



**LOOK WHAT YOUR HOME'S SMART METER CAN DO FOR YOU**

## CONNECTED DEVICES HELP CONTROL ELECTRICITY USE

ComEd is committed to offering information and options to customers so they better understand how much electricity they use and how to take control of their electricity use. Smart meters provide customers access to more information about their electricity use. ComEd's Smart Meter Connected Devices service is one of the ways customers can easily access this information and benefit from having smart meters at their homes.

ComEd welcomes retailers, manufacturers and wholesalers ("vendors") to participate in ComEd's Smart Meter Connected Devices service. To help ensure customers are offered a diverse supply of smart devices, ComEd encourages vendors to submit their commercially available devices for testing to evaluate if the smart devices are compatible with ComEd smart meters. If a smart device is compatible with ComEd smart meters and the vendor signs an agreement\*\*, the smart device will be added to the Smart Meter Connected Devices (SMCD) List, which is posted to [ComEd.com/SMCD](http://ComEd.com/SMCD) and available to ComEd customers who are interested in purchasing smart devices. ComEd's Smart Meter Connected Devices service is open to all vendors in accordance with this document. Smart devices submitted for testing will be processed in the order they are received.

### INTRODUCTION

**ComEd's Smart Meter Connected Devices service enables residential customers with smart meters to access electricity usage and estimated electricity cost information provided by the ComEd smart meter installed at their homes. Customers will purchase a smart device, register it online with ComEd and ComEd will wirelessly connect the smart device to the ComEd smart meter at the customer's home. By participating in ComEd's Smart Meter Connected Devices service, customers can better understand how much electricity they use and make changes that can help them manage their electric bills.**

\* ComEd reserves the right to make periodic changes at any time to this Vendor Guide. Please refer to [ComEd.com/SMCD](http://ComEd.com/SMCD) for the latest version of this guide.

\*\* Appendix C, Release and Limitation of Liability

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## SMART METER CONNECTED DEVICES TESTING PROCESS

This guide provides a comprehensive description of the ComEd Smart Meter Connected Devices Testing Process, including:

- 1 Overview
- 2 Smart Meter Connected Devices Testing
- 3 Smart Device Criteria
- 4 Ongoing Requirements

### 1 Overview

To have a smart device tested for compatibility with ComEd smart meters and be included in the Smart Meter Connected Devices List, vendors must:

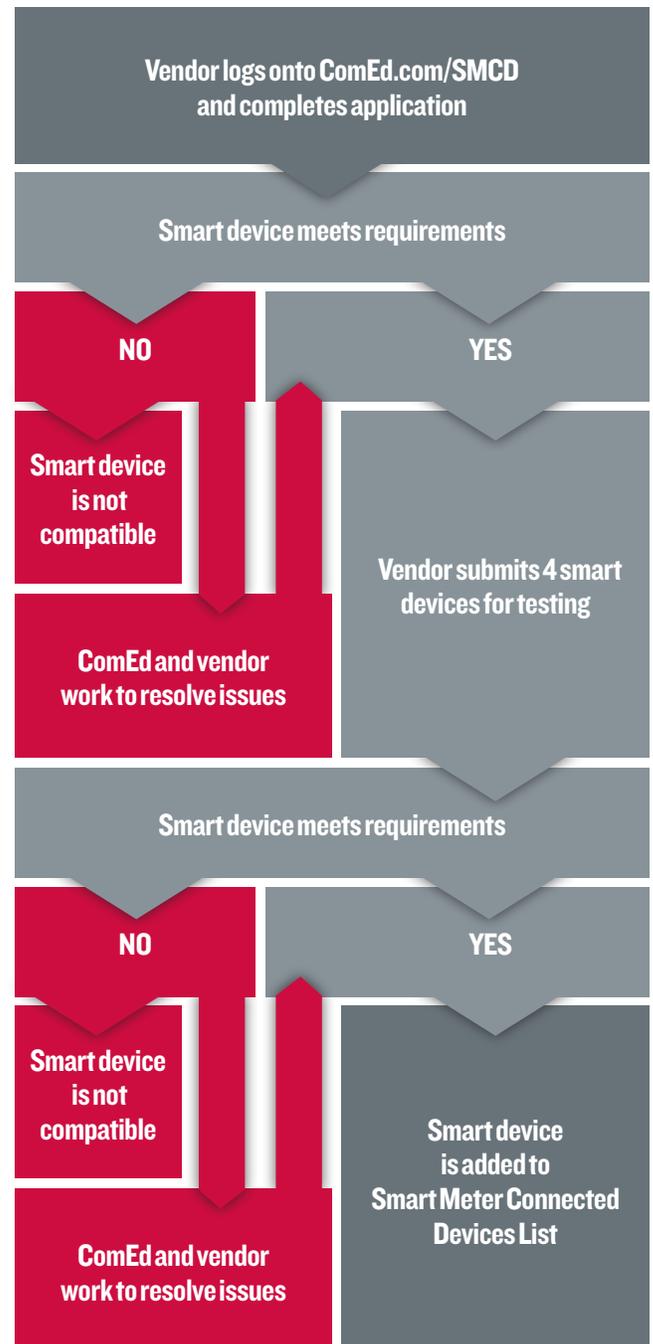
- Fill out and submit an application (Appendix A of this document)
- Meet the Smart Device Requirements listed below (Section 3 in this document)
- Provide ComEd with four (4) smart devices for testing (These smart devices will not be returned at the end of the testing process.)

