

Explanatory note- installation of in-home displays (IHDs)

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The Department of Environment, Land, Water and Planning develops policy for the [Victorian Energy Upgrades](#) program. The program provides incentives for Victorian households and organisations to make energy efficiency improvements that save money on their energy bills and reduce Victoria's greenhouse gas emissions

The Essential Services Commission administers the program as the 'Victorian Energy Efficiency Target scheme' under the *Victorian Energy Efficiency Target Act 2007*.

For more information, visit veet.vic.gov.au.

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1. Overview

The installation of in-home displays (IHDs) became an eligible prescribed activity under the Victorian Energy Efficiency Target (VEET) scheme on 1 March 2012. The purpose of this document is to help accredited persons (APs) understand the IHD activity and provide important information about their obligations when undertaking this activity. APs should take careful note of these obligations, especially those relating to IHD installation and the disclosure of information to the customer.

1.1. What is an IHD

An IHD is a product that displays a home's electricity consumption to a householder where the IHD has been installed. An IHD displays information such as tariff, energy usage and the total cost of electricity used for the period displayed in near real-time. This information is displayed in a numerical and non-numerical (e.g. graphical) format, allowing a householder to compare their current electricity consumption with their previous, historical consumption information.

The purpose of an IHD is to provide a householder with information about their energy use so they can identify periods of high and low energy consumption and use that information to make energy saving choices for their home.

1.2. How does an IHD work?

IHDs obtain electricity consumption information from a smart meter or some other sensing apparatus (such as a sensor that clamps on to electrical wiring leading to the meter). The electricity consumption information is then transmitted to a display via a secure, encrypted communications channel.

IHDs that obtain electricity consumption information directly from a smart meter must be ZigBee-enabled. 'ZigBee-enabled' means a product that can communicate directly with the smart meter. Smart meters and ZigBee-enabled IHDs are equipped with a low-power wireless radio transmitter based on the ZigBee standard.

Non-ZigBee-enabled products do not communicate directly with a smart meter. Generally, they require a sensor and transmitter to be installed on a residence's electricity meter or main electricity cable. This enables household energy consumption to be measured and transmitted to the IHD display via short-range radio signals.

2. Overview of activity

The *Victorian Energy Efficiency Target Regulations 2008* (the Principal Regulations) specify the mandatory standards and minimum requirements for IHDs. A copy of the Principal Regulations is available from the VEET website (www.veet.vic.gov.au).

An AP wishing to engage in the IHD activity under the VEET scheme must follow a prescribed process, which is presented as a flow chart in Figure 1 below and described in further detail in the following sections.

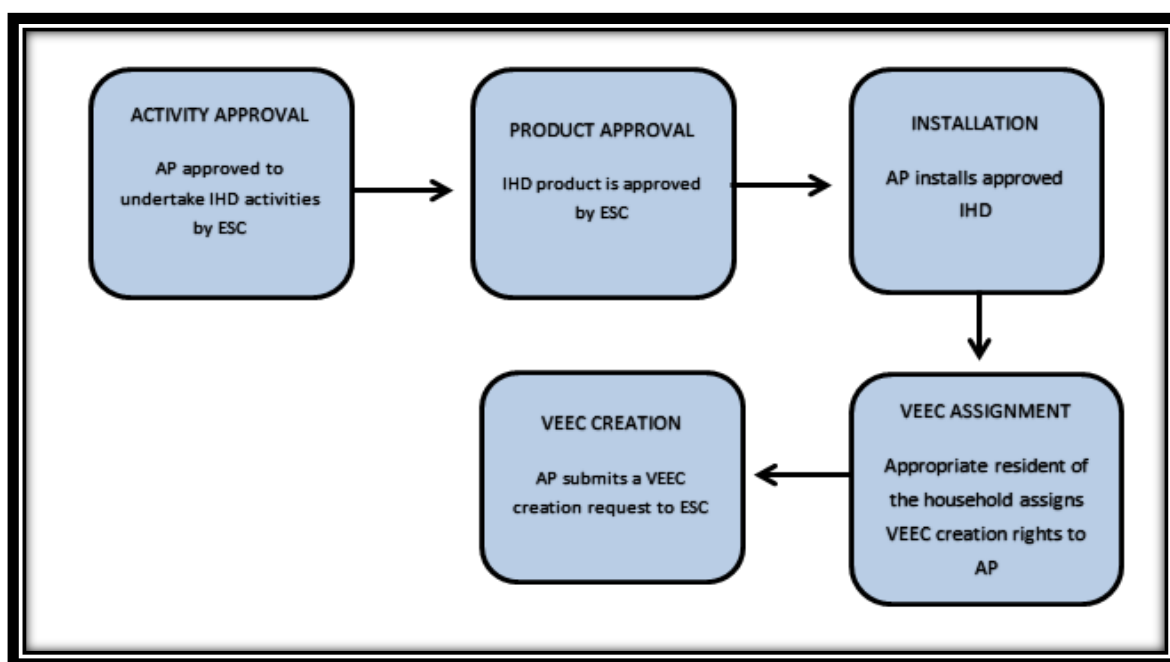


Figure 1: Overview of AP process for IHD activity

2.1. Activity approval

To create a Victorian energy efficiency certificate (VEEC), a person must be accredited under the *Victorian Energy Efficiency Target Act 2007* (the Act). The accreditation process involves submitting an application for accreditation via the online portal available through your VEET account. The *Explanatory note – lodging an application for accreditation* details the process that must be followed to become an AP. A copy of this document is available from the VEET website (www.veet.vic.gov.au).

Even if an AP is already undertaking other VEET activities, they must seek approval from the Essential Services Commission (the commission) before engaging in the prescribed activity of installing IHDs. APs seeking to install IHDs must submit the application for additional activities form, available from the VEET website.

2.2. Product approval

Only commission approved IHDs may be installed under the VEET scheme. To obtain commission product approval, the applicant must submit an application online by logging into their account on the VEET website (www.veet.vic.gov.au), clicking on the 'Products - New Application' menu item, and completing the online application. Online applications for 'new' IHD products (i.e. products not previously approved by us) must be accompanied by supporting documents that demonstrate that the product meets the requirements of the Principal Regulations.

All IHDs installed under the VEET scheme must pass a commission approved laboratory test. A copy of the laboratory test report must be submitted to us as part of the online product approval application. It is important to note that ZigBee-enabled devices must be tested with the energy distribution network service provider (DNSP), often referred to as the distribution business (or DB) in the area they are to be installed. Evidence that these devices are compatible with the DNSP's systems in the area, or areas, where the AP wishes to install them, must also be provided to us as part of the online product approval application.

For further details regarding the IHD product approval process, please see [Explanatory note – in-home display \(IHD\) product approval](#), available from the VEET website.

2.3. Product installation

Once an IHD has been approved by us, it can be installed under the VEET scheme. The installation of IHDs involves a number of steps, as outlined in Figure 2 below. Important aspects of the installation process are discussed in more detail in the following sections.

A small number of houses in Victoria will have more than one meter, or will have a two-element meter. Usually, one meter will be for light and power and the other for hot water. In these circumstances, the IHD should be bound to the light and power meter rather than the hot water meter, as the former would normally represent a larger proportion of the household's energy consumption.

2.3.1. Confirming customer's eligibility¹

Before an IHD can be installed, the AP must confirm the customer's eligibility for the activity.

The following items should be included in an AP's eligibility checklist when considering installing **ZigBee enabled** devices:

- there is no working IHD already at the premises
- a smart meter has been installed at the address and is communicating as part of the AMI network
- the IHD is suitable for the customer
- the customer is the electricity account holder or their authorised agent
- if the IHD has a dedicated display, the proposed location of the display is appropriate.

Factors such as distance from the smart meter and obstructions from walls or floors can affect ZigBee connectivity. The radio frequency used by ZigBee devices can have difficulty transmitting through double brick walls or walls constructed with metal. Therefore, installers must be appropriately trained on the functionality and limitations of the IHD that they will be installing.

The following points should be included in an AP's eligibility checklist when considering installing **non-ZigBee** device:

- there is no working IHD already at the premises
- the IHD is suitable for the customer
- the customer is the electricity account holder or their authorised agent
- if the IHD has a dedicated display, the proposed location of the display is appropriate
- if the device is a clamp-on-type, it must be installed by a qualified and licensed electrician and a certificate of electrical safety must be provided to the customer.

¹ **Please note:** The Principal Regulations (Regulation 8) prohibits VEECs being created more than once for the same product or activity in a residential premises in relation to IHDs.

