

Prepared Testimony of

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**Before the U.S. House of Representatives
Subcommittee on Energy and Mineral Resources of the
Committee on Resources**

**Oversight Hearing on
“The Growing Natural Gas Supply and Demand Imbalance: The Roles that Public Lands & Federal
Submerged Lands Could Play in the Solution”**

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Good morning Madam Chairman and Members of the Subcommittee. I am pleased to appear before you today and wish to thank the Subcommittee for holding this important hearing.

My name is Lee Gooch and I am the Vice President of Natural Gas for the Potash Corporation of Saskatchewan (“PotashCorp”). PotashCorp is the world’s largest integrated fertilizer company. We mine and manufacture potash, phosphate and nitrogen products. Nitrogen products begin with the manufacture of ammonia and ammonia is derived from stripping the hydrogen molecule from natural gas. As such, this industry is one of the largest industrial consumers of natural gas in the U.S. and we have no alternative feedstock choices. Indeed, the natural gas component of ammonia production in the U.S. accounts for 75-90% of total production cost. Yet, we compete in worldwide marketplaces that manufacture products from natural gas made available overseas at a fraction of the cost.

As an industrial end user of natural gas, PotashCorp is also member of the Process Gas Consumers Group (“PGC”). I am here today, as the Chairman of PGC, to provide the Subcommittee with insights into the importance of natural gas to industrial end users such as the members of PGC, and the critical issues currently facing us involving access to adequate supplies of natural gas at reasonable prices.

I. Overview of PGC – Industrial Profile

PGC is a national association of industrial gas consumers who require natural gas in many of their key operations. PGC works to promote coordinated, rational, and consistent federal and state policies relating to natural gas and its transportation.

PGC member companies represent a broad cross-section of U.S. industry, both geographically and in terms of products produced. Our membership employs millions of people and represent over half a trillion cubic feet (“Tcf”) of natural gas purchased and consumed annually.

Unlike other sectors of the natural gas industry, the buying and selling of natural gas and the

pipeline capacity required to transport it represent only one facet, albeit an important one, of an industrial end user's overall business operations. Industrials generally are not in the natural gas business. Rather, our involvement in the natural gas marketplace typically is a means to an end, not an end in itself. Industrials purchase and consume natural gas as one of the requisite inputs in the processing and manufacturing of automobiles, aluminum, steel, metal products, fertilizer, alcohol, wallboard, insulation and other building products, paper products, plastics, glass, fibreoptics, food and grain products, and a host of other, readily recognizable commodities.

II. Industrial Consumption of Natural Gas and the Need for Adequate Supplies

Access to adequate supplies of natural gas is crucial to the economic well being of the industrial community. The studies we have reviewed all point toward ever-increasing demand for natural gas and project continued reliance on natural gas by the industrial community.

According to the Energy Information Administration ("EIA"), overall demand for natural gas in the U.S. has been steadily increasing and is expected to grow even more rapidly over the next 20 years.^[1] Historically, industrials have represented the largest consuming sector of natural gas and our amount of natural gas consumption has grown consistently over the years.^[2] According to a recent report published by the Interstate Natural Gas Association of America Foundation, Inc. ("INGAA"), in Y2000, the industrial sector accounted for approximately 35% of all natural gas consumed in the country, making it the single largest consuming sector.^[3] Specifically, INGAA reports that the industrials consumed 8,736 billion cubic feet ("Bcf") of the total 23,321 Bcf of natural gas consumed that year.^[4] The closest other sector was the residential sector at 5,084 Bcf, followed by the power generation section at 4,180 and the commercial sector at 3,298 Bcf.^[5]

Moreover, in addition to growing steadily over the previous years, natural gas usage by industrials is predicted to continue growing well into the future. Again, INGAA reports that industrial consumption will grow to 10,545 Bcf in 2015 – a 20.7% increase.^[6] And, while it is true that natural gas for electric generation is projected to grow substantially (from approximately 4,000 Bcf in 2000 to almost 8,000 Bcf in 2010^[7]), the fact remains that industrials currently consume about two times the quantities of natural gas that electric utilities consume. Importantly, industrials will still out-consume power generation by about 2 Tcf in 2015.^[8]

Similarly, EIA has also projected that natural gas consumption by the industrial sector will continue to grow and will continue to be the largest consuming sector of the economy, with industrial consumption projected to reach 9.39 Tcf by 2010, which is 34% of the projected total consumption of approximately 28 Tcf.

