

Rocky Mountain Power's Informational Filing

AMI, Grid Modernization & Advanced Rate Design

Docket No. 20-035-16

Technical Conference

May 10, 2021



AMI Project

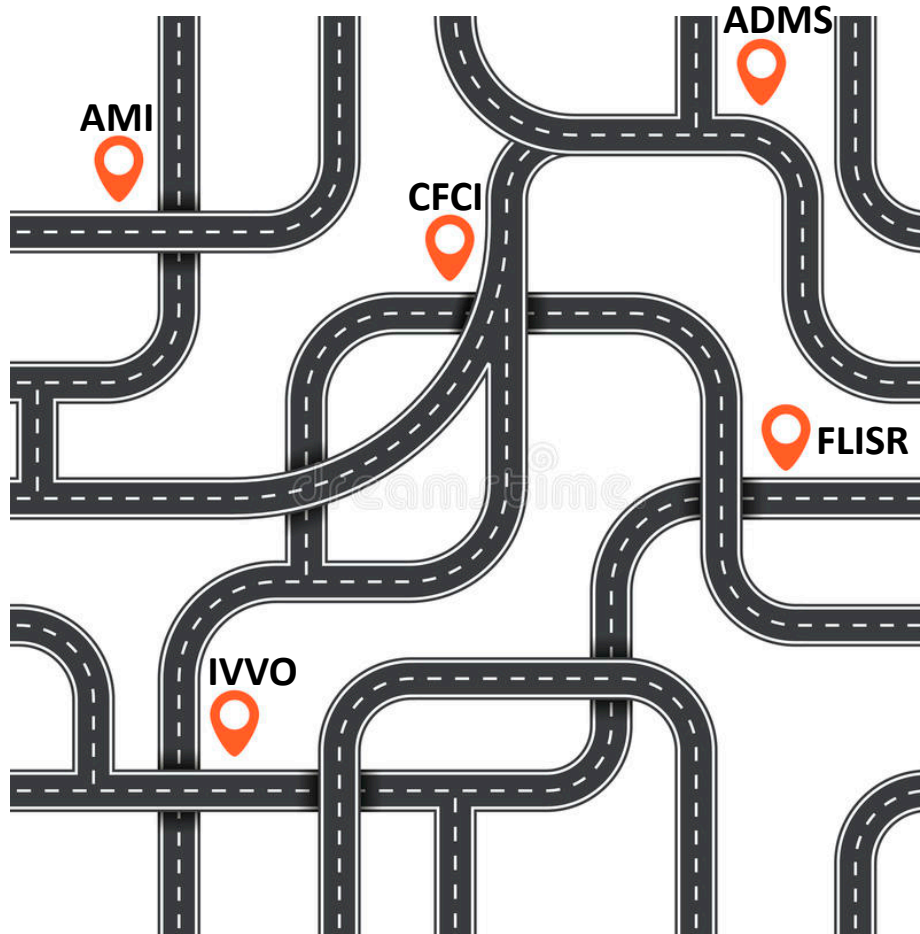
- **SCOPE**

- The Utah/Idaho project involves upgrading the head-end software and installation of a field area network and approximately 240,000 new Itron Riva AMI meters for most customer classifications and 20,000+ Aclara AMI meters for Utah rate schedule 136 private generation accounts.

- **SCHEDULE**

- The first phase of IT upgrades is nearing completion and field network installations have begun in Idaho. Installations will progress from Idaho southward through Utah with completion of the network by December 2021.
- Meter installations follow network completion; this development sequence ensures the meters communicate accurately with the network. Installations are scheduled to commence in October 2021 with full project optimization and completion by the end of 2022.

