

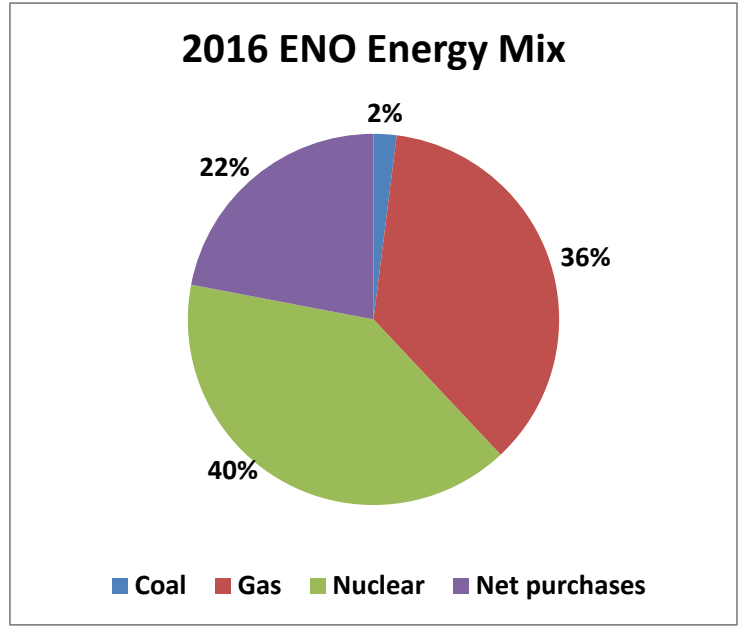
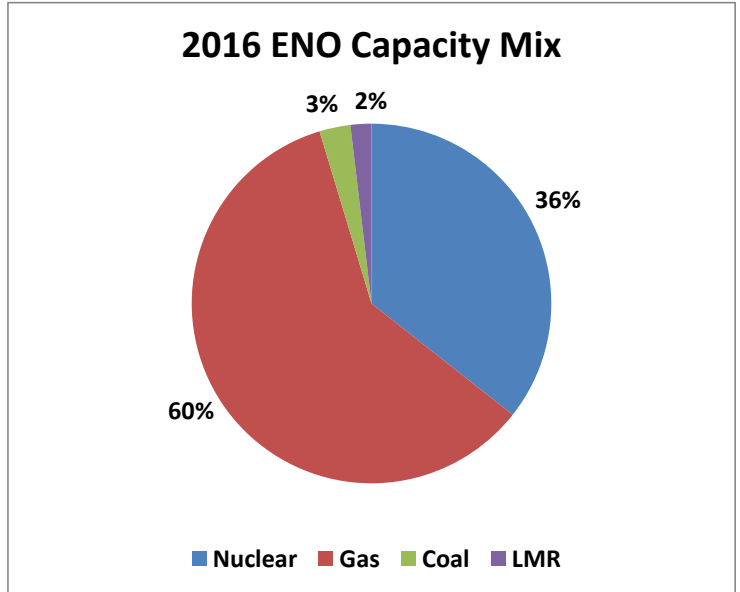


2018 ENO IRP--Public Meeting #1
**Overview of Planning Analyses,
Inputs, and Assumptions**



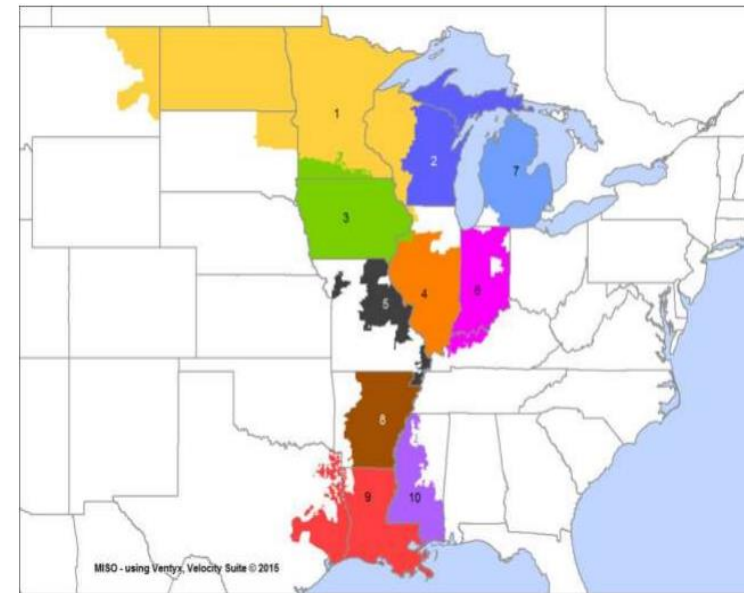
ENO Overview: 2016 Electric Service Numbers

