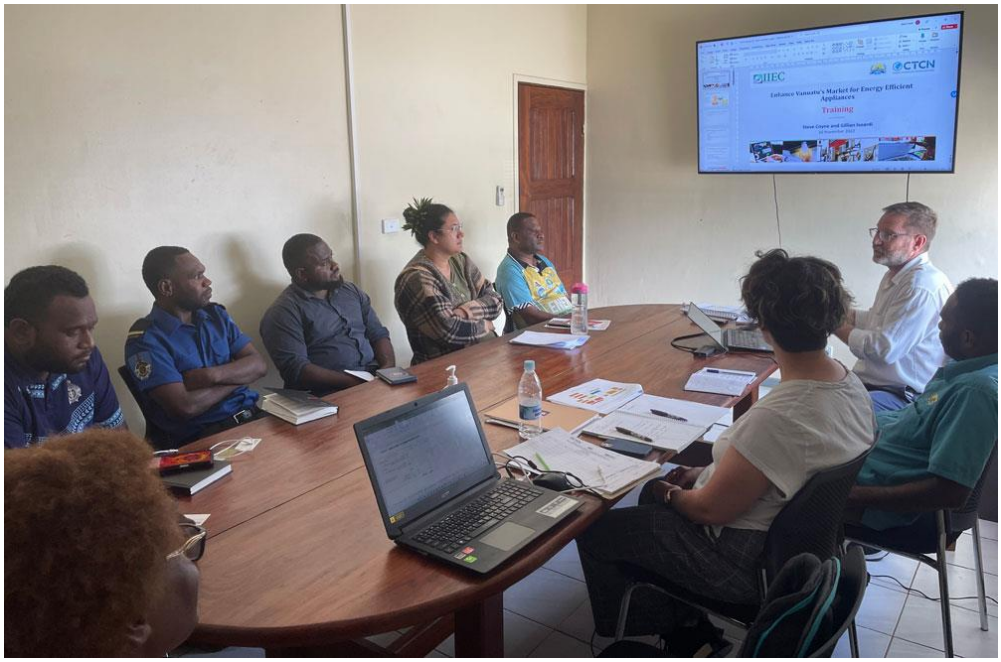
Inspected MEPSL Regulated Products at Wilco (Retail Store)

Inspected MEPSL Regulated Products at Rapid Electrical (Retail Store)

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

DoE Participants Engaged in Training Activity

Project Team Deliver a Training Session 1 on MV&E to DoE Officers



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

DoE and Customs Officials Engaged in Training Activity

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

Project Team Discussed with Custom Official on Inspection of Imported MEPS-Regulated Goods

Project Team with DoE Officials Inspected the Imported Used Household Refrigerator

DoE Officials Inspected Imported Refrigerator