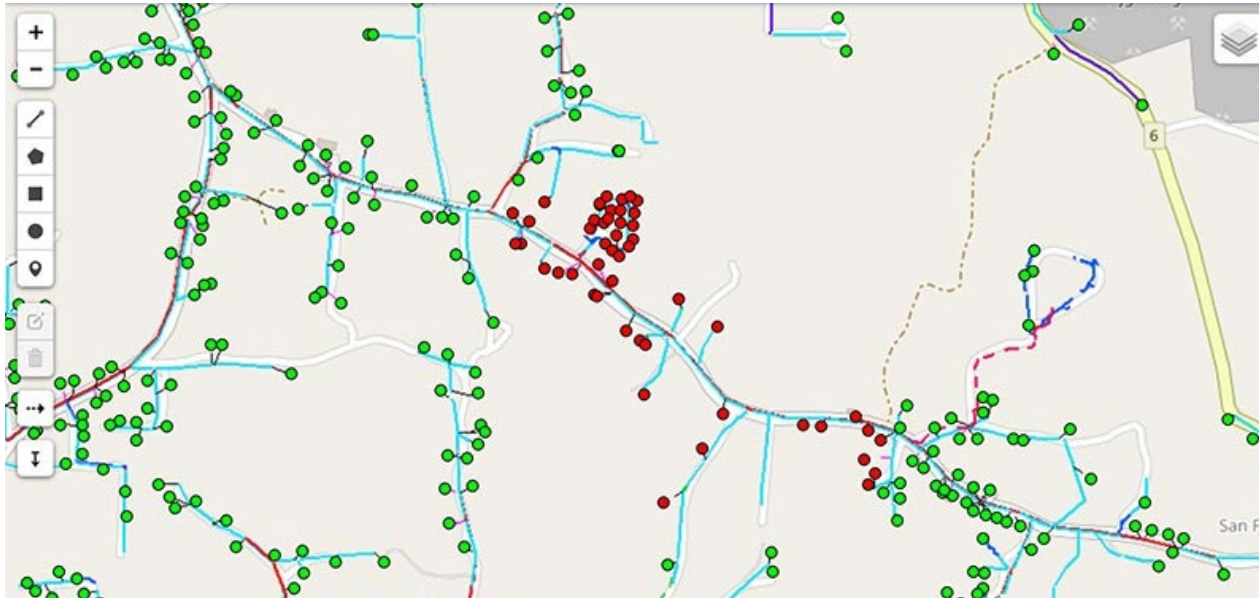
AMI Roadmap



- The road map, by necessity, involves several independent technologies that will develop and converge over time to produce a modernized grid that benefits customers.
- These technologies may be implemented in the future depending on how each technology integrates with the AMI system and the ability to solve specific business and customer needs.

Outage Management with AMR Meters

- The technology being developed by Itron is an ERT Gateway Mesh (“EGM”) field device that allows the AMI system to integrate over 80% of the existing AMR meters.
- The AMR meters will be able to provide power outage and restoration messages as well as hourly interval data for residential and small commercial customers.



Advanced Distribution Management Systems

- Areas typically supported by an advanced distribution management system (ADMS) include:
 - Outage management
 - Switching operations
 - Lock-out and tagging procedures
 - Fault calculations
 - Load flows
 - Near real-time state estimation routines
 - Active voltage management
 - DR for identified load resources
 - Smaller scale distributed energy resource (DER) management
 - Direct control of the distribution system
- Advanced distribution management systems create an intelligent distribution network model to maximize the efficiency and operability of the distribution network.
- ADMS provides distribution engineers with near real-time system performance data and historical performance metrics.

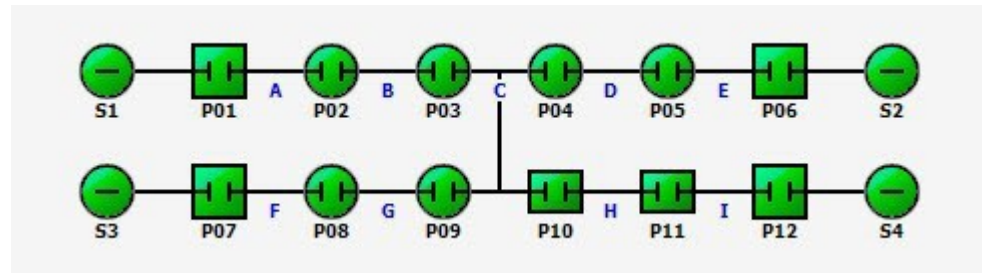
Communicating Faulted Circuit Indicators

- Challenges
 - Limited visibility of real-time status of distribution line equipment, circuit loading levels and event information leads to increased outage duration and restoration times.
 - Lack of information from distribution line equipment creates inefficiencies in managing outage response situations.
- Communicating Faulted Circuit Indicators (CFCIs)
 - Part of the ARMS project (approved STEP project).
 - Provide remote indication of a fault on the distribution system to quickly identify the failed section of line enabling faster repair times.
 - Monitor and report current levels (amps) at various points along the distribution line to provide more granular views to operators and engineers.



