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VIA ELECTRONIC FILING

Public Utility Commission of Oregon
Filing Center
P.O. Box 1088
201 High Street SE, Suite 100
Salem, Oregon 97308-1088

Re: Consolidated UG 435 / UG 411 / Application of NW Natural for a General Rate Revision / Schedule 198 Renewable Natural Gas Recovery.

Attention Filing Center:

Attached for filing in the above-referenced docket is NW Natural's Exhibit List and Cross-Examination Exhibits.

Please contact this office with any questions.

Sincerely,

Alisha Till
Paralegal

Attachments

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON**

UG 435 AND UG 411

In the Matter of

NW NATURAL GAS COMPANY D/B/A NW
NATURAL

Request for a General Rate Revision (UG
435), and

Advice 20-19, Schedule 198 Renewable
Natural Gas Recovery Mechanism (ADV 1215)
(UG 411).

**NW NATURAL'S EXHIBIT LIST AND
CROSS-EXAMINATION EXHIBITS**

PREFILED EXHIBITS

David H. Anderson, President and Chief Executive Officer	
NW Natural/100	Direct Testimony of David H. Anderson and Zachary D. Kravitz
Zachary D. Kravitz, Senior Director of Rates and Regulatory Affairs	
NW Natural/100	Direct Testimony of David H. Anderson and Zachary D. Kravitz
NW Natural/1500	Direct Testimony of Zachary D. Kravitz
NW Natural/1501	Schedule 198 Tariff Sheets
NW Natural/1600	Reply Testimony of Zachary D. Kravitz
NW Natural/2500	Surrebuttal Testimony of Zachary D. Kravitz
NW Natural-Staff- CUB-AWEC- SBUA/100	Joint Testimony of Zachary D. Kravitz, Brian Fjeldheim, William Gehrke, Bradley Mullins, and Danny Kermod
NW Natural-Staff- CUB-AWEC- SBUA/200	Joint Reply Testimony of Zachary D. Kravitz, Brian Fjeldheim, William Gehrke, Bradley Mullins, and Danny Kermod (Confidential)
NW Natural-Staff- CUB-AWEC- Coalition/100	Joint Testimony of Zachary D. Kravitz, Robert Wyman, Brian Fjeldheim, Michelle Scala, Bob Jenks, Bradley Mullins, and Charity Fain
NW Natural-Staff- CUB-AWEC- Coalition/200	Joint Reply Testimony of Zachary D. Kravitz, Robert J. Wyman, Brian Fjeldheim, Michelle Scala, Bob Jenks, Bradley Mullins, and Charity Fain
Brody J. Wilson, Director, Vice President, Treasurer, Chief Accounting Officer and Controller	
NW Natural/200	Direct Testimony of Brody J. Wilson (Confidential)

NW Natural/201	Credit Rating Agencies' Latest Credit Reports
NW Natural/202	NW Natural Credit Ratings 2017 to 2021
NW Natural/203	NW Natural Embedded Cost of Long-Term Debt (Confidential)
NW Natural/204	Market Implied Treasury Forwards
NW Natural/205	Recent Utility Debt Issues
Dr. Bente Villadsen, Principal of The Battle Group	
NW Natural/300	Direct Testimony of Dr. Bente Villadsen and Josh Figueroa
NW Natural/301	Resumes
NW Natural/302	Technical Appendix
NW Natural/303	Supporting Schedules
Joshua Figueroa, Associate of The Brattle Group	
NW Natural/300	Direct Testimony of Dr. Bente Villadsen and Josh Figueroa
NW Natural/301	Resumes
NW Natural/302	Technical Appendix
NW Natural/303	Supporting Schedules
Daniel B. Kizer, Engineering Senior Director	
NW Natural/400	Direct Testimony of Daniel B. Kizer
Wayne K. Pipes, Director of Facilities, Security and Emergency Management	
NW Natural/500	Direct Testimony of Wayne K. Pipes
NW Natural/501	KPFF Report – Astoria Service Center
NW Natural/502	KPFF Report – Lincoln City Service Center
NW Natural/503	250 Taylor Second-Floor Tenant Improvement Floor Plan
Jim R. Downing, Vice President and Chief Information Officer	
NW Natural/600	Direct Testimony of Jim R. Downing
NW Natural/700	Direct Testimony of Jim R. Downing (Highly Confidential)
NW Natural/701	TSA Security Directive 2
NW Natural/702	Summary Table of Requirements and Workstreams (Highly Confidential)
NW Natural/703	Job Descriptions
Melinda B. Rogers, Vice President, Chief Human Resources and Diversity Officer	
NW Natural/800	Direct Testimony of Melinda B. Rogers
NW Natural/801	Base Pay Analysis
NW Natural/802	Pay Governance Executive Compensation Review
NW Natural/803	Incentive Plan Prevalence (Confidential)
NW Natural/804	Milliman 2021 Benchmarking Data: Medical Renewal Increases
NW Natural/805	2020 Cigna/Kaiser Demographic Benchmarking Data
NW Natural/806	Milliman 2021 Benchmarking Data
Cory A. Beck, Senior Manager of External Communications and User Experience	
NW Natural/900	Direct Testimony of Cory A. Beck
NW Natural/901	2020 Category A Per Customer Based on Operating Revenue

