

# The Smart Grid ....

## Vision for a New Electric Utility Industry

### Leesburg's Approach to Smart Grid Deployment

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# Leesburg Overview

- 23,000 electric customers, also provide natural gas, water & advanced fiber optic services.
- 9,700 (42%) AMR electric – 18,900 (34%) AMR total meters.  
(Discontinued further AMR deployment 2007)
- 140 residential electric meter AMI pilot deployed January 2008.
- Completed AMI business case December 2009.
- \$19,500,000 SGIG, 50% from DOE.
- \$1,240,000 EECBG from State of Florida.
- “AMI and related technologies” proposal evaluation.

# Where Should We Start?

- While all electric utilities are all similar we are not all alike.
- Two common entry points are Metering and Distribution Automation.
- Leesburg started with a Vision.
  1. Developed a Vision.
  2. Identified four broad Goals.
  3. Focused efforts to develop Strategies to support the Goals.

# Leesburg's 2020 Vision

Leesburg will operate the best and most secure electric grid available in the country by the year 2020 by incorporating information and control technologies that can support four goals:

1. Empowering customers.
2. Rewarding energy efficiency and conservation.
3. Improving distribution reliability and resiliency.
4. Expanding the use of renewable energy, distributed generation, and alternative technologies.

# Focus - Empowering Consumers

## AMI Related Technologies

- Advanced Metering Infrastructure (Focus: Consumer Needs not Technology)
- Smart Meters.
- **Communications networks, or 2 or 3 or 4.... or more?**
- **Meter Data Management System**
- Customer Web Portal
- **Home Area Networks and In-Home Displays**
- **Information Privacy Issues**
- Programmable Communicating Thermostats
- Direct Load Control
- **Pay-as-you-go (prepaid electric service)**
- **Consumer education and information plan**
- Speakers bureau

# Focus – Rewarding Efficiency & Conservation

## Energy Efficiency & Conservation Initiatives

- **Consumer Education & Information Plan**
- Consumer Notification Communications Plan
  - Who to notify
  - When to notify
  - How to notify
- **Focus Groups to gain ideas and gauge plan acceptance**
- Propose Time Differentiated Rate Schedules designed to offer choices
  - TOU, PTR, CPP, Direct Load Control, others
- Equipment control by Utility or Consumer?
- **Load Reduction Credit Rider – for GSD customers**

# Focus – Improving Reliability and Resiliency

## Reliability and Resiliency Initiatives (Automation)

- **Cyber Security Assessment and Cyber Security Plan**
- Substation Power Transformer w/Smart Grid monitoring and control
- Distribution Transformer Monitoring
- **Communicating Sensors on the grid**
- SCADA Upgrades
- Outage Management System
- Communicating Reclosers and Faulted Circuit Indicators
- Trip Saver Cutouts (fuse saving vs. fuse blowing... how about both?)
- Integrated Distributed Generation
- **Integrated Volt/VAR Control**

