



Advanced Metering System (AMS) Update

Fall 2008 REP Presentation

Oncor Electric Delivery

Today's Presentation Will Cover Several Areas:



- **Background and Overview**
- **Meter Deployment Plan and Schedule**
- **IT and Functionality Schedule**
 - **Permanent**
 - **Interim**
- **Customer Education and Low Income Customers**
- **Major Challenges**

What an Advanced Metering System is



- **Provides 15 minute interval data available on a historic “day after” basis**
 - **Approximately 3000 reads per month vs. a historic 1 read per month**
- **Demand side management opportunities**
 - **Ability to provide pricing signals to customers**
 - **Control of selected appliances and equipment via a home area network (HAN) using ZigBee SmartEnergy profile**
 - **Provide energy consumption information to consumers via in-home monitors**

What an Advanced Metering System is (con't)



- **Ability to remotely disconnect/reconnect customers**
 - **Enables pre-paid retail pricing**
 - **Eliminates safety issues of employees**
- **Ability to get “on demand” readings of customer meters**
- **Ability to provide a loss of voltage signal to the distribution system**
 - **Provides data to outage monitoring system**
 - **Coordinates with distribution automation**
- **Provides a common AMS web portal for customer, REP, or authorized third party, with access to customer data**



Oncor's AMS Deployment Plan was Approved August 29 with the following Significant Provisions:

- **Full deployment by year end 2012**
- **Customer Education funding: \$15 M**
- **Low Income provision: \$10 M**
- **Residential Surcharge Adjusted to \$2.21 per Month**
- **Quick Deliverable Schedule for Some Functionality**

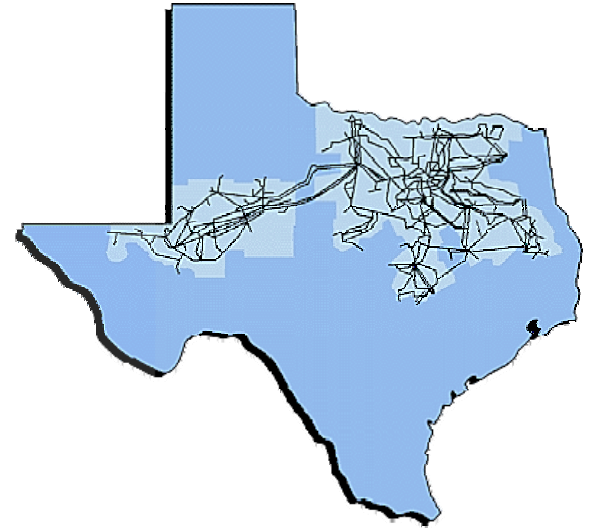
Plans and Schedule

Oncor has Several Milestones to Meet During Deployment

- **Provide 15 minute non-VEE (validation, editing, estimation) data and daily register data via FTP (December 31, 2008)**
- **Provide ESIID listing of AMS meters and whether meter is RF (radio frequency) or PLC (powerline carrier)- (January 31, 2009)**
- **Support HAN functionality between one device and the meter (March 31, 2009)**
- **Support TOU (time of use) functionality for existing profiles (May 1, 2009)**
- **Support prepaid electric service (June 1, 2009)**
- **Support 15 minute VEE data to ERCOT and REPs (July 1, 2009)**
- **Support common AMS web portal functionality (January 31, 2010)**

Oncor's Diverse Service Territory is Best Served by a Multiple Technology Approach

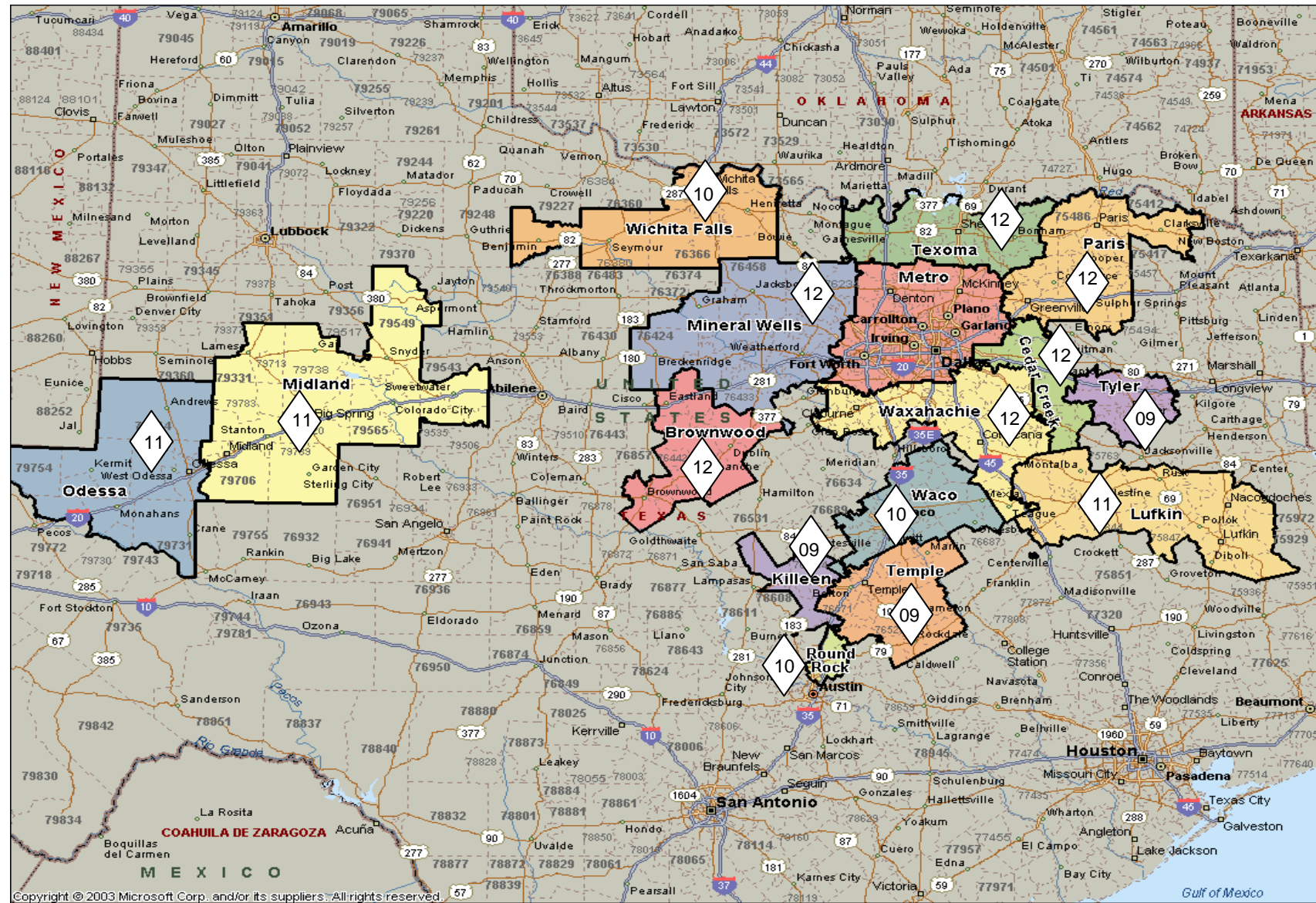
- **Radio Frequency (RF) will be used for the urban/suburban areas**
 - Landis + Gyr (formerly Cellnet + Hunt)
 - 900MHz mesh network
- **Powerline Carrier (PLC) will be used in hardest to reach (i.e. rural) areas**
- **Concurrent deployment paths – one urban and one rural**



