Supplement No. 2

Work Plan for NW Natural’s 2014

**Washington Integrated Resource Plan**

UG-131473

Issued August 28, 2014

**Technical Working Group Meetings**

Below is the schedule meetings and filing dates for the Company’s 2014 IRP. This schedule is revised from the first supplement to the Company’s work plan that was filed September 12, 2013:

**TWG No. 1 – August 22, 2013**

NW Natural reviewed a recap from most recent 2013 NW Natural Washington IRP and 2013 Oregon IRP Update, projected major issues/updates for 2014 IRP, the Gas Supply Outlook and Price Forecast, and our preliminary forecast results

**TWG No. 2 – October 2, 2013**

NW Natural reviewed the revised load forecast, discussed scenarios, and discussed the criteria to be used to determine what Distribution System Planning projects should be included in the IRP.

**Scenario Workshop – November 13, 2013**

NW Natural held a half-day scenario workshop as opposed to a technical working group to try to identify those scenarios that were most meaningful to the technical working group.

**TWG No. 3 – December 10, 2013**

Cancelled due to weather.

**TWG No. 4 – January 23, 2014**

NW Natural reviewed a recap from most recent 2013 NW Natural Washington IRP and 2013 Oregon IRP Update, projected major issues/updates for 2014 IRP, the Gas Supply Outlook and Price Forecast, and our preliminary forecast results

**TWG No. 5 – April 3, 2014**

NW Natural reviewed comments from parties, discussed providing additional analysis on alternative pipeline, presented its carbon pricing analysis and reviewed its long term hedging practices.

**TWG No. 6 – July 11, 2014**

NW Natural plans to review the additional analysis it will perform on alternative pipelines.

**March 3, 2014**

Draft IRP filed with WUTC

**August 29 to September 5, 2014**

The Company will submit its final 2014 IRP to the WUTC.

**IRP Content**

Below is expected content of the final 2014 IRP. This is taken from the table of contents included in the Draft 2014 IRP filing on March 3, 2014.

**CHAPTER 1 – EXECUTIVE SUMMARY**

I. Introduction and Background

II. Principle Conclusions

III. Demand Forecasts

IV. Supply-Side Resources

V. Resource Portfolio Analysis

VI. Public Involvement

VII. Multi-Year Action Plan

**CHAPTER 2 – GAS REQUIREMENTS FORECAST**

I. Overview of Load Forecast Methodology

II. Customer Forecast

III. Load Forecast Model

IV. Weather

V. Gas Price Forecast

VI. Emerging Markets

VII. Results

VIII. Forecast Accuracy and Peak Day Analysis

IX. Key Findings

**CHAPTER 3 – SUPPLY-SIDE RESOURCES**

I. Overview

II. Current Resources

III. LNG Process Improvement and Refurbishment Project

IV. Supply-Side Resource Dispatching

V. Gate Station Planning

VI. Recent Action Steps

VII. Future Resource Alternatives

VIII. The Cutting Room Floor

IX. Gas Supply Portfolio Acquisition Strategy

X. Emergency Planning

XI. Key Findings

**CHAPTER 4 – DEMAND-SIDE RESOURCES**

I. Overview

II. Methodology for Determining the Cost Effective DSM Potential

III. Program Funding and Delivery

IV. Load Management and Demand Response

V. Conclusion

**CHAPTER 5 – ENERGY POLICIES AND ENVIRONMENTAL CONSIDERATIONS**

I. Overview

II. State, Regional, and Federal Energy Policies

III. Carbon Pricing in the 2014 IRP

IV. Scenarios

V. Analysis

VI. Results

VII. Key Findings

**CHAPTER 6 – DISTRIBUTION SYSTEM PLANNING**

I. Background

II. Scope

III. Nomenclature

IV. Overview

V. Existing Distribution System

VI. Distribution System Planning Methodology

VII. Significant Potential HP Transmission/Distribution System Planning Projects

VIII. Other Distribution System Projects

IX. Key Findings

**CHAPTER 7 – LINEAR PROGRAMMING AND THE COMPANY’S RESOURCE CHOICES**

I. System Planning Overview

II. Resource Planning Model Results

III. Portfolio Risk Analysis

IV. Key Findings

**CHAPTER 8 – AVOIDED COST DETERMINATION**

I. Overview

II. Costs Included in Avoided Cost

III. Methodology

IV. Results

V. Key Findings

**CHAPTER 9 – PUBLIC PARTICIPATION**

I. Technical Working Group

II. Public Participation

**APPENDIX 1 – REGULATORY COMPLIANCE**

I. Compliance Overview

II. Detailed Compliance Review

**APPENDIX 2 – GAS REQUIREMENTS FORECAST**

2.1 Customer Forecast – Base Case: Residential + Commercial Firm Sales

2.2 Customer Forecast – Base Case: Residential

2.3 Customer Forecast – Base Case: Commercial Firm Sales

2.4 Customer Forecast – High Growth: Residential + Commercial Firm Sales

2.5 Customer Forecast – High Growth: Residential

2.6 Customer Forecast – High Growth: Commercial Firm Sales

2.7 Customer Forecast – Low Growth: Residential + Commercial Firm Sales

2.8 Customer Forecast – Low Growth: Residential

2.9 Customer Forecast – Low Growth: Commercial Firm Sales

2.10 Annual Load Forecast – Base Case: Firm Sales

2.11 Annual Load Forecast – Base Case: Residential

2.12 Annual Load Forecast – Base Case: Commercial Firm Sales

2.13 Annual Load Forecast – Base Case: Industrial Firm Sales

2.14 Annual Load Forecast – Base Case: Firm Transportation

2.15 Annual Load Forecast – Base Case: Firm Sales + Firm Transportation

2.16 Annual Load Forecast – Base Case: Interruptible

2.17 Annual Load Forecast – Base Case: Emerging Markets (Low Case)

2.18 Design Day Load Forecast – Base Case: Firm Sales

2.19 Design Day Load Forecast - Base Case: Residential

2.20 Design Day Load Forecast - Base Case: Commercial Firm Sales

2.21 Design Day Load Forecast - Base Case: Industrial Firm Sales

2.22 Design Day Load Forecast - Base Case: Firm Transportation

2.23 Design Day Load Forecast - Base Case: Firm Sales + Firm Transportation

2.24 Design Day Load Forecast - Base Case: Emerging Markets Firm Sales (Low Case)

**APPENDIX 3 – SUPPLY SIDE RESOURCES**

**APPENDIX 4 – DEMAND-SIDE RESOURCES**

I. Oregon Incremental Savings by Year

II. Washington Incremental Savings by Year

III. Oregon Cumulative Savings by Year

IV. Washington Cumulative Savings by Year

V. Detailed Measure Description

Residential

Commercial

Industrial

**APPENDIX 5 – ENERGY POLICIES AND ENVIRONMENTAL CONSIDERATIONS**

**APPENDIX 6 – DISTRIBUTION SYSTEM PLANNING**

I. Washington Distribution System Projects

**APPENDIX 7 – LINEAR PROGRAMMING AND THE COMPANY’S RESOURCE CHOICES**

I. System Diagram

II. Resource Options

III. Portfolio 1 (CC 2018)

IV. Portfolio 2 (WEX 2018)

V. Portfolio 3 (Sumas Exp. 2018/25)

VI. Low Load Growth

VII. High Load Growth

VIII. 2013 Washington IRP Design Weather

**APPENDIX 8 – AVOIDED COSTS**

I.Base Avoided Costs by Month and Load Center

**APPENDIX 9 – PUBLIC PARTICIPATION**

I. Technical Working Group Sign-In Sheets