### 2 Smart Meter Connected Devices Testing

This section describes how a vendor applies to have its smart devices tested by ComEd. This includes the process for submitting an application, the forms to be submitted and contact information.

ComEd will work with vendors throughout the testing process to ensure that the vendor is aware of any issues that may arise. Below is a flow chart of the ComEd Smart Meter Connected Devices Testing Process.

### Smart Meter Connected Devices Testing Process



# Smart Meter Connected Devices Service

## Smart Meter Connected Devices Testing *Continued*

### **STEP 1: Requirements**

The vendor should review the Device Criteria (Section 3 of this document) to ensure the smart device meets all of the criteria.

### **STEP 2: Application Submittal**

To participate in the ComEd Smart Meter Connected Devices Testing Process, the vendor must complete an application (Appendix A in this document) and attach it to an email, along with any additional relevant documentation, to the email address listed below. Please include the **Subject Heading** listed below in the subject line of the email submission. Any questions about the Smart Meter Connected Devices (SMCD) Testing Process should be sent to the same email address. Applications will be evaluated in the order in which they are received.

**Email To:**

[SMCDHelpDesk@ComEd.com](mailto:SMCDHelpDesk@ComEd.com)

**Subject Heading:**

ComEd Smart Meter Connected Devices List Application

### **STEP 3: Release and Limitation of Liability**

The vendor must sign a Release and Limitation of Liability form (Appendix C of this document).

### **STEP 4: Device Submittal**

ComEd will review the application to ensure that the smart device can be tested to determine if it is compatible with ComEd smart meters.

- **If the application is not approved**, ComEd will contact the vendor with the reason and will work with the vendor to resolve any issues, if possible.
- **If the application is approved**, the vendor will be contacted and asked to submit four identical smart devices for testing to the address below.  
**Please do not send any smart devices until you receive notice from ComEd.**

**Shipping Address:**

ComEd  
c/o: Demand Response Department  
Three Lincoln Centre  
Oakbrook Terrace, IL 60181

ComEd will provide notice to the vendor within one business day of when the smart devices are received. Testing and certification will be completed in the order in which the smart devices are received.

### **STEP 5: Testing of Smart Devices**

Once the smart devices are submitted, they will be evaluated in the order in which they are received. The smart devices will be subject to a variety of functional tests. These tests evaluate whether the smart device is compatible with ComEd smart meters, receives information from ComEd smart meters, is reliable and provides a positive customer experience. In addition, multiple smart devices will be tested to ensure consistency in functionality and manufacturing uniformity. More details on the testing procedures and examples of the specific tests can be found in Appendix B of this document. The general categories include:

- Commissioning
- Metering and Price
- Longevity
- Messaging
- Range

ComEd will review the results of the test with the vendor. If a smart device fails ComEd's compatibility test, the vendor will be contacted and ComEd will work with the vendor to resolve any issues, if possible.

