

FERC /NARUC Collaborative on Smart Grid

***How Can Regulators Ensure that Investments in
Smart Grid Technologies Will Not Become Obsolete?***

Ed May

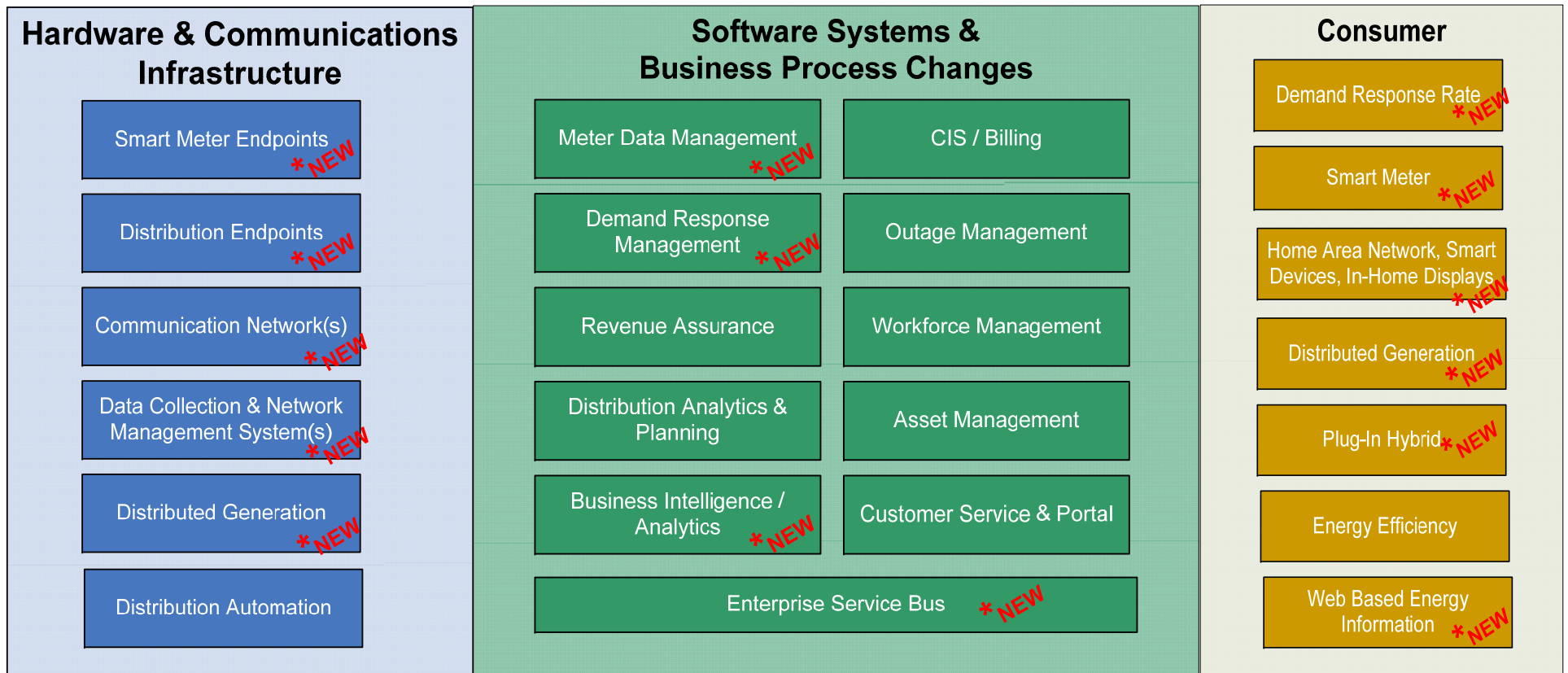
Director

AMI & Smart Grid Strategy



AMI / Smart Grid

A Transformational Endeavor



Smart Grid Standards Adoption: Utility Industry Perspective

“The grid will become “**smarter**” and more capable **over time** and the supporting **standards** must also **evolve** to support higher degrees of interoperability enabling more advanced capabilities over time. The implication of the SG evolution for standards adoption is that **at any point in time the industry will be characterized by a mix of old technology, last generation technology, current generation smart technology and “Greenfield” technology opportunities.**”

Source: [Smart Grid Standards Adoption: Utility Industry Perspective](#), OpenSG Subcommittee of the Utility Communication Architecture International User Group, and Smart Grid executive Working Group.

Inter vs Intra-system communications

- **“inter-system”** interfaces are those interfaces between the boundary of the utility’s transmission, distribution and customer systems and the boundary of another entity’s systems or devices (i.e., the interface between a utility meter and customer device, or between utility grid management system and RTO system)
- **“intra-system”** interfaces are those interfaces within the boundary of the utility’s system of transmission, distribution and customer systems (e.g., interface between utility meter and utility communication network or utility fault detector and distribution management system).

Source: [Smart Grid Standards Adoption: Utility Industry Perspective](#), OpenSG Subcommittee of the Utility Communication Architecture International User Group, and Smart Grid executive Working Group.

