

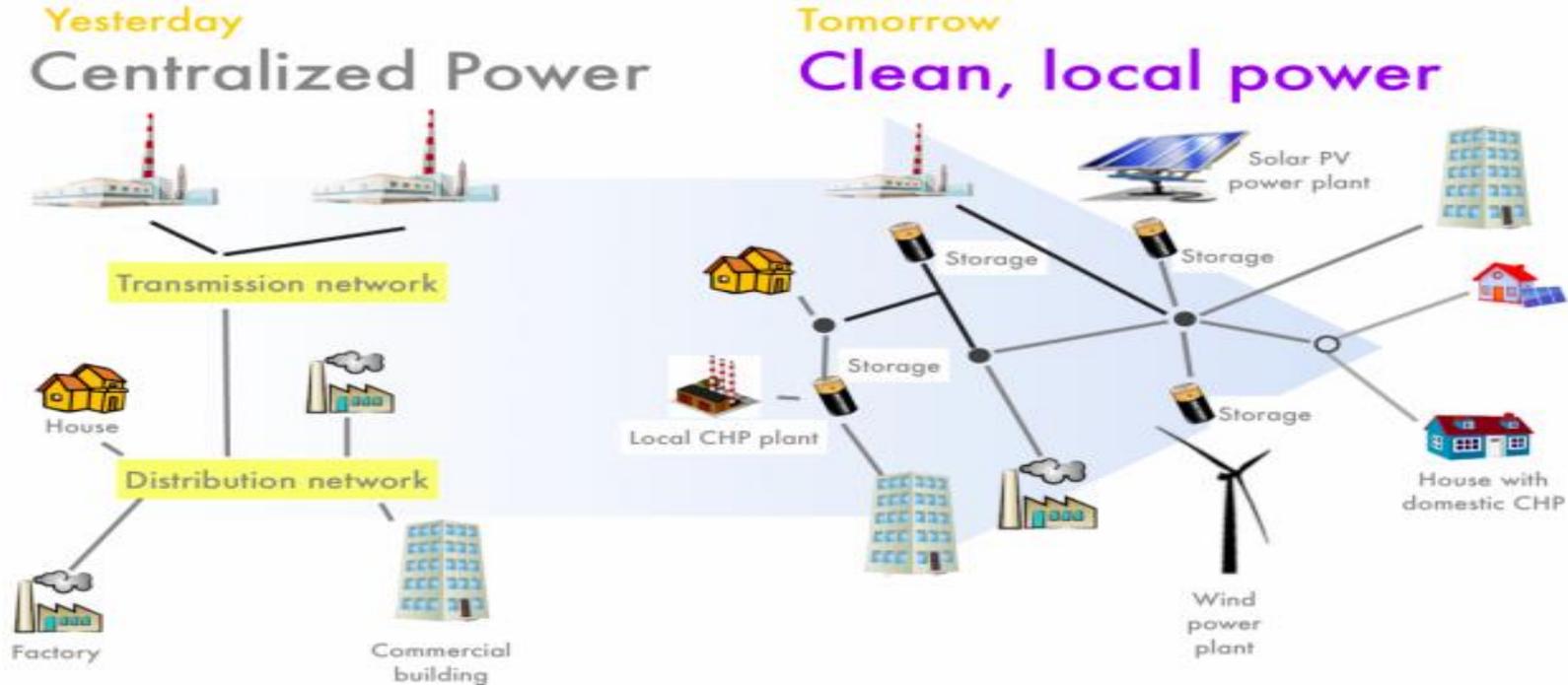


**NYSERDA**

**New Tools**  
for  
**New Electrical System**  
for  
**New York State**

May 5, 2016

# Future of Energy

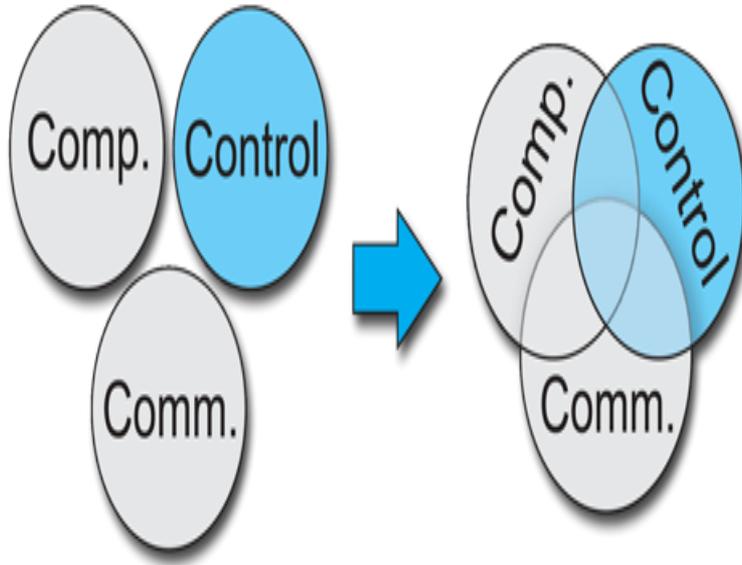


# Electric Utility Industry

Use technologies / tools to solve problems and improve:

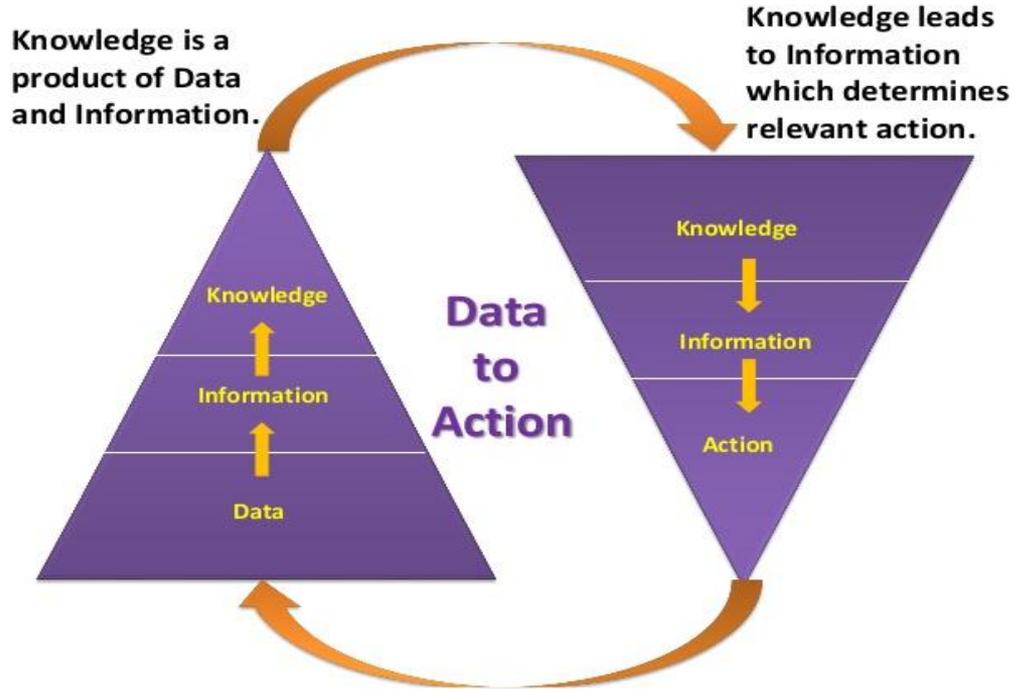
- Productivity
- System Efficiency
- Distributed Resources
- Asset Utilization
- Predictive Maintenance
- Operations
- Security

# Electric Utility Industry



- Smart Grid
- Energy Storage
- Distributed Energy Resources
- Renewable Energy
- Energy Efficiency
- Smart Cities
- Smart Transportation
- Smart Buildings

