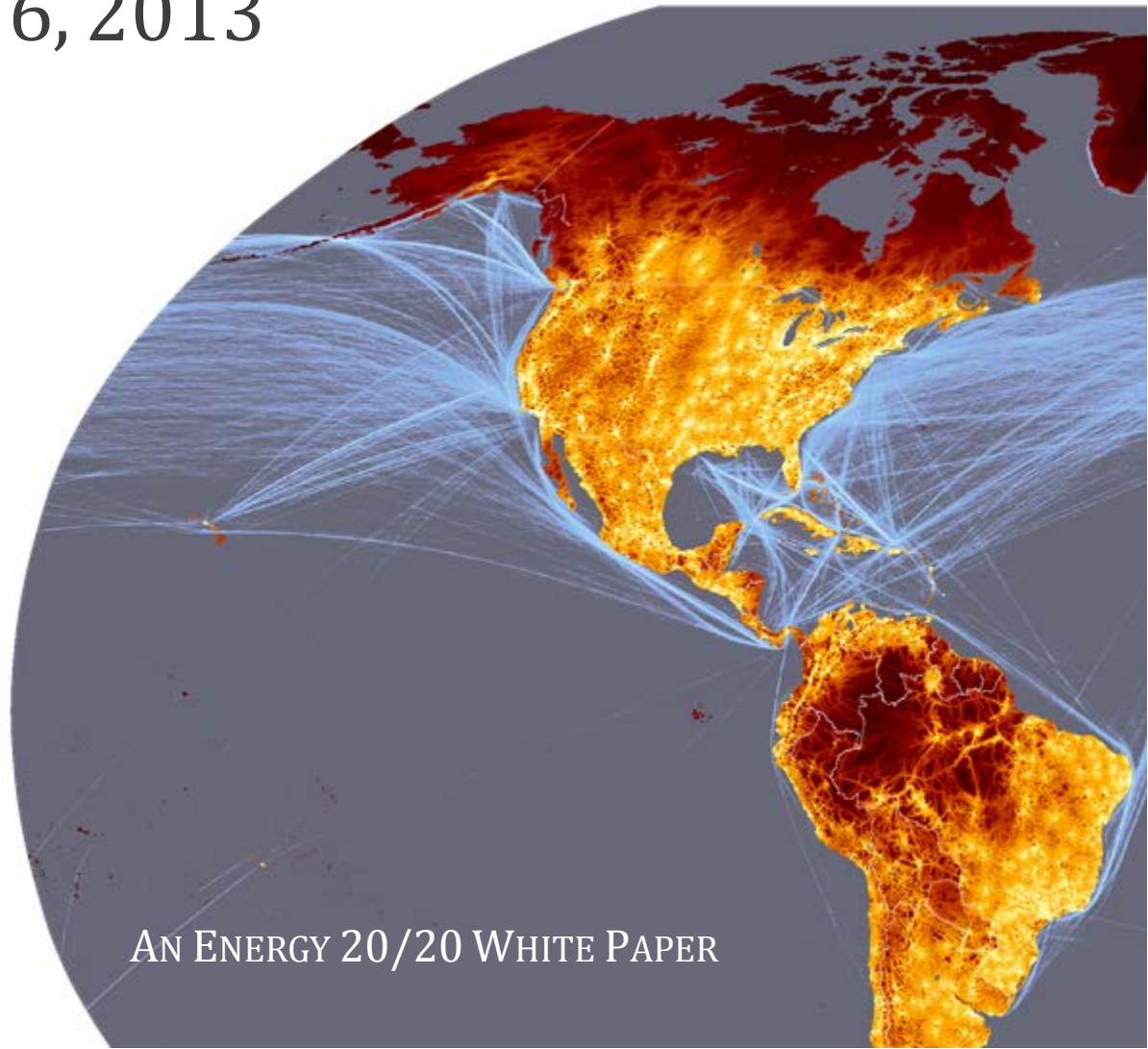


# THE NARROWING WINDOW: AMERICA'S OPPORTUNITY TO JOIN THE GLOBAL GAS TRADE

U.S. SENATOR LISA MURKOWSKI

113<sup>TH</sup> CONGRESS

AUGUST 6, 2013



AN ENERGY 20/20 WHITE PAPER

# United States Senate

WASHINGTON, DC 20510

August 6, 2013

Dear Reader:

Earlier this year I released a comprehensive policy blueprint entitled, *Energy 20/20: A Vision of America's Energy Future*. In it, I offered a set of principles and made a number of recommendations for legislation, executive action, and other steps that would improve our nation's energy policy. In the months since its release, I have spoken to a wide array of individuals and groups in what I hope is just the beginning of an honest conversation with the American people on this important subject.

