

Value Propositions for Big Data Analytics

EPRI Transmission and Distribution System Experiences

Doug Dorr ddorr@epri.com

Program Manager

EPRI Transmission, Distribution and Information Group

U.S. Department of Energy's Electricity Advisory
Committee (EAC) Meeting
Arlington, VA March 13th 2019



Data Analytics Initiative for Transmission and Distribution

Research Summary and Outcomes

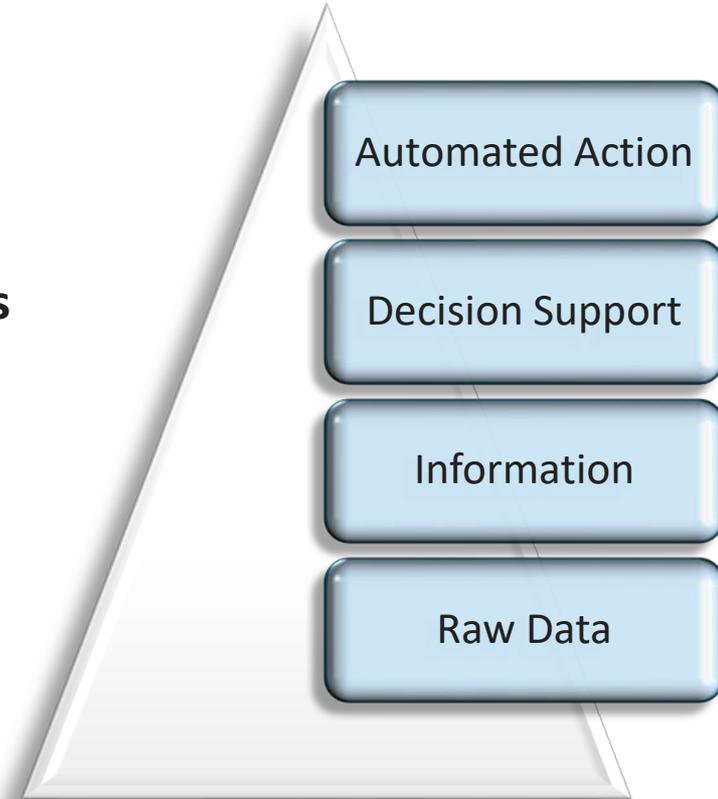
Transmission Modernization Demonstration (TMD)

Distribution Modernization Demonstration (DMD)

Data Management & Analytics to
Support Electric System Operations,
Planning, and Asset Management

DMD/TMD Data Management & Analytics to Support Operations, Planning & Asset Management

- **Leverage Smart Grid Investments** that are producing high-quality data
- **Integrated Data Sources** across different organizational groups
- **Application of advanced data mining algorithms**
- **Demonstrate the data analytics applications**
 - Planning, Operations & Asset Management
- **Learning and global collaboration**
 - 28 utility members
 - 30 research partners
 - Most valuable applications
 - Leading practices for enterprise architecture



