EnergyCite Advanced ANSI Power Meter Development Program

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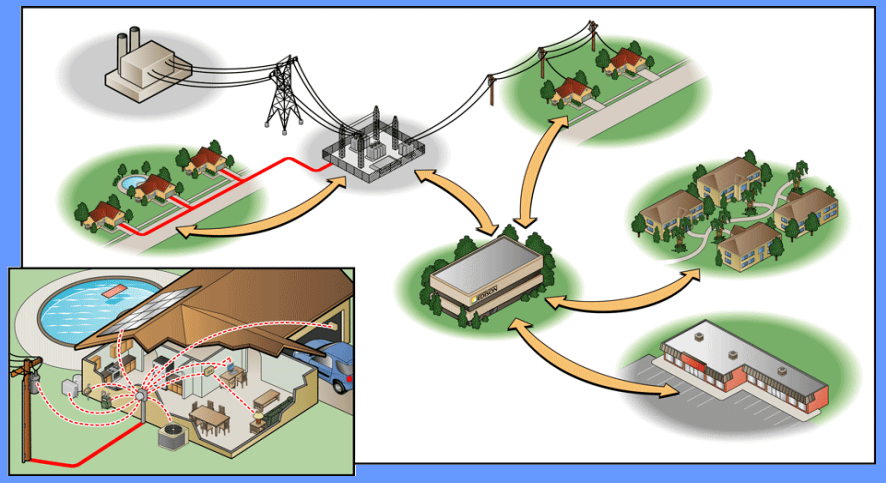
USCL Corporation is developing advanced power meters for utility companies such as Southern California Edison (SCE), which is using "a 2-way communications infrastructure with 5 million intelligent metering devices (…) to create lasting value for our customers and our operations".

- Enable Energy Smart Customers
  - Integrated information from utility
  - Outage & service information
  - Payment options (e.g., pre-payment)
  - Support rate option innovations

- Manage Distributed Resources
  - Economic dispatch of load resources
  - Dispatch of load for grid management
  - Intelligent net metering
  - Distributed energy resources

- Operational Efficiencies
  - Field communication links to distribution
  - Revenue cycle improvements
  - Situational data in near real-time
  - Wholesale - retail markets integration



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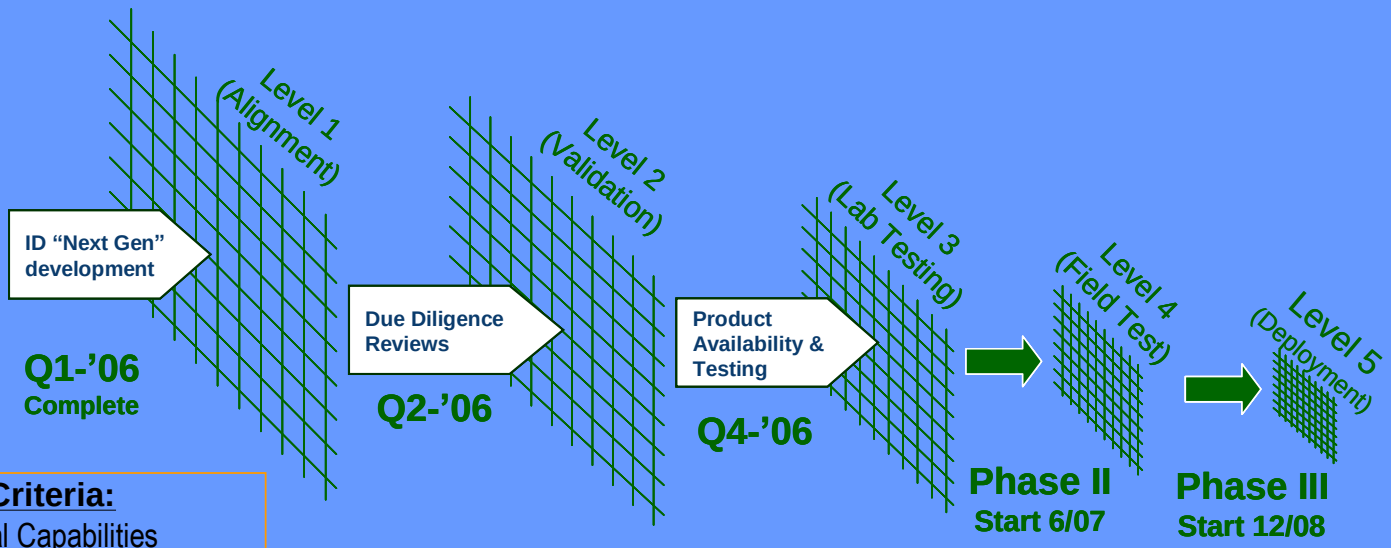
Advanced Metering Infrastructure (AMI) Cooperation between Industry and Utilities

