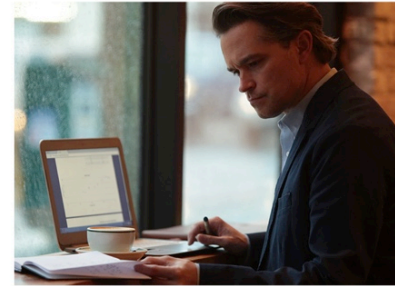


Rocky Mountain Power Advanced Metering Infrastructure Utah Project

January 9, 2018



Agenda

- Introductions
- Utah Automated Meter Reading Review
 - Current Technology
 - Future Technology
- Project Overview
- Project Benefits
- Utah STEP Funding Proposal – Outage Management
- Project Timeline
- Employee Impacts
- Project Communication Strategy
 - Installation Communications – Oregon Examples
 - Realizing the Benefits of Advanced Metering
- Next Steps
- Questions?

Current Meter Technology in Utah

Automated Meter Reading (AMR)

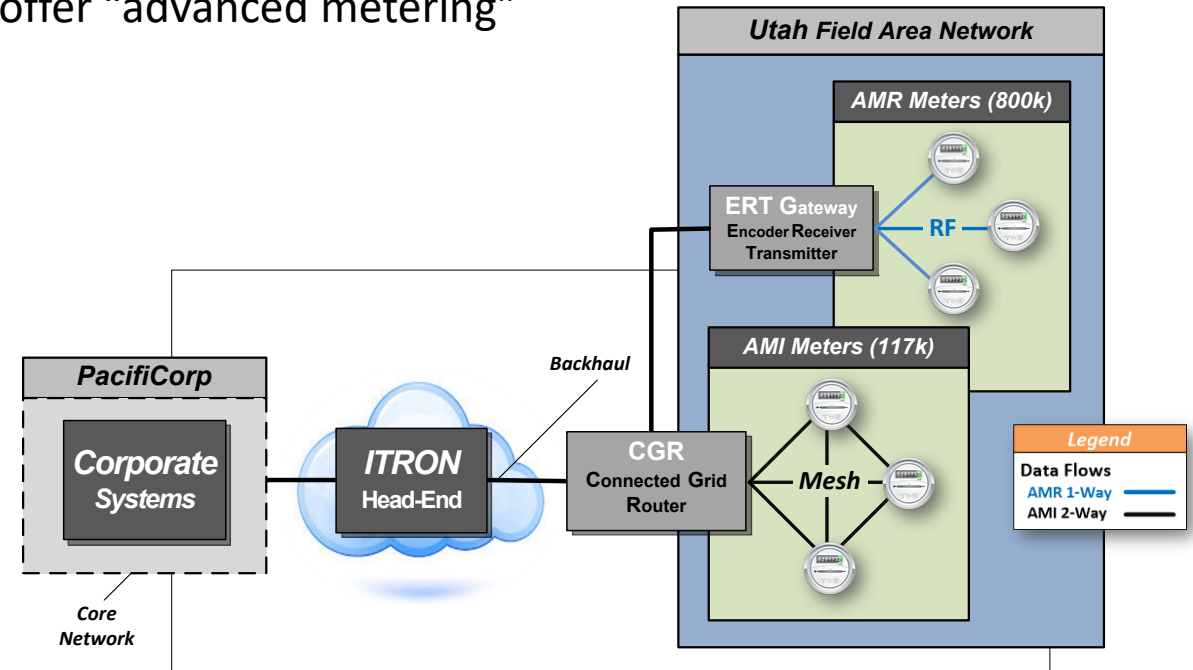
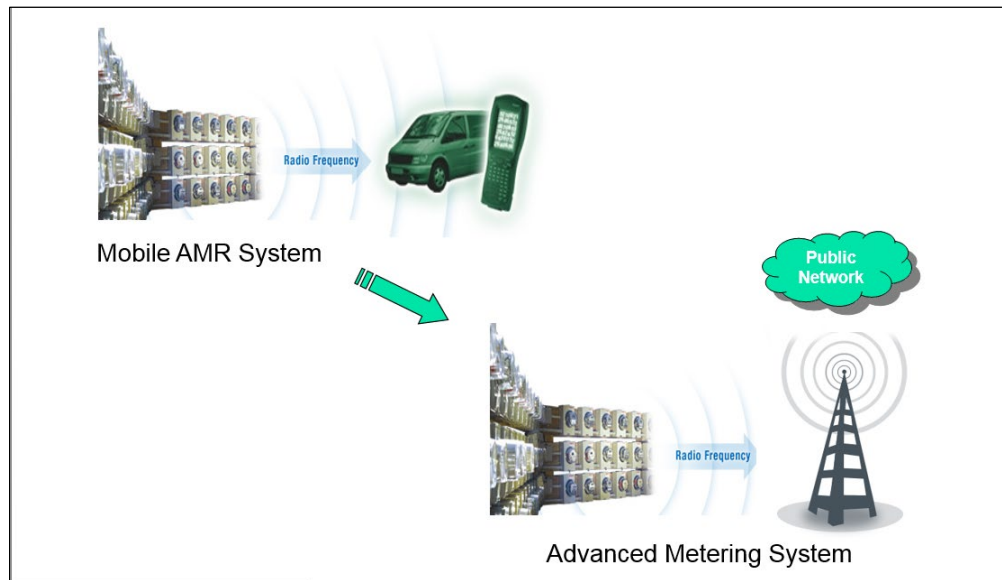
- AMR reads are collected via drive by technology on a monthly basis for billing purposes
- Installed in Utah beginning in 2008
- Approximately 920,000 AMR meters in Utah
- Used for customers not requiring interval or power factor metering
- Over 17,000 non-AMR meters in Utah, which are manually read each month