NW Natural/902	2020 Natural Gas Safety Customer Survey
NW Natural/903	NW Natural Advertising Awareness Public Sentiment Tracking – Q3 2021
NW Natural/904	Renewable Natural Gas: NW Natural Customer Insight Panel Study
NW Natural/905	Environmental Issues Customer Research
NW Natural/906	Renewable Natural Gas: NW Natural Customer Insight Panel Study
NW Natural/907	NW Natural Advertising Awareness Public Sentiment Tracking – Q3 2021
NW Natural/1900	Reply Testimony of Cory A. Beck
NW Natural/1901	Recommended Practice 1162
NW Natural/1902	Category B – 2021 Safety Implementation Plan
NW Natural/2700	Surrebuttal Testimony of Cory A. Beck
NW Natural/2701	FERC Account Reclass 909 to 913
NW Natural/2702	Revised OPUC SDR 57 Showing Reclass (Excel)
NW Natural/2703	Purchase Order for Affiliated Media Contract
NW Natural/2704	Supplement Responses to UG 435 Coalition DRs 198 and 199
NW Natural/2705	Alternative Calculation of RNG-related Salary and Overhead
Kerry F. Shampine, P.E., Senior Manager of Distribution and Transmission Construction	
NW Natural/1000	Direct Testimony of Kerry F. Shampine
NW Natural/1001	Incident Costs Summary Details
Anna K. Chittum, Director of Renewable Resources	
NW Natural/1100	Direct Testimony of Anna K. Chittum (Highly Confidential)
NW Natural/1101	Nexus Due Diligence Report (Highly Confidential)
NW Natural/1102	GTI Analytica Report, 2019 (Highly Confidential)
NW Natural/1103	GTI Analytical Report, 2020 (Highly Confidential)
NW Natural/1104	Tyson Lexington: Structure
NW Natural/1105	RNG Bundled Evaluation (Confidential)
NW Natural/1106	Lexington Incremental Cost (Confidential)
NW Natural/1107	Counter Party Review (Confidential)
NW Natural/1108	Biogas Engineering Site Observation Report (Highly Confidential)
NW Natural/1109	Lexington Gas Production (Highly Confidential)
NW Natural/1110	Beef Slaughter/Packaging Industry (Confidential)
NW Natural/2100	Reply Testimony of Anna K. Chittum (Highly Confidential)
NW Natural/2101	AGA Net Zero Emissions Opportunities for Gas Utilities Presentation
NW Natural/2102	Oregon Greenhouse Gas Reporting Program Verifier Training
NW Natural/2103	NW Natural Comments on DEQ's Proposed Climate Protection Program
NW Natural/2900	Surrebuttal Testimony of Anna K. Chittum (Highly Confidential)

Tobin F. Davilla, Senior Manager of Financial Planning and Budget	
NW Natural/1200	Direct Testimony of Tobin F. Davilla
NW Natural/1201	Base Year Operations and Maintenance Expense
NW Natural/1202	Test Year Operations and Maintenance Expense
NW Natural/1203	Oregon Economic and Revenue Forecast
NW Natural/1204	Collective Bargaining Agreement
NW Natural/1205	Paymentus Services Agreement (Confidential)
NW Natural/1206	Amendment No. 1 to Utility Location Services Agreement (Confidential)
NW Natural/1207	Heath Consultants Incorporated: Master Services Agreement (Confidential)
Kyle T. Walker, Manager of Rates and Regulatory Affairs	
NW Natural/1300	Direct Testimony of Kyle T. Walker
NW Natural/1301	Comparison of Test Year to Prior Rate Case
NW Natural/1302	Increase in Revenue Requirement
NW Natural/1303	Derivation of Forecasted Test Period Revenue
NW Natural/1304	Routine Decoupling and WARM Updates
NW Natural/1305	Miscellaneous Revenues Detail
NW Natural/1306	Uncollectible Accounts Adjustments
NW Natural/1307	Operations and Maintenance Expense
NW Natural/1308	Tax Provision
NW Natural/1309	Proforma Cost of Capital and Revenue Sensitive Costs
NW Natural/1310	Cloud Based Software Depreciation (Confidential)
NW Natural/1311	Forecast of Other Taxes
NW Natural/1312	Rate Base & Depreciation Expense – Oregon and System
NW Natural/1313	State Allocation Factors
NW Natural/1314	Lexington RNG Project Cost of Service
NW Natural/1315	Williams Pipeline Outage Adjustment Tariff
NW Natural/1316	Horizon O&M Adjustment Tariff
NW Natural/1317	TSA Directive 2 Adjustment Tariff
NW Natural/2300	Reply Testimony of Kyle T. Walker and Robert J. Wyman
NW Natural/2301	Updated Cost-of-Service Model (Confidential)
NW Natural/2302	NW Natural's Response to UG 435 AWEC DR 30 (Confidential)
NW Natural/2303	NW Natural's Response to UG 435 OPUC DR 454
NW Natural/2304	NW Natural's Response to UG 435 OPUC DR 500
NW Natural/3000	Surrebuttal Testimony of Kyle T. Walker and Robert J. Wyman
Robert J. Wyman, Rates and Regulatory Senior Analyst	
NW Natural/1400	Direct Testimony of Robert J. Wyman
NW Natural/1401	LRIC Study Summary of Results
NW Natural/1402	Rate Spread Allocation Proposal Methodology