Oncor AMS Deployment Plan (Non-Metro)



Number in diamond represents year of completion of deployment (e.g., 12 = 2012)



AMS Deployment Plan Timeline



Number of advanced meters to be deployed (in thousands)

Deployment Area	2008-2009	2010	2011	2012
Metro	472	552	552	555
Non- Metro	219	350	350	347
Period Total	691	902	902	902
Cumulative Total	691	1,593	2,495	3,397

At least 180,000 installed by June 2009

Customer Education and Monitors for Low Income Customers

Oncor Plans to Conduct a Thorough Customer and Stakeholder Education Program



SMART TEXASSM rethinking energy

Focus will be on benefits to the individual:

- Putting control in the hands of consumer
- Ability to have positive impact on environment

Target audiences include:

- End use customers
- Retail electric providers
- Local and state officials
- Community-based outreach groups

Campaign will emphasize interactive touch/feel

- Solid outreach program aimed to promote understanding of AMS
- Host local site events across Oncor system to educate general public

Oncor's SMART TEXAS Program and Mobile Experience Center (MEC) –

- **Mobile Experience Center – from concept to delivery in 45 Days**
- **MEC will visit communities corresponding to AMS rollout**
- **Regulatory, Legislative, and Board visits**
- **Strong interest by others utilities to support customer education**
- **Recent Venues Include:**
 - **East Texas State Fair – Tyler**
 - **Heart of Texas Fair – Waco**
 - **Central Texas State Fair – Belton**
 - **Texas State Fair – Women's Museum "Green Home" Sponsorship**
 - **See www.oncor.com for upcoming schedule under Technology & Reliability**



Oncor's Plans Include Ways to Enable Consumers to Make an Impact Soon

- **Surcharge will include ~\$10 M to fund the provision of the in-home monitors to low income or hard to reach consumers**
- **Studies have shown that merely providing consumers with real time feedback can have up to a 5% impact on consumption**



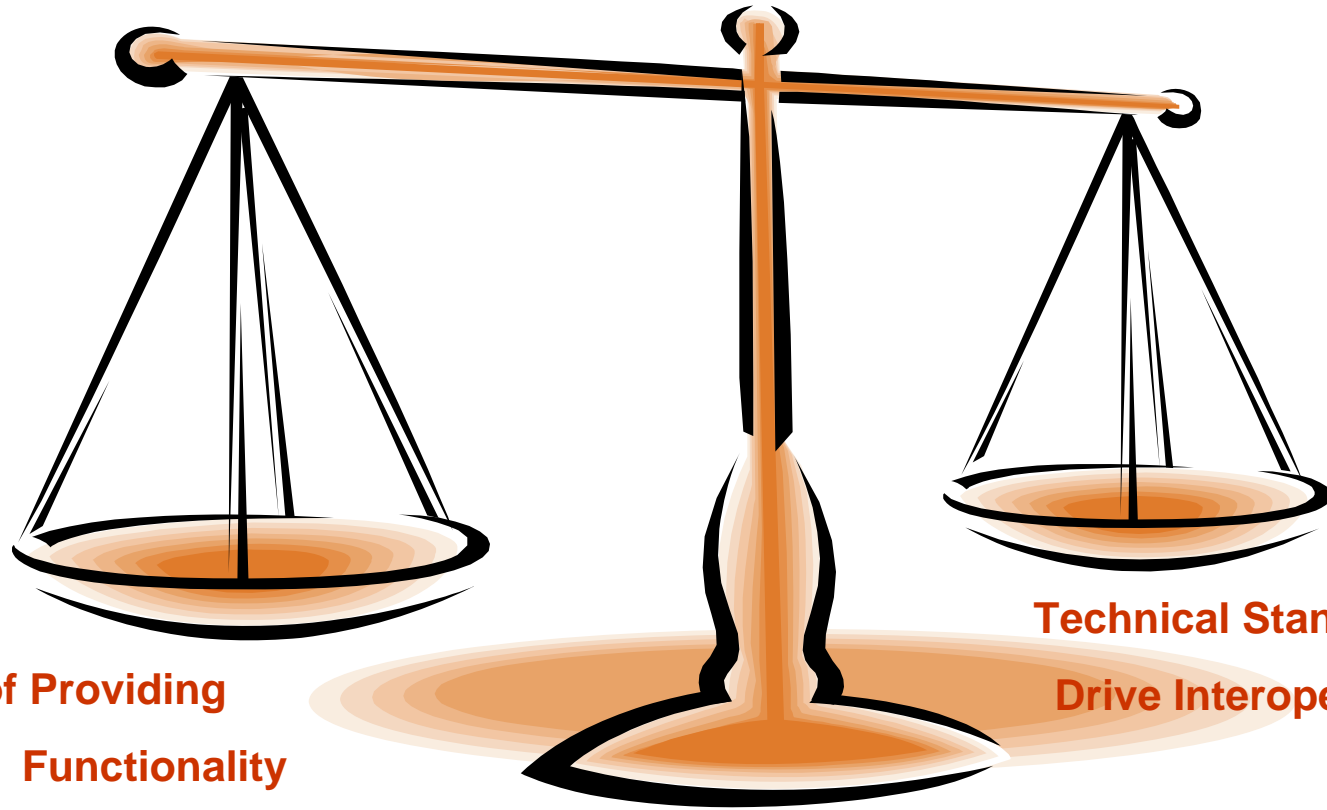
- **For those that attend the local events, Oncor will give away Compact Fluorescent Lamps**
- **Monthly savings from replacing one 100 W incandescent bulb with a CFL will fund the surcharge**