- ENO served over 198,000 electric customers in the City of New Orleans
- Customer demand peaked July 7th at 1,142 MW
- Customers used over 5.7 million MWh of electricity
- 143 miles of high voltage transmission lines
- 1,773 miles of distribution lines
- 24 substations



ENO Overview: MISO Membership

- What is MISO?
 - A Regional Transmission Organization (RTO)
- What does MISO do?
 - Manages energy markets within geographic footprint
 - Manages short term capacity market for Load Serving Entities to address resource adequacy needs
 - Oversees reliability of the transmission system
 - Facilitates a transmission planning process to enhance efficiency of the electric grid
- When did ENO join?
 - In December 2013, following Council approval

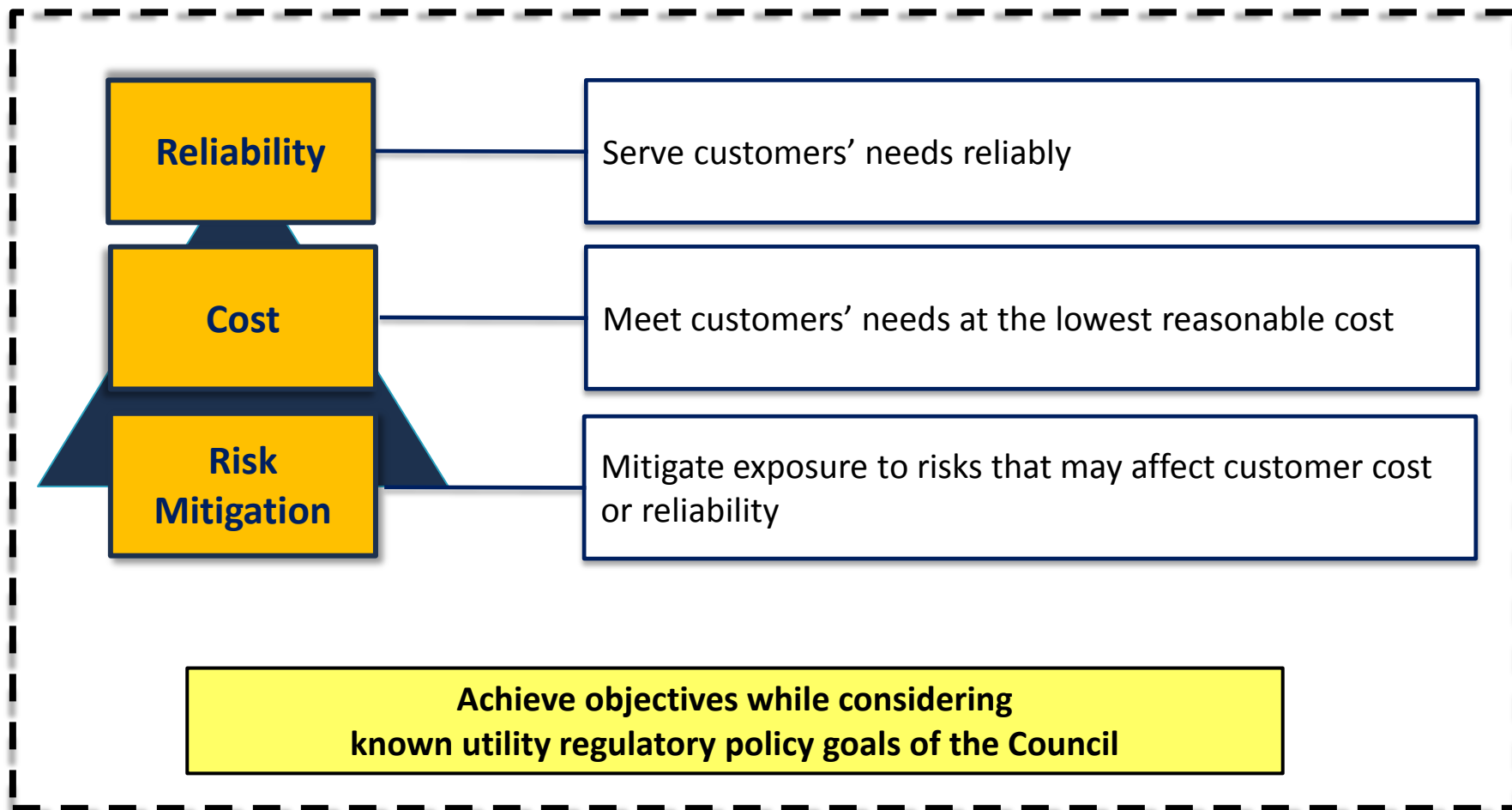


2018 IRP—Requirements of Revised Rules (R-17-429)

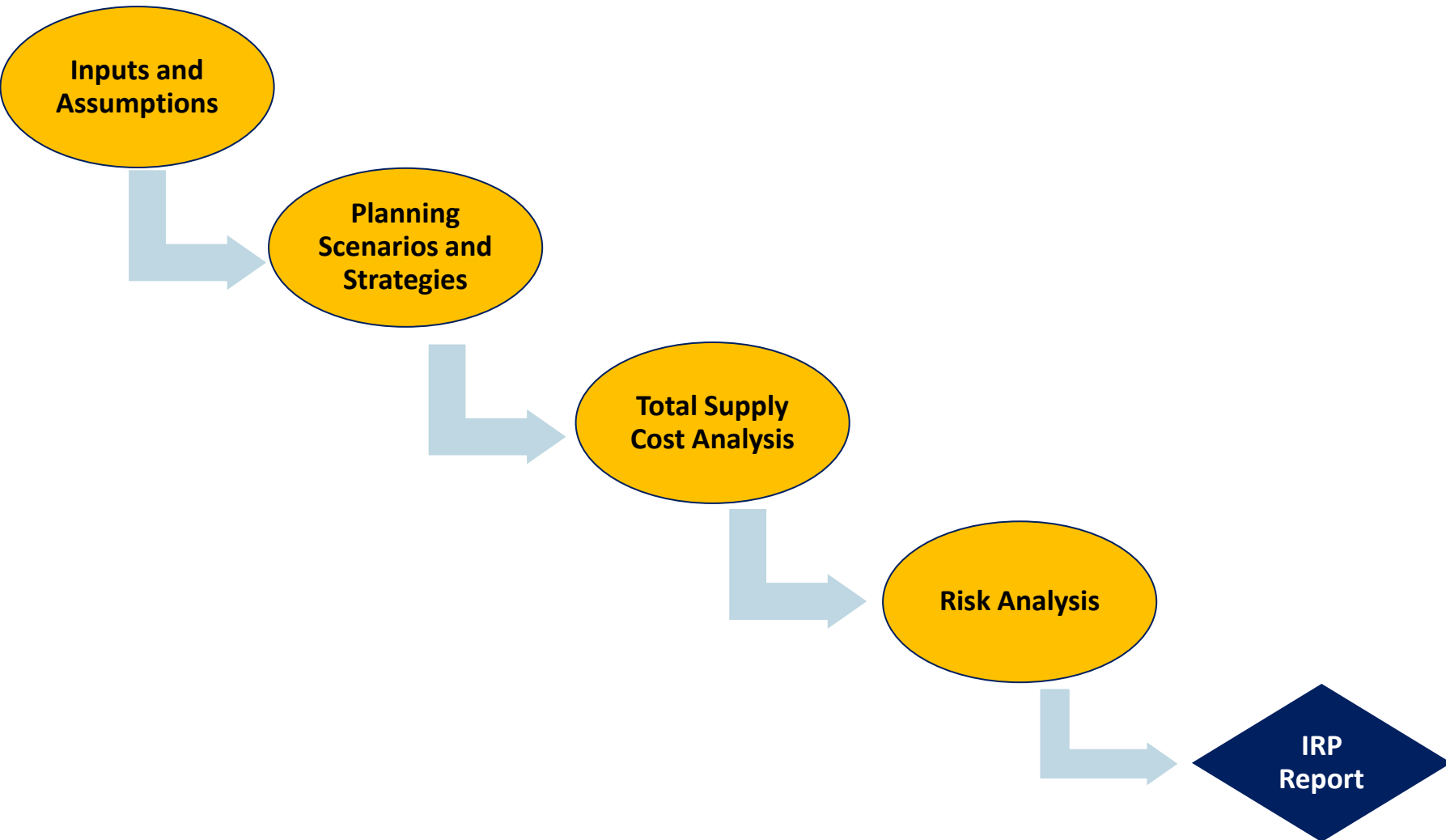
- **What's the goal?**
 - IRP Report filed in early 2019 that “serves as a general resource planning tool to the Utility and the Council”
- **How will the Report be developed?**
 - ENO, Stakeholders, and the Advisors will analyze and discuss a range of inputs and assumptions across different future scenarios and strategies
 - This analysis will result in a number of optimized resource portfolios that will inform resource decisions during the 20 year planning horizon