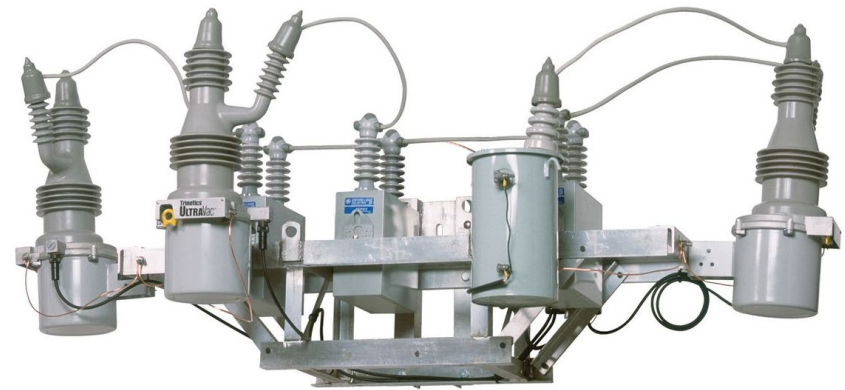
Fault Location, Isolation and Service Restoration

- In March 2018, Pacific Power began implementing a fault location, isolation and service restoration (FLISR) pilot program in Lincoln City, Oregon. The protection scheme uses the Gen5 network for communication between field protective devices. Known as the Devil's Lake DA project this pilot has been progressing for the past few years in terms of design, installation and troubleshooting the system.
- In May 2021, the project team will evaluate the field area network's overall performance.



Interactive Volt-Var Optimization

- Interactive volt-var optimization (IVVO) allows system operators to manage and levelized voltages across the distribution feeder to minimize line losses.
- The AMI system can be leveraged to enable real-time communications at various voltage management devices on the distribution system, e.g., regulators and capacitor banks.
- Historical or real-time data gathered from these devices can be integrated into the Company's control center or distribution planning tools to optimize the system for potential opportunities such as voltage reduction, load reduction or loss reduction.



Demand Response

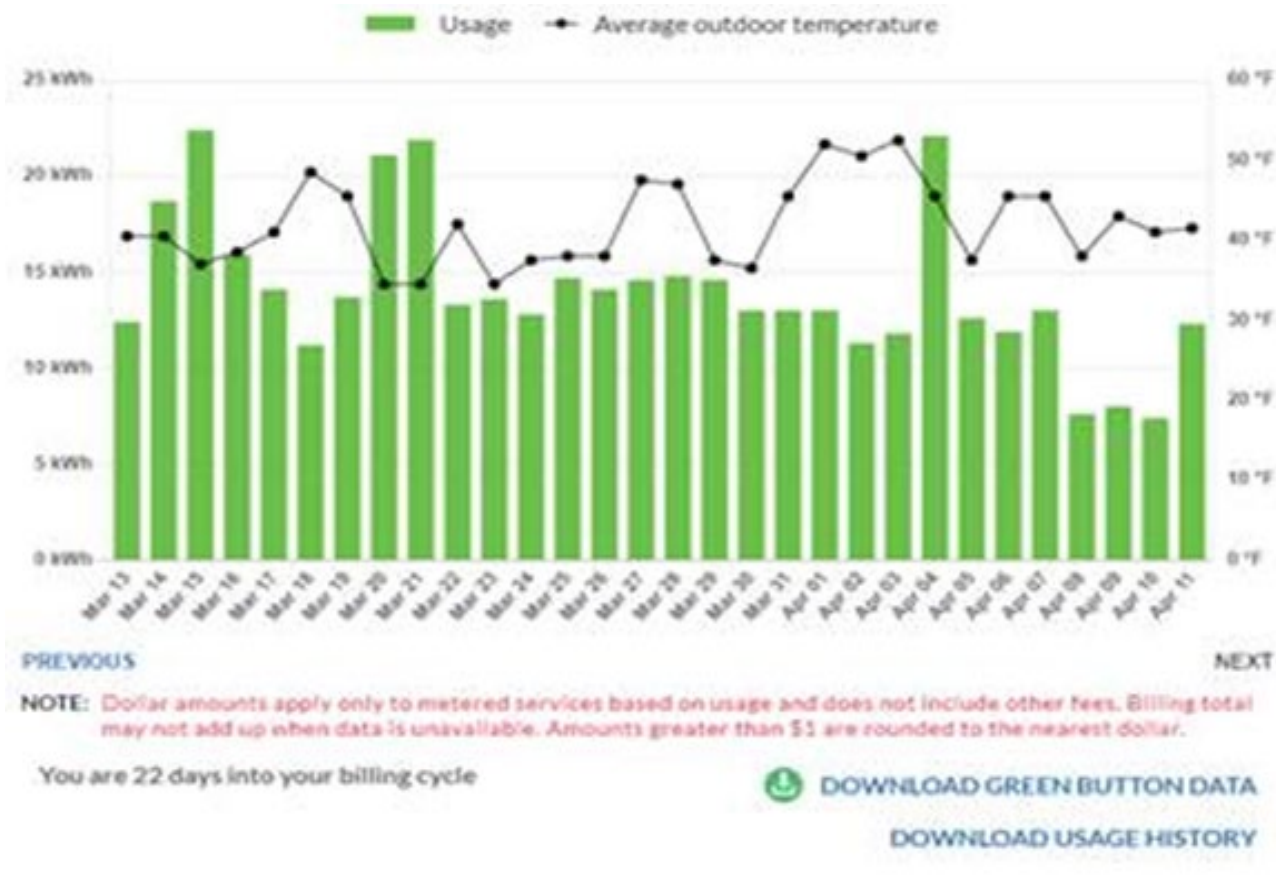
- Demand response programs include both indirect and direct load control programs to reduce the overall energy consumption during routine, critical and emergency times.
- Indirect load control encourages customers to change energy usage patterns by making data available and providing price signals that encourage changes in the time energy is utilized.
 - The most common price signals in the industry today are time-of-use (TOU), critical peak pricing (CPP) and peak time rebate (PTR) programs.
- Direct load control allows the company to curtail load during critical times or emergency events.
 - The Company's AMI system may allow for better quantification of load curtailment levels during direct load control events.
 - Once the AMI has been completed, the communication infrastructure may create cost effective opportunities to procure new programs and/or expand existing ones.