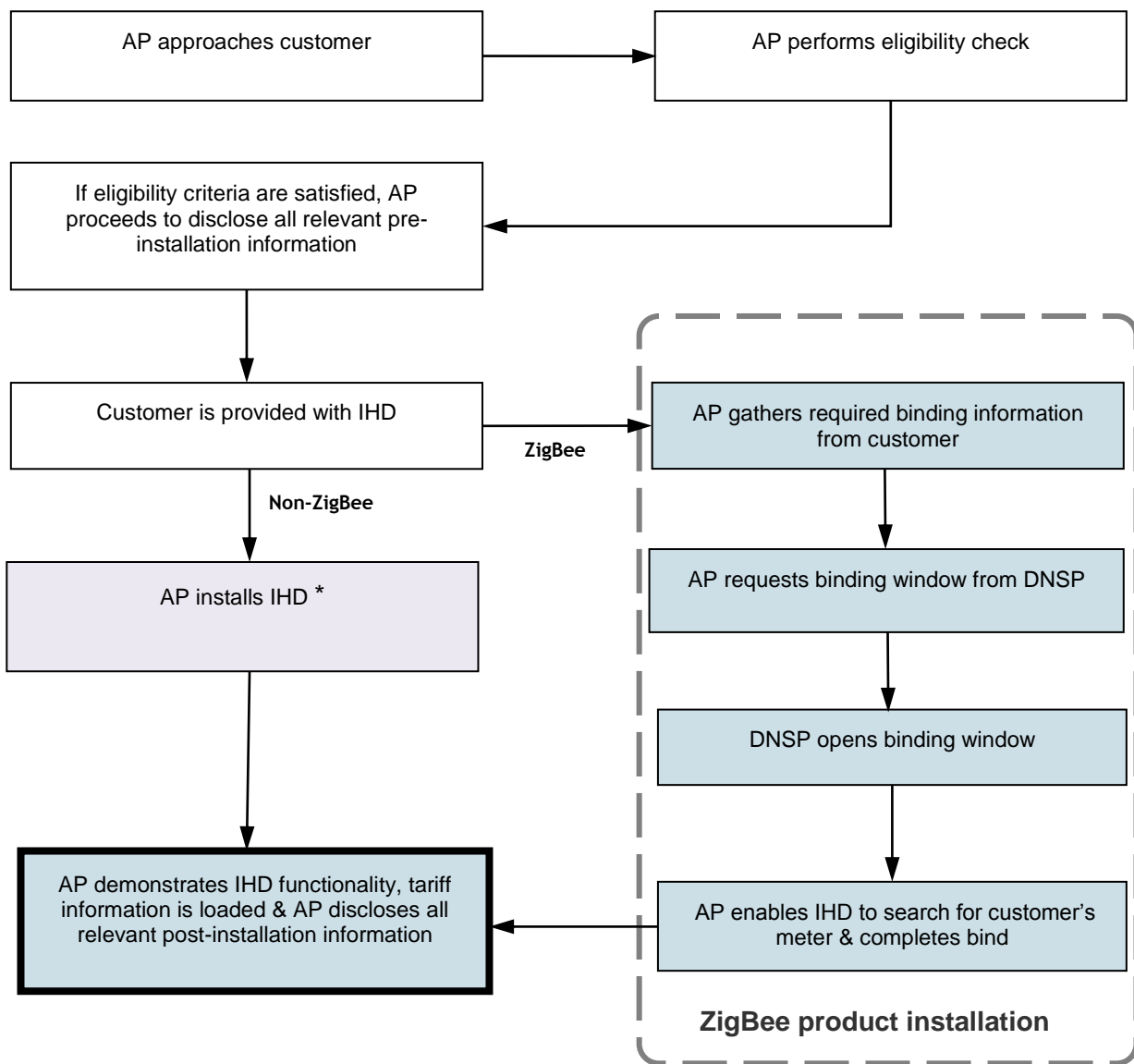


Figure 2: IHD installation process

* Non-ZigBee devices are required to be physically installed on premises by the AP. If the device is a clamp-on-type, it must be installed by a qualified and licensed electrician.

2.3.2. Disclose relevant information

APs must disclose all relevant information to the customer. There will be information that a customer will need to know before being provided with an IHD, such as all associated costs and the product’s limitations. The customer will also need to understand how to use the product, which should be explained before installation, and further demonstrated after installation.

Once the customer is determined to be eligible, the AP must disclose all relevant pre-installation information. The following details should be explained to the customer:

- in order to complete the bind, it will be necessary to input information such as the National Meter Identification (NMI) number that appears on the customer's energy bill, and their specific tariff information (see also section 2.3.3 below)
- the customer is entering into a commercial exchange with the AP, that IHDs are not being distributed, subsidised or rebated by the government, and that the customer is not obliged to accept the IHD product offered
- all costs associated with the provision of the device, including any future costs that may be incurred.