IntelliGrid℠ OpenAMI **Utility Brainstorming**

Billing & Customer Service	Customer Interface	Delivery	Energy Procurement	Field Services / System Recovery	Installation & Maintenance
Multiple clients read demand and energy data automatically from customer premises	Customer reduces demand in response to pricing event	Distribution operator curtails customer load for grid management	Real-time operations curtails (or limits) load for economic dispatch (ES&M)	AMI system recovers after power outage, communications or equipment failure	Utility installs, provision and configure the AMI system
Utility remotely limits or connects/ disconnects customer	Customer reads recent energy usage and cost at site	Distribution operators optimize network based on data collected by the AMI system	Utility procures energy and settles wholesale transactions using data from the AMI system	-	Utility maintains the AMI system over its entire life-cycle
Utility detects tampering or theft at customer site	Customer uses pre-payment services	Customer provides distributed generation	-	-	Utility upgrades AMI system to address future requirements
Meter reading for gas & water utilities	Multiple clients use the AMI system to read data from devices at customer site	Distribution operator locates outage using AMI data and restores service	-	-	-

Produced by Southern California Edison

AMI Technology Assessment at Southern California Edison



L1 Key Criteria:
- Functional Capabilities
- Product Timing
- Commercial availability
- Interoperability
- 2-way comms
- Reliability & Availability
- Security
- Serviceability
- HAN Capabilities
- WAN Options
- Target price range
- Other

L2 Key Criteria:
- Design Development
- Production Capabilities
- Financial Condition
- Processes:
  - Business / Development
  - Manufacturing (NPI)
- Supply Chain
- Small Requirements Gaps
- Other

L3 Key Criteria:
- Successful Lab Test
- Added functionality
- Flexibility
- Commercial Terms
- Other

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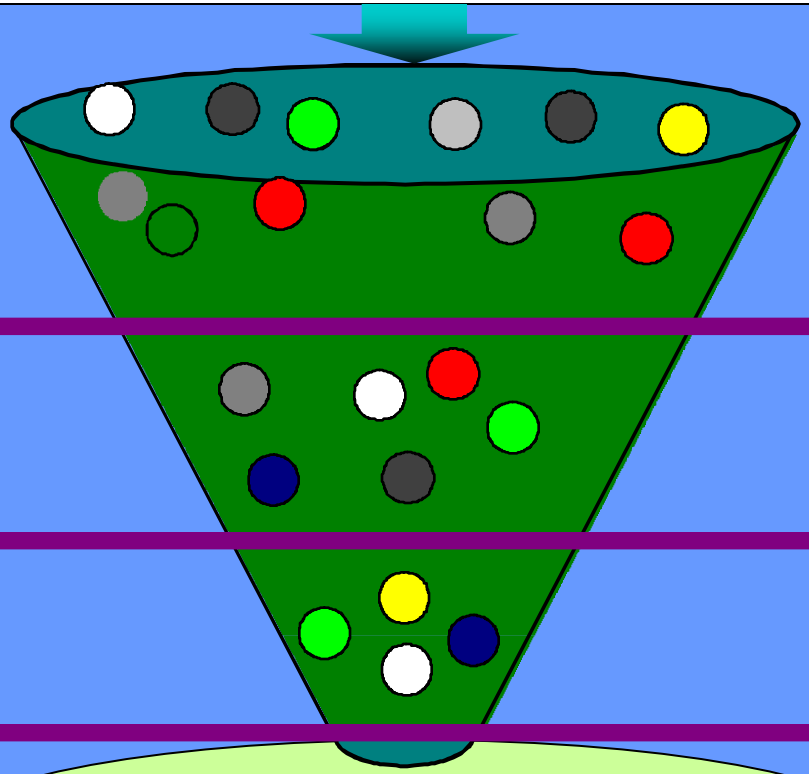
Vendor Assessment