Future Technology

Advanced Metering (Fixed Network)

- In addition to automated meter reading (AMR), advanced metering is capable of delivering interval data from all meters.
- Providing outage detection and restoration messages via the system.
- Direct load control is available through a separate system (e.g. paging, etc.)
- Many utilities, including PacifiCorp (Rocky Mountain Power), intend to mitigate the risk of “stranded investment” by migrating their mobile systems to fixed network and offer “advanced metering”





Project Overview

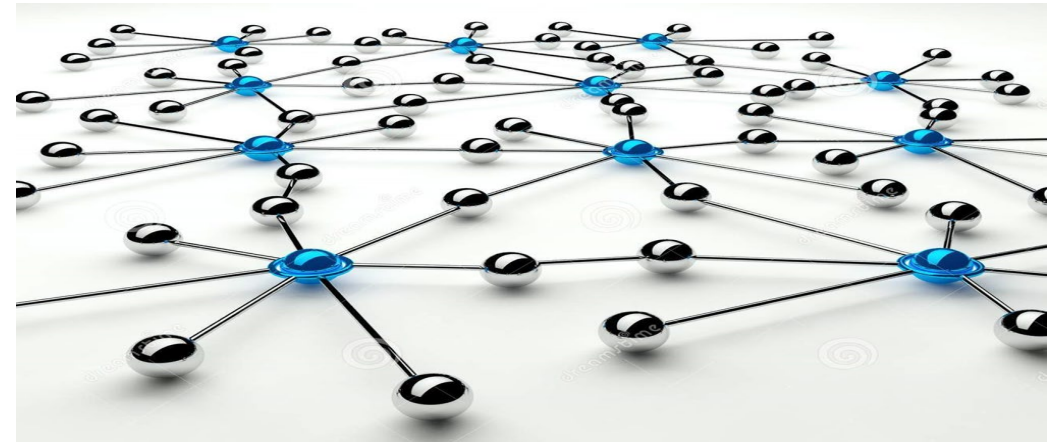
- Construct an AMI field area network
- Integrate AMI software with existing legacy systems
- Install 156,000 smart meters to complete the mesh network
- Total Project Cost:
 - \$70.8m investment
 - \$4m annual net benefit
- Two year implementation – January 2019 through June 2021
- Contract signed with Itron
 - Riva AMI system and meters
 - Network and meter hardware, design and installation
- Leverage resources and lessons learned from the Company's Oregon and California AMI projects

Project Benefits

- Improves customer service
- Delivers cost savings
- Provides customers with timely interval energy usage data
- Reduces CO₂ emissions via fewer vehicles on the road
- Enhances visibility into field operating conditions (e.g., outage reporting)
- Provides a platform for future Smart Grid applications

Utah STEP Funding Request – Outage Management

- \$4.5m for deploying advanced line sensor technology on distribution circuits.
- \$12m for ERT Gateways to extend AMI network to the remaining 764,000 AMR meters.
- ERT Gateways captures outage information and aggregates meter reads into hourly interval data from AMR meters.
- Provides for faster outage response, shorter restoration times and improved reliability.
- Filing for approval to use STEP funds in the first quarter of 2019





Project Timeline

	2018			2019												2020												2021								
Milestone	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June			
IT Development and Integration																																				
Meter qualification testing																																				
AMI field area network design and construction																																				
Meter installations																																				
Extend AMI network to support remaining AMR meters																																				
Customer Communications																																				