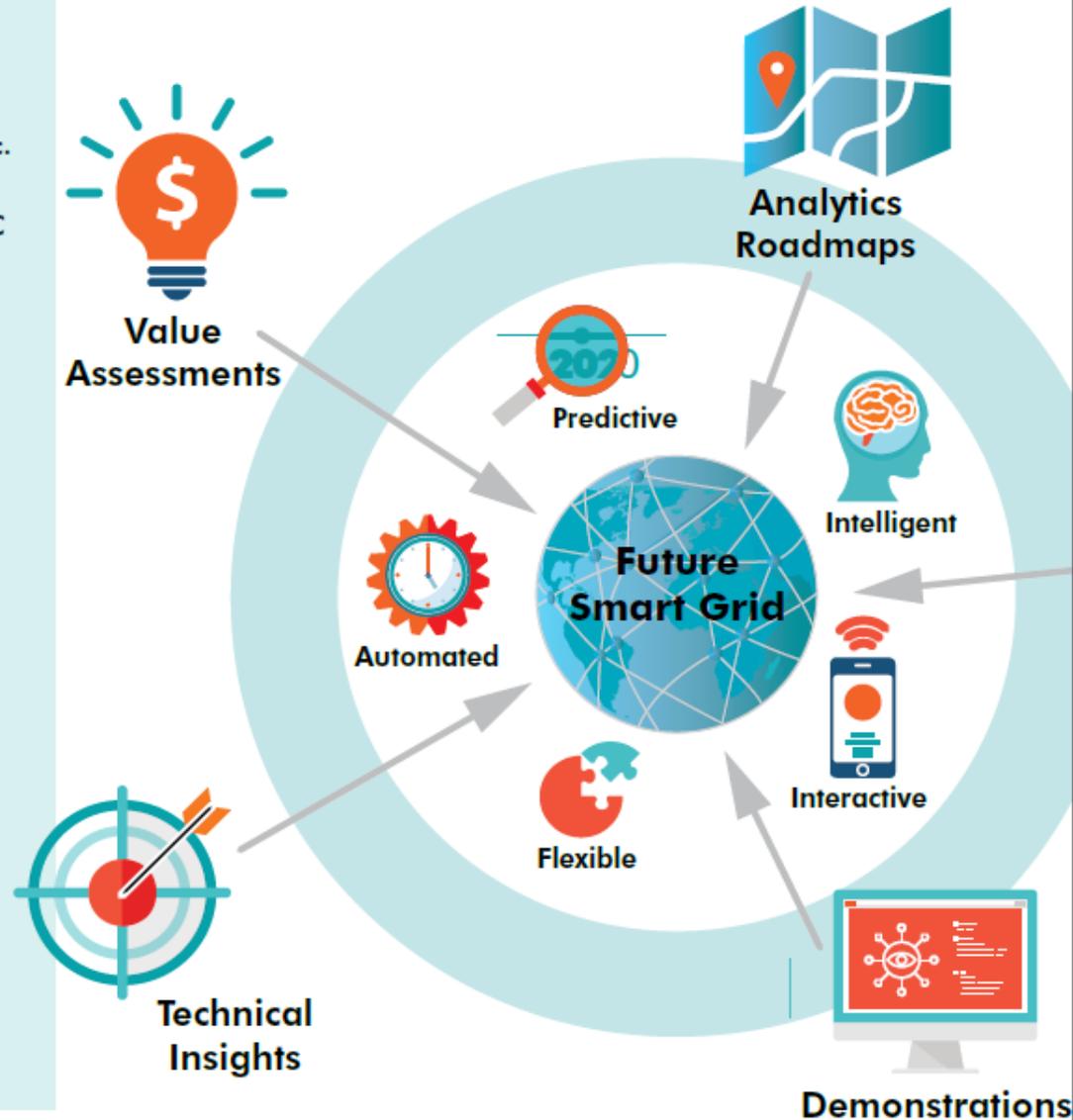
*Turning Data into Opportunity & Value
Improving Reliability – Increasing Operational Efficiencies*

DMD TMD Collaborators, Member Priorities, and Progress

DMD TMD COLLABORATIONS, MEMBER PRIORITIES AND PROGRESS

Alabama Power Company	Hydro One Networks, Inc.
Ameren Services Company	Hydro-Québec
CenterPoint Energy	LG&E and KU Energy LLC
Consumers Energy	Pepco Holdings, Inc.
CPS Energy	PPL Electric Utilities
DTE Energy	Seattle City Light
Georgia Power Company	Southern Company

- American Electric Power Service Corporation (AEP)
- Arizona Public Service Company (APS)
- Bonneville Power Administration (BPA)
- Central Hudson Gas & Electric Corp.
- Consolidated Edison Company of New York, Inc.
- Electric Power Board of Chattanooga (EPB)
- FirstEnergy Service Company
- L'Institut de recherche d'Hydro-Québec (IREQ)
- Long Island Power Authority (LIPA)
- New York Power Authority (NYPA)
- Sacramento Municipal Utility District (SMUD)
- Salt River Project Agricultural Improvement and Power District (SRP)
- Tennessee Valley Authority (TVA)
- Tennessee Valley Public Power Association (TVPPA)