Major Challenges



- **Security**
- **Bandwidth/ System Usage**
- **Functional Desires Ahead of Industry Standards; Especially Related to the Home Area Network (HAN)**

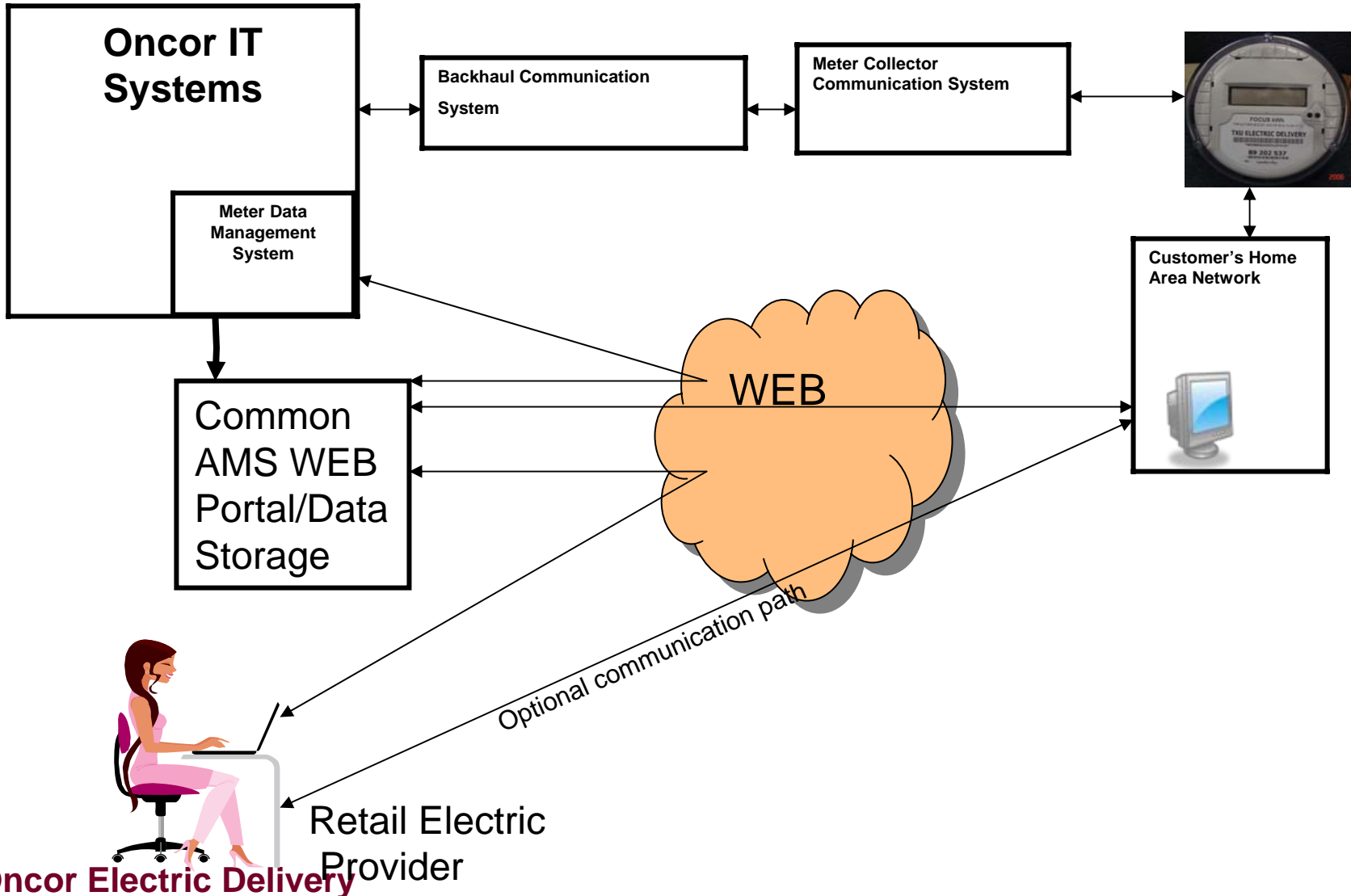
Conflicting Factors around the HAN



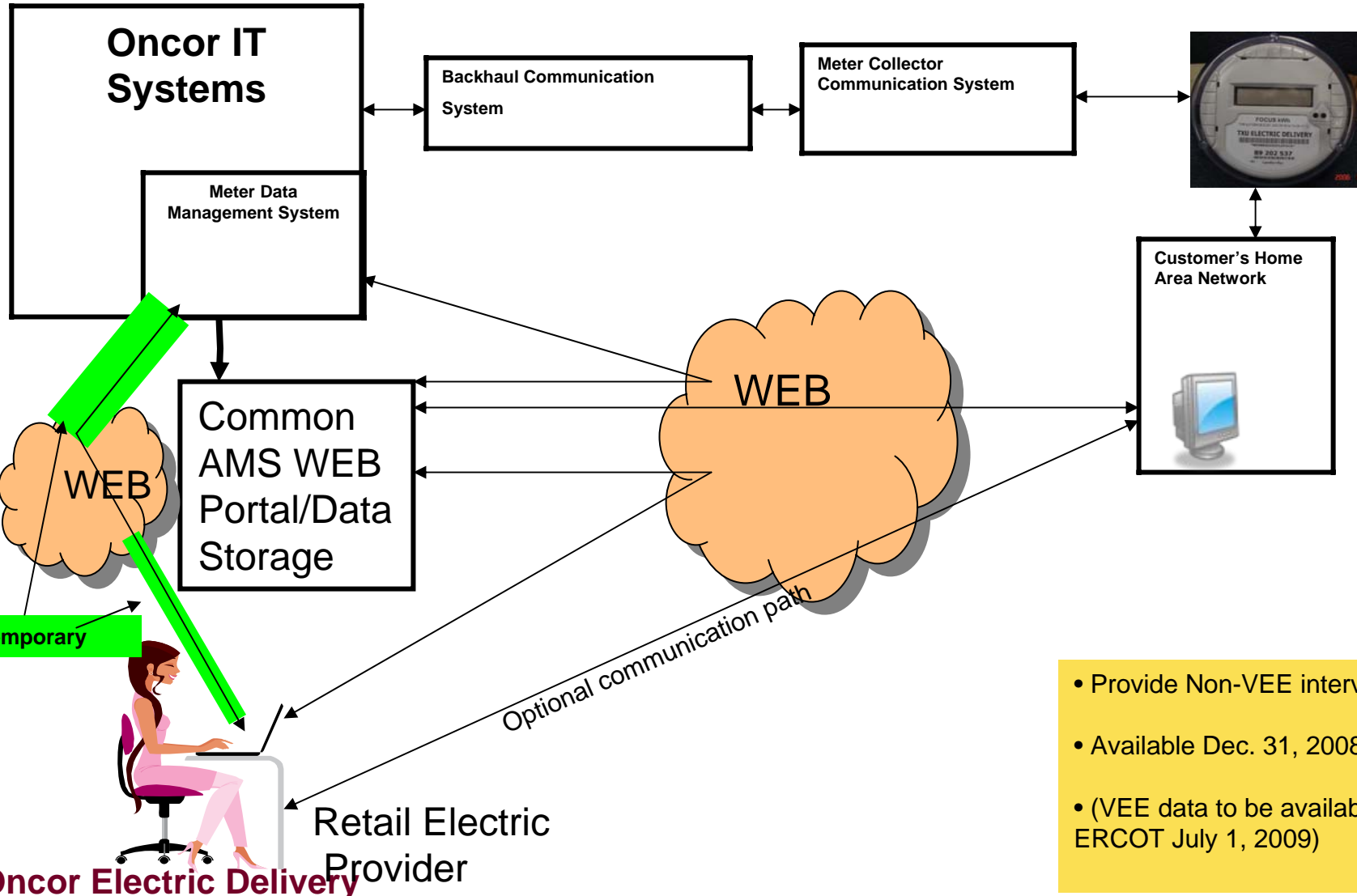
**Speed of Providing
Additional Functionality**