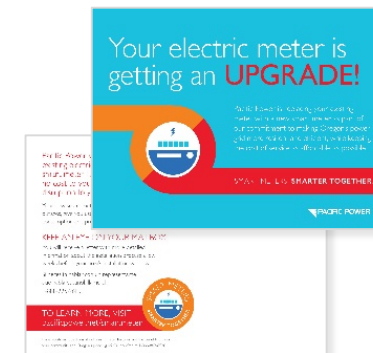
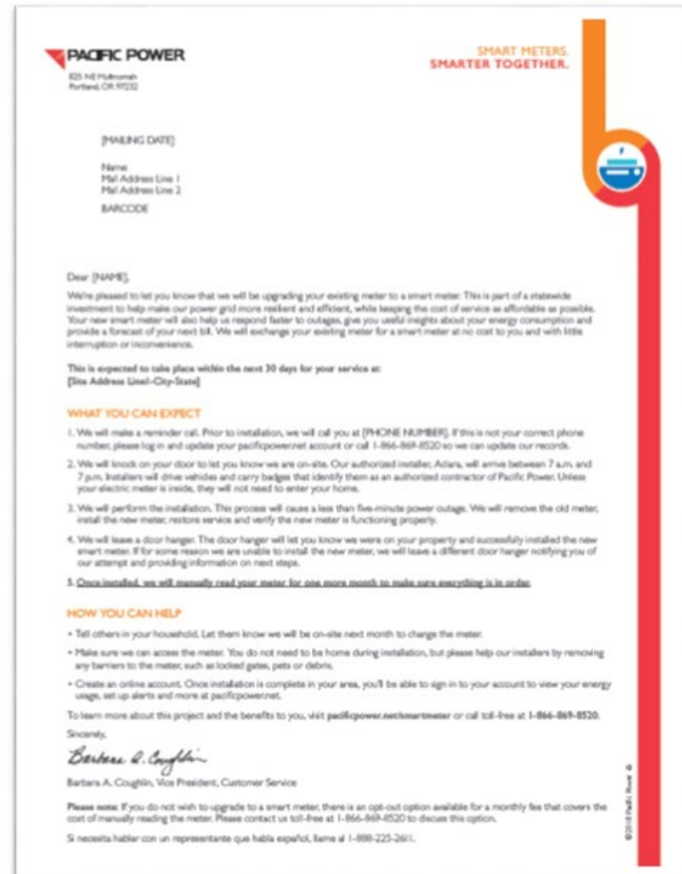
Employee Impacts

- Employee reductions projected to occur 2021
- Employees notified on November 1, 2018
- Opportunities to bid on other positions
- Resume writing and interview skills training to be offered
- Exploring other options to support employees

Project Communication Strategy

- Awareness – what to expect
- Education – how smart meters work and the benefits they provide; how this also benefits customers with an AMR meter
- Acceptance – address concerns
- Big picture – the role smart meters play in Rocky Mountain Power's grid modernization efforts

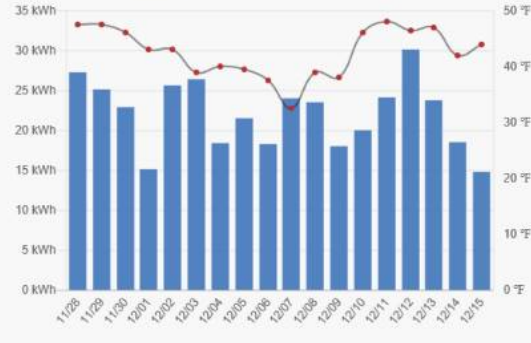
Installation Communications – Oregon Examples




Realizing the Benefits of Advanced Metering Your Account Features and Setting up Alerts

Your Account
View & Pay Bills
Payment & Billing Options
Your Alerts
Usage Details
Online Profile & Account Information
Start, Stop or Move
Landlords & Property Managers
Report Power Outage
Smart Meters


Your Account Secure Site
Show account info **Electric Account** active
Account Options
Manage alerts
✓ Paperless billing
✓ Automatic payments
✓ Renewable energy
Equal pay
Your Current Bill
Billed on 11/29/18 View Current Bill
Current due \$0.00
Past due \$0.00
Total due \$0.00
Automatic payments scheduled
Need more time to pay?