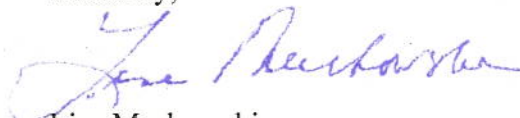
One area that deserves attention is natural gas. We have seen record increases in its production here in the United States in recent years. We need to shift from a mindset of scarcity, which has been dominant in the debate during most of my adult life, to one of abundance. If the best projections prove accurate, we will soon be a net exporter of natural gas.

As I suggested in *Energy 20/20*, I believe the federal government should swiftly process pending applications to export liquefied natural gas (LNG) to non-free trade agreement (FTA) countries to ensure that some of our excess supply can reach our friends and allies overseas. If we do, the result will be more energy for a more stable world – not to mention more jobs and more revenues for the U.S.

The Department of Energy approved its first permit to export LNG to non-FTA countries in April 2012. The second application was approved in May 2013. Unfortunately, that was a full 29 months after it was received. The Department's commissioned study on the economic dimensions of exports was also delayed for many months during the 2012 presidential election season. In light of the uncertainty this has generated, I am offering the attached report, which clearly articulates my own position in favor of exports.

I am eager for this dialogue to continue and appreciate your participation in it.

Sincerely,



Lisa Murkowski  
U.S. Senator

## **ACKNOWLEDGMENTS**

The image used in the cover design is drawn from the global map of accessibility produced by the European Commission's Joint Research Centre and the World Bank. It is available here:

<http://bioval.jrc.ec.europa.eu/products/gam/index.htm>.

Special thanks are also due to Michael Ratner and Paul Parfomak of the Congressional Research Service for their excellent coverage of this issue.

## THE GROWING RESOURCE BASE

Proved reserves of natural gas have increased every year since 1998.<sup>1</sup> The Energy Information Administration (EIA), the independent statistical agency of the Department of Energy, produces an estimate, updated annually, of proved reserves of dry natural gas. From 2000 to 2010, that estimate increased from 177.4 trillion cubic feet (tcf) to 304.6 tcf.<sup>2</sup> This increase of over 70 percent was largely due to technological advances made in hydraulic fracturing and horizontal drilling, which made shale gas economic to produce.

While proved reserves have grown dramatically, so have estimates of unproved natural gas resources. The EIA's estimates increased approximately 50 percent from 1999 to 2009, rising from 1,330.9 tcf to 1,903.7 tcf.<sup>3</sup> These numbers include what are referred to as "undiscovered resources" and do not factor in economic feasibility.

Advances in technology allowing access to the vast unconventional gas resources are driving these dramatic increases. In 1999, the EIA estimated that unproved unconventional gas resources stood at 358.0 tcf, from a combination of shale, coal bed methane, and other types of rock. In 2009, the EIA's estimate of unproved unconventional gas resources grew to 1,026.7 tcf, an increase of 186.8 percent.<sup>4</sup>

Some caution is warranted when discussing these numbers: assessment methodologies change over time, terminology evolves, and different analyses yield different results. When EIA makes estimates it assumes the status quo for technology, policy, and other factors. It is telling, nonetheless, that official U.S. government estimates are aligned in both magnitude and trend

