

## **2. Natural Gas Price Volatility Study**

In response to Stakeholder's request for a natural gas price forecast and volatility assessment, Siemens PTI proposes the following two-part approach:

### **Part 1: Quantify the Impact of Natural Gas Price Volatility on PNM's Annual Fuel Expense**

Using a simulation-based Value at Risk (VaR) framework, Siemens PTI will:

- Analyze historical spot pricing data to calculate volatility including short duration market disruptions that create pricing anomalies
- Apply this volatility to the forward curve via Monte Carlo simulation
- Generate thousands of potential price paths
- Organize these into standard deviation bands around the forward curve
- Apply these paths to forecasted monthly gas consumption (from IRP dispatch) to quantify cost exposure
- Estimate the variance between expected and unfavorable outcomes to assess risk potentially passed on to ratepayers

Prior to execution, Siemens will coordinate with Stakeholders and PNM (virtually) to confirm the methodology meets expectations.

### **Part 2: Risk Mitigation Analysis** Based on Part 1 results, Siemens PTI will:

- Develop a risk mitigation framework
- Define acceptable variance thresholds with PNM's risk team
- Evaluate hedge ratios and alternative hedging strategies (Henry Hub, basis instruments)
- Quantify expected risk reduction, opportunity cost, and cash implications of each option

#### **Deliverables:**

- Excel model, supporting report, and summary presentations outlining findings and recommendations
- Virtual presentation for stakeholders