## Focus – Expanding the use of Renewable Energy, Distributed Generation, and Alternative Technologies

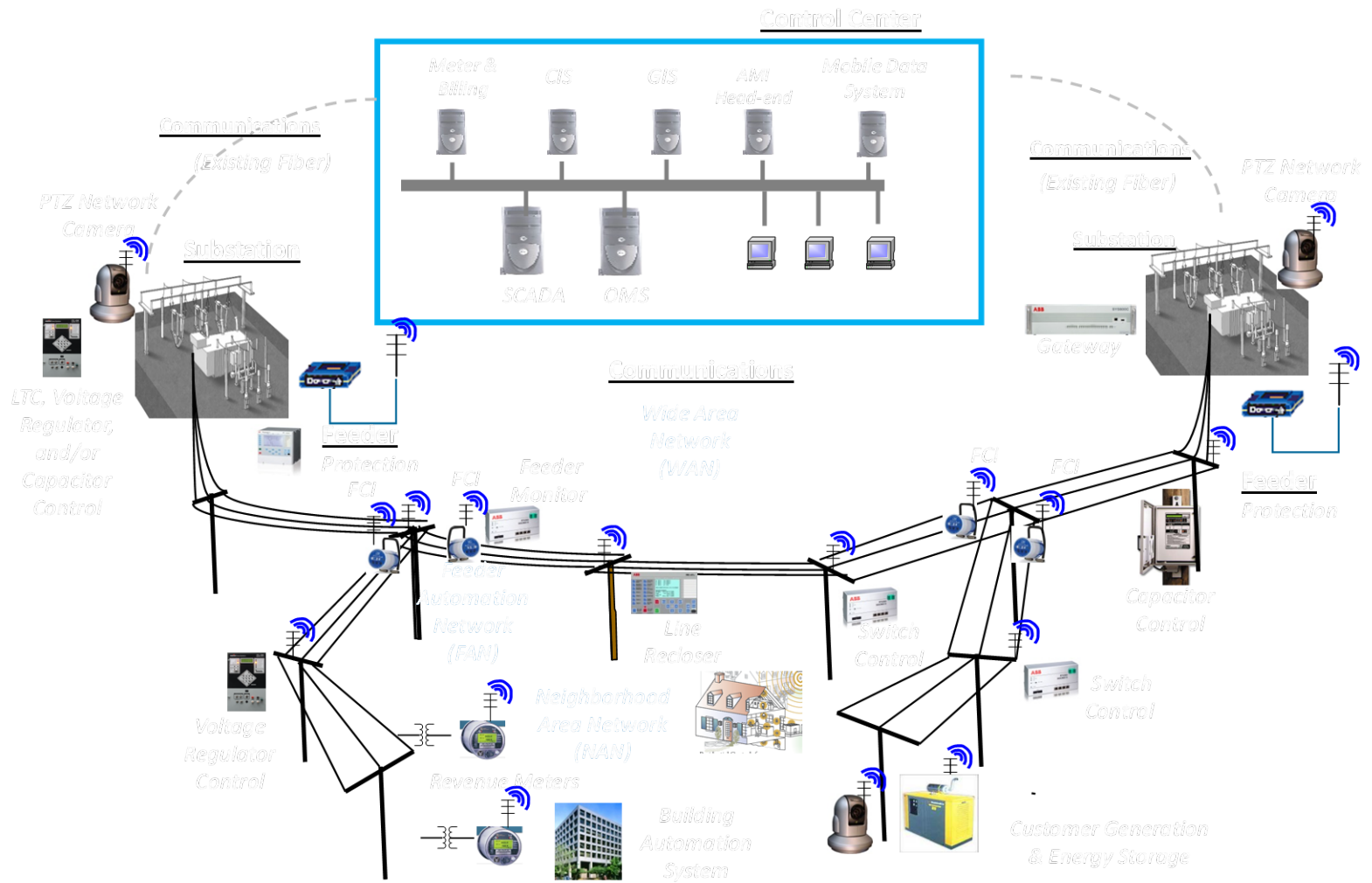
### “Preparing for the Future” Initiatives - In Progress

- Integrating customer owned Solar PV systems
- Integrated Distributed Generation – Utility and Customer
- Maximize opportunity to use wireless communications network for delivering converged services

### “Preparing for the Future” Initiatives - Future

Integrating PHEV Load and Storage  
2 MW Battery Storage at Substations  
???

# Leesburg's Distribution Smart Grid Landscape



# Closing Thoughts to Consider

- Attack your biggest issues – our needs are different
- Focus on your Consumer - not the technology
- Create a Vision and Goals - to drive your strategies
- Prepare a Business Case – you may be surprised
- Smart Grid entry points – start with what you have
  - AMI or Distribution Automation
- Learn from others – Good, Bad, and Ugly
- Replicate only the GOOD
- Your business model will change – back office impacts



Good luck, have fun and...

**HANG ON TIGHT!**

**Thank YOU**

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