NW Natural/1403	Proposed Incremental Revenue Requirement Allocation by Rate Schedule
NW Natural/1404	Proposed Base and Total Billing Rates by Rate Schedule and Rate Block
NW Natural/2300	Reply Testimony of Kyle T. Walker and Robert J. Wyman
NW Natural/2301	Updated Cost-of-Service Model (Confidential)
NW Natural/2302	NW Natural's Response to UG 435 AWEC DR 30 (Confidential)
NW Natural/2303	NW Natural's Response to UG 435 OPUC DR 454
NW Natural/2304	NW Natural's Response to UG 435 OPUC DR 500
NW Natural/3000	Surrebuttal Testimony of Kyle T. Walker and Robert J. Wyman
NW Natural-Staff-CUB-AWEC-Coalition/100	Joint Testimony of Zachary D. Kravitz, Robert Wyman, Brian Fjeldheim, Michelle Scala, Bob Jenks, Bradley Mullins, and Charity Fain
NW Natural-Staff-CUB-AWEC-Coalition/200	Joint Reply Testimony of Zachary D. Kravitz, Robert J. Wyman, Brian Fjeldheim, Michelle Scala, Bob Jenks, Bradley Mullins, and Charity Fain
Kimberly A. Heiting, Senior Vice President of Operations and Chief Marketing Officer	
NW Natural/1700	Reply Testimony of Kimberly A. Heiting and Ryan J. Bracken
NW Natural/1701	Oregonian Article Regarding Electric Utilities' Challenges to Decarbonize
NW Natural/1702	Energy+Environmental Economics' Pacific Northwest Pathways to 2050 Study
NW Natural/1703	American Gas Foundation's Study on Building a Resilient Energy Future
NW Natural/1704	NW Natural's Modeling Results for UM 2178
NW Natural/1705	Enbridge Presentation on Natural Gas Heat Pumps
NW Natural/1706	ANSI/ASHRAE Standard 105-2021 (Confidential)
NW Natural/1707	NW Natural's Comparison of Efficiency of Gas and Electric Heat Pumps
NW Natural/1708	AGA Review and Comments "Methane and NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes"
NW Natural/1709	Catalyst Environmental Solutions and California Restaurant Association's "Issues that Render the Sierra Club/UCLA Study of Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality..."
NW Natural/1710	NW Natural's Response to Coalition DR 158 Confidential, Excel attachment included)
NW Natural/1711	NW Natural's Response to Coalition DR 73
NW Natural/2400	Surrebuttal Testimony of Kimberly A. Heiting and Ryan J. Bracken

NW Natural/2401	CUB Response to NW Natural Data Request No. 1
Ryan J. Bracken, Director of Strategic Planning	
NW Natural/1700	Reply Testimony of Kimberly A. Heiting and Ryan J. Bracken
NW Natural/1701	Oregonian Article Regarding Electric Utilities' Challenges to Decarbonize
NW Natural/1702	Energy+Environmental Economics' Pacific Northwest Pathways to 2050 Study
NW Natural/1703	American Gas Foundation's Study on Building a Resilient Energy Future
NW Natural/1704	NW Natural's Modeling Results for UM 2178
NW Natural/1705	Enbridge Presentation on Natural Gas Heat Pumps
NW Natural/1706	ANSI/ASHRAE Standard 105-2021 (Confidential)
NW Natural/1707	NW Natural's Comparison of Efficiency of Gas and Electric Heat Pumps
NW Natural/1708	AGA Review and Comments "Methane and NOx Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes"
NW Natural/1709	Catalyst Environmental Solutions and California Restaurant Association's "Issues that Render the Sierra Club/UCLA Study of Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality..."
NW Natural/1710	NW Natural's Response to Coalition DR 158 Confidential, Excel attachment included)
NW Natural/1711	NW Natural's Response to Coalition DR 73
NW Natural/2400	Surrebuttal Testimony of Kimberly A. Heiting and Ryan J. Bracken
NW Natural/2401	CUB Response to NW Natural Data Request No. 1
John D. Taylor, Managing Partner of Atrium Economics, LLC	
NW Natural/1800	Reply Testimony of John D. Taylor
NW Natural/1801	Resume of John D. Taylor
NW Natural/1802	NW Natural Response to CUB DR 52 (includes Excel attachment)
NW Natural/1803	NW Natural Response to Coalition DR 33
NW Natural/1804	Updated Investment Analysis for Residential Line Extension Allowance (Excel)
NW Natural/2600	Surrebuttal Testimony of John D. Taylor
NW Natural/2601	Updated Investment Analysis for Residential Line Extension Allowance – 30-year
NW Natural/2602	Updated Investment Analysis for Residential Line Extension Allowance – 20-year
Amanda E. Faulk, General Accounting Senior Manager	
NW Natural/2000	Reply Testimony of Amanda E. Faulk
NW Natural/2001	COVID-19 Deferral Variance Calculations