Enabling New Products, Services, and Markets

“The fifth fuel”

Plug In Cars

Going Green

Energy Management

DR + Conservation

Price Response

Direct Load Control

Simple Awareness



Renewable



Home Control



Smart Thermostat



In home display

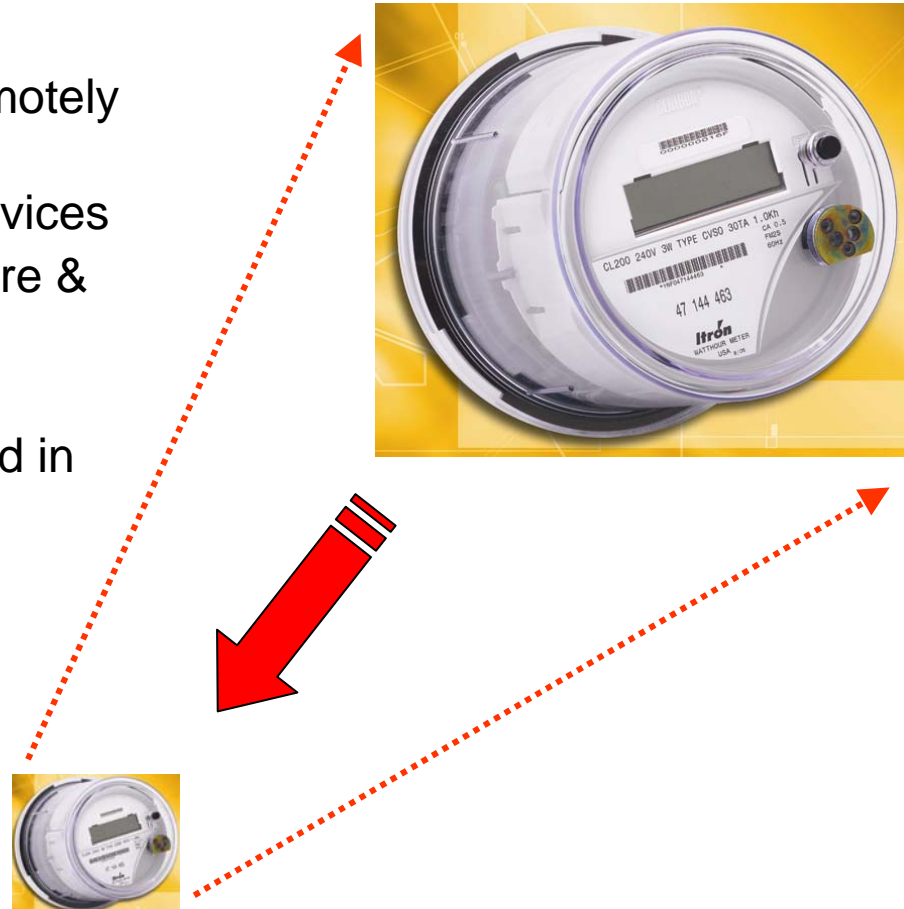
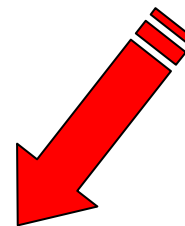
“An increasing intersection of energy information and every day decisions.”

Unknown

Transition Period to Smart Metering

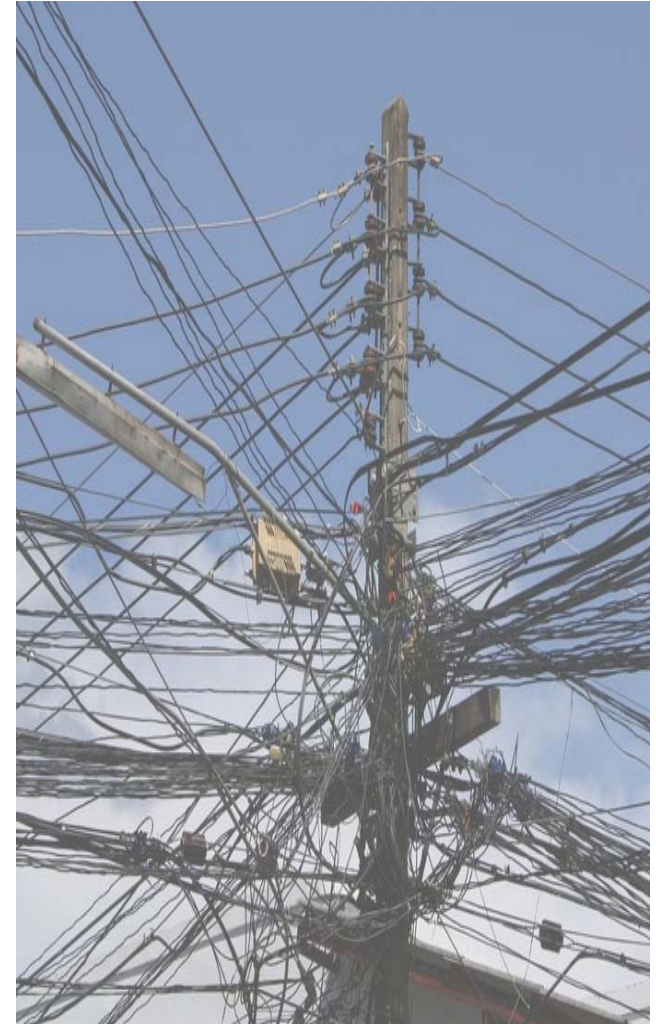
Smart Meter Characteristics:

- Firmware downloadable to the meter
- Remote connect / disconnect and remotely programmable load limiting switch
- HAN: Local connectivity to remote devices
- Remote device configuration / firmware & feature updates
- Interval data reads
- Multiple Channels Interval Data stored in the meter
- On-demand reads
- Demand reset
- CPP / TOU rate updates
- Demand response
- Tamper / theft
- Voltage
- Outage / restoration
- Security architecture



Key Priorities:

- Support and participation of the NIST process toward **SG standards**
- Clear Smart Grid **Architecture**
- Recognize that the Smart Grid will clearly be a system-of-systems
- Therefore, focus on interoperability with priority towards **Inter-System standards**
- **Adaptors**, translators, and/or proxy servers for achieving Inter-System interoperability
- New **rate structures to** enable consumer awareness, conservation, and DR
- **Cyber Security**
- **Education** and Awareness



 **Thank You.**

Ed May

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