Initial distilled set of prioritized requirements

Vendor Assessments RFI responses and interview results

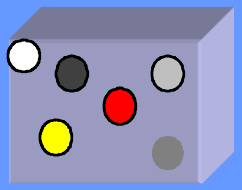
Map requirements to components

Rank vendors on capability hierarchies

Refine conceptual models to match vendor capabilities

Screen vendors

AMI Roadmap



Short-list of vendors coupled with a clear conceptual AMI architecture

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EnergyCite Class 200 Residential Meter from USCL

Variable Rate Functions

- Conforms to all applicable ANSI specifications including data and communications
- Time of Use (TOU) Rates
- Peak Demand Rates
- Class of Service Rates
- Dynamic & Real-Time Pricing
- Critical Peak Pricing

EnergyCite Class 200 Residential Meter from USCL

Remote Functions

- Wide Area Network data and multimedia telecommunications
- Service Outage & Restoration Reporting
- Theft of Power Reporting
- Remote Service Connect & Disconnect
- Remote Demand Current Limiting

EnergyCite Class 200 Residential Meter from USCL

- Over voltage & under voltage reporting.
- Damaged neutral reporting
- Power factor monitoring and reporting, distribution-grid and subscriber side
- Reverse power measurement for net metering of solar power etc.
- WAN to LAN wireless gateway. 802.15.4 ZigBee compliant. 2.4 GHz and 902-928 MHz

EnergyCite Class 200 Residential Meter from USCL

- WiFi & WiMax migration path for USCL AMI WAN communications C12.22 compliant and tcp/ip
- Subscriber-Side Billing. Billing calculation is performed internally by meter for all types of complex tariffs.
- Prepayment of service
- Remote Programmability of meter real time run software/firmware
- Wireless LAN to in-premise devices; i.e., EMS-2020, HA thermostat interface, etc.

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Feedback of Information for Enhanced Consumer Awareness

Professor Sarah Darby, Environmental Change Institute, University of Oxford, England, points out the fact that there are three types of feedback to domestic consumers:

- real-time direct feedback within the consumer's premise,
- indirect feedback via billing, and
- inadvertent feedback as a by-product of technical, household or social changes.

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Increasing Energy Efficiency using Information Feedback

Feedback has a significant role to play in raising energy awareness and reducing consumption by 10% to 20%, depending upon prevailing conditions. As Dr. Darby points out, "the highest savings - in the region of 20% - were achieved by using a table-top interactive cost - and power consumption - display unit and an indicator showing cumulative cost of operating electric loads..."

"Making it obvious: designing feedback into energy consumption," Dr. Sarah Darby, Real-time Energy Feedback Forum, Toronto, Canada, May 17, 2005.

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SCE - Next Generation Metering System http://www.sce.com/PowerandEnvironment/ami/

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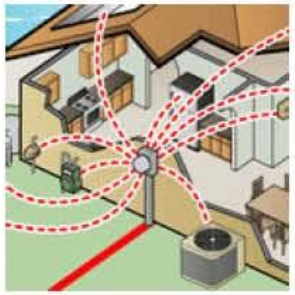
Advanced Metering Infrastructure

Next Generation Metering System

What if your electric meter was much more than a meter? What if ...

- your electric meter gave you both an incentive to save energy and helped you reduce energy costs without interrupting your life?
- your electric meter could communicate with your appliances to produce big energy and money savings?
- your electric meter helped the whole electric system operate more efficiently, reducing the chance of power emergencies, rolling blackouts and too-high wholesale electricity costs?
- your electric meter made it easier for you to keep track of your energy use so you could adjust your energy use, plan, budget and even pre-pay your electric bill?

