



GUIDANCE NOTE 1



WHAT IS A PRODUCT REGISTRATION SYSTEM AND WHY USE ONE?



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Introduction

THIS GUIDANCE NOTE IS PART OF SERIES OF TOOLS OF UNITED FOR EFFICIENCY ON PRODUCT REGISTRATION SYSTEMS.

OTHER TOOLS IN THIS SERIES INCLUDE:



GUIDANCE NOTES



PROTOTYPE

This guidance note is the first of a series of guidance notes prepared by UN Environment's United for Efficiency (U4E) initiative. The series intends to assist policymakers in developing and emerging economies who have or are currently considering transforming their market to energy-efficient products. The guidance notes aim to support the development of product registration systems and in particular web-based product registration systems, an essential element in the support and efficient delivery of such programs. The focus of the notes lies on cooling products (primarily refrigerators and air-conditioners), though the product registration system framework is also capable of supporting the inclusion of other product categories (e.g. lighting, washing machines, electric motors).

The recommendations on product registration systems fall within the U4E Integrated Policy Approach. For more detailed guidance on other aspects of the U4E Integrated Policy Approach, see: <https://united4efficiency.org/resources/publications/>

Table of Contents

Introduction	3
1. What is a Product Registration System?	5
2. Primary Objectives of Product Registration Systems	6
3. Participants/Process/Structure	7
3.1 Product Registration System Participants.....	7
3.2 The Registration Process.....	8
3.3 Data and Structure	8
4. Benefits and Opportunities of Product Registration Systems	10
4.1 Facilitation of Trade	10
4.2 Workload Reduction	10
4.3 Maintains Records in Real Time.....	10
4.4 Facilitation of MV&E Activities.....	10
4.5 Provides a Valuable Consumer Resource	10
4.6 Incentivizes Product Innovation.....	11
4.7 Facilitates Use of Forms in Multiple Languages.....	11
4.8 Facilitates Program Evaluation	11
4.9 Facilitates Related Programs and Promotions.....	11
5. Useful Links	12

List of Figures

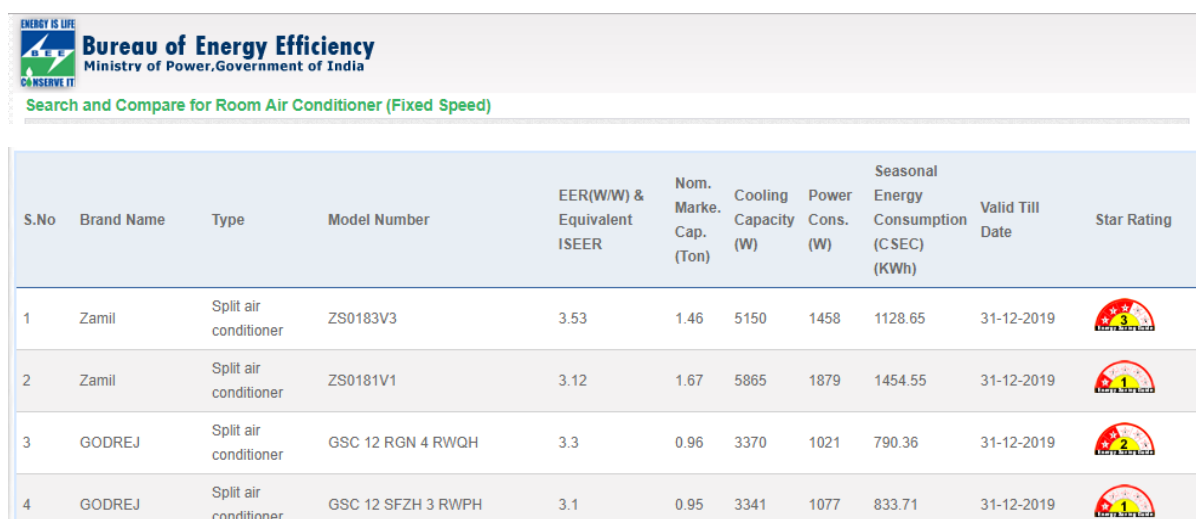
Figure 1: Indian Product Registration System – Public interface for air-conditioners	5
Figure 2: Trends in refrigerator energy-efficiency based on Australian product registration system data	6
Figure 3: Product Registration Systems – Users and its utilization.....	7
Figure 4: The registration process	8
Figure 5: Schematic of a Product Registration System - South Africa (currently under development) .	9
Figure 6: Australian Product Registration System – public interface – mobile application	11