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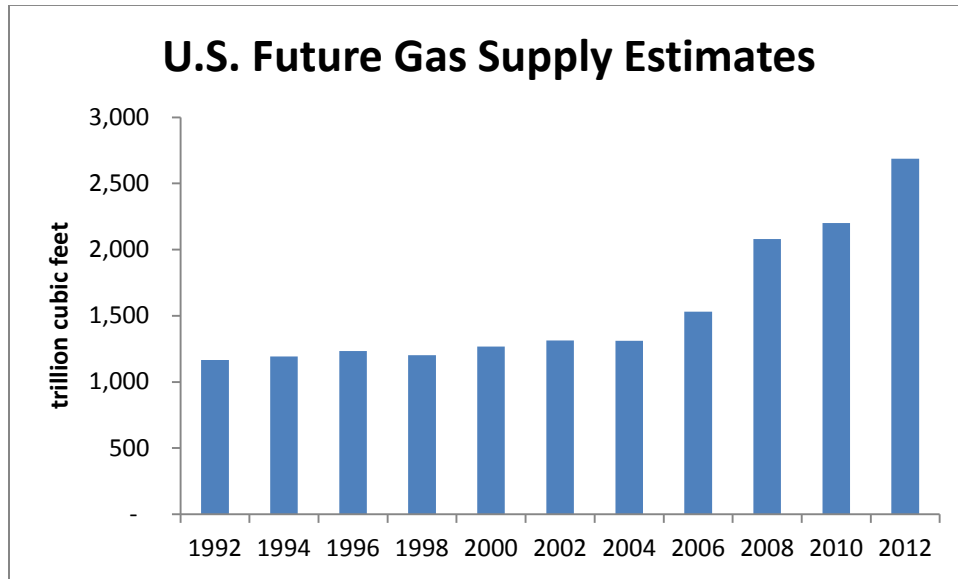
<sup>1</sup> Proved reserves are a subset of the total resource base with a high probability that they can be produced with existing technology at current prices and reach a market.

<sup>2</sup> Energy Information Administration, *U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Proved Reserves, 2000 and 2010*, Table 1: <http://www.eia.gov/naturalgas/crudeoilreserves/archive/2000/full.pdf> and <http://www.eia.gov/naturalgas/crudeoilreserves/pdf/uscrudeoil.pdf>.

<sup>3</sup> EIA, *Annual Energy Review 1999 and 2011*, Table 4.1: <http://www.eia.gov/totalenergy/data/annual/archive/038499.pdf> and <http://www.eia.gov/totalenergy/data/annual/archive/038409.pdf>.

<sup>4</sup> Ibid.

with other highly respected assessments, such as the Potential Gas Committee's biennial estimate of U.S. natural gas resources. From 2002 to 2012, its estimate of the Future Gas Supply, which includes both potential resources and proved reserves, increased from 1,314 tcf.<sup>5</sup> This is an increase of more than 100 percent.



Source: Potential Gas Committee 2012.

It is also true that even these expanded projections may ultimately prove to be dramatically understated. Collaborating scientists from the United States and Japan are currently examining the potential of methane hydrates as an energy source. These are deposits in Arctic and deep-water marine environments where natural gas has been trapped in-place by frozen water molecules. Extracting this gas efficiently and safely is challenging. However, recent breakthroughs suggest that commercial-scale production may one day be technically and economically possible. Research is ongoing and continually improving. According to the Bureau of Ocean Energy Management, approximately 21,444 tcf of methane hydrate resources exist in

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<sup>5</sup> *Potential Supply of Natural Gas in the United States: Report of the Potential Gas Committee (December 31, 2012)*, published by the Potential Gas Agency and the Colorado School of Mines (April 2013), Table 3.

the Gulf of Mexico alone.<sup>6</sup> There are also significant methane hydrate resources on Alaska's North Slope and offshore.<sup>7</sup> If research efforts are ultimately successful, methane hydrates will increase the resource base exponentially.<sup>8</sup>

A genuine energy revolution is underway. Technology will increase the magnitude of these resources and economics will render more of them accessible to industry. The geological component of the U.S. natural gas bounty is undeniable and threats to supply will emanate above ground, from legislative and regulatory intervention, not below it.