Achieving the Goal--Planning Objectives

The IRP planning process seeks to balance three main objectives: **reliability, cost, and risk**



Path to the 2018 IRP Report

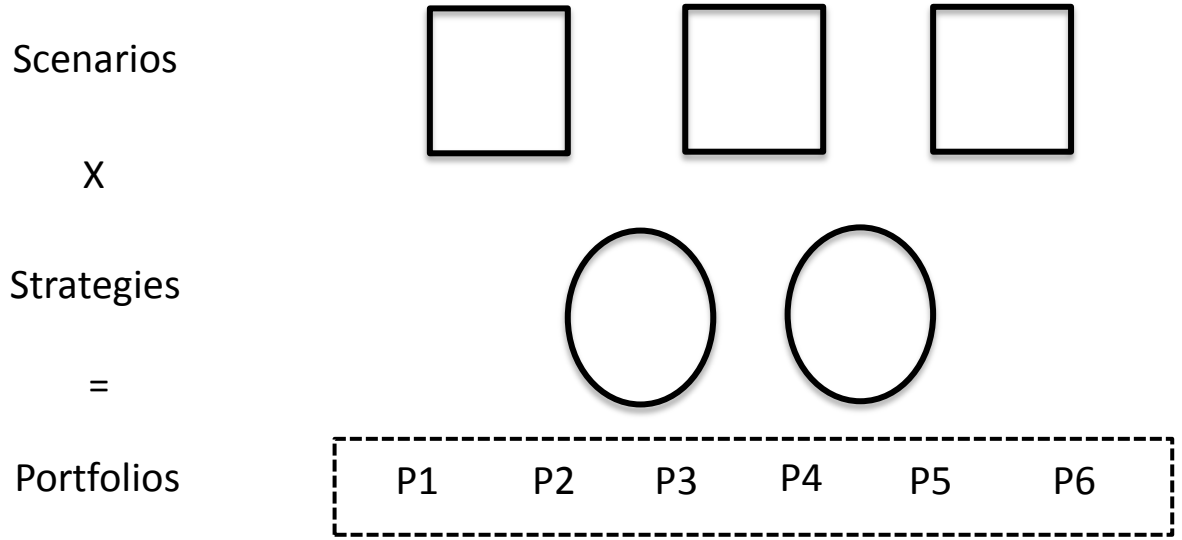


Inputs and Assumptions

Customer Need	Supply Side and Demand Side Resources	Transmission	Economic & Financial
<ul style="list-style-type: none"> • Peak Load Forecast w/ Sensitivities • Reserve Requirements 	<ul style="list-style-type: none"> • Existing Fleet capability • Resource deactivations • Power Purchase Agreements • Technology Assessment (capital and operating costs) • Impact of existing DSM • DSM Potential Study 	<ul style="list-style-type: none"> • Transmission topology (including planned upgrades) • Import/Export Limits 	<ul style="list-style-type: none"> • Inflation • Discount Rate • Fuel Forecasts • Environmental pricing (e.g., CO₂) • Capacity Value

