

APS

Resource Planning Goals

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Resource Planning - Objective

- Objective for Resource Planning:
 - Provide reliable service to APS customers at a reasonable cost while balancing the overall risks of the resource portfolio and complying with applicable federal and state regulations
 - The plan should also anticipate other potential outcomes by incorporating elements of flexibility
 - The process must ensure that the utility has the financial strength to implement the outcomes of the planning process

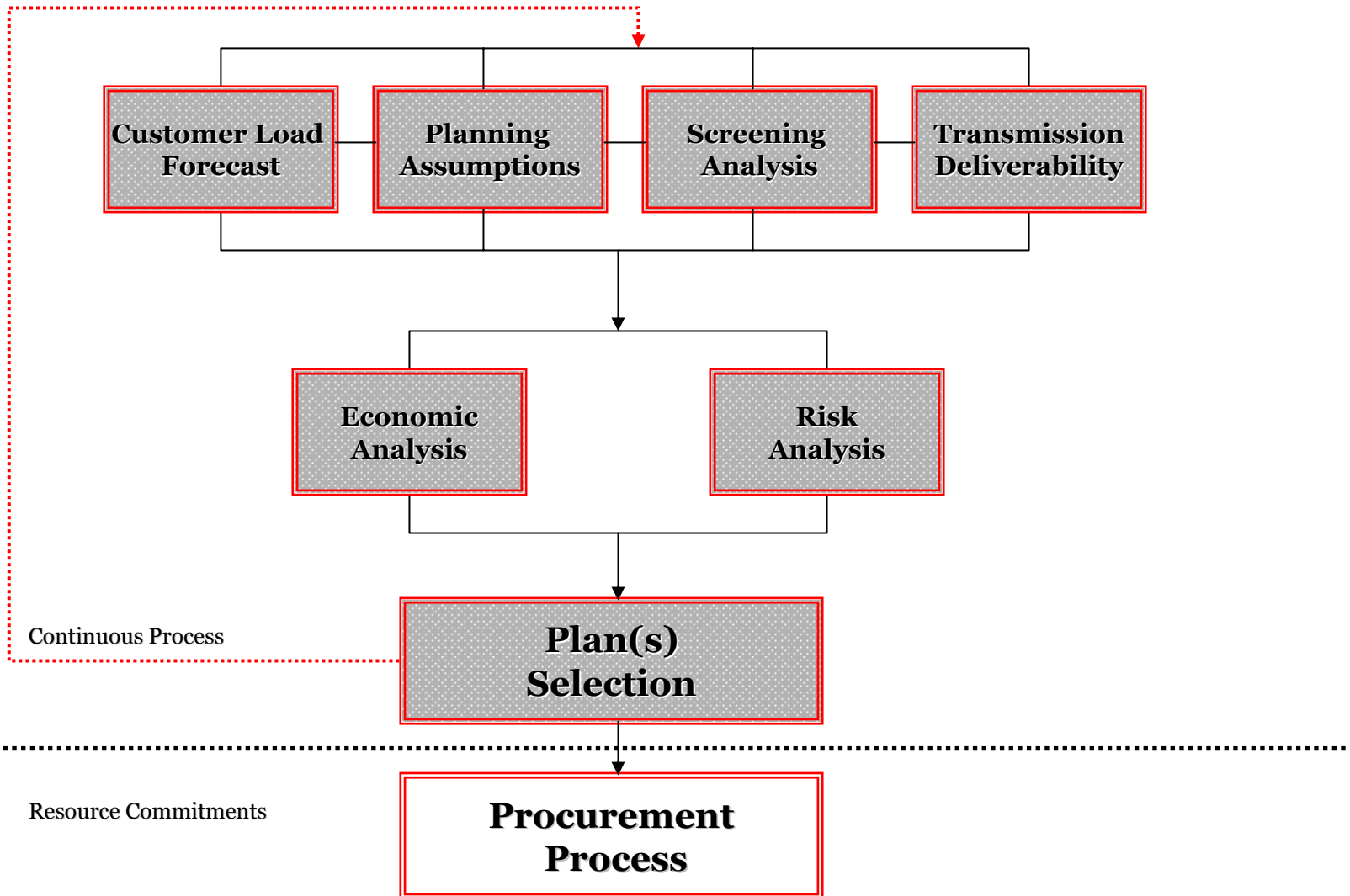
Resource Planning Context

- APS Overview:
 - Expected High Load Growth
 - Significant Future Resource Needs
 - Significant Resource Planning Challenges:
 - Climate Change
 - Cost Uncertainty and Rising Costs
 - Other Issues (transmission, regional picture, water, natural gas)
- APS Resource Planning Process:
 - Consideration of All Resource Options
 - Balance Numerous Objectives:
 - Reliability of Service
 - Customer's Electricity Price and Price Stability
 - Impacts to the Environment
 - Risk

Resource Planning Guidelines/Considerations

- **Reliability:**
 - **Minimum Reserve Margins (15% summer, 12% winter)**
 - **Resource Adequacy Considerations**
 - **Firm Transmission Needed to Deliver Resources to Load**
 - **Flexible Resources to Meet Operating Requirements**
- **Environmental:**
 - **Meet or Exceed Applicable Laws and Regulations:**
 - Future generating plants must include necessary pollution controls
 - Resource plan includes renewable resources to meet or exceed state RES standards
 - **Costs of Currently Regulated Emissions Included in Economic Results and Comparisons**
 - **Future Potentially Regulated Emissions Evaluated Thru Risk Analysis Process**
- **Economic:**
 - **Total Cost of Serving Customers (present value of estimated revenue requirements)**
 - **Customer Price Impacts (average cost)**
 - **Capital Requirements**
- **Risk:**
 - **Risk Impacts Evaluated thru Several Methods:**
 - Stochastic analysis, sensitivity analysis, scenario analysis, qualitative evaluations
- **Planning Standard:**
 - **Resource Decisions Involve Balancing of Economic and Risk Impacts**
 - **Focus on “Least Cost” Alone Could Ignore Critical Risk Factors**

Resource Planning Analysis Process



Attributes of “Preferred” Resource Plan

1. Meets Reliability Needs:
 - Allows APS to meet targeted reserve margin levels
 - Provides for operational flexibility to respond to outages and weather variations
 - Other operational issues could become important in the future
2. A Balanced and Diversified Portfolio that allows APS to:
 - Provide a Reliable Power Supply at Reasonable Prices
 - Reduce Overall Risk of the Energy Supply Portfolio
 - Meet or Exceed Environmental Requirements
3. Flexibility is Incorporated into the Plan:
 - Specification of future resource types anticipates the possibility of different “market” outcomes:
 - CC capacity could meet part of “peaking” need
 - Renewable resource technologies are evolving
 - Other new (or improved) technologies may emerge
 - Long lead-time resource development is approached in a step-wise manner:
 - Decision points throughout development schedule to allow for re-assessment
 - Provides the ability to adjust for changes in capacity needs (load forecast changes)