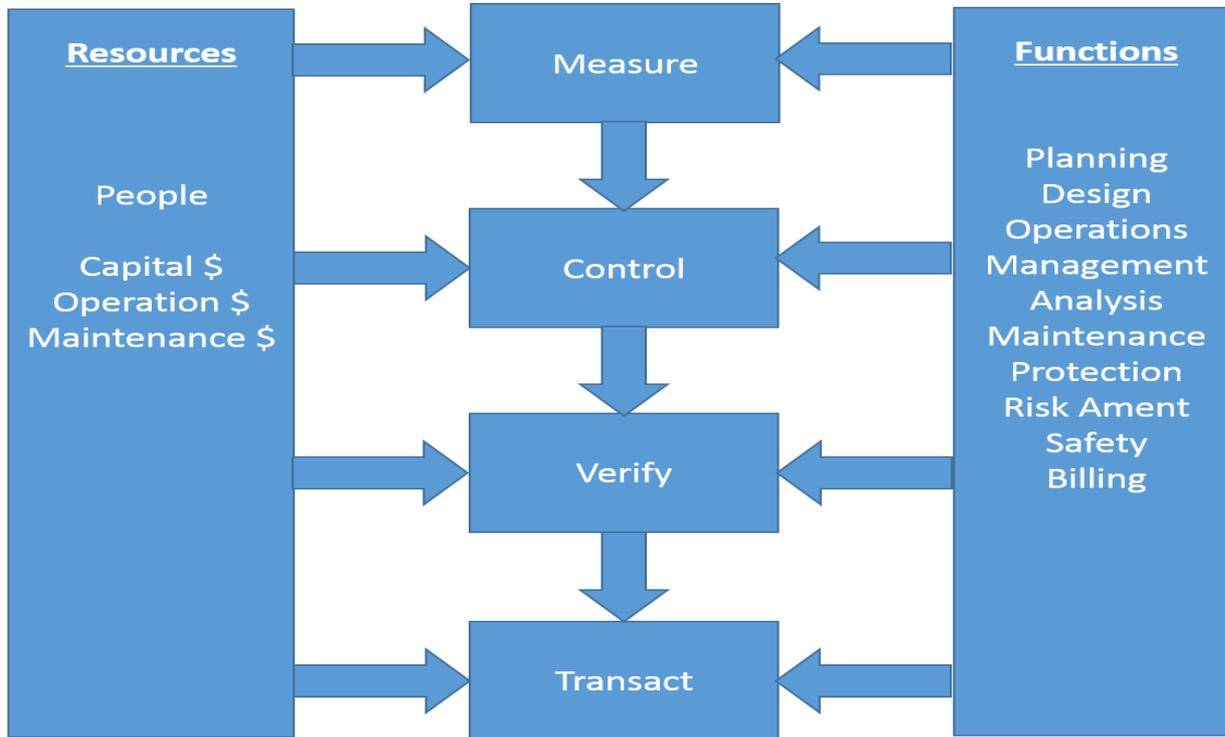
# Data into Action



## 2. D-I-K-A Model

- Concepts
  - Data = Representations of reality
  - Info. = Data which provides relevant clues or news
  - Knowledge = The framework or schema for organizing the relationships between pieces of information.
  - Action = The deeds or decisions made based on knowledge

# Electrical System



# Modeling

**Representation of something, especially a system or phenomenon, that accounts for its properties and used to study its characteristics**

# Tools

- **Integrated System Models (T&D)**
- **DER Analysis (Steady- State / Dynamic)**
- **Automation Simulations /Algorithms**
- **Reliability Modeling**
- **Advanced Load Forecasting**
- **Power Quality Modeling / Analysis**
- **System Component Modeling**
- **EV Modelling / Analysis**

# NY's Reforming the Energy Vision (REV)

- Fundamental changes in ways utilities provide distribution service
- Aligning electric utility practices and regulation with technological advances in information management, pricing, power generation and distribution
- Improving system efficiency, empowering customer choice, and encouraging greater penetration of clean generation and energy efficient technologies and practices

# NYS Grid Modernization

- Accelerate Technologies / Solutions
- Develop vision / steps required to get to future grid state
- Prove benefits for producers, suppliers, and consumers of power
- Demonstrate capabilities of the smart grid
- Educate public, regulators, and policy makers
- Emphasis on aggressive real world projects, including NY Prize and the NY PSC's Reforming the Energy Vision

# Key New York State Initiatives

- Reforming the Energy Vision (REV)
  - REV Pilots/Demonstrations
- Clean Energy Fund (10 year; R&D and Mkt. Dev. programs)
  - Smart Grid R&D (10 more years)
    - Smart Grid Systems
    - DER Integration
    - NY Prize Community Microgrid

# Smart Grid is a Priority in CEF

Technology and applications that improve asset utilization, improve efficiency, maintain strict security, lower consumer costs and lower the carbon intensity of the electric-power sector

<http://www.nyserda.ny.gov/Cleantech-and-Innovation/Smart-Grid>

# NY Prize Award Process

All communities enter/apply to competition and are evaluated at each stage by external judges

Critical project partners:  
Municipalities and Utilities

Evaluation Panel(s)

Threshold Qualitative  
Criteria

**Stage 1**  
Awards to Conduct  
Feasibility Assessments

83 awards for  
studies  
(up to \$100K)

Allocations

\$8 m

Threshold Audit  
Grade Design Criteria

**Stage 2**  
Feasibility Evaluated  
Awards for Audit Grade  
Design

8-12 Awards  
(up to \$1M)

\$8-10m

Audit Grade Design  
Review

**Stage 3**  
Designs Evaluated  
Awards for Build-out/  
Operation

5-6 Awards  
Up to \$5M)

\$20m

# Questions?

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