Please note: for any (Zigbee or non-Zigbee) activity to be eligible to create VEECs, the applicable NMI, energy bill and tariff information specific to the customer must be input into the IHD at installation. The use of generic information in any of these cases will not satisfy this requirement

Information that should be disclosed to the customer, before installation, should include:

- all costs associated with the IHD being installed and any future costs that may be incurred
- factors that may affect the ability of the IHD to communicate with the meter
- how the product works, how tariff information is updated, how to interpret the data displayed and how the customer can save electricity using the device. APs must explain to the customer how to use the product and how to input tariff information into the IHD. IHDs have the functionality to display historical electrical consumption information which can help the household to identify periods of high consumption. IHDs can also give the householder an indication of how much their electrical appliances cost to run. This functionality can enable a household to make informed decisions about power usage. Therefore, it is important that product functionality is fully explained and demonstrated to the customer for the household to be able to optimise the benefits of the product.
- information on product warranty. APs should also note that product manuals and product warranty information must be left with the customer. In addition, a phone number that the customer can call if they encounter problems with their IHD should also be provided to the customer after installation. Please see section 3 below for more details
- how the information displayed on the IHD will compare to the information on their bill:
 - All APs engaged in the IHD activity should be familiar with Clause 4.7 of the *Energy Retail Code, Version 8, 2011*. The Energy Retail Code governs the marketing activities, service levels and customer complaint handling processes of energy retailers. Clause 4.7 of the code requires information on how energy consumption and cost information will compare to that on the customer's bill to be disclosed to the customer. As APs undertaking the IHD activity will

be providing and installing products that display energy consumption information, they should be guided by this clause of the code and must disclose how the data displayed on the IHD compares to the information on their bill.

- The dollar amount shown on the IHD does not include other charges that may appear on the customer’s bill, such as supply charges or discounts offered by their energy retailer.

Therefore, the IHD is unlikely to indicate energy costs that will appear on the customer’s bill.

- Steps to ensure data privacy, such as how to delete historical information and how to remove an IHD if they move out:
 - Customers should be fully briefed on data privacy issues relating the installation of an IHD. This should include information on how the device operates and stores information and for how long, as well as how to delete historical data. Customers should also be informed that information traffic from the meter to the IHD is encrypted. This means that other devices cannot automatically connect to their meter or view the information (energy consumption, usage and cost) that is being transmitted to the IHD.
 - When a customer with a functioning IHD moves house, they may wish to take their IHD with them. If their IHD is a non-ZigBee device, the customer may need to engage a licensed electrician to uninstall their product. If the device is ZigBee-enabled, the customer will have to unbind (disconnect) their IHD from the smart meter at their old address and request a rebind at their new address. Customers should be directed to contact the AP that provided them the device to find out how this can be achieved. If the customer does not wish to take their IHD with them and wishes to leave their IHD behind, they should be shown how to erase their historical data to ensure it cannot be viewed by new occupants moving in.
 - For further information regarding data privacy, see section 4 of this document.
- Who to contact in the event the IHD does not operate as expected. APs will need to provide a suitable level of ongoing customer support. The nature and extent of this ongoing support must be disclosed to the customer. Please see section 3 below for more information.

2.3.3. Binding request

Once a customer’s eligibility has been confirmed, all relevant information has been disclosed to the customer and the customer has agreed to the provision of an IHD, the product can be installed.

For a ZigBee-enabled device to obtain electricity consumption information from the smart meter, it needs to ‘bind’ to it. This binding process is when a smart meter connects to an IHD, to enable it to read the electricity consumption information. The binding process is initiated by the AP, completed by the DNSP, and then confirmed by the AP.

To bind an IHD to a smart meter, the DNSP requires specific details about both the IHD and the smart meter. This information must be gathered by the AP and submitted to the DNSP. The DNSP requires the following information to open a binding window²:

- National Meter Identification number (NMI) - this is a 10-digit number that identifies the site to the DNSP and can be found on the customer's electricity bill
- NMI checksum - this is a single numeral used to assist with data validation and is usually the eleventh character of the NMI
- meter serial number
- VEET approved device (yes/no)
- IHD device name, class and type
- IHD manufacturer
- IHD model number
- IHD serial number
- IHD firmware version
- battery powered (yes/no)
- Home Area Network identifier/code
- MAC address - the Media Access Control address (MAC address), or 'MAC ID', is unique to each IHD and enables the smart meter to identify the customer's IHD in order to bind.

The information listed above is required by the DNSP to enable them to bind the IHD to the meter. The DNSP uses this information to send a message to the smart meter to ask it to open a 'binding window' and search for that customer's IHD. The length of the binding window is generally determined by the binding process set up by the AP and DNSP. Once the binding window is open, the meter seeks the signal from the customer's IHD, initiates the bind and completes it.