1. What is a Product Registration System?

Product registration systems (also referred to as “Product registration databases”) are a tool used to capture specific information on products used to underpin policies or programmes. They are often utilised as a standards & labelling programme tool designed to capture product-specific information on all products available on the market. Product registration systems form the initial compliance gateway for products to enter the market, thereby helping to ensure that anticipated energy and greenhouse gas savings are realised.

A product registration system can be either a regional or national facility and may contain a variety of information – ranging from a simple list of eligible products, to more comprehensive datasets customized to address a diverse range of policy, market and compliance needs. Information contained therein may be public or private in nature, or a combination of the two.

Throughout the world a number of product registrations systems are currently in use, such as in Australia, China, Europe, India or the United States (see links for other international systems at the end of this document).



S.No	Brand Name	Type	Model Number	EER(W/W) & Equivalent ISEER	Nom. Marke. Cap. (Ton)	Cooling Capacity (W)	Power Cons. (W)	Seasonal Energy Consumption (CSEC) (KWh)	Valid Till Date	Star Rating
1	Zamil	Split air conditioner	ZS0183V3	3.53	1.46	5150	1458	1128.65	31-12-2019	3
2	Zamil	Split air conditioner	ZS0181V1	3.12	1.67	5865	1879	1454.55	31-12-2019	1
3	GODREJ	Split air conditioner	GSC 12 RGN 4 RWQH	3.3	0.96	3370	1021	790.36	31-12-2019	2
4	GODREJ	Split air conditioner	GSC 12 SFZH 3 RWPH	3.1	0.95	3341	1077	833.71	31-12-2019	1

Figure 1: Indian Product Registration System – Public interface for air-conditioners

With support from the Global Environment Facility (GEF) and the Kigali Cooling Efficiency Program (K-CEP), the United for Efficiency (U4E) initiative aims to design and develop a suitable prototype product registration system for energy efficient product programs in developing and emerging economies. Moreover, U4E will support interested countries and regions in its implementation.

2. Primary Objectives of Product Registration Systems

Product registration systems are intended to achieve three main objectives:

- **To aid in the transformation of markets:** Product registration systems reduce barriers to trade in energy efficient products and reduce compliance complexity for importers and manufacturers. The impacts of such transitions can be profound. In Australia, for instance, energy consumption levels of refrigerators have effectively halved over the past 25 years (see Figure 2).
- **To provide a data resource:** A product registration system is a comprehensive and integrated data repository of value to government, industry and the public alike.
 - Governments need to know if products being imported or offered for sale meet the regulations and are approved for import/sale. Ideally, governments also need to be able to share such data with their international and regional partners in energy efficiency programs so that countries can learn from each other and pursue proactive policy revisions as their markets evolve. Reliable database sets are for example needed in order to meet national and international energy and greenhouse gas reporting requirements to bodies such as UNFCCC. Policy makers also need to access baseline data and track efficiency trends to inform future policy directions.
 - Industry needs reliable and easily accessible records to demonstrate that their market offerings are compliant and to ensure a level playing field for all.
 - Consumers need real time registration data at their fingertips in order to compare and contrast market offerings to be able to make informed choices about the energy efficiency of products they wish to purchase.
- **To enable MV&E activities:** Product registration databases form a key resource for those undertaking monitoring, verification and enforcement (MV&E) activities in relation to product efficiency standards and labelling programs.