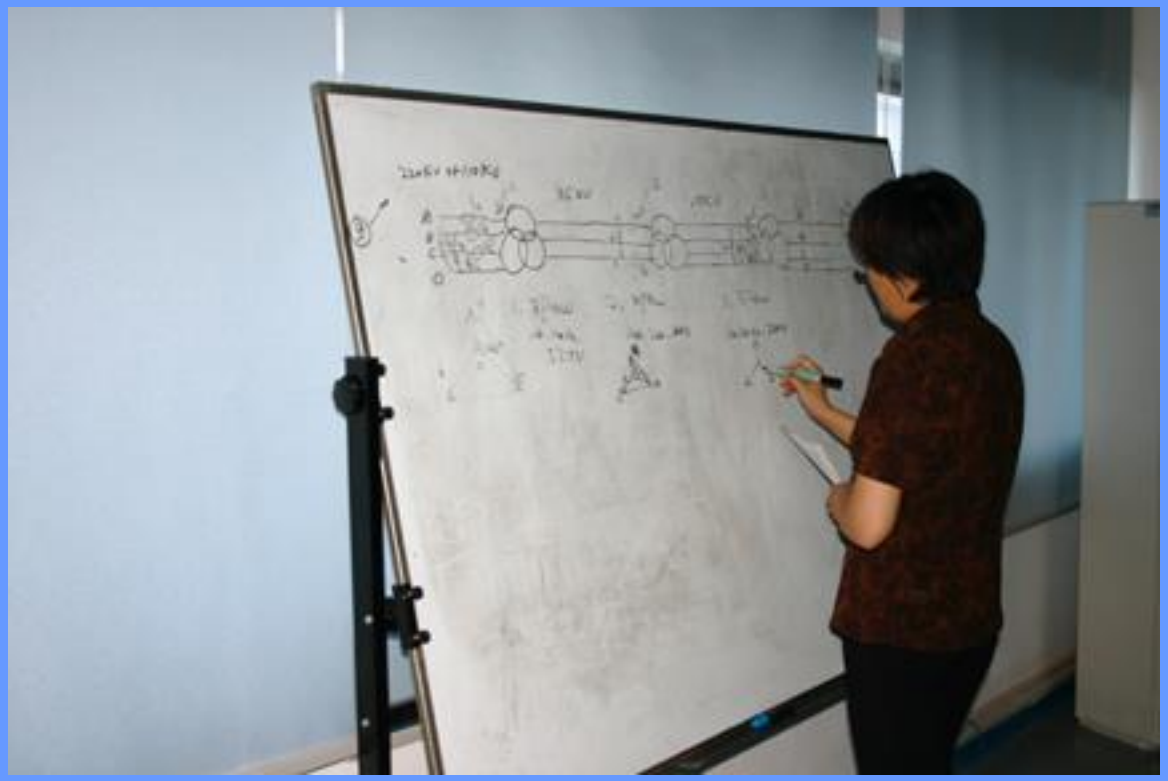


At Southern California Edison, we know the next generation of electric meters could do all this and more. And we think it should. We think the meter should help us offer the best possible service to our customers at the most reasonable cost.

SCE's AMI **wins award** for the 2005/2006 Best AMR initiative in a North American

SCE Meter & Communications Candidate Vendors

- RPR Approved Vendors
- USCL
- Trilliant (Com)
- Sensus (Meter)
- Landis + Gyr (Meter)
- Itron (Meter and Com)
- Echelon (Meter)
- Cellnet (Com)



Director of Engineering Hunan Werko & Wasion Meters Group Ltd., Changsha, China. Hunan Werko is a $500 K Investor in USCL

USCL's Tom Tamarkin and Dr. Victor Kolesnichenko & Wasion Meters Group LTD., Meter R&D Team Changsha, China, June 2006

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USCL Chief Meter Design Engineer, Dr. Victor Kolesnichenko
Explaining ANSI Requirements in Changsha, China

USCL Meter Development

USCL mechanical engineer, David Wuester, conducting a design review in San Jose, California

USCL New Development Plan

- Effective 18 October 2006 USCL took over all meter design and development in the U. S.
- Program is headed by Dr. Victor Kolesnichenko
- Mechanical enclosure designed by David Wuester
- USCL will contract with OEM Manufacturing Agent such as Flextronics for Production

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USCL EnergyCite Meter Enclosure Sample