Mary O. Moerlins, Director Environmental Policy and Corporate Responsibility	
NW Natural/2200	Reply Testimony of Mary O. Moerlins
NW Natural/2800	Surrebuttal Testimony of John D. Frankel and Mary O. Moerlins
John D. Frankel, Director of Marketing	
NW Natural/2800	Surrebuttal Testimony of John D. Frankel and Mary O. Moerlins

CROSS-EXAMINATION EXHIBITS

Exhibit NW Natural/3100 The Coalition’s Response to NW Natural’s Data Request No. 13

Exhibit NW Natural/3101 The Coalition’s Response to NW Natural’s Data Request No. 14

DATED this 28th day of July 2022.

MCDOWELL RACKNER GIBSON PC



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BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

UG 435 / UG 411

NW NATURAL

CROSS-EXAMINATION EXHIBIT 3100

The Coalition's Response to NW Natural's Data Request No. 13

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UG 435**

Coalition's Data Request Response

Dated: May 18, 2022

Request: UG 435 NWN DR 13

Please provide any analysis that OEC has performed or relied upon relating to winter peak capacity of the electric system in NW Natural's service territory, relating to how much that capacity will need to be increased to electrify building heat in Oregon and relating to how such capacity will be generated. Does your analysis also consider the removal of any existing low carbon or zero carbon energy sources (e.g., hydroelectric and nuclear) from the Pacific Northwest region's energy supply? If yes, please explain. If no, please explain why not.

Response:

The Coalition objects to this data request under OAR 860-001-0500 because the request is burdensome, overly broad and not commensurate with the needs of this case, the resources available to the parties or the importance of the issues to which the discovery relates. This request is outside the scope of discovery as it is not reasonably calculated to lead to the discovery of admissible evidence. This case relates to NW Natural's petition for a rate increase and NW Natural has the burden of demonstrating its proposed rate increase is fair, just and reasonable, and that its investments are prudent. Costs that electric utilities may incur if building heat is electrified is not being decided in this rate case and therefore is not relevant to this proceeding.

Notwithstanding this objection, the Coalition responds as follows:

OEC has not performed its own analysis relating to winter peak capacity of the electric system in NW Natural's service territory, nor did Ms. Apter rely upon any such analysis in her Direct Testimony. For a list of resources discussing this issue, see response to DR 9 and DR 12.

BEFORE THE
PUBLIC UTILITY COMMISSION OF OREGON

UG 435 / UG 411

NW NATURAL

CROSS-EXAMINATION EXHIBIT 3101

The Coalition's Response to NW Natural's Data Request No. 14

**BEFORE THE PUBLIC UTILITY COMMISSION
OF OREGON
UG 435**

Coalition's Data Request Response

Dated: May 18, 2022

Request: UG 435 NWN DR 14

Please provide any analysis OEC relied on relating to the costs that electric utilities subject to HB 2021 will need to incur to meet the 100% clean goals.

Response:

The Coalition objects to this data request under OAR 860-001-0500 because the request is burdensome, overly broad and not commensurate with the needs of this case, the resources available to the parties or the importance of the issues to which the discovery relates. This request is outside the scope of discovery as it is not reasonably calculated to lead to the discovery of admissible evidence. This case relates to NW Natural's petition for a rate increase and NW Natural has the burden of demonstrating its proposed rate increase is fair, just and reasonable, and that its investments are prudent. Costs that electric utilities may incur to comply with HB 2021 are not relevant to this proceeding.

Notwithstanding this objection, the Coalition responds as follows:

OEC did not rely on any analysis in Direct Testimony relating to the costs that electric utilities subject to HB 2021 may need to incur to meet HB 2021. For a list of resources discussing costs generally, see responses to DR 9 and DR 12.