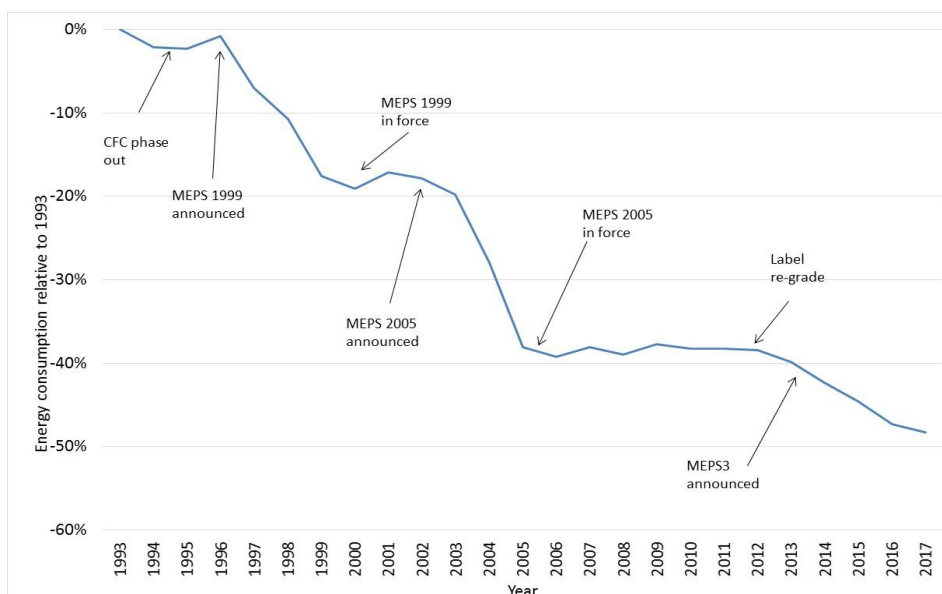


Figure 2: Trends in refrigerator energy-efficiency based on Australian product registration system data

3. Participants/Process/Structure

3.1 Product Registration System Participants

Typically, product registration systems include a number of different user types who utilize the system in order to realise a range of desired outcomes.

The seven main product registration system user types and the various uses of a product registration system are detailed in figure 3 below.

User	Use
Programme Managers / Regulators	<ul style="list-style-type: none"> Control (regulate) the sale of energy efficient products Monitor compliance and identify products at risk of non-compliance Facilitate enforcement actions (provides evidence base) Capture data on compliance actions undertaken Collect fees (as applicable)
Policy Makers	<ul style="list-style-type: none"> Establish product efficiency baselines Track trends in product efficiency over time (program evaluation) Inform updates to MEPS levels and labels Facilitate reporting of national energy data to international bodies
Customs officials	<ul style="list-style-type: none"> Control entry of products at the border In regionally based product registration system, the systems facilitate alerts to other customs authorities on potential imports of non-compliant products
Manufacturers and Importers	<ul style="list-style-type: none"> Easily register products Promote their most energy efficient products Track competitors claims of performance and report instances of non-compliance
Distributors and Retailers	<ul style="list-style-type: none"> Check registration status of specific product models to be distributed/sold Access energy label data Track competitors claims of performance and report instances of non-compliance
Consumers	<ul style="list-style-type: none"> Inform purchasing decisions (compare and contrast models) on a variety of topics Calculate lifetime energy consumption and running costs Educate and raise public awareness of energy efficiency Register complaints of suspected non-compliant products
Other programme managers	<ul style="list-style-type: none"> Provide the basis for related incentive and/or procurement programmes intended to promote the greater use of energy efficient products

Figure 3: Product Registration Systems – Users and its utilization

3.2 The Registration Process

The registration process typically follows five key steps as detailed in **Figure 4** below. The population of the database occurs primarily through inputs provided by manufacturers/suppliers (the applicant) during the application process. A direct entry of data into the product registration system by the applicant saves time and effort for programme managers/regulators and puts the onus on manufactures and suppliers to ensure the claims they are making are correct. Further, as data is input directly into the database there are no transposition errors that inevitably occur in circumstances where paper based applications are manually keyed into a database.





Step 1	Test / Certify Product	A test laboratory or conformity assessment body selects samples of the product and undertakes testing in accordance with the applicable standard.
		
Step 2	Application	The applicant (manufacturer, importer or distributor) opens an account in the product registration system and completes an application form for approval of their product (test reports are typically uploaded as part of the application).
		
