ZigBee Smart Energy Features

Metering Support:
- **NEW** - Meter swap outs
- Multiple commodities including electric, gas, water, and thermal
- Multiple units of measure for international support
- Battery or mains powered
- Multiple measurement types such as load profile, power factor, summation, demand, and tiers
- Real-time information
- Historical information (previous day, today, etc.)
- Status indicators including tampering
- Ability to record both generation (delivered) and consumption (received)

**Text Message Support:**
- Scheduling and canceling of messages
- Ability to request message confirmation
- Unregistered devices allowed to request and receive messages
- Multiple urgency levels
- Optional message duration for short-lived messages
- Support for multiple international character sets

**Demand Response and Load Control Support:**
- Scheduling of multiple events
- Auditing of event enrollment, participation, and other actions
- Ability to individually or simultaneously target specific groups of devices including HVACs, water heaters, lighting, electric vehicles, and generation systems
- Multiple control methods including temperature set points and offsets, criticality levels (such as emergency signals) and duty cycling
- Ability to randomize start and end times to avoid spikes

**Pricing Support:**
- **NEW** - Block tariffs (inclining/declining block rates)
- **NEW** - Prepayment
- Multiple commodities including electric, gas, water, and thermal
- Multiple units of measure for international support
- Multiple currencies for international support (using ISO 4217)
- Unregistered devices allowed to request and receive pricing information
- Support for multiple providers and rates in a single location
- Support for price ratios and price tiers
- Support for separate generated (delivered) and consumed (received) prices

**Preliminary Device Support:**
- Meter-integrated or standalone energy service portals
- In-premise displays including low-cost, standalone devices such as refrigerator magnets and energy orbs
- Programmable communicating thermostats (PCT)
- Generic load control devices for appliances such as water heaters, lights and pool pumps
- Smart appliances
- Electric vehicles and plug-in hybrid electric vehicles
- Energy management systems
- Range extenders

**Security:**
- Support for utility registration and utility-only networks
- Automatic, secure network registration using either pre-installed keys or ECC certificate exchange
- Support for ECC public key infrastructure for authentication and mobility
- Data encryption

**Other:**
- **NEW** - Tunneling of manufacturer specific protocols
- **NEW** – Over-the-air updates
- **NEW** – Backwards compatible with ZigBee Smart Energy version 1.0 ZigBee Certified products
- Time Synchronization provided by ESP
- Designed for easy upgrade and adaptability within version 1.x

*NEW features found in ZigBee Smart Energy version 1.1*