CYBER◯SWITCHING®

Emerging Energy Code Mandates for Submetering

Smart Submeters ›

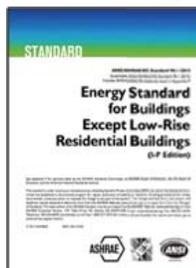**Emerging energy codes recognize submetering is a key energy efficiency strategy**

Mandatory submetering requirements help achieve energy-efficiency policy goals, including greenhouse gas emission reductions, decreased energy consumption, and net zero energy performance.

Building energy codes like ASHRAE 90.1-2013, the national reference standard, and leading state-specific codes like California's Title 24, continue to evolve. The newest code revisions both contain new submetering provisions.

ASHRAE 90.1-2013 REQUIREMENTS

As the national reference standard, ASHRAE 90.1 sets the minimum acceptable level for all nonresidential construction nationwide. New construction requires:

- Total electrical energy
- HVAC systems
- Interior lighting
- Exterior lighting
- Receptacle circuits

STANDARD

Energy Standard for Buildings Except Low-Rise Residential Buildings (I-P Edition)

ASHRAE · ANSI

For multi-tenant buildings, these loads must be separately monitored both for the total building and for each tenant (excluding shared systems). In addition, the code requires specific recording and reporting of energy data:

- Automatically record energy use at least every 15 minutes
- Report use at least hourly, daily, monthly, and annually
- Provide subtenant energy data to each individual tenant
- Retain energy data at least 36 months

Solution Highlights

- **Solutions break through previous price-performance barriers**
- **Compliant with California Title 24-2013; ASHRAE 90.1-2010 and 90.1-2013 requirements**
- **Integrates with Cyber Switching line of Demand Response and Motor Control Products**
- **Flexible and scalable system architecture simplifies future expansion**
- **Easy installation; Cat6 wiring outside the electrical cabinet or subpanel**
- **Optional software modules for tenant billing or automated demand response**
- **Revenue grade performance reliability**
- **Calibrated for meter accuracy to better than 0.2%**

CALIFORNIA TITLE 24-2013 REQUIREMENTS

A recognized influencer in future code development, Title 24-2013 includes some important mandates:
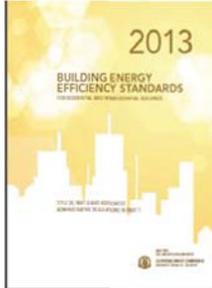
- Metering electrical loads with specific data points dependent on service size.
    - o Services < 250 kVA: instantaneous kW demand, resettable kWh
    - o Services from 250-1000kVA: instantaneous kW demand, resettable kWh + historical peak demand
    - o Services > 1000 kVA: instantaneous kW demand, resettable kWh, historical peak demand + kWh per rate period

- Disaggregated measurement of electrical load energy use
    - o Services > 50 kVa: specific load types must be individually monitored
    - o Higher service levels, specific load types may also be required to be measured by floor, type, or area (specifically, lighting, HVAC, plug loads, and renewable generation sources)

- Demand responsive controls and equipment
    - o Equipment capable of receiving and automatically responding to at least one standards based messaging protocol which enables demand response after receiving demand response signal.

FLEXIBLE SOLUTIONS FOR TODAY AND THE FUTURE

Cyber Switching's smart submetering solutions satisfy these emerging code requirements while still providing a future-proof technology platform that can scale to meet customers' current and future needs with easy software upgrades.

Featuring a modular distributed architecture, Cyber Switching solutions build upon smart submetering modules that can easily be installed in electrical cabinets or accessory enclosures. The basic submetering system provides real-time monitoring of vital data points such as instantaneous kW demand and resettable kWh. The advanced system provides recording and reporting capabilities via a proprietary communications network and intuitive dashboard.

Scalable at every level, customers can easily add submetering modules and hubs to accommodate physical expansion. Optional software modules are available for a variety of objectives, including tenant billing and automated demand response. With this kind of flexibility, building owners and operators can easily adjust operations to maximize the energy performance at every level of development. While today's need may be only for code-compliant energy monitoring, tomorrow's objectives may focus on enhancing power quality and reliability. Only the Cyber Switching solution provides a platform that embraces the entire spectrum of energy performance, from efficiency to reliability and quality.

About Cyber Switching
Headquartered in Silicon Valley, Cyber Switching began pioneering power distribution technologies in 1994. Fueled by an entrepreneurial leadership team and dedicated staff, the company continues to engineer innovative and technically advanced solutions for the rapidly evolving power and energy challenges faced by enterprises of all sizes.