

[Whisker Labs](#) just announced a product that monitors individual loads / sources through digital disaggregation (like Sense) but using a sensor that adheres to the main panel, eliminating the need to remove the deadfront to attached CTs. Pretty crazy. Connectivity is through the existing network.



#### Sensing

Breakthrough energy sensing technology that offers unprecedented ease and scale.

We've developed energy sensing technology that installs in minutes without an electrician or any electrical work. Simply stick our sensor to the face of the breaker panel, and we do the rest. Our innovative technology will fundamentally change the way you think about energy data.

[Learn more >](#)

#### Analytics

Our software services distill valuable insights from aggregated energy data.

Whether from our sensing technology or your data collection network, our source-agnostic cloud offers tools that make sense of your data and deliver value to your customers. Our platform leverages advanced energy disaggregation algorithms that offer insight, **efficiency and automation** to your customers through your branded applications.



---

Other CT-based options beyond what's been mentioned include [neurio](#) (existing network),



## WHAT'S INCLUDED IN THE BOX:

- Neuroio Wifi Sensor
- 4 current transformers
- voltage cables
- antenna and mounting options
- accessories

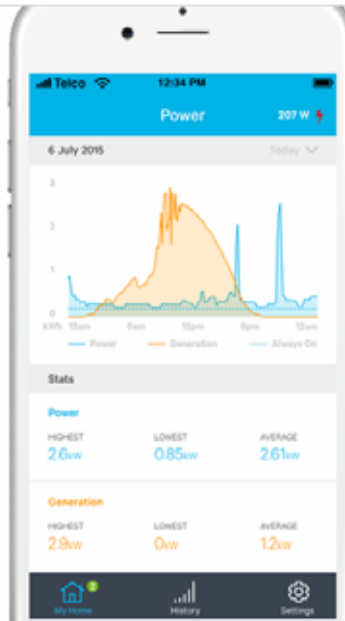
ORDER TODAY

neurio

PRODUCTS INSTALLATION THE LAB SUPPORT BECOME A RESELLER MY NEURIO

**Real-Time Usage & Generation Monitoring**  
Displays your home's energy in real-time, allowing you to see what you are generating and using.

**Solar Savings Tracker**  
See how much money your solar investment is saving you each day, week and month.



**Works with Any Inverter**  
Neurio works with any inverter since it's attached to the home's breaker panel.

**View History**  
See your generation and consumption history over the day, week, month or year.

## GET EVEN GREATER INSIGHTS

Now available as a software upgrade, you can get even more detail into how your home is operating with our Intelligent Energy Monitoring. Through the power of our analytics, you can see what individual appliances are costing you, how often they are used and for how long. It's a great way to gain added safety and efficiency. [Learn more.](#)



the Locus [LGate 101e](#) (cellular or existing network),

## Highly Accurate, Revenue-Grade Energy Meter and Web Enabled Datalogger for Monitoring Residential Solar PV Systems

**Efficiently manage solar assets with a system that collects, stores and uploads a wide array of energy data**

Locus Energy provides a range of hardware to collect performance data from solar PV systems. All DAS hardware is factory configured and tested allowing for plug-and-play installation and commissioning. The platform supports a wide variety of third-party hardware including meters, inverters, weather stations and string/sub-array combiners.



[LEARN MORE »](#)

*"For years, web-enabled system monitoring was too complex and cost prohibitive for residential and light commercial solar installations. Locus Energy bridged this gap for us about five-years ago with a cost effective, easily installed monitoring solution that we now deploy on all of our projects, regardless of size. Their tech support team is top notch, accessible, and knowledgeable, and they've developed as one of our most valued vendor partners."*

**Rob Meyers**  
Owner, South Mountain Company

INVERTER SUPPORT	LGATE 101	ITRON	LGATE 120	LGATE 320	LGATE 350	LGATE 360
SMA Sunny Boy**	✓		✓	✓	✓	✓
Power-One PVI (< 15 kW)	✓		✓	✓	✓	
Power-One PVI (> 15 kW)					✓	✓
Power-One Trios					✓	✓
KACO blueplanet 02xi	✓		✓	✓	✓	
Fronius IG Plus	✓		✓	✓	✓	
Eaton	✓		✓	✓	✓	
AE 3TL Inverters (formerly REFUsol)					✓	✓
AE 35-260TX Inverters (formerly PV Powered)					✓	✓
AE 250-500NX Inverters (formerly Solaron)					✓	✓
Solectria					✓	✓
Satcon					✓	✓
ENVIRONMENTAL SENSORS	LGATE 101	ITRON	LGATE 120	LGATE 320	LGATE 350	LGATE 360
Pyranometer - Plane of Array Irradiance***	✓		✓	✓	✓	✓
Pyranometer - Horizontal Irradiance***					✓	✓
Silicon Reference Cell	✓		✓	✓	✓	✓
Back of Module Temperature Sensor	✓		✓	✓	✓	✓
Ambient Temperature Sensor	✓		✓	✓	✓	✓
Anemometer	✓		✓	✓	✓	✓
Relative Humidity Sensor					✓	✓
Barometric Pressure Sensor					✓	✓
Rainfall Gauge					✓	✓
DC MONITORING	LGATE 101	ITRON	LGATE 120	LGATE 320	LGATE 350	LGATE 360
Sub-Array Level DC Monitoring				✓	✓	✓
String-level DC monitoring with smart combiner box				✓	✓	✓