It is important to note that the prescribed activity has not been completed until the device has been bound to the smart meter for that residence. For ZigBee-enabled IHDs, VEECs will only be created when the IHD has been successfully bound.

The binding request may be in the form of an email to the DNSP, a telephone call, or it can be done through an internet portal, depending on the binding process implemented by that DNSP. APs must confirm which process the relevant DNSP in that area uses to facilitate IHD binding.

Once the product is installed, any meter data from previous occupants should not be read by the IHD. It is the APs' responsibility to purge or reset the IHD to start recording information from the binding day forward. This prevents the meter data of previous occupants being disclosed.

² **Please note:** this list is indicative only and may be amended. Please contact the customer's DNSP to confirm what information they require.

Non-ZigBee IHDs do not need to bind to a smart meter, but in some instances may require a sensor to be clamped on to the electrical wiring leading to the meter. In this instance, the installations must be performed by a qualified electrician and a certificate of electrical safety must be provided to the customer.

2.4. VEEC assignment

Once an IHD has been installed, the customer can assign their VEEC creation rights to the AP. For information regarding mandatory information that must be captured in the assignment form, please see [Mandatory Information for Assignment Forms: In-Home Displays](#), available from the VEET website (www.veet.vic.gov.au).

2.5. VEEC creation

To create VEECs an AP must submit certain information to us. Mandatory fields to be completed by the AP include:

- activity date
- address where the installation took place
- consumer's first and last name
- consumer's phone number
- installer details
- product brand and model details
- IHD serial number
- ZigBee enabled (yes/no)
- if ZigBee enabled:
 - NMI
 - IHD's MAC address
 - firmware version
 - relevant distributor (DNSP) name
- if not ZigBee enabled:
 - meter serial number
 - electrician licence number (applicable if the installation required wiring work)
 - certificate of electrical safety (applicable if the installation required wiring work).

VEEC creation requests are made through the VEET website (www.veet.vic.gov.au).

2.5.1. Binding reports

To verify that an installation has taken place, we require confirmation from the DNSP that a specific smart meter has been bound to a specific IHD. This confirmation ensures that VEECs are created

for unique binds only. This binding information is contained within a binding report, created by DNSPs and submitted to us. The binding report contains the NMI and MAC address for each IHD that has bound to a meter in that DNSP's service area. Under section 60 of the Act, we may request this information and must receive it within a specified time frame of not less than 10 business days.

3. Other matters

3.1. Ongoing customer support

This prescribed activity requires APs to establish a suitable method of ongoing customer support. The nature and extent of that support must be disclosed to the customer. As part of the ongoing customer support, the AP that sold and installed the IHD must:

- provide the customer with a helpline number
- inform the customer on how to troubleshoot device issues.

Some non-ZigBee IHDs that are attached to a smart meter at installation may need to be removed by DNSPs in the event that the smart meter requires repair or removal. Therefore, customers should be provided with information on how to reinstall their IHD should it be removed, as well as adhesives to facilitate reinstallation, if required.

3.2. Privacy issues

The information that is transmitted from the meter to the IHD is considered personal information and therefore subject to the National Privacy Principles (NPPs). DNSPs have a responsibility to ensure that meter data is handled according to the *Privacy Act 1988* and the NPPs. APs undertaking the IHD activity must also abide by the relevant privacy legislation. This means that APs will have to confirm that a customer is the registered electricity account holder for that premises, or their authorised agent.

DNSPs identify addresses by the NMI for that site, rather than by customer name. Therefore, the AP does not need to provide the name of the customer to the DNSP when requesting a bind.

Also, APs installing IHDs under VEET are responsible for purging or resetting IHDs at the point of installation to ensure that the meter data of previous occupants is not disclosed.

4. Legal context for this document

We have prepared this explanatory note as a general summary of relevant parts of the:

- *Victorian Energy Efficiency Target Act 2007*
- *Victorian Energy Efficiency Target Regulations 2008*
- *Victorian Energy Efficiency Target Guidelines*

This document should not be relied upon as substitute for legal advice and should be read in conjunction with the above source documents. In the event of inconsistency between this explanatory note and the above source documents, the content in the source documents takes precedence.

Document version control

The RM reference for this document is: C/11/39467

Version	Amendments made	Date published
V 1.7	Wording changes made in line with Non ZigBee devices installation	31 July 2014
V 1.8	Footnote added concerning site duplication flags	12 January 2016
V 1.9	General review and clarification of certain requirements	23 May 2016
V 2.0	General review and clarification of certain requirements	1 November 2017
V 3.0	Updated to new Victorian Energy Upgrades template	15 December 2017