Step 3	Assessment	The programme manager/regulatory authority reviews the submitted application and accompanying documentation for compliance with the requirements of the standards and labelling scheme.
		
Step 4	Approval	If the product is found to have a valid test and is compliant with any governing energy efficiency regulations (e.g. MEPS) then the regulator approves the product for import and sale.
		
Step 5	Publication	Once approved, key details of the approved product are automatically published on the public portal of the product registration system website (see example in Figure 1 above)

Figure 4: The registration process

Product registration systems that apply best practice include checks built in to automatically review data as it is entered, they are thus rejecting applications that have omissions of key data and reject products if they do not meet the minimum performance standards before it is sent to the programme manager/regulator for consideration. In this way, the regulators administrative burden is limited to reviewing applications that pass the database's automatic checks and subsequent cross-checking application claims with test report/certification documentation.

3.3 Data and Structure

Typically, a product registration system collects seven categories of data as follows:

1. Particulars of the applicant
2. Product identification (brand, model, etc.)
3. Product attributes (type, capacities, types of refrigerants used, etc.)
4. Testing details and results
5. Performance claims
6. Sales and price data
7. Compliance history

Items 1 – 5 above are collected during the product registration process. The first three categories of information cover off on the administrative/legal requirement to clearly identify both the applicant and

the product they are registering. Items 4 and 5 cover the technical details and evidentiary materials necessary to support the applicant's claim of compliance with the energy efficiency standards/regulation. Also contained within these first five categories of information is all of the data necessary to inform consumers about energy efficient products available in their market place (brand, model, capacities, performance, availability, etc.).

Items 6 and 7 are optional inclusions that are collected post registration. Item 6 supports efforts by policymakers to evaluate the programme while item 7 serves to inform the monitoring and verification component of the programme.