**Technical Standards to
Drive Interoperability**

AMS Architecture

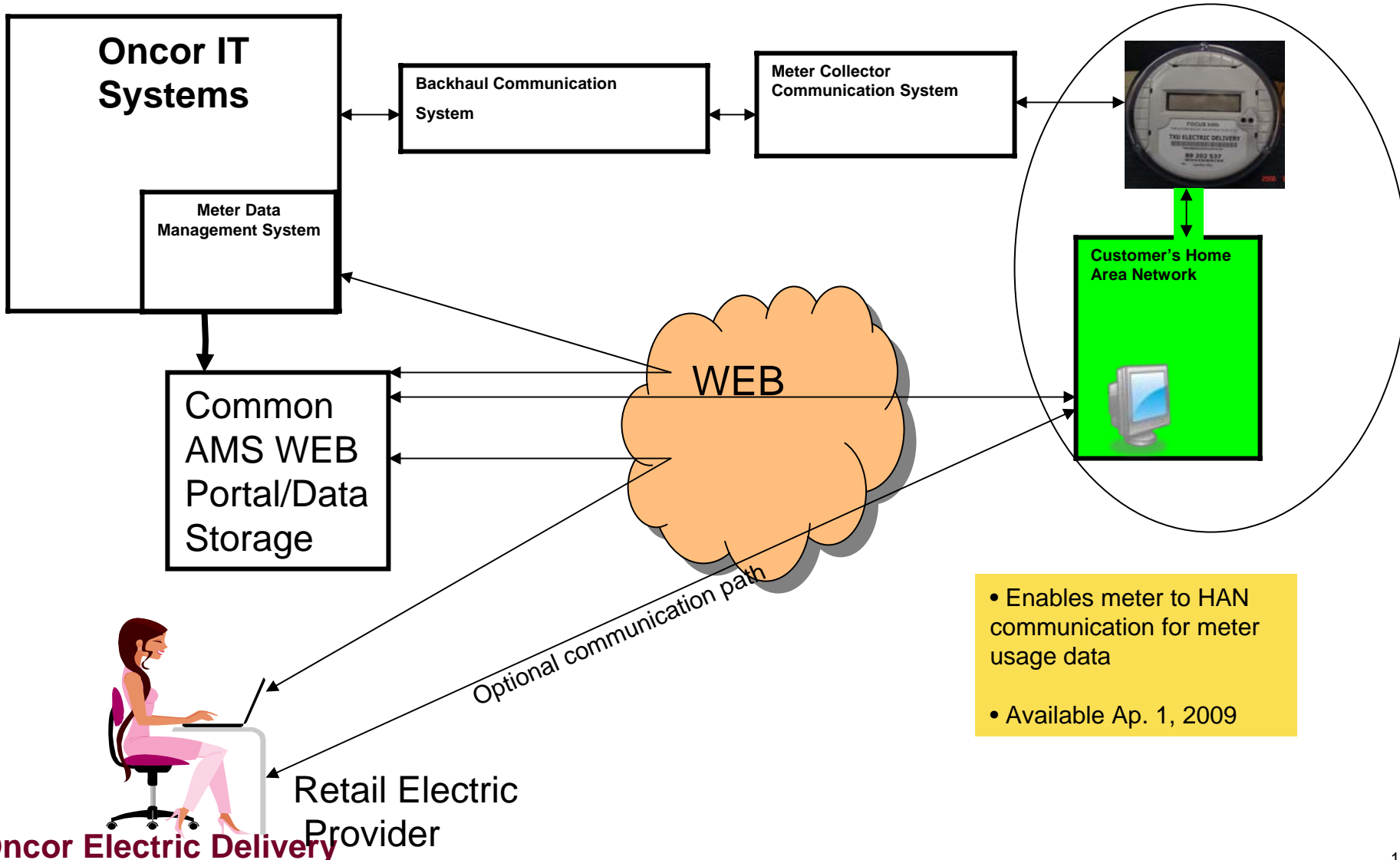


Temporary Ability to Access non-VEE Interval Data



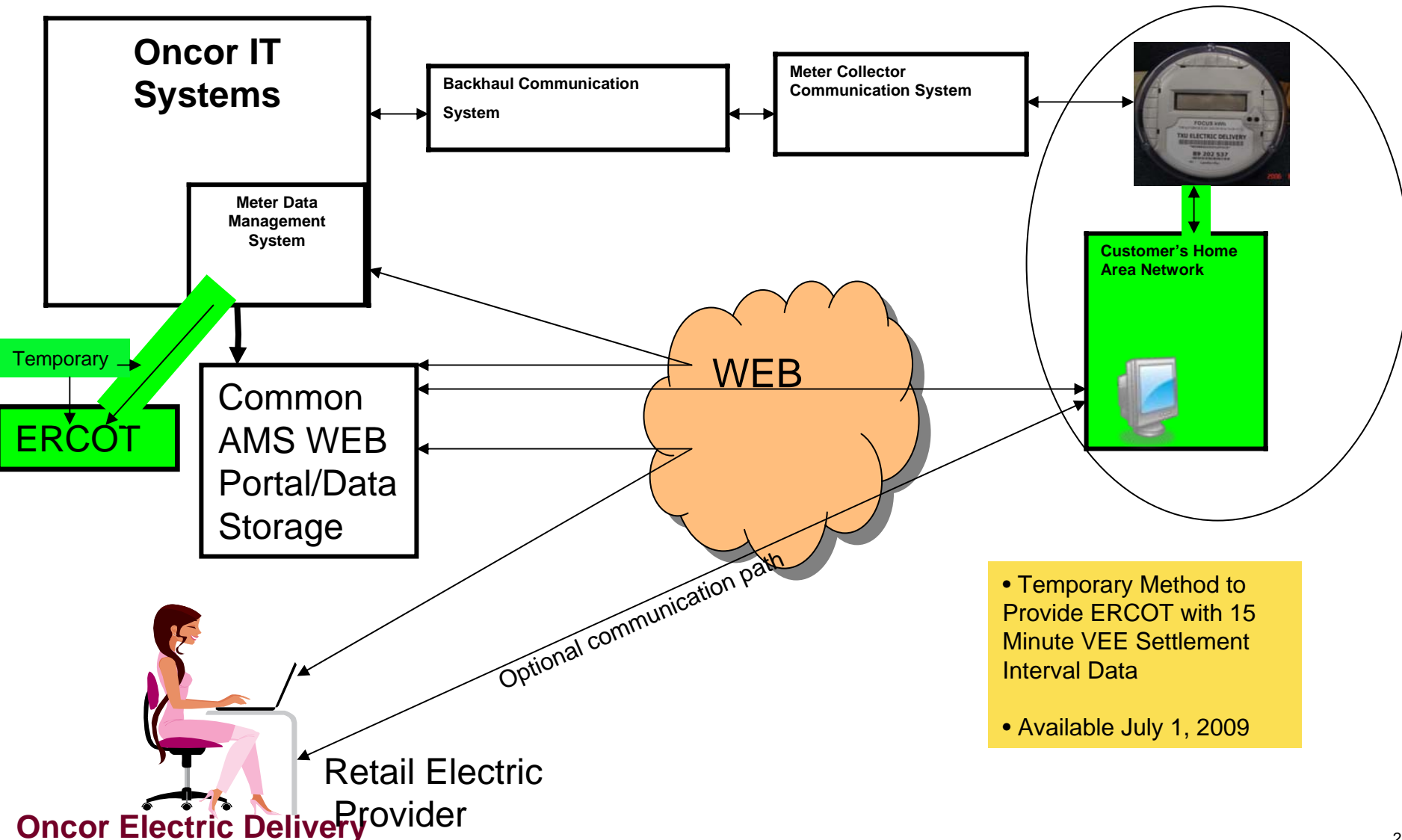
- Provide Non-VEE interval data
- Available Dec. 31, 2008
- (VEE data to be available to ERCOT July 1, 2009)

