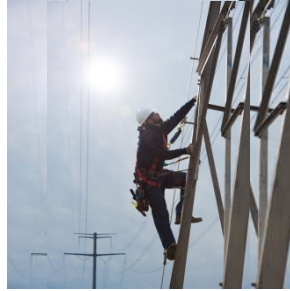


# Energy Grid of the Future & Innovation

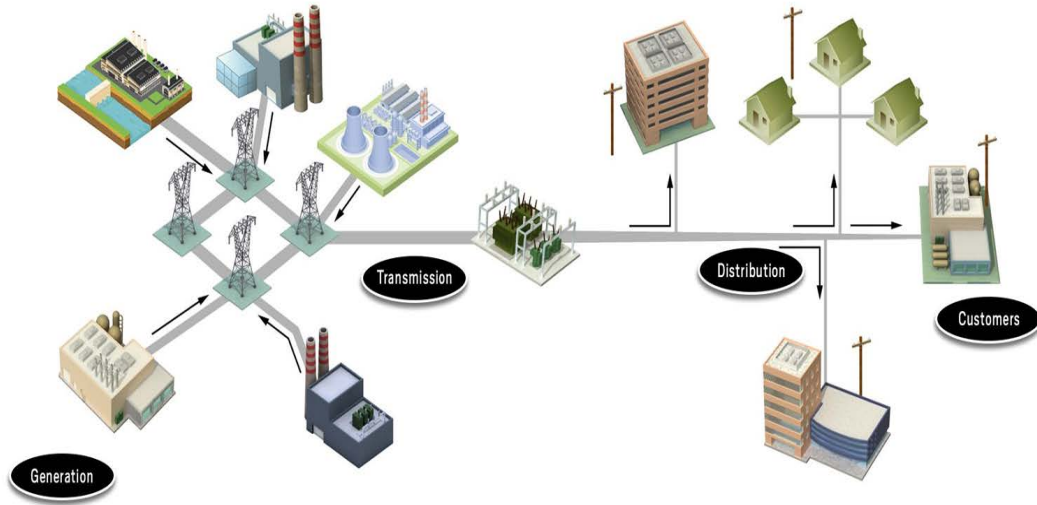


Michael Moehn - President, Ameren Missouri  
Warren Wood - VP, External Affairs & Communications  
Steve Kidwell – VP, Corporate Planning

December 20, 2017



# The Energy Grid Today



# Evolving Customer Needs/Expectations/Segments

## Industry Transformation

- Customer Engagement & Expectations
- Integrated Grid
- Distributed Energy Resources
- Electrification

