

# Overview of Draft Sixth Power Plan

Power Committee  
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## Conditions Facing the Region

- Slower demand growth, but increasing summer peak loads
- Higher fuel prices and CO<sub>2</sub> penalties
- Increasing share of variable resources
- Uncertain, but likely, carbon control policies



## Resource Alternatives

- Increased cost-effective efficiency potential
  - Technological progress and new applications
  - Higher avoided costs
- Generating resources more expensive
  - Levelized cost - \$78 to \$239 per megawatt-hour
  - Constrained by RPS requirements
  - Limited alternatives in early years of plan



## Recommendations

- Aggressive acquisition of cost-effective conservation is lowest cost resource and reduces risks from higher prices and potential carbon policy requirements
  - Has the potential to meet most load growth and delay reduce generating resource commitments in the near term
  - Reduces consumers bills and creates local jobs and income



## Renewable Generation

- In the face of uncertainty of future carbon control costs, development of wind and geothermal generation is prudent, with or without an RPS requirement
  - Integration of wind will require increased reserves for within-hour balancing
  - There are actions that can be taken to reduce these reserve requirements, but additional capacity may be needed in some control areas



## Fossil Fuel Generation

- On a regional energy planning basis, decisions on new natural gas generation do not need to be made in the first 5 years
  - Individual utilities may face different needs to meet their customers' requirements
- Meeting stated GHG reduction goals will require reduced operation of, or retiring, coal plants
- This accounts for some of the value of conservation and renewable resources in the plan



## Electricity Rates

- In all futures electricity rates are expected to increase (roughly 30 percent over 20 years)
- Increases are consistent with increasing fuel costs and carbon penalties.
- New generating resources are more expensive
- Efficiency acquisition can affect rates
  - Effect depends on how much of cost is incurred by utilities vs. codes, standards, and customer
  - Effect on consumer electricity bills is less because fewer Kilowatt-hours are consumed



## Capacity and Flexibility

- Plan maintains a substantial capacity and energy surplus on a regional planning basis
- Resource flexibility for within hour balancing reserves will be needed for wind integration
  - First, improved system operation; e.g. wind forecasting, reserve sharing, dynamic scheduling
  - Generating resources with operating costs near the wholesale market price
  - In long term near storage technologies may become available



## Climate Policies

- RPS requirements are very similar to what would be cost-effective strategy with only CO<sub>2</sub> price risk.
- Resource strategy reduces carbon emissions from 57 to 38 M tons per year in a typical future
  - However, without coal plant retirement, 20 percent of futures could have no reduction by the end of the study
  - Coal retirement requires replacement resources for adequacy, timing of retirement and new resource development could have significant cost impacts



## Action Plan

- Accelerate efficiency acquisition
  - NEET is a regional head start
- Identify near-term, local, small scale renewable and CHP alternatives
- Identify cost-effective flexibility strategies
- Monitor and demonstrate new technologies (efficiency, DR, smart-grid)
- Adaptive management of plan implementation