\* The LGate 350/360 warranty only covers the enclosure and workmanship - It does not cover the power meter or data logger, which are covered by the original manufacturers' warranties.  
 \*\* Please confirm the specific SMA inverter model versions supported prior to purchasing.  
 \*\*\* Locus Energy offers Class 1, Class 2, and secondary standard grade irradiance sensors.

TED (existing network),

[TED BASICS](#)[APPLICATIONS](#)[PRODUCTS](#)[STORE](#)[SUPPORT](#)[CONTACT](#)

## Product Details: TED Pro Home



### Real-time in-home Electricity Monitor

Our **NEW** state-of-the-art electricity monitoring system allows you to view real-time electricity usage on your computer, locally or remotely. Now you can perform your own household energy audits, project monthly bills, and reduce and manage your electricity usage. New and improved accessories allow you view data easier with two display options, and include the ability to monitor individual breakers with the new TED Spyder.

[Visit TED Store to Purchase](#)

### TED Pro Home includes:

- ✓ 1 NEW Energy Control Center (ECC) embedded with Footprints Software
- ✓ 1 Measuring Transmitting Unit
- ✓ 1 Set of two Current Transformers

and the [Enphase Envoy-S](#) (which can monitor non-enphase systems and is cellular).

# The all new Envoy-S

Your solar communications just got smarter.

[LEARN MORE](#)

**Enphase Brings Intelligent Control to Energy Management with New Envoy-S**



- Sep 09, 2015
- Technology
- By Enphase Energy

*By Ilén Zazueta-Hall, Director of Product Management*

Technology is evolving—both in the solar industry and home automation space—and finding a way to connect the two has become increasingly important.

Last year, Enphase introduced the vision for its [Enphase Energy Management System](#) with the promise of integrating solar generation, energy storage, load monitoring and smart grid intelligence into what will create the smart, connected home.

Today, Enphase is launching a key component of our energy management system—the Envoy-S Solution. Now, Envoy-S enables more cost effective and reliable installations while creating greater value for solar customers.



The Envoy-S communications gateway serves as the local “brain” for the system, balancing generation, storage and load. With the new gateway, Enphase is introducing a complete solution: the Enphase AC Combiner Box, the Enphase Mobile Connect cellular modem and data plan and a series of partnerships that further extend energy management capabilities.

We’ve worked hard to balance the need for a simple, fast installation with the ability to offer new features to homeowners, so there are two versions of Envoy-S, one Standard and one Metered. Both have a longer warranty, can be installed outdoors and use integrated WiFi to work with a redesigned [Installer Toolkit mobile app](#) for fast and easy system set up. The Envoy-S Metered

adds built-in revenue-grade generation metering and optional consumption metering for managing storage and integrating with other home energy solutions.



### Efficiency for solar professionals

Fast installations and lower cost are *the* driving factor for the solar industry as a whole, that's why Enphase integrated the Envoy-S into a purpose-built application called the Enphase AC Combiner Box. The AC Combiner Box is specifically designed to speed up the installation process while reducing material and labor costs. It integrates the Envoy-S metered with a pre-configured set of electrical components to consolidate equipment for an equipment savings of 20%.



UL listed, the AC Combiner Box ensures not only a safe installation, but also a smooth inspection process, which has proven just as important in saving time and money.

### Value for systems owners

With these new metering capabilities in Envoy-S, installers can now provide energy insight for their customers. With enhanced data and engagement, homeowners will be able to see not only the times their systems are producing the most energy, but also the times they use energy the most – and how to take best advantage of their decision to go solar.

This integration is also what will drive charge-discharge decisions with the AC Battery.

The easy-to-understand view of their energy allows system owners to understand their energy use when and if they want to, but they can rest assured knowing their intelligent system will function correctly no matter what.



And this is just the beginning...

Envoy-S is the first in a series of new products; I look forward to telling you more about our Energy Management System in the weeks to come.



There's another product just now coming to the US from Australia called [CarbonTrack](#) (cellular). Whole home + PV energy monitoring (CTs), zigbee / z-wave 2-way communications with smarthome devices, communicates with energy storage... basically an energy-focused smarthome hub. Lots going on in this space!