Meter to HAN Connectivity

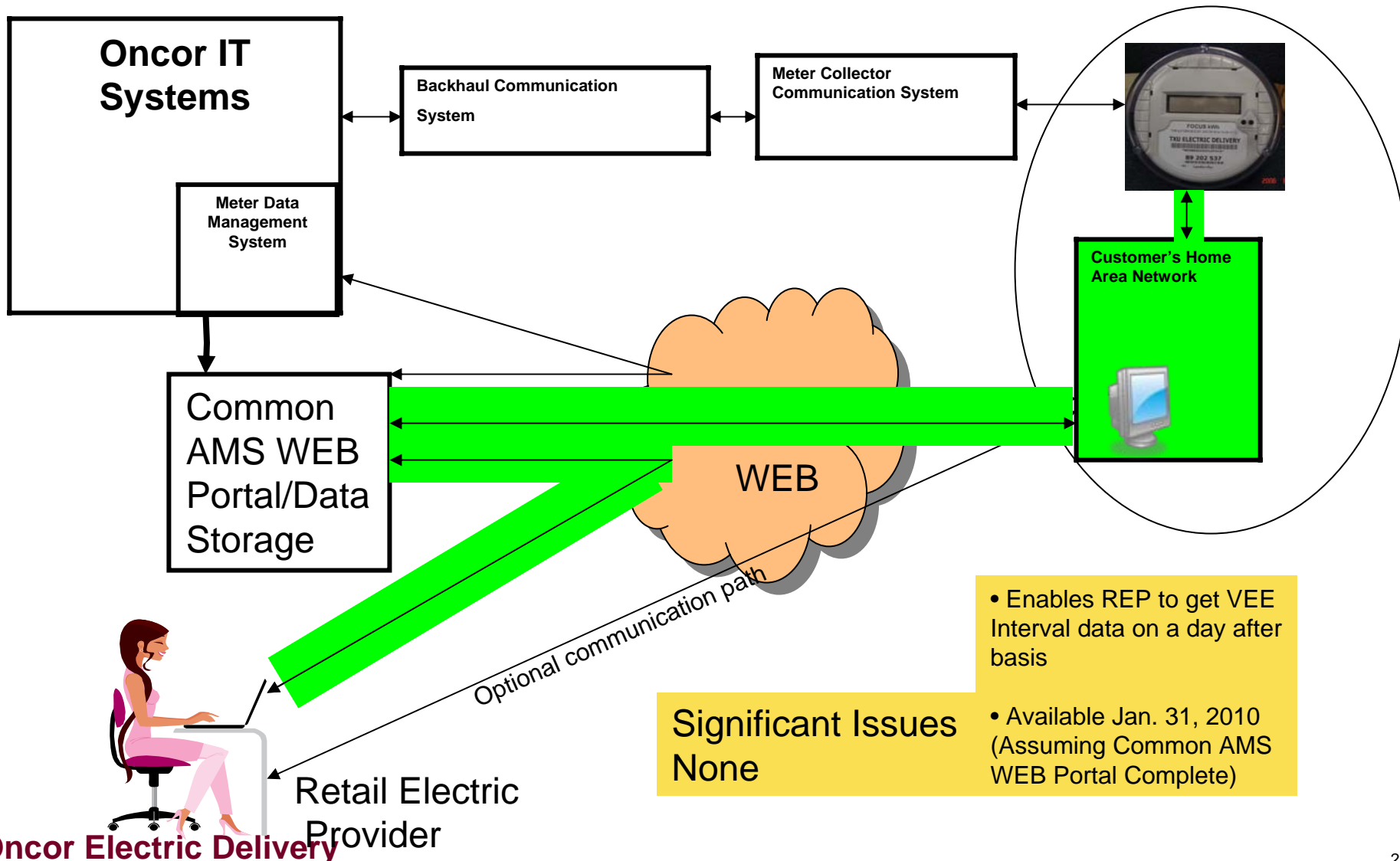


- Enables meter to HAN communication for meter usage data
- Available Ap. 1, 2009

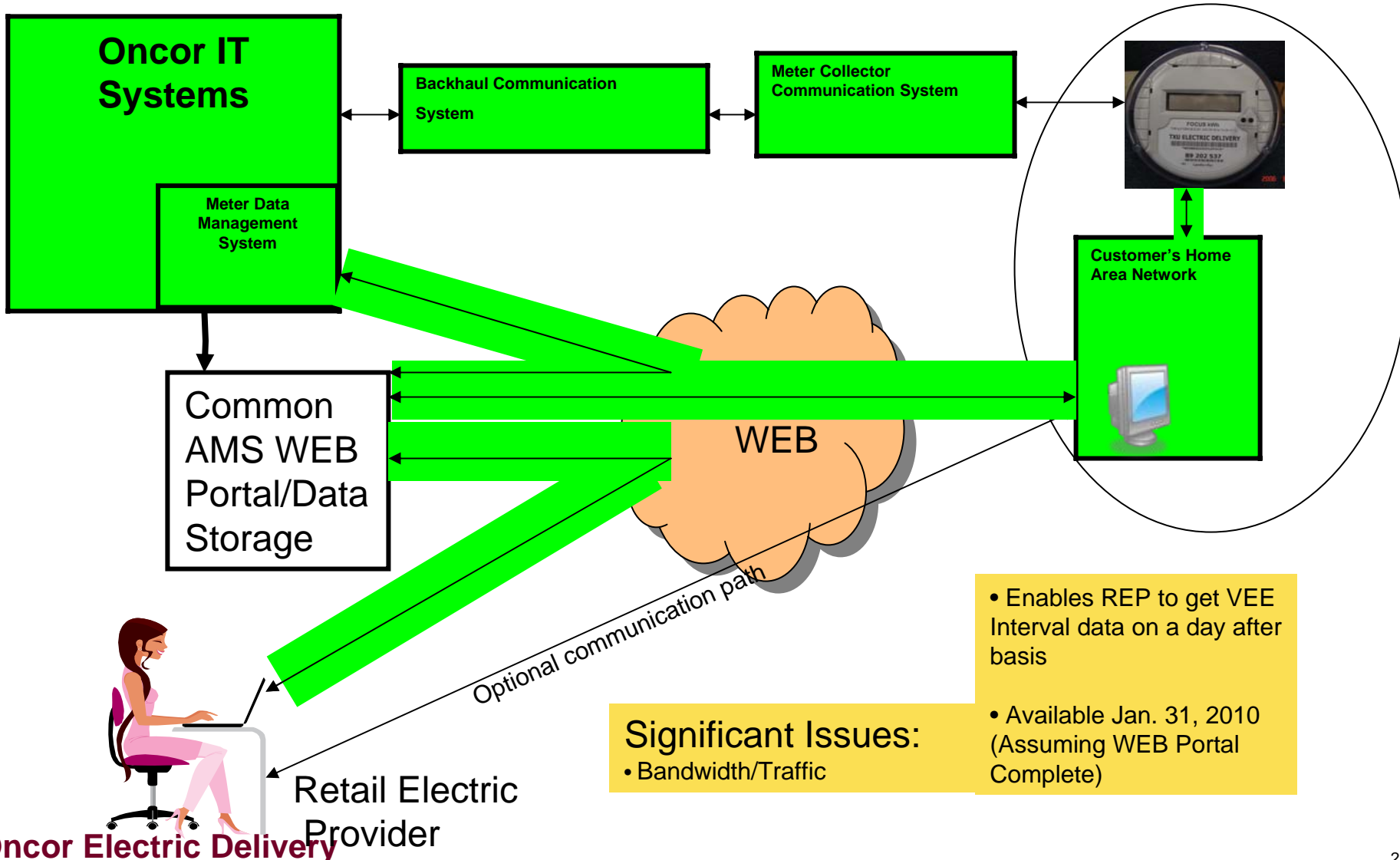
Providing VEE 15 Minute Interval Data to ERCOT