Future industrial need and preference for natural gas also will be heavily influenced by environmental considerations as well as continued demands for process, fuel, feedstock, and other uses. Strengthened governmental mandates setting environmental limits encourage and increasingly require that industrials use "clean fuels," particularly natural gas, versus coal, oil and other fossil fuels.^[9]

Much of the gas used by industrials is consumed in feedstock and process uses, for which other fuels are not physically or economically viable substitutes.^[10] Therefore, the access to competitive, reasonably priced natural gas supply and service options is absolutely crucial. The options and prices can significantly affect manufacturing costs and the ultimate price of industrial products. As such, the natural gas industry has a substantial impact upon industrial manufacturers' ability to compete in their own, increasingly globally-competitive, markets. Thus, both projected gas consumption growth for increased industrial production and increased reliance on more environmentally-favored natural gas dictate the industrial sector's need for gas as well as our compelling interest in its availability, price and ease of use.

III. The Need to Expand Exploration and Production Efforts

U.S. industry has made significant strides in recent years to control energy costs, both through the use of more efficient technology, as well as through conservation measures. Nonetheless, as we stated earlier, our member companies are heavily dependent on natural gas as both as a fuel and as a feedstock and consume more than half a Tcf of natural gas annually in essential processing, manufacturing and other operations. However, despite new efficiencies, consumption of natural gas is still outpacing production and will continue to do so in the future. As noted recently by Vice President Cheney in his National Energy Policy Report, “[o]ver the next 20 years, U.S. natural gas consumption will grow by over 50 percent. At the same time, U.S. natural gas production will grow by only 14 percent, if it grows at the rate of the last 10 years.”^[11]

To ensure the future ability of energy-dependent companies to contribute fully to our nation's economic vitality, we need a national energy policy that will foster the development of adequate and reliable supplies of natural gas and other energy sources at reasonable prices.

As the Members of this Subcommittee know, and has been reported by EIA and others, there is an enormous amount of natural gas that currently is either off-limits to exploration and production or is located where exploration and production activities are severely restricted.^[12] The most recent EIA numbers that we have reviewed indicate that there is about 293 Tcf of natural gas in the Rocky Mountain region that is unproved and technically recoverable.^[13] Of that amount 33.6 Tcf is completely off limits to exploration and production.^[14] Another 57.5 Tcf is considered to be *de facto* off limits because of the impact of compliance with a variety of environmental laws and regulations.^[15] Further, an additional 50.8 Tcf is located in areas where the costs and timing of the development is affected by the lease stipulations.^[16] Finally, we note that significant offshore reserves are also off limits to exploration and production.^[17]

PGC fully supports environmental policies designed to safeguard our nation's National Parks, national monuments and wilderness areas. However, the industrials are also concerned about a national policy that, on the one hand, favors increased reliance on natural gas as the environmentally preferred fuel of choice while, on the other hand, promotes policies that limit the ability to either explore for, produce and/or bring natural gas to the market areas. It is difficult to reconcile these two sets of policies. And, as discussed further below, as industrial consumers with limited choices except to rely on natural gas, we, and our

employees and communities, are among those hurt by these conflicting policies.