### **STEP 6: Inclusion on the Smart Meter Connected Devices List**

If the smart device tests to be compatible with ComEd smart meters, the device will be included in the Smart Meter Connected Devices List.

# Smart Meter Connected Devices Service

## 3 Smart Device Criteria

The following criteria must be demonstrated prior to ComEd testing a smart device to determine if it is compatible with ComEd smart meters.

### 1: Smart device capability

Smart devices must be designed to receive electricity usage and estimated electricity cost information from a smart meter.

### 2: The smart device shall be ZigBee 1.1 certified

The smart device must already be ZigBee 1.1 Smart Energy Profile certified. A copy of the certificate must be provided as part of the submission information.

### 3: Smart device firmware version in commercially available devices

The firmware version on commercially available devices should be the same firmware version that was on the smart device during ZigBee certification. Smart devices that were ZigBee certified by similarity (see [ZigBee certification guidelines at http://www.zigbee.org/zigbee-for-developers/zigbeecertified](http://www.zigbee.org/zigbee-for-developers/zigbeecertified)) may also be accepted. See “Resubmission of Smart Devices to the ComEd Smart Meter Connected Devices Testing Process” (Section 4. Ongoing Requirements) for details on firmware changes.

### 4: Smart device being tested shall be in retail packaging

Smart devices sent to ComEd for testing should be contained within the same packaging format that will be sold to customers. The package should also contain all instructions and documentation that will be included in packaging that is shipped to customers.

### 5: Smart device shall be commercially available to end customers

The smart device must be commercially available to the end customer. As part of the submission information, provide the website URL or store locations where customers can purchase the smart device.

### 6: Smart device must have production certificates

Tested devices must have ZigBee production certificates to be compatible with ComEd’s smart meters.

### 7: Any Vendor-specific profiles/clusters must implement Smart Energy Profile (SEP) application layer security

If a vendor-specific profile or cluster is implemented on the smart device, the interaction with that profile must be secured by Smart Energy Profile (SEP)/cluster encryption to prevent that feature from being maliciously used or exploited. Exceptions outlined in the SEP specification will be allowed.

## Operational Environment and Scope

ComEd’s smart meter network consists of a Silver Spring Networks system and smart meters. Residential smart meters consist primarily of GE I-210+ and GE I-210+C variants. The Silver Spring Networks’ NIC cards used are primarily 310s. The testing environment uses ZigBee production certificates; therefore, smart devices are required to have production certificates as well. The firmware/software versions are as follows:

- Silver Spring Networks DR Portal: 1.8.3.1
- Silver Spring Networks AMM Portal: 4.7.9
- Silver Spring Networks 310 NIC Card Firmware: 2.14.1 & 2.16.6

## 4 Ongoing Requirements

### ComEd/Silver Spring Networks branding

Vendors **DO NOT** have the authority to brand their smart devices with ComEd or Silver Spring Networks logos. ComEd will not promote any one smart device over any other smart device under ComEd's Smart Meter Connected Devices service.

### Removal of a smart device from the Smart Meter Connected Devices List

A smart device can be removed from the Smart Meter Connected Devices List for the following reasons:

- If ComEd updates/upgrades its smart meter hardware/firmware resulting in issues that cannot be resolved with the smart device after working with the vendor.
- The vendor makes any changes to the smart devices (firmware, hardware or configuration changes) that render the smart device inoperable, and the vendor does not intend on selling the old version of the smart device to customers.

### Resubmission of smart devices to the ComEd Smart Meter Connected Devices Testing Process

Resubmission to the ComEd Smart Meter Connected Devices Testing Process could be necessary if the vendor has changed the firmware or hardware of its smart device, or if ComEd has made significant changes to the smart meter network firmware or hardware which warrants resubmission. To resubmit a smart device, complete an application (Appendix A in this document), provide the information below and select 'yes' when asked if the smart device has previously been on the Smart Meter Connected Devices List (Smart Device Information Question 1):

- The circumstances that caused the smart device to be removed from the Smart Meter Connected Devices List.
- The steps taken to rectify the circumstances that caused the smart device to be removed from the Smart Meter Connected Devices List.
- The results of the steps taken to rectify the circumstances that caused the smart device to be removed from the Smart Meter Connected Devices List.
- Any comments from the vendor.

