ENERGY CONSERVATION
10-Year Potential and 2-Year Target

Rich Arneson
September 11, 2019
Energy Conservation – State Law

• The Energy Independence Act requires qualifying utilities to determine their conservation potential using “methodologies consistent with those used by the Pacific Northwest Electric Power and conservation planning council” (19.285.040(1)(a) RCW)

• The Energy Independence Act is codified in WAC 194-37 and outlines how utilities are to comply with the law
Conservation Mandate

Washington Administrative Code 194-37

Requires qualifying utilities to establish:

• 10-year achievable economic conservation resource potential
• 2-year conservation target that is “no less than its pro rata share of its ten-year potential.”

These metrics must be developed and adopted every two years

We recommend the Board adopt both metrics prior to January 1, 2020

• The target sets the 2020/21 conservation acquisition baseline against which Tacoma Power will be judged for compliance purposes
Tacoma Power conducted a conservation potential assessment to determine our 10-year potential

WAC 194-37 requires qualifying utilities to use inputs that “reasonably reflect the specific characteristics of the utility”:

- Utility service area specific customer data
- Economic activity and building types
- Current technology assumptions – nearly 8,000 measure permutations
- Enables useful, relevant, detailed conservation planning
- Consistent with NWPCC methodologies

We will incorporate the results of the Conservation Potential Assessment into our next Integrated Resource Plan
Metric 1:

Ten-Year Conservation Potential 233,660 MWh

<table>
<thead>
<tr>
<th>Sector</th>
<th>Economic Achievable Potential (MWh)</th>
<th>(aMW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>55,827</td>
<td>6.4</td>
</tr>
<tr>
<td>JBLM Residential</td>
<td>1,737</td>
<td>0.2</td>
</tr>
<tr>
<td>Commercial</td>
<td>89,125</td>
<td>10.2</td>
</tr>
<tr>
<td>JBLM Commercial</td>
<td>11,242</td>
<td>1.3</td>
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<tr>
<td>Industrial</td>
<td>62,468</td>
<td>7.1</td>
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<tr>
<td>Street Lighting</td>
<td>2,713</td>
<td>0.3</td>
</tr>
<tr>
<td>Distribution Efficiency</td>
<td>10,548</td>
<td>1.2</td>
</tr>
<tr>
<td>Total</td>
<td>233,660</td>
<td>26.7</td>
</tr>
</tbody>
</table>
METRIC 2:

Two-Year Conservation Target 46,732 MWh

• Target we are asking the Board to adopt
  • Must Hit!
  • Failure will result in fines

• 20% of the 10-year potential
  • Meets the pro-rata share requirement
  • Will be modeled in IRP and load forecast

• Annual Objective ~ 23,366 MWh
  • About 0.5% of our 2018 retail sales
Next Steps

At the October PUB meeting, we will request adoption of:

- Metric 1: A ten-year achievable economic potential of 233,660 MWh
- Metric 2: A two-year conservation target of 46,732 MWh
Utility Modernization Strategy

Distribution Automation & Enhanced Outage Management

John Nierenberg
Manager of T&D System Planning, Operations, & Asset Management
Today, Tacoma Power has limited visibility into real-time operations...

Is a given customer in service?

Where is the failure?

What is the voltage at the customer?

What is the peak use of the customer?

What is the customer’s load shape?

Which customers are out of service?

What is the status of a given transformer?
Distribution automation uses digital sensors, switches, & communications technology to automate electric distribution system functions.

- Improves reliability
- Improves service quality
- Delivers cost savings
Distribution automation builds from new & existing utility technologies...

- Advanced meters & communications networks
- Utility geospatial platforms

- Distribution and outage management systems
- Energy management & SCADA systems
Common industry examples of distribution automation

- Automated feeder switching
- Improved fault detection
- Real-time asset health monitoring
- Enhanced outage management
New digital field devices can be deployed to enable distribution automation.
Customer benefits

- Reduction in customer interruptions
- SAIDI & SAIFI Improvements
- Automate power restoration
- Reduce customer burden to report outages
- More accurate restoration times
- Increased customer satisfaction
Utility benefits

- Reduced expenses
- Enhanced resiliency & reliability
- Improved equipment maintenance
- Improved employee safety
- Avoided truck rolls & reduced emissions
- Real-time situational awareness
Distribution automation enables utility modernization objectives
Advanced meters enable future distribution automation capability for TPU

**Advanced Meters Customer Benefits Roadmap**

*Updated August 2019*

### Phase 1 Functionality
*To be completed by mid 2022*

1. Basic meter to bill
2. Basic meter data reporting
3. Monthly billing
4. Customer meter options policy
5. Support for existing manual prepay process

### Phase 1 Dependencies

1. Deploy AMI Network & Meters
2. SAP Integration
3. MDMS Implementation
4. New Customer Portal Deployment & Integration
5. New SAP Functionality for Fees

### Phase 2 Functionality
*To be rolled out between 2021 and 2023*

1. Enhanced prepay functionality (via portal)

### Phase 2 Dependencies

1. Asset analytics use cases
2. Engineering analysis & systems planning
3. Enhanced voltage monitoring
4. Revenue protection

### Enabled Functionality
*Features enabled by AMI not in program scope
To be prioritized after 2023*

1. New real-time rate models
2. Support for multi-service prepay (water, sewer, trash)

### Future Dependencies

1. SAP Customer Interaction Center Replacement
2. OMS & ESRI GIS Integration
3. Energy Management System Integration
4. SAP Configuration for New Rates
5. Embedded Taxes in Rates Removed from SAP

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**Customer Benefits Key**

- **Reliability & Resiliency**
- **Billing & Payment**
- **Convenience**

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**2020**

**2021**

**2022**

**2023**

**2024 and beyond...**