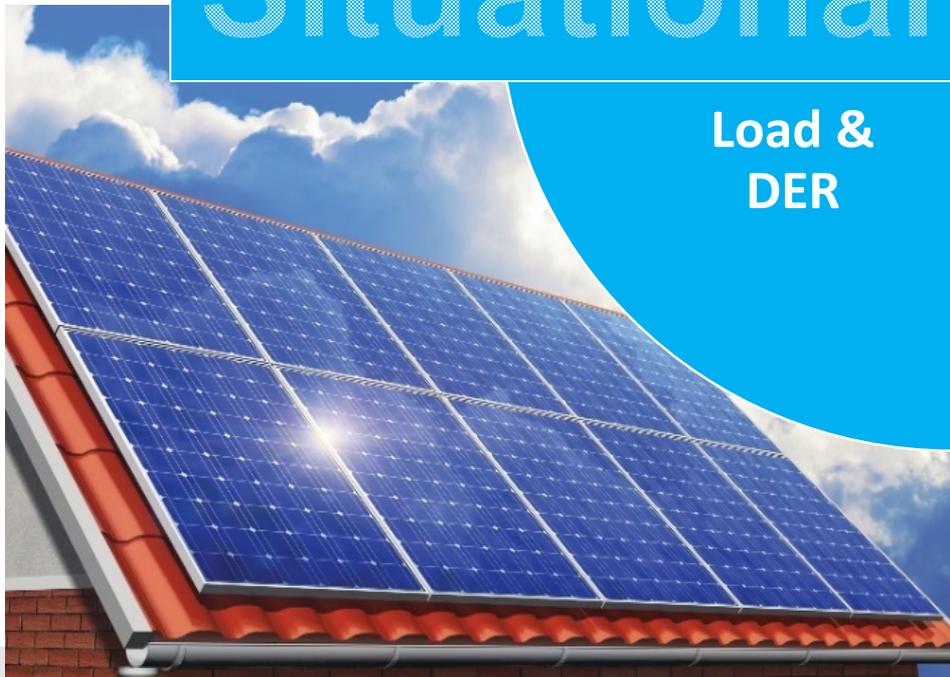


Assets

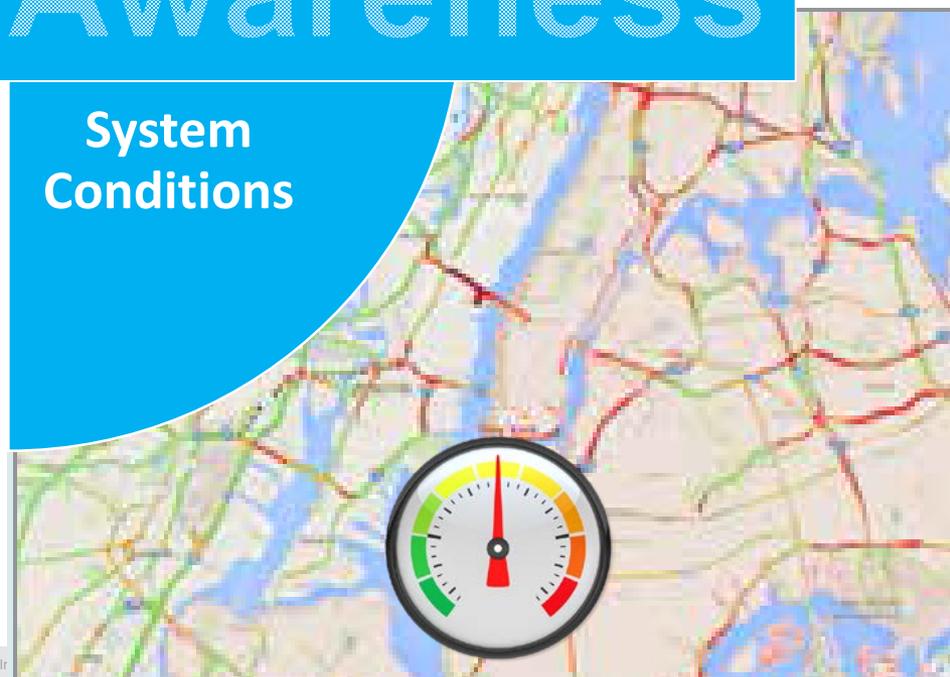


Outages

Situational Awareness