### Updates/upgrades to ComEd smart meter hardware/firmware

When ComEd smart meter firmware or hardware updates/upgrades are implemented, ComEd will analyze and/or test the existing smart devices included on the Smart Meter Connected Devices List to determine if recertification is necessary. If a smart device is found to be incompatible with ComEd smart meters, ComEd will attempt to resolve the issue so that recertification is not necessary. However, if significant hardware/firmware changes were made and recertification is deemed necessary, then ComEd will contact the vendor for recertification of the smart device.

### Vendor changes to smart devices

When vendors make firmware or hardware updates/upgrades to a smart device, the vendor must inform ComEd. The vendor will also need to resubmit the smart device with the new hardware/firmware updates for retesting. If possible, ComEd will work with the vendor to retest the smart device by 'similarity' if the changes to the smart device do not impact functionality in a way that would require full retesting. Release notes of the hardware/firmware changes must be provided by the vendor.

# SMART METER CONNECTED DEVICES LIST APPLICATION

## BUSINESS INFORMATION

Business Name	Business Address	
Primary Business Contact Name	Primary Business Contact Email	Primary Business Contact Phone
Primary Technical Contact Name	Primary Technical Contact Email	Primary Technical Contact Phone

## SMART DEVICE CRITERIA

### 1. Device Type (IHD, PCT, etc.)

2. Is this device designed to receive electricity usage and estimated electricity cost information from a smart meter?  Yes  No

3. Is the device ZigBee I.1 certified?  Yes  No

Please attach a copy of the ZigBee certificate and PICS document

4. Is the firmware version of the smart device the same as what was ZigBee certified?  Yes  No

If not, please include release notes on the differences between the ZigBee certified firmware, and the submitted firmware

5. Can the vendor ship the test smart devices in retail packaging?  Yes  No

6. Is the smart device commercially available?  Yes  No

Please include a link to the website where a user can purchase the smart device

7. Do the smart devices to be tested have production certificates?  Yes  No

8. Does the smart device implement Manufacturer Specific Profiles/Clusters that are not secured with SEP Encryption?  Yes  No  N/A (no MSPs)

## SMART DEVICE INFORMATION

1. Has the device previously been on the Smart Meter Connected Devices List?  Yes  No

2. Smart Device Model Name

3. Smart Device Model Number

4. Smart Device Firmware Version

5. Please state the implemented ZigBee Clusters

6. Please describe any Manufacturer Specific Profiles/Clusters that are implemented on this smart device

7. Please enter a description of the smart device that can be used on our marketing page to describe the smart device

## SMART METER CONNECTED DEVICES TEST MATRIX

<b>COMMISSIONING</b>	Join the meter
	Rejoin the meter after smart device soft reset
	Rejoin the meter after smart device power outage (smart device power outage = 5 min)
	Rejoin the smart meter after smart device power outage (duration = 1 min). Test with (10) cycles of power outages.
	Rejoin the smart meter after meter power outage (meter power outage = 15 min)
	Rejoin the smart meter after meter power outage (meter power outage = 12 hour)
	Commission to a different meter
	Rejoin after long (24 hour) power outage on smart device
	Commissioning after network outage
<b>METERING AND PRICE</b>	Summation Format 1 decimal place
	Demand Format 1 decimal place
	Historical Format 1 decimal place
<b>LONGEVITY</b>	Maintains connection over 72 hour period
<b>MESSAGING</b>	Smart device displays text message
<b>RANGE</b>	Smart device still communicates with meter from 75 foot distance
<b>DURABILITY</b>	Smart device does not break during testing
	Smart device user interface holds during testing (Example: Buttons)
	Smart Device Display retains a clear resolution throughout testing

## RELEASE AND LIMITATION OF LIABILITY

The “Applicant,” whose signature is below, has received and read ComEd’s Smart Meter Connected Devices Vendor Guide (“Guide”), incorporated herein by reference, and has submitted a smart device for testing and validation by ComEd. Applicant must sign this Release and Limitation of Liability agreement (“Agreement”) before ComEd will begin testing or validation of the Applicant’s smart device.