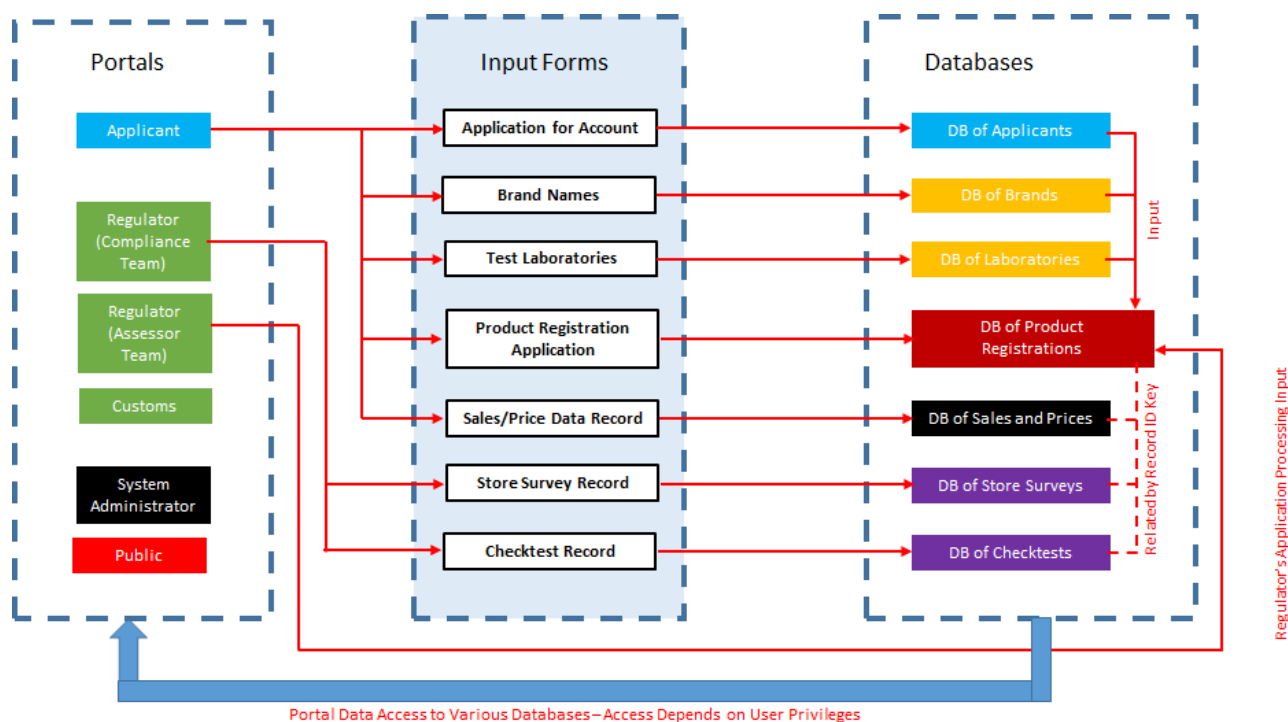


Figure 5: Schematic of a Product Registration System - South Africa (currently under development)

The overall structure of a typical product registration system is shown in an example taken from the recently constructed South African product registration system (see **Figure 5**). In this schematic of the system the various portals (i.e. access points for the various users of the system) are shown on the left hand side of the diagram. In the central section of the diagram are the key input forms available in the system while on the right hand side of the diagram are the various databases that store the data, primarily generated via the input forms.

In this South African arrangement, the applicant is responsible for not only inputting data for product registration applications but also the provision of data on sales numbers and sales prices for each registered product on an annual reporting basis for the life of the registration approval.

4. Benefits and Opportunities of Product Registration Systems

A well-structured product registration system supports a market transformation programme by the following key benefits and opportunities:

4.1 Facilitation of Trade

By providing transparency, with a reliable and easily accessible common application process and clear rules for approval to enter products into the market a product registration system forms a key tool in the facilitation of trade in energy efficient products. Web based product registration systems are particularly beneficial, offering easy access to stakeholders (particularly suppliers) around the world. Regionally based product registration systems, such as the one used by the Community of Pacific Islands, streamline the approval process for suppliers of products across multiple nations of an entire region.

4.2 Workload Reduction

An effective product registration system reduces workloads for suppliers and regulators alike. For suppliers, compliance costs are minimized due to the streamlined nature of the approval process where all transactions take place seamlessly on-line. It is beneficial for regulators as built in checks automatically review data while entering before it is sent to the programme manager/regulator for consideration, this saves time and effort in returning applications that would otherwise be submitted with errors or omissions. The applicant inputs the data directly into the system eliminating keying in by regulators and avoiding inevitable transposition errors. Utilizing a regional system results moreover in reduced efforts required by administrators, suppliers and retailers.

4.3 Maintains Records in Real Time

The on-line nature of a product registration system means that:

- Applications are lodged with the regulator the instant the submit button is clicked
- Approvals by regulators are notified to applicants immediately
- Approved products are listed on the public register the day of approval

4.4 Facilitation of MV&E Activities

Product registration systems facilitate government monitoring, verification and enforcement programs by helping to:

- Ensure compliance with national energy efficiency policies at the time of registration
- Identify non-compliant products at national borders
- Identify non-compliant products at point of sale
- Verify if information accompanying the product (e.g. on an energy label) matches its claimed (registered) details
- Identify products that are at the highest risk of being non-compliant
- Maintain the necessary evidence base to support enforcement actions

4.5 Provides a Valuable Consumer Resource

A product registration system facilitates comparison of market offerings allowing consumers to make informed choices concerning the energy efficiency of products they wish to purchase. Additionally, a product registration system delivers data via desktop computer applications and/or mobile applications (see example of a mobile application in **Figure 6** below) and can utilize label features such as quick response (QR)¹ codes to help streamline the process for consumers

¹ Please visit the following link for more information on the QR code system used for example in China
http://mddb.apec.org/Documents/2017/SCSC/WKSP2/17_scsc_wksp2_008.pdf