Your Usage Usage Calculator Usage Details
Projected bill : \$93 - \$114
Projected bill alert: \$170
You are 18 days into your billing cycle
Site address: [About your smart meter](#)
Any time frame that occurs without energy usage will not show on this graph.
Daily Usage
Usage — Average Temperature


Pacific Power App

Report outages and stay informed with our free mobile app. Get it on the App Store® and Google Play™.

Your Account Residential Business Contractors Efficiency & Environment
Your Account > Your Alerts Secure Site
Show account info **Electric Account** active
Select your alert preferences below.

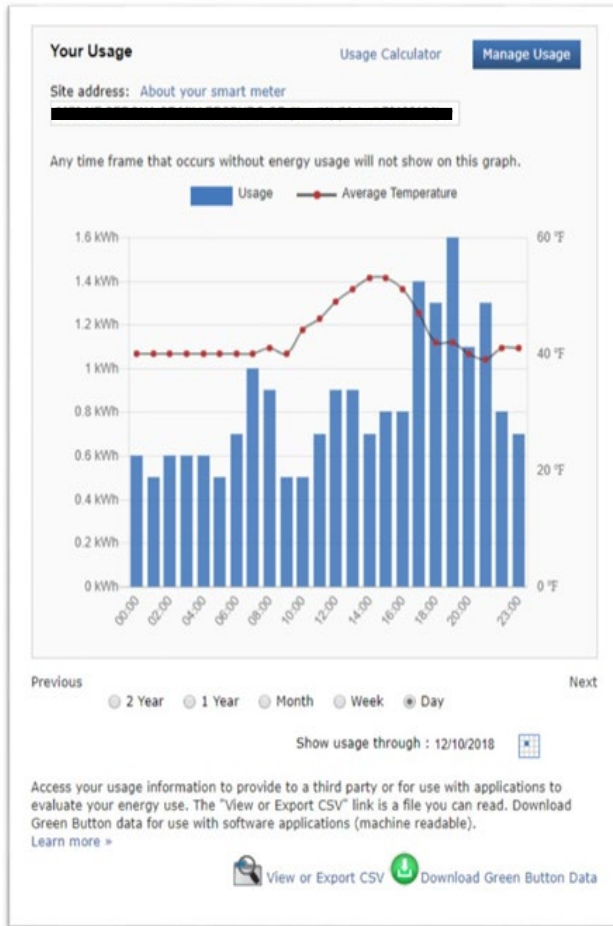
Your Account
View & Pay Bills
Payment & Billing Options
Your Alerts
Usage Details
Online Profile & Account Information
Start, Stop or Move
Landlords & Property Managers
Report Power Outage
Smart Meters

Pacific Power App

Report outages and stay informed with our free mobile app. Get it on the App Store® and Google Play™.

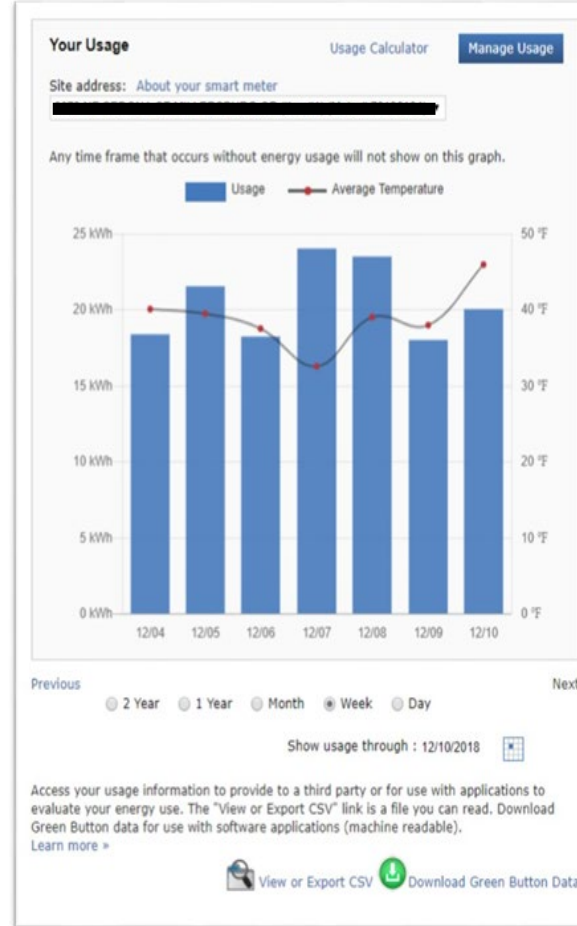
Your Alerts Secure Site
Select your alert preferences below.
Billing & Payment
Billing Notice Includes the amount due and due date when your bill is ready. This alert does not change your paperless status. ☒ Email ☒ Text
Attach a copy of my bill Terms and conditions apply. ☐ Yes (Email only)
Projected Bill Get an alert when your energy bill is projected to be higher than a threshold you set. ☐ Email ☒ Text
Projected bill threshold \$
Payment Due Reminder Get an alert a few days before your payment is due if your bill has not been fully paid. ☐ Email ☒ Text
Payment Confirmation Get an alert when a payment is applied to your account. ☐ Email ☒ Text
Power Outage
Reported Outage Follow-Up When you report an outage, we'll provide status update alerts. ☒ Email ☒ Text ☐ Call
Programs & Services
Account Services & Energy News Information and services to help you save energy, support renewable power and more. This may include newsletters. ☒ Email ☒ Text
Cancel Continue