- Andrew

"Don't get me wrong: I love nuclear energy! It's just that I prefer fusion to fission. And it just so happens that there's an enormous fusion reactor safely banked a few million miles from us. It delivers more than we could ever use in just about 8 minutes. And it's wireless!"

~William McDonough

On Mon, Dec 5, 2016 at 8:43 AM, Philip Boutelle <[philboutelle@gmail.com](mailto:philboutelle@gmail.com)> wrote:  
This product by Sense is similar to CURB (or [eGauge](#), or other multiple-CT devices), but you install a single set of CTs on the main feeds (plus on on the solar if you have it). The device then 'learns the electronic signature' of the loads in the house to disaggregate what is being used. I haven't tried one yet.  
<https://sense.com/>

## Sense listens.

Every electrical device has a unique electronic signature – its own voice. There is a noisy conversation happening inside your home as every device that's turned on is talking. All of them. All at once.

The Sense home energy monitor listens to those voices through current sensors on the main breakers in your electric panel. It records them millions of times per second. We then apply multidomain device signature detection algorithms to distinguish one appliance from another – to recognize each individual voice.

I have previously installed a beta device from Verdegris, which does the same thing (single CT set) but is geared for commercial customers, whereas Sense is residential.

<http://verdigris.co/>

-Phil

On Mon, Dec 5, 2016 at 6:01 AM, William Dorsett <[wmdorsett@sbcglobal.net](mailto:wmdorsett@sbcglobal.net)> wrote:

There is a new one mentioned in SolarPro, from a company called CURB (<http://energycurb.com/>) . CURB gives CT's for eighteen different circuits so over time you can understand how each load is performing. One of our families had a broken pump shaft so it never registered that there was more water in the pressure tank, so it ran for weeks. The site mentions that they will be able to predict appliance failure from historical data. And it can monitor overall PV generation. It looks very promising though from the reviews it may not yet allow a download of historical data. It would be great if in addition to logging data, it would allow active management of interlocking relays to control demand charges. There is another product called Energy Sentry (<http://energysentry.com/> ) , that allows you to prioritize your large loads so they aren't allowed to all come on at the same time. As more utilities add Time of Use and demand charges this will be a really valuable piece of hardware. For installers this will become just another value added service. These two companies should merge.

Bill Dorsett, Manhattan, KS

**From:** RE-wrenches [mailto:[re-wrenches-bounces@lists.re-wrenches.org](mailto:re-wrenches-bounces@lists.re-wrenches.org)] **On Behalf Of** Jerry Shafer  
**Sent:** Sunday, December 04, 2016 2:42 AM  
**To:** Peter Talmage; RE-wrenches  
**Subject:** Re: [RE-wrenches] Whole house energy monitors

Peter

is this system CT based, can you turn around the CT's as when in most cases installation says to install directional and for solar they get installed backwards instead.

Jerry

On Sat, Dec 3, 2016 at 2:25 PM, Peter Talmage <[ptalmage@yahoo.com](mailto:ptalmage@yahoo.com)> wrote:

Does anyone have experience with whole house energy monitors that work with interfaced PV arrays. It seems most just deal with the array output as a load .

Thanks. Peter Talmage

Related, this is a similar type of product for remote telecom sites, we have used dozens of these for many interesting configurations. The relays on this unit allow for a lot of options from rebooting devices to starting generator.

<http://www.remotemonitoringsystems.ca/>

Kevin

**From:** RE-wrenches [<mailto:re-wrenches-bounces@lists.re-wrenches.org>] **On Behalf Of** Allan Sindelar  
**Sent:** November-22-16 11:02 PM  
**To:** RE-wrenches <[re-wrenches@lists.re-wrenches.org](mailto:re-wrenches@lists.re-wrenches.org)>  
**Subject:** [RE-wrenches] Versatile remote monitoring component

Wrenches,

I support the PV for several Access Point sites for a local wireless internet provider, a nonprofit that serves rural and remote areas around Santa Fe. Through working with them I learned of a product that others here may find useful at remote sites. It's a Web Based Remote Monitor and Control System.

Info is at

<https://www.streakwave.com/itemdesc.asp?ic=TPDINMONITORWEB&eq=&Tp=&o1=0>. From the web page: The PowerSENS is a versatile tool which enables the equipment designer and installer to remotely monitor his equipment and site. The unit can be accessed via the network (web and SNMP) to remotely monitor up to 4 voltages (up to 80V DC), 4 currents (up to 16A), 2 temperatures and control power to various equipment using 4 on-board relays. The system has built-in surge protection to prevent damage from electrical surges.

Runs on 12-48V DC.

Allan

--

**Allan Sindelar**