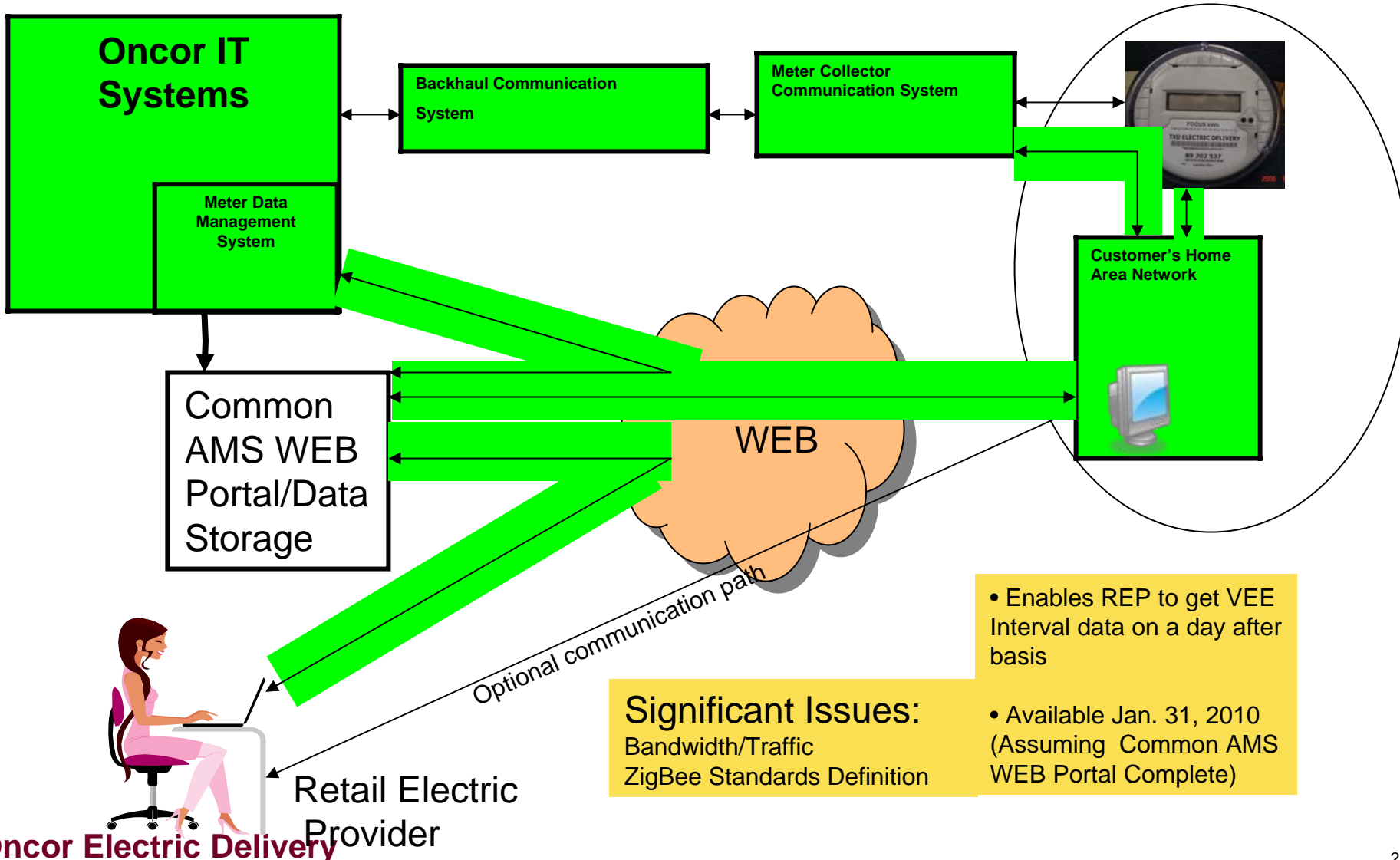
REP/Customer to Meter Data Connectivity



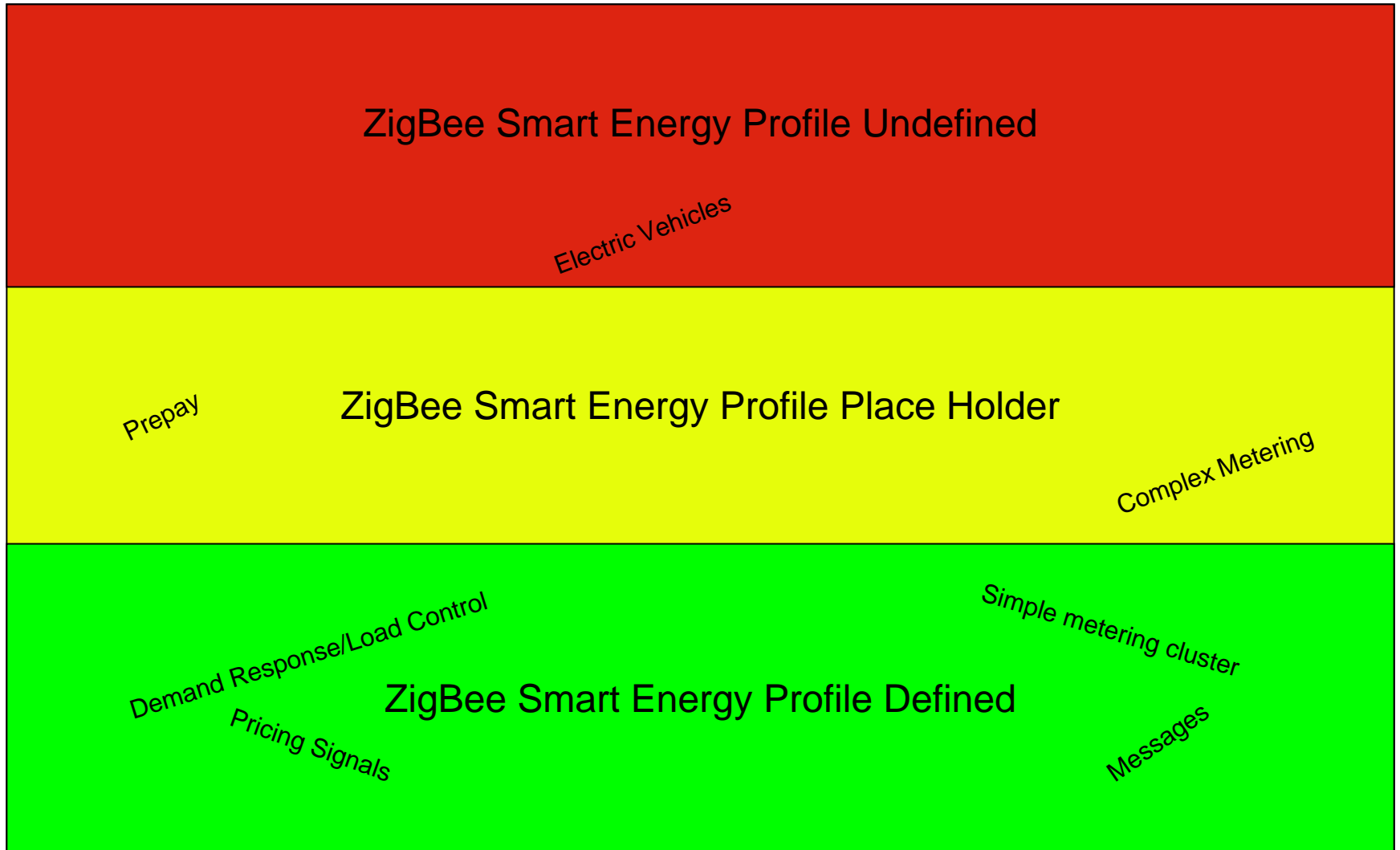
REP to Meter Connectivity



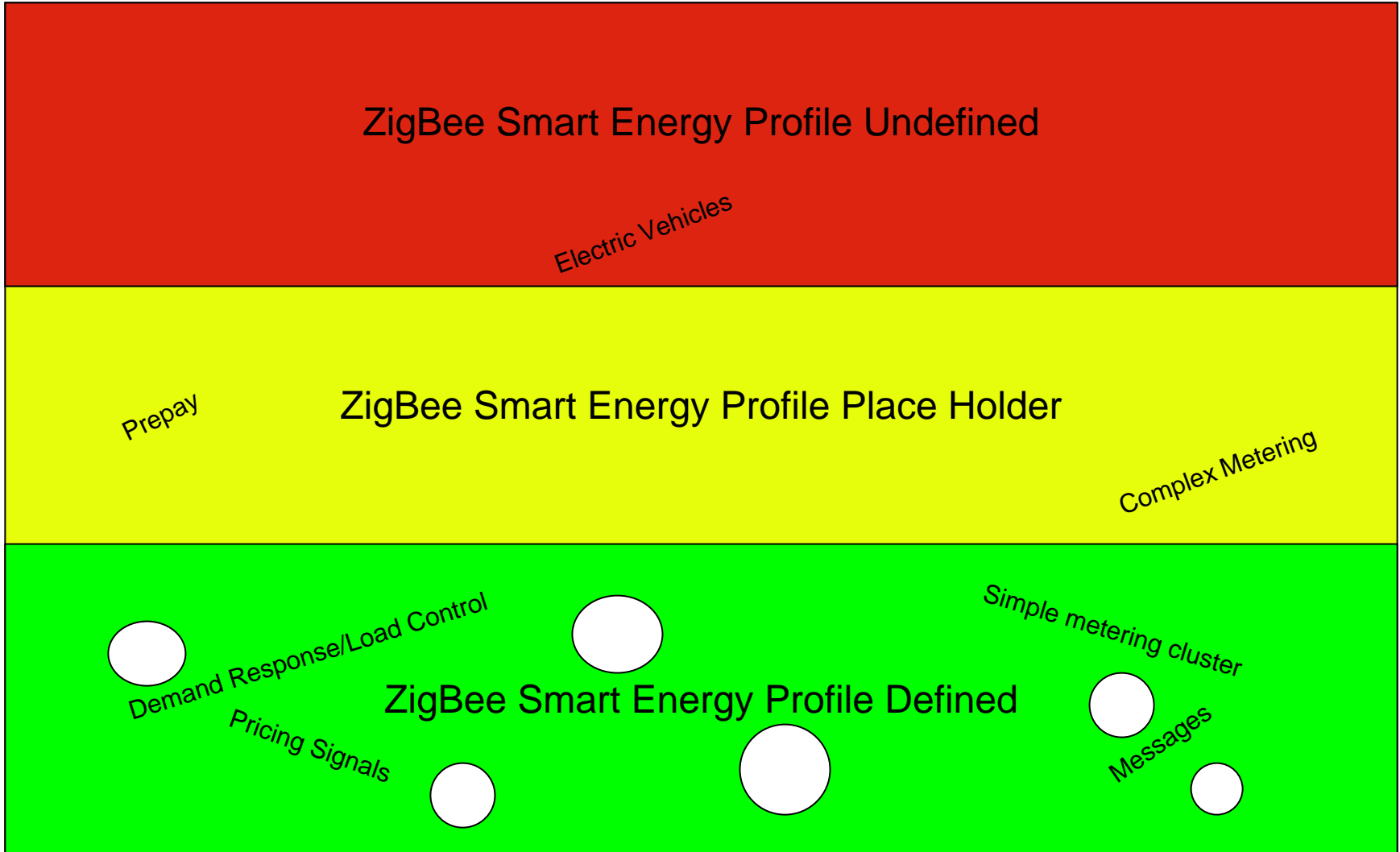
REP to HAN Connectivity



HAN Functionality Compared to Market Desires



Unfortunately Gap Exists in the Defined Areas





Oncor is Committed to the Success of AMS and Needs to Maintain:

- **Good Plans**
- **Good Industry Participation**
- **Good Communications**
- **Good Market and Industry Partnering**

Questions ?