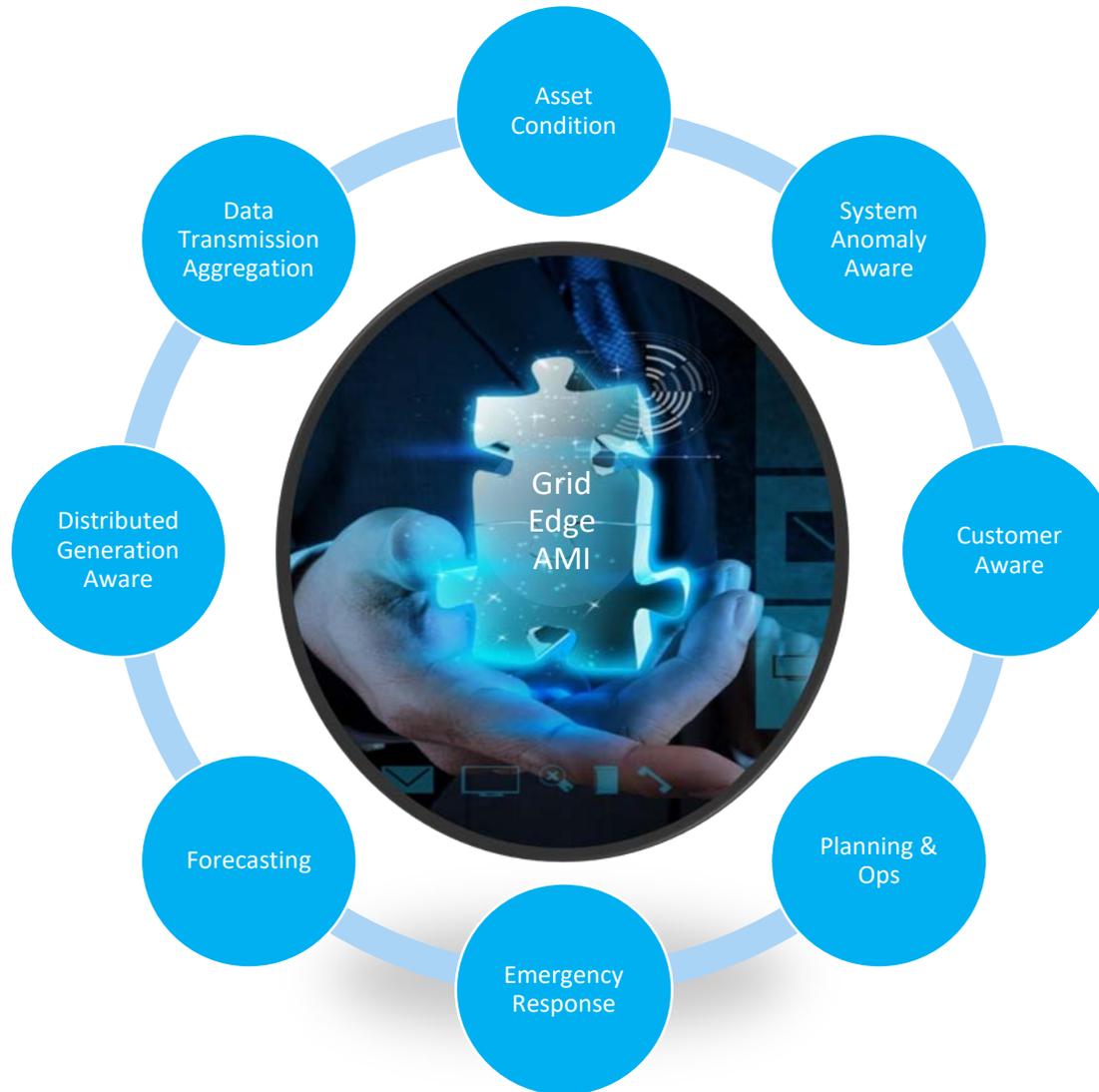


**Load &
DER**

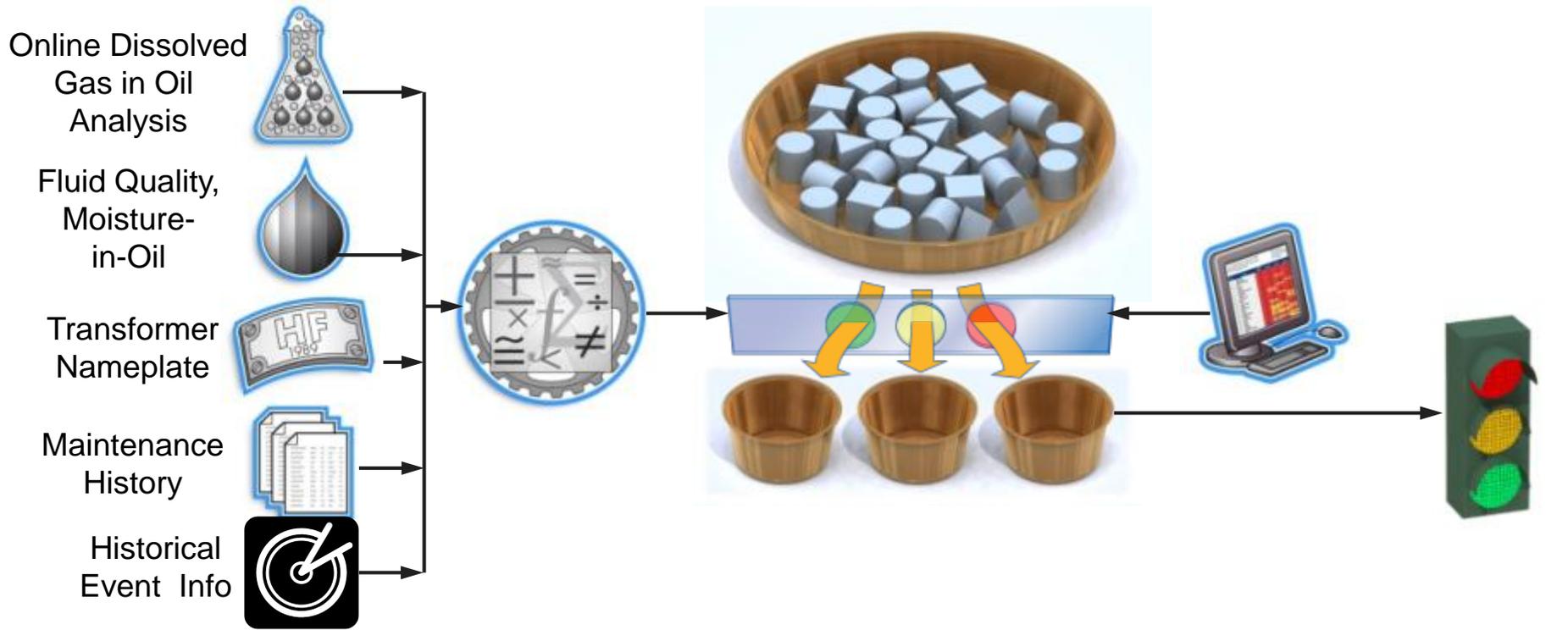


**System
Conditions**

The Areas and Departments Where AMI Systems and Smart Meter Data can be Leveraged are Diverse!