Energy Usage Tools

- Rocky Mountain Power's website (www.rockymountainpower.net) has been enhanced provide more detailed usage information for future AMI and existing AMR customers.
- The customers will have access to energy usage graphs online.
- The graphs will depict available near real-time hourly, daily, weekly, monthly, and annual consumption data. Business customers will also have 15-minute interval data available.



Energy Usage Tools



Utilizing the *Download Green Button Data* functionality, customers will be able to download daily and up to twenty-four months of usage data' providing customers with the ability to securely transfer their usage data to third-party solution providers who can further assist them in monitoring and managing energy usage.

Energy Usage Tools

- Functionality that projects electric usage will also be available to Rocky Mountain Power AMI and AMR customers.
- Customers will be able to establish a billing threshold by entering a target dollar amount online. If a billing projection exceeds the target amount, the customer will be notified via text or email.
- Subsequent communications will continue to occur weekly for the customer to see if their energy consumption decisions are moving their bill projection downward.

<p><input checked="" type="checkbox"/> BILLING NOTICE Includes the amount due and due date of your current bill. This alert does not change your paperless status.</p> <p><input checked="" type="checkbox"/> Email <input checked="" type="checkbox"/> Text message</p> <p><input checked="" type="checkbox"/> Attach a copy of my bill. Terms & Conditions apply.</p>	<p><input checked="" type="checkbox"/> PROJECTED BILL Get an alert when your bill is projected to be higher than a threshold that you set.</p> <p>Threshold amount <input type="text" value="\$75"/></p> <p><input type="checkbox"/> Email <input checked="" type="checkbox"/> Text message</p>
<p><input checked="" type="checkbox"/> WEEKLY ENERGY COST Get weekly usage alerts to better understand and manage your usage.</p> <p><input checked="" type="checkbox"/> Email <input type="checkbox"/> Text message</p>	<p><input checked="" type="checkbox"/> PAYMENT DUE REMINDER Get an alert a few days before your payment is due if your bill has not been fully paid.</p> <p><input type="checkbox"/> Email <input checked="" type="checkbox"/> Text message</p>
<p><input checked="" type="checkbox"/> PAYMENT CONFIRMATION Get an alert when a payment is applied to your account.</p> <p><input type="checkbox"/> Email <input checked="" type="checkbox"/> Text message</p>	<p><input checked="" type="checkbox"/> POWER OUTAGE NOTIFICATIONS We'll contact you with power outages that affect you.</p> <p><input type="checkbox"/> Email <input checked="" type="checkbox"/> Text message <input checked="" type="checkbox"/> Phone call</p>
<p><input type="checkbox"/> ACCOUNT SERVICES & NEWS Information and services to help you save energy, support renewable power and more. This may include newsletters.</p> <p>Enroll</p>	

Current Rate Design Plans

- Leverage AMI to re-design existing time of use (residential, non-residential, and irrigation)
- Collaborate with stakeholders on what other future rate designs should be pursued



Potential Other Rate Designs

- Opt-Out Time of Use
- Critical Peak Pricing
- Peak-Time Rebate
- Interruptible Pricing
- Real-Time Pricing
- Conjunctive Billing



Rate Design/Cost of Service Collaborative Stakeholder Process

- Unbundling
- Cost of Service Methodology
- Rate Design Opportunities



Conclusion

- Additional questions?