IV. Price Volatility Concerns

Not only do we need adequate supplies, we also need less volatile gas prices. According to EIA, the average natural gas prices in January 2000 was \$2.40 at the Henry Hub, with daily prices climbing steadily until the price exceeded \$10 in December of 2000.^[18] As evidenced in the various newspaper reports, the impact on this fly up was significant. For instance, in California, Shasta Paper Company “temporarily closed its plant just before Christmas [2000] and laid off more than 400 workers, largely because of the soaring price of gas used in its production process.”^[19] Likewise, two potato-flake processors in the West, which also rely heavily on gas to run their machinery, shut down temporarily and idled dozens of workers. Specifically, one stated that it closed because its “gas bill grew by more than tenfold from one year ago”^[20] and the Sunshine Potato Flakes of Colorado said it closed because “its gas bill for January was expected to top \$140,000, or four times its October bill, leaving it ‘no choice’ but to idle a plant in the San Luis Valley.”^[21]

Closer to home, ammonia manufacturing is also greatly affected by gas price volatility. For example, when, in January 2000 the natural gas price was \$2.40 per MMBtu, the average cost to produce a ton of ammonia in Louisiana was \$100. By mid-year, gas prices rose to over \$4.00 per MMBtu and ammonia manufacturing costs rose to near \$170 a ton resulting in the entire U.S. operating rate falling as low as 71%. By first quarter of 2001, soaring gas prices caused ammonia production costs to jump to well over \$300 per ton, idling 55% of total U.S. ammonia manufacturing. By the following year, during first quarter 2002, natural gas prices returned to a range of low-to-mid \$2.00 per MMBtu yet manufacturing only returned to an equivalent 75-78% range, suggesting some permanent shut-downs had occurred. Today, with natural gas prices over \$3.00 per MMBtu, we’ve seen at least one U.S. fertilizer company file bankruptcy and may see more yet to come. The level of natural gas price volatility we have experienced in the past few years have created significant economic and operational impacts to this industry, and this volatility continues to greatly discourage future manufacturing growth in the U.S.

Make no mistake, by our desire for less volatile prices we do not mean to imply that Congress should step in to regulate the wellhead price of natural gas. PGC, along with many other representatives of the other energy industry sectors, fully supported the legislative efforts that led to the decontrol of natural gas prices.^[22] Regardless of how volatile the prices are and regardless of how much this volatility adversely impacts our companies, we, most emphatically, do not want the federal government to set the price of natural gas at the wellhead. Rather, PGC believes that increased access to sources of natural gas will allow the market to stabilize the price of gas to a reasonable level.

EIA correctly noted that, “unpredictable [natural gas] prices have deleterious consequences for natural gas consumers. For example, they ... can affect the financial viability of large industrial projects such as electricity generation plants and fertilizer plants, where natural gas supply is the largest component of operating costs.”^[23] Although some tools are available to industry to try to mitigate these prices swings, the usefulness of these tools is somewhat limited in the long term. As the EIA report also correctly recognized, the “deleterious effects of cyclical prices on suppliers and consumers can be mitigated through

long-term, fixed-price contracts and price hedging; however, those financial instruments are limited in their duration and access.”^[24]

We are already seeing press reports warning of a “major supply crunch” in the winter of 2002-2003. Notably, as reported in *Gas Daily* two weeks ago, “U.S. gas production has fallen for a fourth consecutive quarter, dipping about 1% in the three months ended June 30, according to a recent report by analyst Raymond James and Associates.”^[25] According to Raymond James, “we continue to believe that the U.S. is on the verge of another major natural gas supply shortage, which could be felt as early as this upcoming winter.”^[26] As further discussed later in my testimony, this type of supply shortage report is cause for great concern in the industrial community because of the difficulties industrials face in using alternative fuels.

V. Need to Develop Sufficient Pipeline Infrastructure to Bring Supplies to Market

In addition to adequate supplies at reasonable prices, industrial gas consumers also have a strong interest in policies that support the needed growth of the pipeline infrastructure to bring gas and competitive transportation options to new and existing markets.

Currently, the interstate pipeline grid in the U.S. consists of more than 206,000 miles of mainline transmission.^[27] With the ever-increasing demand for natural gas supply, the pipeline network must also be expanded to enable reliable delivery to the domestic market.^[28] As I indicated earlier, one of the major areas of expansion in the demand for natural gas is the expected growth in gas-fired power plants. According to EIA, “[i]n 2002, it is estimated that 50,000 MW of new gas-fired capacity will be installed into the United States. That figure translates into 4.4 to 5.6 Bcf/d of new mainline capacity likely to be needed” to serve these plants.^[29] EIA goes on to note that “[w]hile the national natural gas pipeline network has expanded sufficiently to meet demand growth during the past several decades, the large incremental needs of power plants over the next several decades can be expected to place unusual demands upon the natural gas pipeline industry.”^[30]

To that end, PGC has long urged the Federal Energy Regulatory Commission (“FERC”) to maintain a pro-competitive approach to pipeline construction proposals and has consistently highlighted the following threshold concerns.

First, in particular, PGC has requested that FERC generally trust the market to decide issues related to the need and proper location for new interstate pipeline capacity. That is, pipelines should be allowed to respond to perceived customer demands for new or expanded capacity, and potential customers should be able to exercise their own judgments about varied pipeline proposals. FERC should not presume to select new projects on behalf of the market or to so burden new projects with construction conditions and delays as to render otherwise viable projects untimely or unmarketable.

Second, FERC should provide a foundation of stable, consistently implemented rate and certificate policies, to the maximum extent practicable. Investors who see erratic FERC policy adjustments will soon decide that investments in new pipeline capacity are too dangerous to justify such expenditures.

That would not be in consumers' interests.

Third, as part of this approach, pipelines should bear a reasonable share of the economic risk of new construction, without receiving any recovery guarantees from FERC. If a pipeline builds new capacity that is substantially unused or that requires reservation charge discounts, then that pipeline's investors should bear the consequences not the existing shippers. At the same time, FERC should not impede the pipeline's ability to take risks (at its shareholders' expense), or take any other shortsighted steps to "protect" pipelines from the consequences of the market's responses (or lack of responses) to their capacity offerings. In this regard, the industrials urge a fair opportunity to earn a reasonable return, while also placing the pipelines at risk if the projected demand falls short of the capacity proposed.

Fourth, FERC should continue to streamline its certificate procedures, including expanding the range of automatically authorized projects under the blanket certificate rules.

We appreciate the strides FERC has made in this area in recent years and continue to support initiatives that ensure the development of adequate infrastructure to meet the ever-growing demand for natural gas.

VI. Common Misperception About Industrials and Fuel Switching

The need for adequate supplies of natural gas at reasonable prices and the infrastructure to bring it to the market are critical areas of concern to PGC because, contrary to popular belief, industrial fuel switching is difficult and at times impossible.

There is a common misperception that, for industrial end users of natural gas, all we have to do is go out to our plants and flip a switch to stop using natural gas and, in its place, use propane, or Number 2 or Number 6 fuel oil, or burn some other alternative fuel so we don't have to rely on natural gas. We stress to the Members of this Subcommittee today that fuel switching is simply not always possible.

Regardless of the economics, for some industrials, fuel switching is impossible and the reasons vary from industrial to industrial. For instance, some industrials just do not have alternative fuel capability. Also, some industrials that perhaps at one point in time had the capability to fuel switch have given up the capability because of the increasingly stringent environmental restrictions. In one instance, one PGC member wanted to expand its plant. However, in order to get the appropriate air and environmental permits for that expansion, this industrial had to give up its ability to fuel switch, and, as a consequence, that plant no longer has fuel switching capabilities.

Also, even absent a plant expansion, with more stringent environmental controls, it is harder to get the kinds of permits needed to burn coal and fuel oil. This means that even if one of our PGC members decided today to try to install more fuel switching capability, in the current environmental or regulatory landscape, it is not at all easy, and in some instances may be impossible.

The other issue that comes into play is capital investment. It costs money for companies to maintain a secondary fuel capability and, in times of economic difficulty, that capital investment may be foregone. Some companies have been forced to make these tough economic decisions.

Furthermore, if a company is using natural gas as a feedstock there is often no other energy

substitute. For example, ammonia manufacturers combine the nitrogen molecule from air with hydrogen molecules from natural gas to create anhydrous ammonia, the basic building block for producing virtually all other forms of nitrogen fertilizer and ammonia based industrial products. There is no economically viable alternative for natural gas as a feedstock in this process.

Moreover, even if there is an alternative fuel available, for many types of industries, the use of natural gas is a preferred energy choice. For example, if a wallboard manufacturer switches to Number 6 fuel oil, that fuel oil can leave a sooty residue on the white wallboard that cannot be covered by paint. Therefore, although it is possible to switch, these types of manufacturers have product quality issues that, in effect, eliminate such an option. Similarly, fuel switching is not an efficient option for some backup systems, such as propane, where more experienced operators are needed because propane burns as a “touchier” flame than does natural gas.

One of the PGC member companies manufactures cars and uses natural gas for drying the paint on the cars. This company can switch from using natural gas to using propane but, again, the process utilizing propane is very sensitive and, if it is not managed very well, an entire day's worth of the paint-drying process can be lost.

Regardless of whether fuel switching remains a viable option, for some companies, even in an emergency situation, a minimum amount of natural gas is needed for plant protection purposes. For example, if a glass manufacturing facilities loses its gas supply quickly and does not maintain plant protection, the entire glass-manufacturing unit freezes up and cannot be restarted. These industrials have to scrap the entire plant and rebuild it again. I have been told that this could cost upwards of \$20 million.

For corn milling plants in the winter, a sudden loss in gas supply can cause those plants to freeze up as well. Now those, when the warm weather comes back, will eventually thaw out. But, apparently there is nothing that they can do to restart them once they lose the gas supply.

Also, for some facilities, depending on the time of year, lines can burst. For ammonia manufacturers, these plants operate at very high temperatures. And even for plant protection volumes, that is generally about 70 percent of their maximum daily quantity.

Another issue arises in the case of an emergency situation that requires a plant to shut down. In this case, the facility that needs to shut down would like as much notice as possible. Some of these large manufacturing units have told me that an emergency shutdown is three days. Preferably, these plants would like to have a couple of weeks to shut down a plant. Three days is what they like to have on an emergency basis in order to do it safely and in order to protect their investment in their equipment.

VII. Conclusion – White Paper Principles

To conclude, I would like to focus your attention to the PGC white paper (“The Industrial End User Perspective on our Nation’s Energy Policy”) that I have attached to my written testimony. The white paper outlines PGC’s goals for the Administration and Congress with regard to the development of a national energy policy and the future of natural gas use, including the following principles I touched on today:

- Develop a balanced national energy policy that appropriately considers contributions from a broad variety of energy sources (including natural gas, coal, nuclear and hydropower as well

as renewables such as biomass, solar and wind).

- Continue current policies allowing deregulated natural gas commodity prices.
- Encourage competition and the operation of free-market forces while preventing the exercise of monopoly power.
- Allow environmentally responsible, and timely, exploration and production of natural gas on public lands.
- Streamline environmental review and certification process to allow more rapid approval of interstate natural gas pipeline projects to bring natural gas supplies to market.

That concludes my prepared remarks but I would be happy to answer any questions that the Subcommittee may have. I thank the Subcommittee for its interest in this important matter and for the opportunity to present the industrial point of view with regard to natural gas supply issues and the formation of a national energy policy.

[1] James Tobin, ENERGY INFO. ADMIN., “Natural Gas Transportation – Infrastructure Issues and Operational Trends” at 1 (October 2001)(herein “EIA October 2001 Report”).

[2] For instance, in 1986, industrials consumed approximately 5.6 Tcf of natural gas. ENERGY INFO. ADMIN., “Historical Natural Gas Annual” at 10 (1998). By 1997, of the 20 Tcf of natural gas consumed nationwide, industrial consumption accounted for the largest single amount, approximately 8.8 Tcf or 44.2%. ENERGY INFO. ADMIN., “Natural Gas Annual 1997” at 39-41 (1998). This amount does not include lease and plant fuel consumption, which would raise industrial gas consumption to 10 Tcf for 1997. ENERGY INFO. ADMIN., “Annual Energy Review 1997” at 177 (1998).

[3] INGAA, “Pipeline and Storage Infrastructure for a 30 Tcf Market, an Updated Assessment” at 2 (2002)(herein “2002 INGAA Report”).

[4] *Id.*

[5] *Id.*

[6] 2002 INGAA Report at 2.

[7] AMERICAN GAS ASSOCIATION, “Impact of Power Generation Gas Demand on Natural Gas Local Distribution Companies” at 3 (October 2001). *See also* NATURAL GAS COUNCIL, “Overview of Natural Gas Markets: A Focus on Natural Gas Supply” at 4-8 (June 11, 2002)(herein “2002 NGC Report”), noting that the primary driver for increased natural gas demand is the power sector.

[8] 2002 INGAA Report at 2.

[9] Notably, the Clean Air Act Amendments of 1990 affect industrial gas use as they “continue the trend toward stricter emission limits for industrial sources” and mandate “tighter control of VOC emissions, [and] requirements for NOx reductions from industrial combustion sources... .” GAS RESEARCH INSTITUTE, “The Implications of the Changes in Industrial Energy Demand: 1985-1992” at 78 (1999).

Further, industrials and utilities would be affected by the need to shift to gas versus coal or other carbon fuels if proposals on climate change are adopted that require substantial greenhouse gas emissions reductions. *See e.g.*, ENERGY SECURITY ANALYSIS, INC., “Electricity & Climate Change: Estimating the Effects of Compliance with the Kyoto Treaty” (1998).

[10] GAS RESEARCH INSTITUTE, “1998 Industrial Trends Analysis” at 3-2 (1998).

[11] REPORT OF THE NATIONAL ENERGY POLICY DEVELOPMENT GROUP, “National Energy Policy Report” at x, Figure 3 (2001).

[12] ENERGY INFO. ADMIN., “U.S. Natural Gas Markets: Mid-Term Prospectus for Natural Gas Supply” at 17 (2001)(herein “2001 Supply Mid-Term Prospectus”). *See also*, 2002 NGC Report at 31, noting that 21 Tcf in the Pacific Offshore Shelf and Slope is 100% restricted, 24 to 43 Tcf in the Eastern Gulf Shelf and Slope is 100% restricted, 31 Tcf in the Atlantic Offshore Shelf and Slope is 100% restricted and 10 Tcf in the Grand Banks is 100% restricted.

[13] 2001 Supply Mid-Term Prospectus at 17.

[14] *Id.* at 18.

[15] *Id.* at 19.

[16] *Id.*

[17] *Id.* at 19-20.

[18] *Id.* at 5.

[19] Retail Service Report, January 19, 2001.

[20] *Id.*

[21] *Id.*

[22] Natural Gas Wellhead Decontrol Act of 1989, Pub. L. No. 101-60, 103 Stat. 157 (Jul. 26, 1989)

[23] 2001 Supply Mid-Term Prospectus at 48.

[24] *Id.*

[25] PLATTS, *Gas Daily* at 1 (July 2, 2002).

[26] *Id.*

[27] EIA October 2001 Report at 1.

[28] *Id.* at 22.

[29] *Id.*

[30] *Id.*