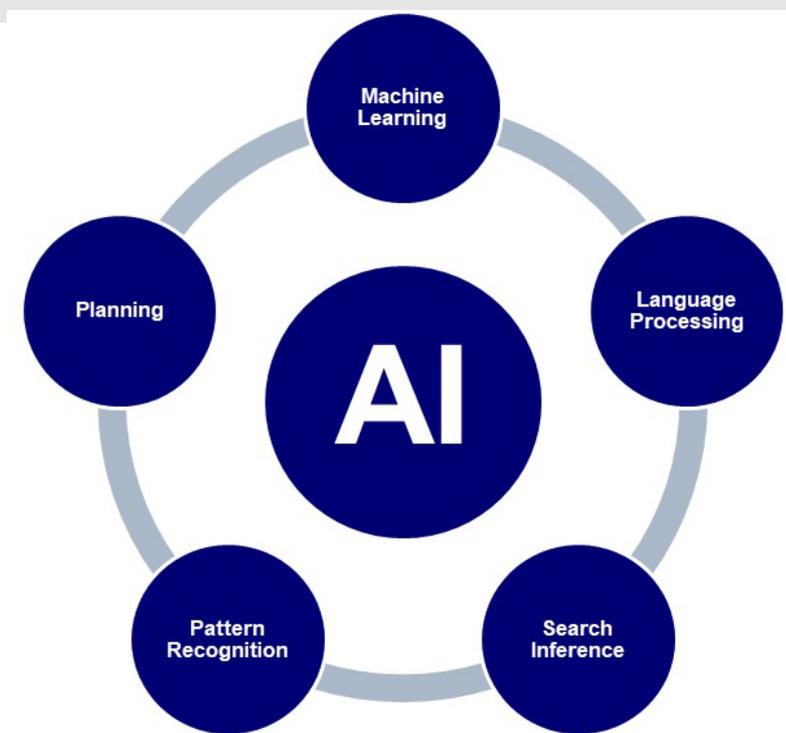
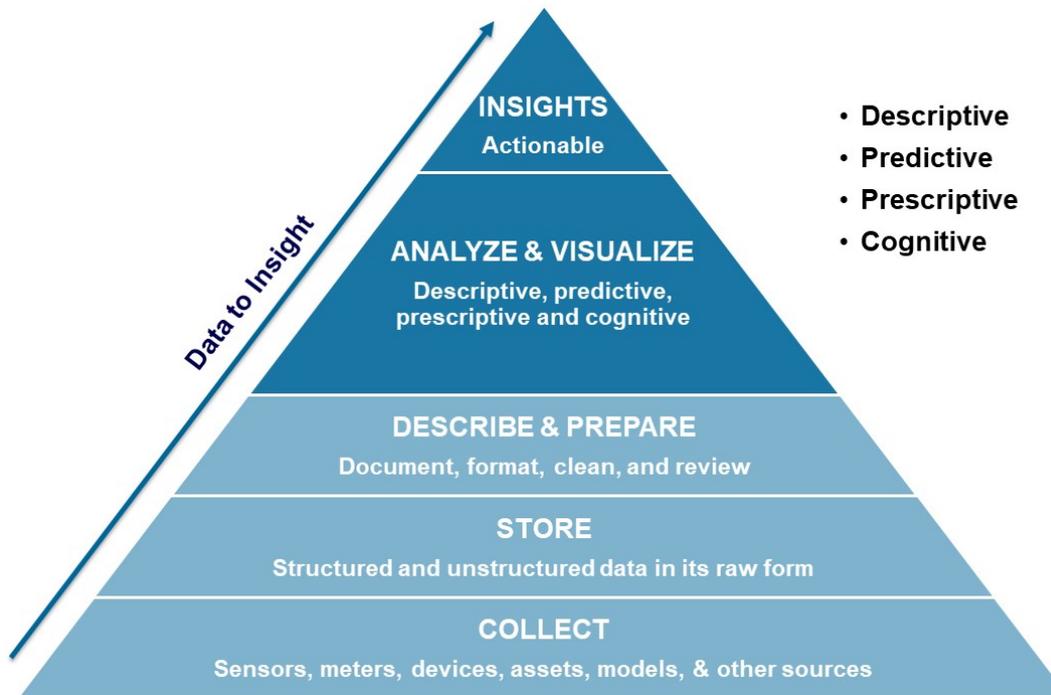


The Power Of Holistic Analytics



Key Takeaways

- **Public Data Challenge:** Not well curated – Help is needed to make the data more easily ingestible
- **Applying the Right Big Data Analytics:** Not well resolved for power system actionable insights – What is the best approach per use case?



- **AI improves outcomes for every use case:** Key industry data sets need to be available in (secure, anonymous, and public format)



Together...Shaping the Future of Electricity