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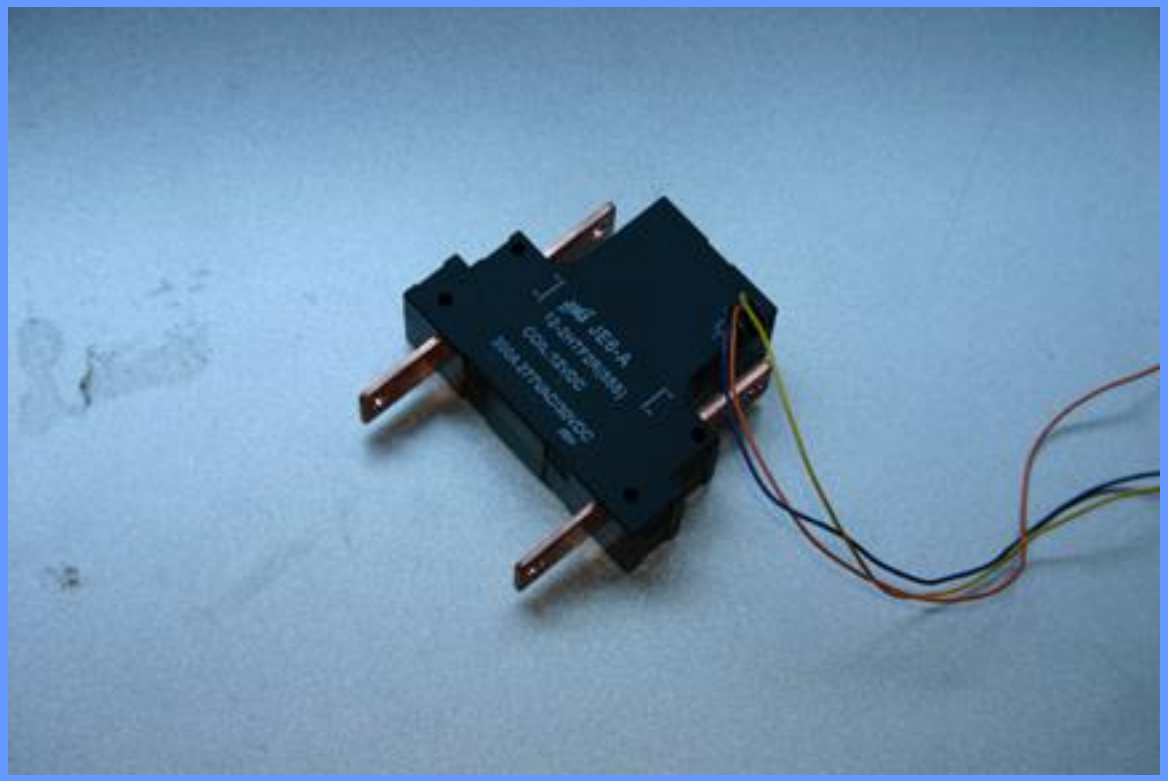
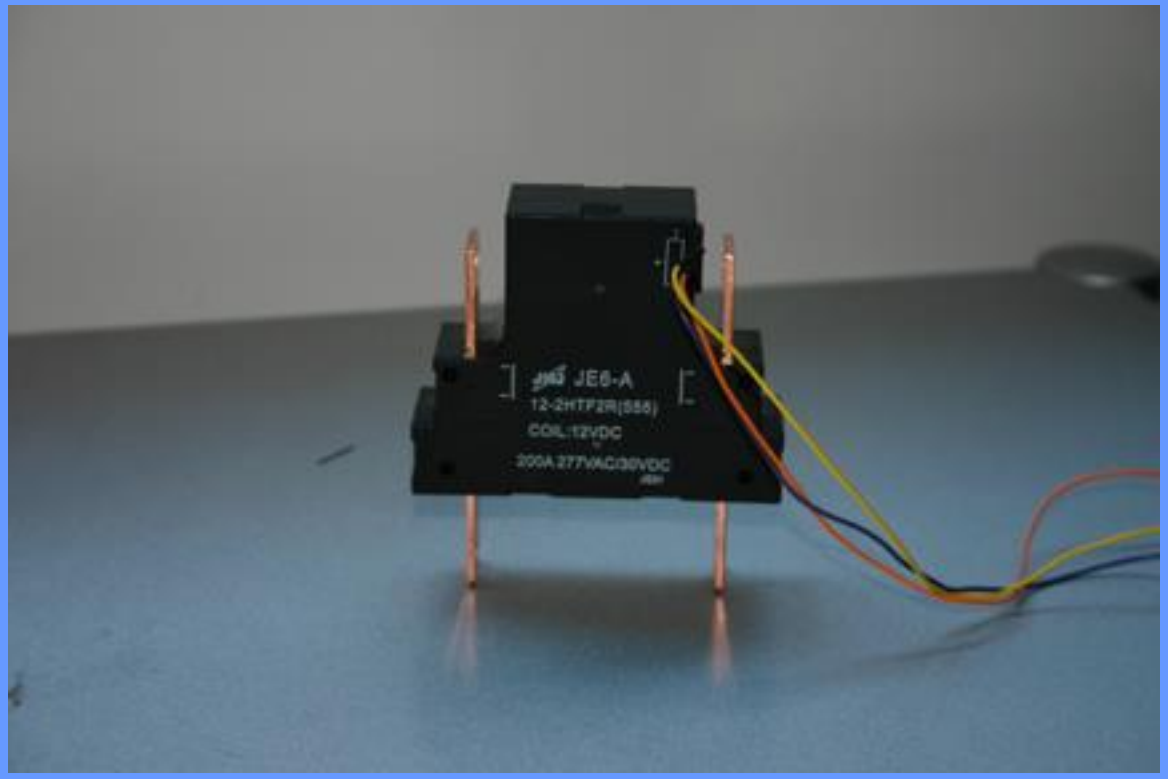