### Validation and Compatibility Not Guaranteed

Without limiting the generality of the contents of the Guide, Applicant acknowledges and agrees that ComEd shall have no liability hereunder for non-compatibility of Applicant’s smart devices with ComEd’s smart meters or other technology systems, for any reason whatsoever. ComEd may upgrade or modify its smart meters or other technology systems at any time and in any way, in its sole and absolute discretion, which may render Applicant’s smart devices incompatible and/or inoperable with the ComEd smart meter network and related systems. ComEd shall have no liability for such resulting incompatibility or inoperability and Applicant bears the risk of failing to disclose this contingency to purchasers and users of its smart devices. Such upgrades or modifications by ComEd may require device changes by Applicant and retesting in order to be revalidated.

### No Smart Device Endorsement

Applicant acknowledges that smart device validation does not under any circumstances constitute endorsement by ComEd of the device. Rather, smart device validation means only that the particular version of the smart device was determined to have been able to connect to ComEd’s smart meter and provide real-time electricity information. Applicant may not use the logos of ComEd in its marketing materials without ComEd’s advance written approval.

### Timing and Duration of Testing

Applicant has no reasonable expectation that its smart device will be tested within a particular time frame, or that ComEd will have time and resources to devote to retesting a device that has either failed earlier rounds of testing or that requires additional testing due to upgrades on the meter side or the smart device side.

### Indemnification and Release of Liability

Applicant shall defend, indemnify and hold ComEd, its current and future parent companies, subsidiaries, affiliates, and its respective directors, officers, managers, shareholders, employees, agents, and representatives (each a “ComEd Indemnified Party” and, collectively, the “ComEd Indemnified Parties”) harmless from, and against all damages, losses, liabilities, expenses and costs (including, without limitation, reasonable outside and allocated in-house attorneys’ fees) arising out of or in connection with Applicant’s (i) failure to comply with any applicable law, ordinance, rule, or regulation or strict liability imposed by any laws and regulations; or (ii) breach of any provision, warranty, or representation of this Agreement. Applicant shall defend, indemnify and hold the ComEd Indemnified Parties harmless, from and against all damages, losses, liabilities, expenses and costs (including, without limitation, reasonable outside and allocated in-house attorneys’ fees) arising out of or in connection with any act or omission by Applicant or its employees or authorized agents related to or in connection with this Agreement that results in (a) injury to or death of persons, including but not limited to customers, employees of Applicant, and members of the general public; or (b) damage or destruction to property; or (c) statements, advertisements, marketing material or representations pertaining to Applicant’s smart devices. Without limiting the foregoing, Applicant shall be liable for any damage to ComEd’s smart meters or other technology systems to the extent arising from the connection of Applicant’s smart device to ComEd’s smart meters or other technology systems.

Applicant shall indemnify, defend and hold all ComEd Indemnified Parties harmless from and against any and all claims, actions, suits, proceedings, losses, liabilities, penalties, fines, damages, costs or expenses, including without limitation, reasonable outside and allocated in-house attorneys’ fees of any kind whatsoever arising from or in connection with (a) actual or alleged infringement or misappropriation by Applicant of any patent, copyright, trade secret, trademark, service mark, trade name, or other intellectual property right; and (b) Applicant’s violation of any third party license to use intellectual property.

ComEd shall have no liability to Applicant hereunder for damages of any kind, whether consequential, indirect, direct or otherwise, including damages relating to the market success or failure of a smart device submitted for validation pursuant to the Guide.

### Termination

ComEd may terminate this Agreement and Applicant’s participation in the testing and validation program for cause upon written notice to Applicant if Applicant fails to comply with any applicable laws and regulations breaches this Agreement or fails to perform in accordance with the Guide.

ComEd may terminate this Agreement and the smart device testing and validation program at any time and for any reason upon ten (10) days’ prior written notice to Applicant.

### Miscellaneous

Applicant represents and warrants that (a) the execution hereof and such submission has received all necessary legal and corporate or business entity authorizations and does not conflict with any legal or contractual requirements to which it is subject; (b) the individual signing below has authority to obligate it hereunder; that all information submitted by it is true and correct, and (c) all such contact information below shall be updated by it so as to remain true and correct at all times during which its devices remain validated.

Applicant:

Signed By:

Name and Title of Signatory:

Date: