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BEFORE THE IDAHO PUBLIC UTILITES COMMISSION

IN THE MATTER OF THE APPLICATION OF INTERMOUNTAIN GAS COMPANY FOR THE AUTHORITY TO CHANGE ITS RATES AND CHARGES FOR NATURAL GAS SERVICE TO NATURAL GAS CUSTOMERS IN THE STATE OF IDAHO	)	Case No. INT-G-16-02

DIRECT TESTIMONY OF DAN KIRSCHNER

FOR INTERMOUNTAIN GAS COMPANY

August 12, 2016

Q. Please state your name, title and business address.

A. My name is Dan Kirschner. I am the Executive Director of the Northwest Gas Association (NWGA). My business address is 1914 Willamette Falls Dr., Suite 260, West Linn, OR 97068.

Q. Would you please describe the NWGA.

A. The NWGA is a bi-national trade association of the Pacific Northwest natural gas industry. We are a 501(c)6, non-profit organization whose mission is to promote natural gas as a cornerstone of the region's energy, economic and environmental foundation. The NWGA accomplishes its mission by producing timely and regionally relevant information relating to natural gas**;** by shaping and communicating the industry's perspective; through policy analysis and advocacy and by facilitating high quality interactions among industry stakeholders. NWGA members include six local distribution companies serving communities throughout Idaho, Oregon, Washington and British Columbia, and three transmission pipelines that transport natural gas from production areas in Alberta, British Columbia and the U.S. Rockies into and through the Pacific Northwest.

Q. Would you please summarize your educational and professional experience.

A. I graduated from Eastern Washington University with a Bachelor of Arts Degree in Government and Economics. I also have an MBA from the University of Washington. I spent several years on the staff of the Washington State Legislature and of U.S Senator Slade Gorton. I worked for a number of years as the Vice President of Public Policy and Public Affairs at the Spokane Regional Chamber of

Commerce. I have been the Executive Director of the NWGA for the past fourteen years.

Q. What are your duties and responsibilities and accountabilities at the NWGA?

A. I am accountable for the successful execution of the NWGA's mission, its financial status and staff management. I report to a Board of Directors that includes representatives of each of the NWGA's nine member companies. I am the chief spokesperson and advocate for the industry and a resource for information about natural gas in the Pacific Northwest. I work to foster understanding and informed decision-making on relevant issues in the region.

Q. What is the purpose of your testimony?

A. I will describe the national and regional trend toward using natural gas as a fuel to generate electricity, replacing coal-fired generation and supporting intermittent renewable generation. I will also discuss the relative benefits of burning natural gas directly in end-use applications.

Q. Why is natural gas increasingly used to generate electricity?

A. In short, natural gas is abundant, clean and affordable. Gas-fired generation is economic, clean, reliable and flexible.

It has been less than ten years since North American producers first achieved economic production of hydrocarbons, including natural gas and oil, from shale formations deep underground. Since then, the amount of natural gas that can be produced has more than doubled and production has soared. We haven't found more natural gas, we found out how to produce natural gas that was previously inaccessible.

Furthermore, producers are continuously improving extraction technologies, allowing more natural gas to be produced at lower and lower prices. Today we are producing more natural gas than ever before utilizing 75% fewer drilling rigs than were in operation less than five years ago.

This phenomenon has had a dramatic effect on the price of natural gas. From 1981 to 2000, the average price of natural gas at the wellhead was $4.40/Mdth in real dollars. In 2015, the average wellhead price was $2.62. In 2008 Idaho residential consumers paid more than $200 million for natural gas delivered to the city gate. In 2015, those same consumers paid almost $100 million less for the same volume of gas.

The low price of natural gas makes it more attractive as a fuel for electrical generation. In the mid-2000s, natural gas was out of favor as a generation fuel because the fuel price risk was so high. While still a risk consideration, that risk has moderated to the point that gas-fired generation appears to be the preferred option as both a base load or energy resource, as well as the flexible, on-demand or capacity resource required to support the significant quantities of intermittent renewable generation built to serve this region over the last decade.

Finally, natural gas is the cleanest on-demand generation option that is both economic and can be permitted and built within a reasonable time frame. Compared to coal, natural gas can reduce CO2 emissions by 45% or more, produces 80% fewer nitrous oxide emissions and virtually eliminates sulphur dioxide, mercury and particulate emissions. The shift from coal to natural gas

generation is widely credited with a 12% reduction in U.S. energy-related CO2 emissions from 2005 to 2015.

Q. What are the trends regarding natural gas-fired generation?

A. Abundance, affordability and a cleaner environmental profile, these are the same dynamics are driving the growth of gas-fired generation. Nationally, natural gas-fired generation is supplanting coal as older coal plants are replaced by new, cleaner natural gas plants, and as the low price of natural gas makes running existing gas plants more economical than existing coal facilities.