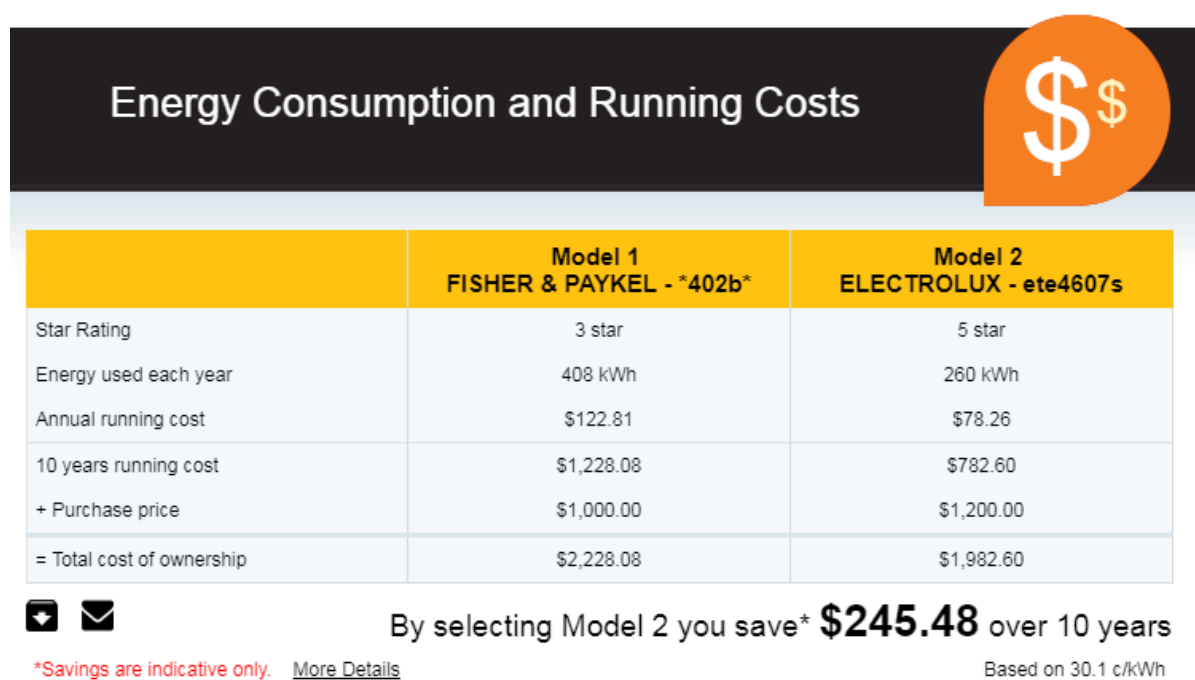


Figure 6: Australian Product Registration System – public interface – mobile application

4.6 Incentivizes Product Innovation

The data set within a product registration system allows program managers to promote the most efficient offerings in the marketplace via the consumer portal. This incentivizes innovation in new efficient product designs.

4.7 Facilitates Use of Forms in Multiple Languages

Web based product registration systems can be easily configured to deliver application forms in a range of languages. For example, the Vietnamese product registration system delivers forms in both Vietnamese and English.

4.8 Facilitates Program Evaluation

The comprehensive datasets maintained by a product registration system, including detailed product performance characteristics, availability dates and (in some cases) sales numbers, facilitates the accurate analysis of sales weighted efficiency trends over time. The information about these trends can be subsequently used to inform future policy directions to adjust MEPS levels.

4.9 Facilitates Related Programs and Promotions

Product registration systems can provide the basis for related incentive and/or procurement programmes intended to promote the greater use of energy efficient products.

5. Useful Links

Prototype

- United for Efficiency [Product Registration System](#)

Product registration systems in other countries

- Australia and New Zealand [Energy Rating product lists](#)
- California [Appliance Efficiency Database](#)
- Canada [Searchable product lists](#)
- China [Certification database](#)
- Chinese Taipei [Certified products database](#)
- Hong Kong [Labelled products database](#)
- India [Star Label product database](#)
- Japan [Product database](#)
- Philippines [Labelled and certified product lists](#)
- Thailand [Label No. 5 Products Database](#)
- Singapore [Database of Registered Goods](#)
- Sweden [Lampguiden mobile app for lighting](#)
- U.S. DOE [Compliance Certification Database](#)
- U.S. EPA [ENERGY STAR Qualified Product Finder](#)
- US [Lighting Facts](#)

