

Illinois Smart Grid Deployment Plenary Session

Moderator: Wanda Reder

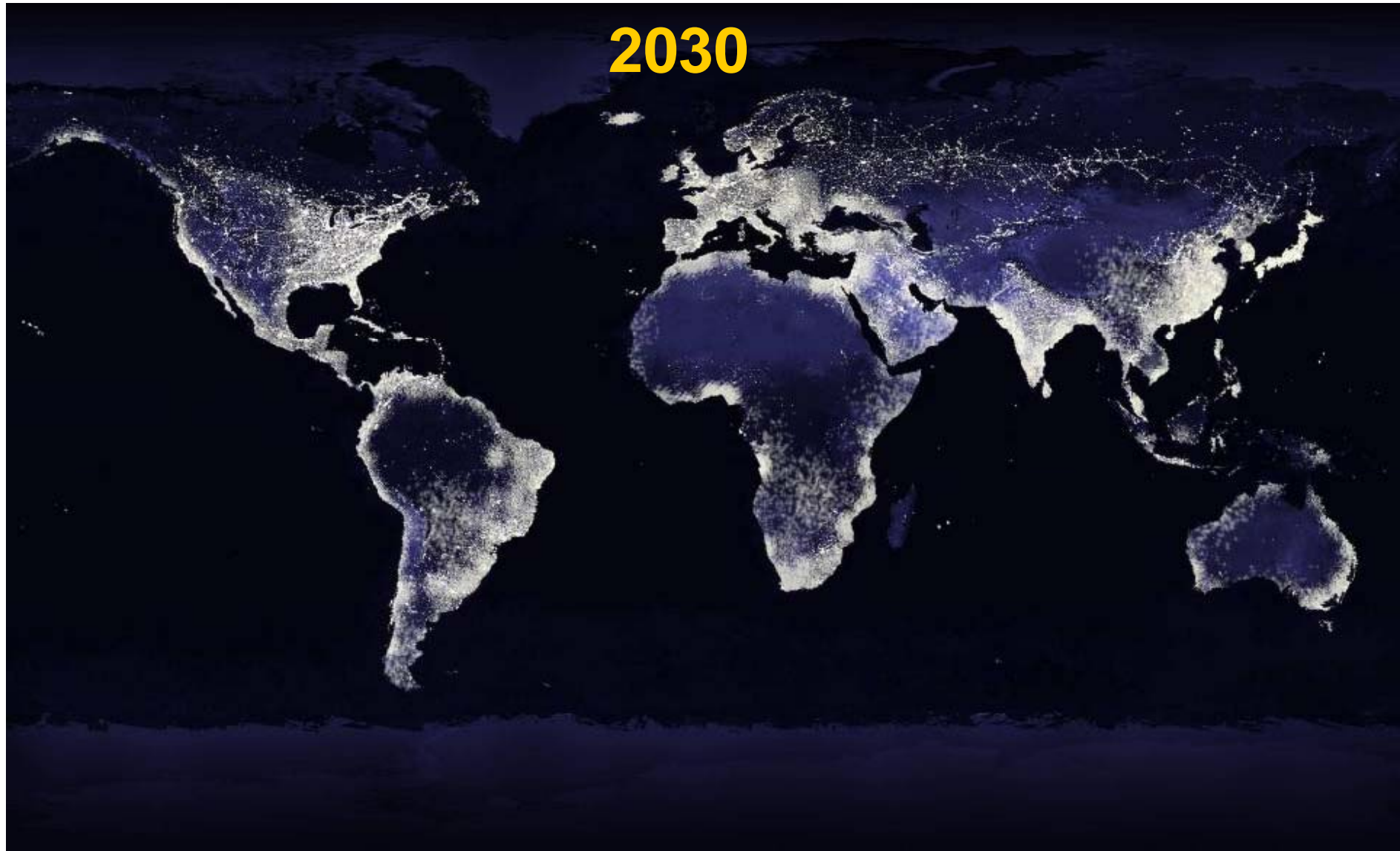
Vice President – S&C Electric Company

Chair – IEEE Smart Grid

DOE – Electricity Advisory Committee

President - IEEE Power & Energy Society President: 2008 - 2009

Electricity Demand is Increasing



Changing Power and Energy World



Growing Population, More Electronics



Rising Cost of Energy



Increasing Environmental Requirements



Escalating Security Concerns








Heightened Investor Demands

Driving Technology:

- Carbon Management
- Electric Transportation
- Sustainability
- Distributed Sources
- Efficiency
- Modernization
- Reliability

Smart Grid Technologies

| Customer Systems | Advance Metering Infrastructure | Electric Distribution Systems | Electric Transmission Systems | Equipment Manufacturing |
|--|--|---|--|--|
|  |  |  |  |  |
| <ul style="list-style-type: none"> • Displays • Portals • Energy management • Direct load controls | <ul style="list-style-type: none"> • Smart meters • Data management • Back office integration | <ul style="list-style-type: none"> • Switches • Feeder optimization • Equipment monitoring • Energy Storage | <ul style="list-style-type: none"> • Wide area monitoring • Synchrophasor Technology • Dynamic compensation • Energy Storage | <ul style="list-style-type: none"> • Energy devices • Software • Appliances |

Grid Modernization

- Addressing aging infrastructure while providing service for an emerging digital economy
 - Increase diversity of power sources
 - Increase intelligence
 - Increase communications
 - Increase control of load
- Changing business paradigms
- Requiring significant forecasted investment
 - \$880 Billion for T&D in the US by 2030 – Brattle Group, 2008
 - \$338 to \$476 Billion in the US by 2020 – EPRI, 2011

Emerging Themes

- Scaling early smart grid efforts
- Modernizing for the digital economy
- Balancing markets, consumer, regulatory, and technology
- Gaining state regulatory certainty
- Ensuring implementation readiness
- Involving consumer and community
- Many others...
 - Data management, inter-connectivity, standards, communication selection, placement of intelligence, cyber security, and workforce preparation



*Illinois Smart Grid
Legislation Approved:
Senate Bill 1652*

Panelists

Anne Pramaggiore, President and CEO
ComEd

Richard Mark, President and CEO
Ameren Illinois

Scott Lange, President and CEO
Silver Spring Networks