

Work Plan for NW Natural's 2013  
**WASHINGTON**  
 Integrated Resource Plan

Issued March 26, 2012

**Methodology**

The purpose of the Integrated Resource Plan (IRP) is to develop strategies for purchasing gas and improving efficiencies of gas usage to meet current and future needs consistent with a lowest reasonable cost approach. To do this, NW Natural will develop and integrate demand forecasts, weather patterns, natural gas price forecasts, and demand side and supply side resources into Gas Supply and Planning Optimization software. The resulting model will act as a guide to steer the Company toward the least cost resource planning portfolio.

**Key Dates**

Develop Model Inputs	
- price forecasts	by April 30
- customer forecasts	by April 30
- load forecasts	by May 15
- supply side resources (existing and proposed )	by May 30
- demand side resources	by August 10
Running Model	August 1 to November 1
- finalizing model	
- analyzing data	
Drafting Chapters	October 15 to December 1
Finalize Draft	December 1 – December 30
File Draft IRP / Distribute to TWG	December 30
Technical Working Group (TWG) Meetings	
- 1 <sup>st</sup> Meeting Discuss customer and load forecast methodologies, price forecast, weather	June 20, (9 a.m. to 3 p.m.)

○ Distribute TWG Meeting #1 Issues to TWG	1 week after meeting
○ TWG comments due back to NWN	1 week after issues list received
○ NWN response due to TWG	2 weeks after comments received
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- 2 <sup>nd</sup> Meeting Discuss DSM and supply-side resources	August 15, (9 a.m. to 3 p.m.)
○ Distribute TWG Meeting #2 Issues to TWG	1 week after meeting
○ TWG comments due back to NWN	1 week after issues list received
○ NWN response due to TWG	2 weeks after comments received
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- 3 <sup>rd</sup> Meeting Discuss model run results	October 31, (9 a.m. to 3 p.m.)
○ Distribute TWG Meeting #3 Issues to TWG	1 week after meeting
○ TWG comments due back to NWN	1 week after issues list received
○ NWN response due to TWG	2 weeks after comments received
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- 4 <sup>th</sup> Meeting Discuss draft IRP-Phone Conference	As Needed. Approx. January 16, 2013
○ Distribute TWG Meeting #2 Issues to TWG	1 week after meeting
○ TWG comments due back to NWN	1 week after issues list received
○ NWN response due to TWG	2 weeks after comments received
File Final 2013 IRP	March 30, 2013

## **Content of 2011 Modified IRP**

### **1. Executive Summary**

- Overview of Company and Resource Plan
- Principal Conclusions from this Plan
- 2011 IRP Multi-Year Action Plan

### **2. Gas Requirements Forecast**

- Overview
- Customer Forecast
  - Residential Customer Forecast
  - Commercial Customer Forecast
  - Industrial Customer Forecast
  - Customer Scenarios
- Load Forecast Model
  - Base Load
  - Heat Load
  - Implementation
  - Peak Day Load
  - Use Per Customer and Price Elasticity
  - Usage Scenarios
- Gas Price Forecast
  - Price Volatility
  - Forecast
  - Price Scenarios
- Weather
- Results
  - Base Case
  - Demand Scenarios
- Forecast Accuracy and Peak Day Analysis
- Key Findings

### **3. Supply-Side Resources**

- Overview
- Current Resources
  - Pipeline Transportation Contracts
  - Gas Supply Contracts
  - Other Existing Supply Resources
  - Joint Venture for Gas Reserves
  - Supply Diversity
  - Physical and Financial Hedging
- Supply-Side Resource Dispatching
- Recent Resource Decisions

- Future Resource Alternatives
  - Interstate Capacity Additions
  - Mist Storage Recall
  - Distribution Planning
  - Imported and Exported Liquefied Natural Gas (LNG)
  - Satellite Storage
  - Potential Future Supply Resources
    - Biogas
    - Supply Basin Storage Development
- Gas Supply Portfolio Acquisition Strategy
  - Overview
  - Plan Goals
  - Relationship to Integrated Resource Plan
  - Strategies
  - Market Outlook
- Emergency Planning
- Key Findings

#### 4. Demand-Side Resources in Washington

- Energy Efficiency Overview
- Methodology – Energy Efficiency
  - Technical Potential Study
  - Evaluation of Achievable Potential DSM in *SENDOUT*<sup>®</sup>
- Other Demand-Side Management Sensitivities
  - Lower Avoided Costs
  - Higher Gas Cost
- Program Funding and Delivery
  - Energy Efficiency Programs
  - Low Income Programs
- Load Management and Demand Response
- Energy Policy
- Key Findings

#### 5. Linear Programming and the Company's Resource Choices

- Overview
- IRP Modification
- Resource Planning Model Integration
- Original Phase Resource Model Results
- Modification Phase Resource Planning Model Results
- Key Findings

6. Avoided Cost Determination

- Overview
- Environmental Externalities
- Methodology
- Results
- Avoided Costs-Modified
- Key Findings

7. Public Participation

- Technical Working Group
  - Issues lists from TWG meetings
- Public Participation