Electric System Evaluation & Modernization SI
Today’s Update

Update the OPPD Board of Directors on the Electric System Evaluation & Modernization (ESE&M) Strategic Initiative.

To share:
• Progress since the last update
• AMI “soft launch” concepts
• AMI Ecosystem Evaluation and Roadmap
• Next steps

AMI = Advanced Metering Infrastructure
**ESE&M Objective and Vision**

**OBJECTIVE**
Develop a cross functional, integrated vision and roadmap for the modern OPPD electric system and supporting technologies that will deliver customer value, enable future products, services, and solutions, while increasing employee engagement and effectiveness by providing them the tools they will need.

**VISION**
Resilient, Digital Grid & Integrated Service Platform

Why ESE&M?
- Decarbonization
- Electrification of transportation
- Changing Customer Preferences
- Technology Advancements and Innovation
- Aging Electric Infrastructure
How We Get There

Advanced Tech & Applications

Intelligent Grid Sensors/Devices & Advanced Distribution Management System (ADMS)

AMI Ecosystem (Core Technologies)

Data Analysis, Business Intelligence and Resiliency

Outage Management & Mobile Workforce Technology

Robust & Secure Communications Infrastructure

Resilient, Digital Grid & Integrated Service Platform enabling Enhanced Products & Services

2-Way Advanced Metering Infrastructure (AMI)

Enterprise GIS
ESE&M and AMI

WHAT IS AMI?

• An integrated system of advanced meters, communications networks, and data management systems that enables two-way communication between utilities and customers.
Since our last update....

- Created detailed use cases and business cases for AMI through workshops with our strategic partner
- AMI ‘war game’ to uncover the interdependencies of the AMI ecosystem
- Deep dive on existing technology systems to determine AMI readiness
- Developed principles and conceptual scope for an AMI soft launch of approximately 10k AMI meters
- Established an AMI Ecosystem Roadmap to achieve the desired functionality for soft launch.
- Cross-SI and enterprise alignment
Principles for Soft Launch Scope

• Balance customer value with executability
• Make it meaningful for customers
• 12 months deployment & integration period for “soft launch”
• Build it to be reliable and sustainable
What customers will experience with the AMI ecosystem

“I received a text right after my power went out letting me know OPPD was on it. I got a second text letting me know the outage was caused by a vehicle accident and it should be restored in 30 minutes.”

“I love the new mobile app. It’s very easy to view and pay my bill. When I moved last year it was so easy to handle everything on the app.”

“I now know how much I’m using in near real-time so I can reduce my footprint and save money”

“I like that OPPD communicates with me in the way I prefer”
What employees will experience with the AMI ecosystem

“Having the right data at my fingertips has made a huge difference in our asset management program”

“The user interface on my mobile device is so easy. Outage information can quickly get to customers so we are approached in the field less often”

“This will require lots of change management”

“AMI can warn us of safety hazards such as an improperly connected customer generator”
AMI Ecosystem Roadmap

**Prerequisites: Years 1, 2 & 3**

**Upgraded Core**
- Enterprise Geographic Information System (GIS)
- New Outage Management System (OMS)
- Mobile for Outage Management
- Meter Data Management System* (MDMS)
- Field Service Management* (FSM)
- Enterprise Asset Management* (EAM)
- Customer Information System (CC&B)

**Foundational**
- Data Governance
- Data Center Enhancement*

**Customer Experience**
- Customer Platform* (Web, Mobile, My Account, etc.)
- Voice of the District (VOD) Tool

**People & Process**
- Customer Education and Outreach
- Business process re-design

**Meter Installation**
- ~10k meters

**Ecosystem Integration**
- Deliver “optimal” capabilities

**Soft Launch: Years 3-4**

**Full-scale Deployment: Years 4-6**

**Deploy & Integrate remaining meters**
- ~380k AMI meters

* - additional detailed scoping required
AMI Ecosystem – Outage Use Case Example

1. Meter loses power and automatically communicates “last gasp” to OPPD systems.
   AMI Collector, AMI Backhaul, AMI Headend, Meter Data Management System

2. OPPD systems identify whose meter it is, pull customer data and identify exactly geographic location coordinates.
   Customer Information System, Outage Management System, Distribution Management System, Geographic Information System

3. Customers are regularly updated with outage information and status updates.
   Customer Platform

4. Crews dispatched to outage are provided real-time asset information including location and asset history
   Geographic Information System, Mobility, Field Service Management, Enterprise Asset Management

5. Electricity is restored and customer is notified.
   Customer Platform
AMI Ecosystem Benefits

**Soft launch (near term)**

- Customers can use portal to view & understand energy usage
- Customers won’t need to call to report outages
- Multichannel outage updates
- Estimated Time of Restoration (ETR) notifications
- Expedited outage restoration
- Remote start/stop service
- Increased situational awareness for utility grid operators
- Enhanced safety for crews with AMI voltage sensing
- Expanded Field Service Management (FSM) capabilities
- Expedited major event analysis
- Grid edge sensing & computing

**Post full deployment (future)**

- Future rate options, products and services
- More customer control over energy use/spending through usage and bill alerts
- Reduced truck rolls and operating costs
- Load and DER Forecasting & Profiling
- Load Disaggregation
- Advanced Data Analytics and Asset Management
- Network Connectivity Analysis
- Optimized spending on system improvements with improved data
Next Steps

• Transition the AMI Roadmap into project plans
  - Deep dive on project scopes with minimum viable product (MVP) approach
  - Budget and resource requirements for the Corporate Operating Plan (COP)

• Develop the Distribution Automation philosophy (Target Q4 2022)
  - Outage impact minimization and grid self healing
  - Grid sensors for enhanced situational awareness
  - Operational tools for advanced grid management

• Evaluation of Engineering Design tools to support paperless workflow
  - End to end electronic information flow between engineering and the field
  - Automatic updates and one source of truth
QUESTIONS