The shift from coal to gas has happened with astonishing speed. In 2010, coal-fired generation was the dominant electricity resource in the U.S., producing twice as much electricity as natural gas. In contrast, natural gas generation is projected by the U.S. Energy Information Administration, or EIA, to exceed coal for the first time ever during the 2016 calendar year. State and federal regulations, like the EPA's Clean Power Plan, will only accelerate this national trend.

We are experiencing the same trends in our region. In the NWGA's 2016 Natural Gas Market Outlook ("Outlook"), we are projecting 1.8% compounded annual growth rate in gas use for generation purposes from 2016-17 to 2025-26, exceeding the expected growth in gas demand from the residential (0.6%), commercial (0.8%) and industrial (0.1%) sectors. Natural gas is the marginal generation resource in our region. The projected growth is expected to come from a combination of additional baseload (energy) generation and increased utilization of flexible plants (capacity) to support renewable resources.

Natural gas is also supplanting coal-fired generation capacity in the Northwest. Recent regional coal plant retirements include the 130 MW JE Corette Plant in Montana, owned by Talen Energy, and the 170 MW Carbon Plant in Carbon, UT owned by PacifiCorp. Currently planned closures include the 250 MW Reid Gardner plant in Nevada, to be closed by the end of 2017; the 550 MW Boardman coal plant in Oregon, 10 percent of which is owned by Idaho Power, mandated to close in 2020; and one of two 670 MW coal-fired units at Centralia in Washington by the end of 2020. There is also increasing pressure to close other regional coal plants before the end of their useful lives, most notably Colstrip units 1 & 2 in Montana, co-owned by Puget Sound Energy and Talen Energy, and North Valmy Unit 1 in Utah, co-owned by Idaho Power and NV Energy.

Natural gas generation can be expected to replace some portion of regional coal retirements because it is dispatchable, economic and a cleaner generation resource. Consequently, the Outlook contemplates a scenario outside of the Expected Demand forecast replacing about two-thirds (800 MW) of the planned Boardman and Centralia retirements with natural gas.

Q. What is the Northwest Natural Gas Market Outlook you referenced?

A. The Outlook is the consensus view of NWGA members of the dynamics driving the natural gas market in the Pacific Northwest. It includes a 10-year demand forecast by sector and an analysis of the capability of the region's infrastructure to serve that demand. It also includes discussions on North American and regional sources of natural gas supply, as well as commodity price trends. It is an aggregation of the integrated Resource Plans (IRPs) and long range planning

analyses of our member companies. The NWGA publishes the Outlook annually and it can be found on our website at www.nwga.org/outlook.

Q. Does natural gas-fired generation make effective use of the available energy?

A. Natural gas is an excellent electric generation fuel for all of the reasons I've mentioned to this point. Langley Gulch is the region's most recent gas-fired generation facility and one of its most efficient. According to the Northwest Power and Conservation Council, it requires about 7,100 Btu of gas to generate 3,413 Btu of electricity (1KW), so it converts only about 48% of the available energy to useful energy. When combined with line losses from transmission and distribution, about 40% of the available energy makes it to homes and businesses, while 60% is wasted.

Q. What are the benefits of using natural gas directly for space and water heat?

A. Using natural gas directly is the most efficient use of this high quality energy resource. By all accounts, more than 90% of the available energy makes it from the well head to homes and businesses where it is burned in highly efficient appliances. In its recent whitepaper, *Dispatching Direct Use: Achieving Greenhouse Gas Reductions with Natural Gas in Homes and Businesses,* the American Gas Association asserts that a typical gas water heater uses 50% less energy than an electric resistance hot water heater; emits half the CO2 and costs less than half as much to operate on an annual basis. The same characteristics apply to electric furnaces and air-source heat pumps.

The NWGA Outlook Expected Demand forecast projects that under normal weather conditions the region will burn 15 percent or about 32 million Dth/year more gas to generate electricity in ten years than it does today. The

Outlook Expected Case forecast includes only the growth in utilization of existing natural gas plants in the region for energy or capacity. It does not include the potential for natural gas to replace soon-to-be-shuttered coal generation in the region. If the projected 32 million Dth of incremental growth in gas used to generate electricity at about 40 percent efficiency were used instead directly in homes and businesses at 90 percent efficiency, the region's consumers would save tens of millions of dollars, reduce CO2 emissions by more than a million tons and, most importantly, preserve and extend this valuable resource.

Q. Do you have any concluding thoughts or comment?

A. Natural gas is an abundant, reliable, clean and affordable source of energy. It is and will continue to be key to satisfying our region's energy needs going forward as a fuel for electricity generation, in industrial applications and to heat homes and businesses. Energy efficiency and demand side management programs should contemplate the direct use of natural gas as a strategy that is in the consumer's best interest; a strategy that reduces environmental impacts and saves dollars while preserving and extending a vital natural resource.

Q. Does this conclude your direct testimony?

A. Yes. Thank you.