Planning Scenarios and Strategies

- **Planning Scenario**—Definition of market outlook consisting of key parameters not controlled by ENO or the Council (Macroeconomic)
- **Planning Strategy**—Defined set of resource constraints, regulatory policies, or business decisions over which ENO, the Council, or Intervenors have control (Microeconomic or Policy Sensitivities)
- Each Scenario combined with each Strategy results in one Resource Portfolio
- Example: if there are three Scenarios and two Strategies, then the analysis would result in six Resource Portfolios to be evaluated



Planning Scenarios and Strategies

- **ENO Scenarios—Three or Four total**
 - One Reference Scenario: Most likely future circumstances and policies
 - Two Alternative Scenarios: Account for alternative circumstances and policies
 - One Consensus Scenario: Developed with input of Advisors and majority of intervenors
- **Intervenor Scenario—Possibly One**
 - If no consensus, then future circumstances and policies agreed to by majority of intervenors

- **ENO Strategies—Two to Four total**
 - One Lowest Cost Option Strategy
 - Zero to two Alternative Strategies: Reflect known policy goals of the Council
 - One Consensus Strategy: Developed with input of Advisors and majority of intervenors
- **Intervenor Strategy—Possibly One**
 - If no consensus, then input agreed to by majority of intervenors

Total Supply Cost Analysis--Portfolio Design

- ENO currently uses AURORA modeling software to develop resource portfolios given defined constraints (e.g. magnitude of capacity needed, minimization of total supply costs)
- Based on defined assumptions, AURORA selects the optimal portfolio of supply- and demand-side resources to most economically serve customer needs over the 20 year planning horizon
- Some planning objectives or strategies may contemplate inputs that cannot be modeled in AURORA. The optimal portfolio in that case would need to be developed based on defined constraints and professional judgment

Total Supply Cost Analysis--Valuation of Resource Portfolios

- Designed portfolios are assessed based on the economic impact to customers under each of the defined scenarios
- Each resource portfolio is tested in each scenario using AURORA production cost modeling software
- For each resource portfolio, a present value forward revenue requirement (i.e., a Total Supply Cost, that includes both relevant fixed and variable costs) will be calculated for the 20 year planning period



Risk Analysis

- **ENO will take into account the performance of the various portfolios across possible scenarios to help determine portfolio risk**
- **Additionally, ENO will conduct sensitivity analysis of quantifiable costs and risks that might affect portfolio robustness (e.g. fuel cost and CO2 price sensitivities)**
- **Analysis will examine impacts on ENO's cost of providing service to customers from social and environmental effects that are:**
 - Quantifiable, and
 - Were included in the modeling of the optimized portfolios
- **To the extent possible with current modeling software, the risk analysis will evaluate the expected outcome of potential costs as well as the range and probabilities of those costs**

IRP Report

- **IRP report is currently due to be filed in January 2019**
- **Will include several sections, as well as supporting analysis and a description of the process and inputs used:**
 - Optimized Portfolios: A range of different resource portfolios optimized to address different possible future scenarios and strategies
 - Cost/Risk Analysis: Assessment of quantifiable costs and risks of identified portfolios
 - Policy Scorecard: A matrix of qualitative and quantitative metrics as described in the IRP Rules and Initiating Resolution to assist the Council in assessing the IRP report
 - Distributed Energy Resource (DER) Integration Report: An assessment of the systems and training necessary for ENO to be able to evaluate integration of DERs into the distribution grid
 - Action Plan: Timeline and plan of steps proposed as a result of the IRP

Path to the 2018 IRP Report