Grunner 200 Amp Relay



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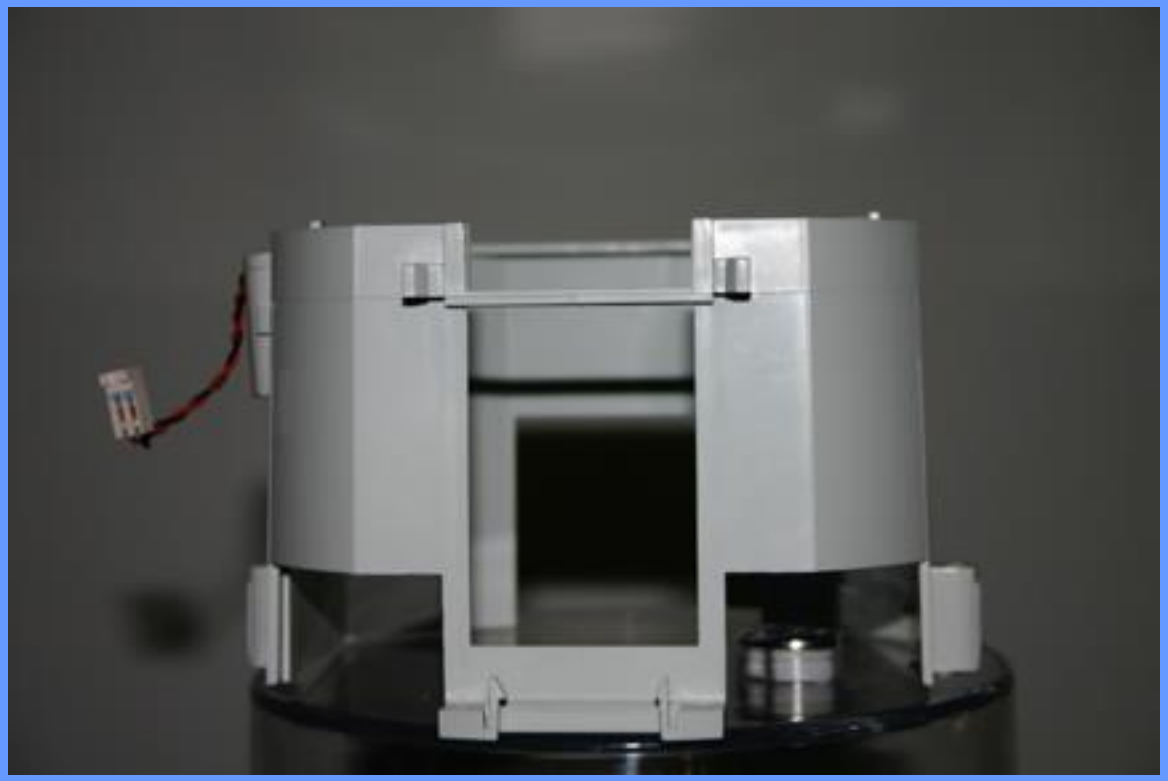