Realizing the Benefits of Advanced Metering

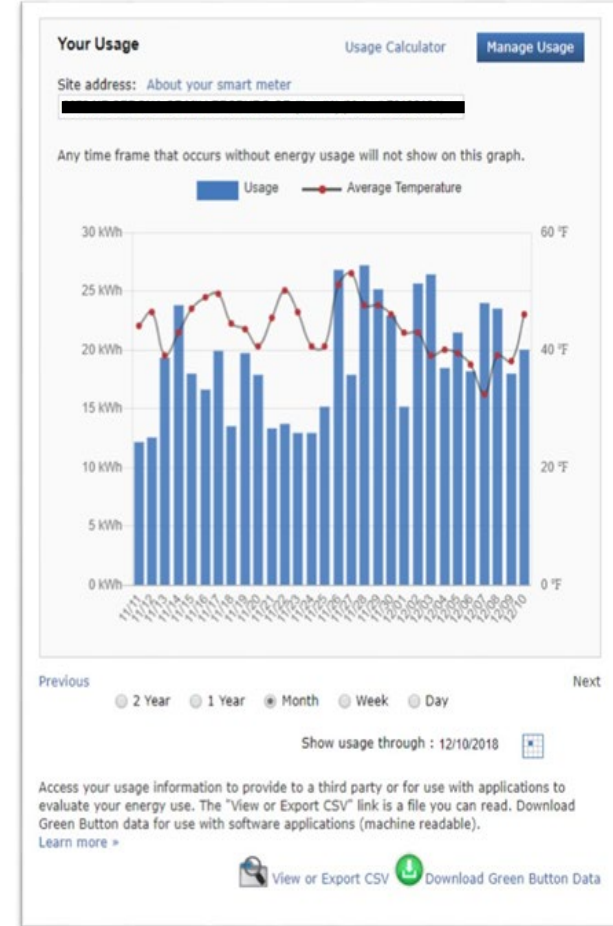
View Energy Usage – Web and Mobile App



Day (By Hour)



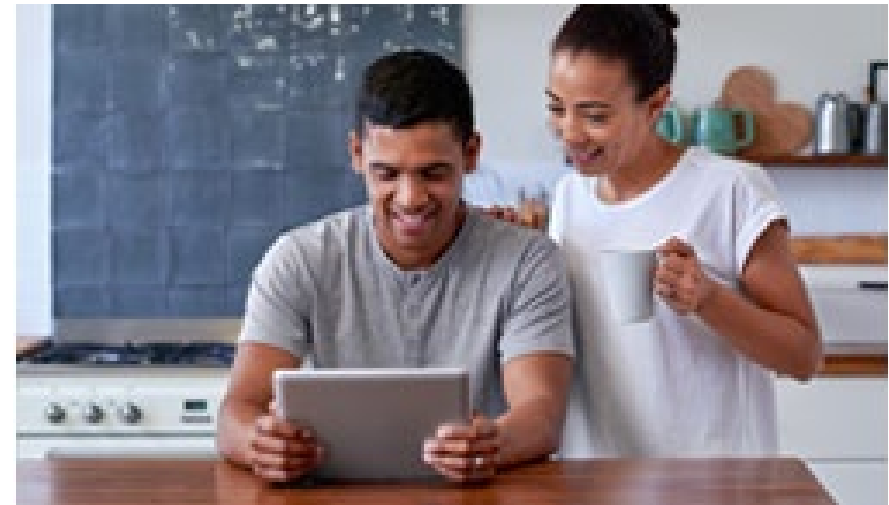
Week



Month

Next Steps

- Review Opt-out tariffs – AMR/AMI
- Propose Collection notification modification
- Finalize Communication Strategy
- STEP Filing



THANK YOU.
QUESTIONS?