## Digital Transformation

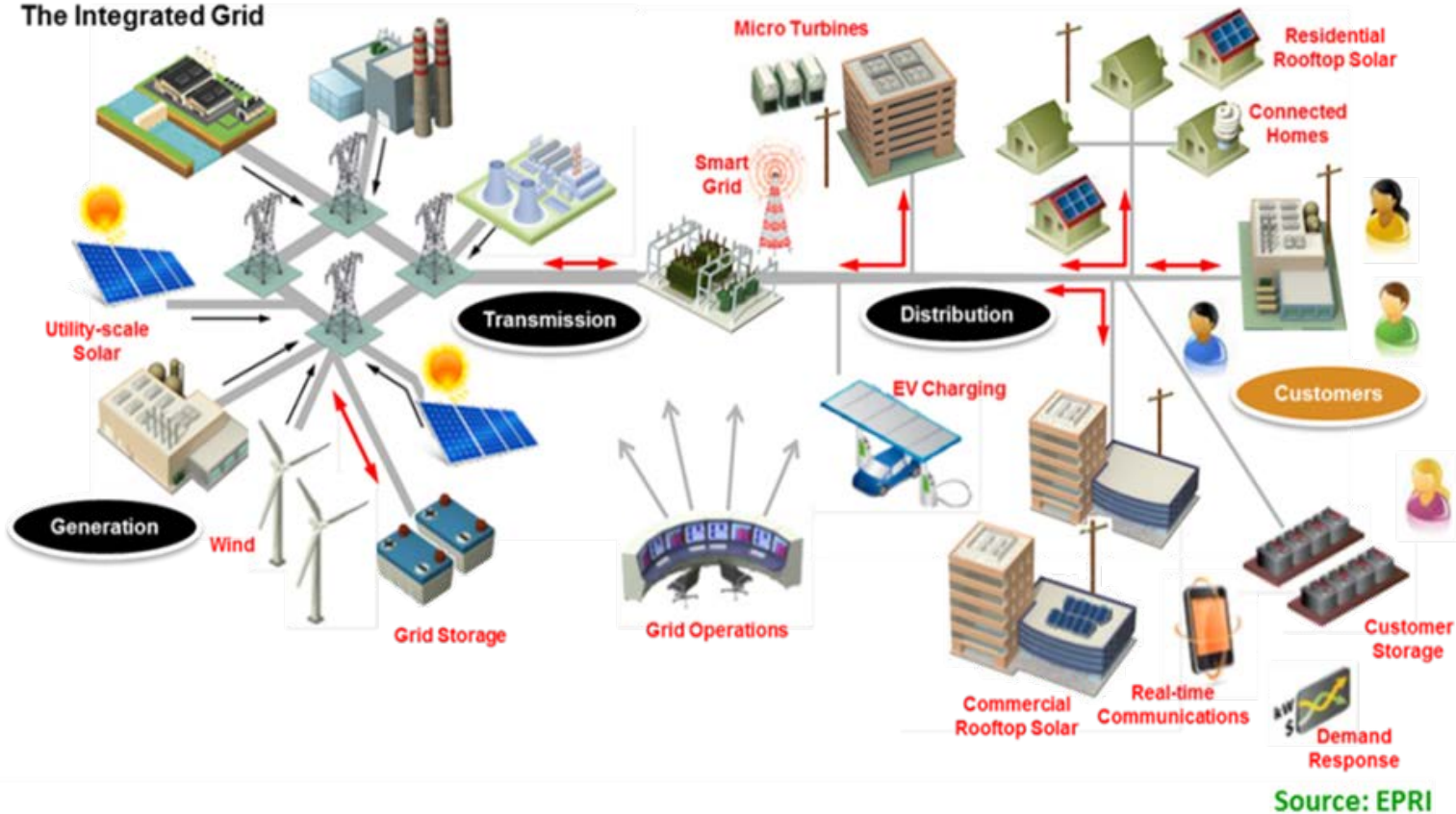
- Advanced Analytics
- Sensors
- Automation
- Mobility
- Cloud
- Cybersecurity

Different customers have different needs and expectations



# New Grid Realities in the Near Future

The Integrated Grid



# Getting creative at the 'Hub'

- Rotation of interested employees
- Thinking 'outside the box'
  - Push back on 'the way we've always done things'
  - Vision of the future and what are the 'no regret' things we can start doing today and what are the strategic things we can start preparing for?
  - What does a customer centric business do vs 'the way we've always done things'?
  - What services are our customers expressing interest in?
  - What services do we think they might have an interest in and how do we test that idea?
  - What are other states doing?
  - How do we further test good ideas and move them to a proposal for stakeholder discussions and possible Public Service Commission filing?





# Recent Activities

- Generation
  - Solar partnerships
  - Callaway dry cask storage facility
  - Acceleration of wind and solar energy resources
- Transmission
  - Volt VAR optimization
- Distribution
  - T&D pole sensors
  - Smart switches
  - Advanced metering
- Other initiatives
  - Ameren Accelerator
  - Energy storage
  - Renewable Choice Program
  - Broader implementation of electrification



# Ameren Accelerator (supports cutting-edge technology)

- blossom: is a way for two parties to exchange anything of value using simple digital agreements set by user-defined rules.
- Hyperion Sensors: has developed a fiber-optic sensor for use with high-voltage equipment, allowing them to become "intelligent."
- Omega Grid: is market software that removes the revenue risk of distributed generation of utilities, encourages energy investment by property owners and enables access to lower rates for everyone.
- Rebate Bus: is a platform for utility programs to deliver instant incentives online.
- SensrTrx: is an industrial analytics application focused on using industrial data to improve uptime, performance and reliability of manufacturing and industrial systems.
- Switched Source: provides equipment solutions for electric-distribution companies to make the grid more resilient and efficient, while supporting the integration of more distributed generation.
- WIFIPUG: smart plug learns routines to make life easier and help consumers save money on energy bills.





***Ameren***

***MISSOURI***

***FOCUSED ENERGY. For life.***