Meter Enclosure Inner Shell With Communications PCBA Mounting Slot

USCL EnergyCite Meter Sample

EnergyCite Meter with ANSI Optical Port and Matting Optical Interface for PC or Hand Held Data Terminal

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EMS-2020 Running on PC

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EMS-2020 Running on Palm Pilot

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EMS-2020 Real Time Burn rate Screens

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EMS-2020 Budget Screen

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EnergyCite Meter Base for 3 Phase Applications

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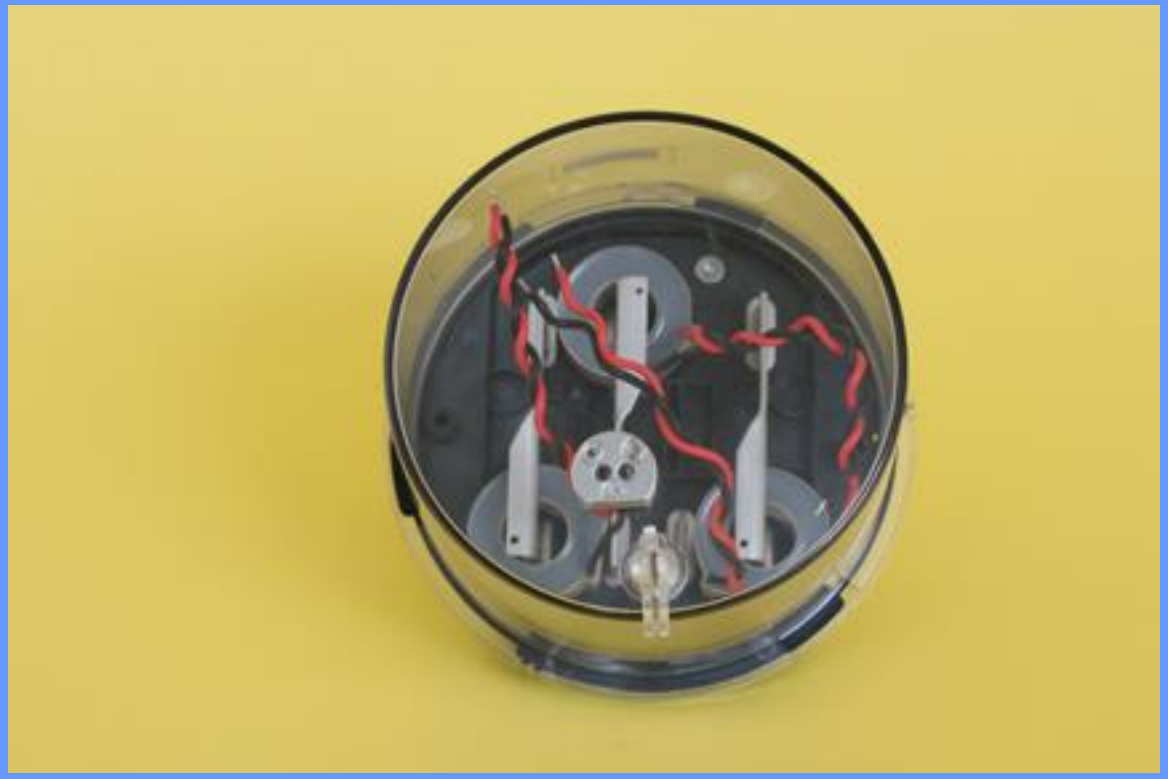

EnergyCite Meter with 3 Phase Current Transformer Configuration

EnergyCite Meter with 3 Phase Current Transformer Configuration