## THE COMING SURPLUS

This vast resource base has facilitated dramatic increases in domestic natural gas production. The U.S. surpassed Russia as the world's largest natural gas producer in 2009.<sup>9</sup> The number of natural gas exploration and development wells also rose to record levels in the 2004-2008 period, leading to a boom in production.<sup>10</sup> The sustained nature of this rise is critical, not the peak of any particular year. In 2012, the U.S. produced about 24.1 tcf of natural gas, the highest level on record.<sup>11</sup>

The U.S. currently consumes more natural gas than it produces, making it a net importer. According to EIA, in 2012 the nation consumed approximately 25.5 tcf of natural gas.<sup>12</sup> The geography of the North American continent enables the U.S. to export gas in significant

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<sup>6</sup> Matthew Frye, "Update on BOEM Lower 48 Assessment," presented to the Methane Hydrate Advisory Committee in Herndon, VA (June 6, 2013): <http://energy.gov/sites/prod/files/2013/06/f1/Matt%20Frye%20-%20Update%20on%20BOEM%20Lower%2048%20Assessment.pdf>.

<sup>7</sup> North Slope Gas Hydrate Assessment Team, "Assessment of Gas Hydrate Resources on the North Slope, 2008," U.S. Geological Survey (FS2008-3073): [http://pubs.usgs.gov/fs/2008/3073/pdf/FS08-3073\\_508.pdf](http://pubs.usgs.gov/fs/2008/3073/pdf/FS08-3073_508.pdf).

<sup>8</sup> For more information about methane hydrates, see Peter Folger, *Gas Hydrates: Resource and Hazard* (RS22990), Congressional Research Service (January 24, 2011): [http://www.energy.senate.gov/public/index.cfm/files/serve?File\\_id=924a328e-1628-4380-9696-0680d061555f](http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=924a328e-1628-4380-9696-0680d061555f).

<sup>9</sup> BP, *Statistical Review of World Energy 2013*: [http://www.bp.com/content/dam/bp/excel/Statistical-Review/statistical\\_review\\_of\\_world\\_energy\\_2013\\_workbook.xlsx](http://www.bp.com/content/dam/bp/excel/Statistical-Review/statistical_review_of_world_energy_2013_workbook.xlsx).

<sup>10</sup> EIA, *Monthly Energy Review* (June 25, 2013), Table 5.2:

[http://www.eia.gov/totalenergy/data/monthly/pdf/sec5\\_4.pdf](http://www.eia.gov/totalenergy/data/monthly/pdf/sec5_4.pdf).

<sup>11</sup> *Ibid.*, Table 4.1: [http://www.eia.gov/totalenergy/data/monthly/pdf/sec4\\_3.pdf](http://www.eia.gov/totalenergy/data/monthly/pdf/sec4_3.pdf).

<sup>12</sup> *Ibid.*

quantities by pipeline to Canada and Mexico. Canada supplied the bulk of U.S. imports as the two markets are highly integrated. Some imports in the form of liquefied natural gas (LNG) came from Qatar, Trinidad and Tobago, and occasionally other countries. These imports have filled the gap between production and consumption.

Most North American gas is retained within North America. The U.S. is a net importer from Canada, with which it has a particularly close relationship. In a report subtitled “Joined at the Well,” the Congressional Research Service states that the two countries “effectively comprise a single integrated market.”<sup>13</sup> In fact, gas pipelines cross the border at dozens of points in the Northwest, Midwest, and Northeast. The U.S. is a net exporter to Mexico. Gas exports from the U.S. to both neighbors are at record highs – 971 billion cubic feet (bcf) to Canada and 620 bcf to Mexico in 2012 – while gas imports from Canada are at their lowest level since 1997.<sup>14</sup>

Although the U.S. is currently a net importer of natural gas, its trade balance in this respect is improving rapidly. Net imports have fallen every year since 2007 and are currently at their lowest levels since 1990.<sup>15</sup> The EIA projects that production will exceed consumption in 2019, which would result in a surplus of natural gas. Some of this surplus will be exported by pipeline to Canada and, increasingly, to Mexico, while the remainder will be liquefied and exported overseas.<sup>16</sup>

The EIA is not alone in this projection. In its *Global Trends 2030* publication, the National Intelligence Council forecasts that “the US could emerge as a major energy exporter” by 2020,

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<sup>13</sup> Paul Parfomak and Michael Ratner, *The U.S.-Canada Energy Relationship: Joined at the Well* (R41875), Congressional Research Service (June 17, 2011): [http://www.energy.senate.gov/public/index.cfm/files/serve?File\\_id=82e43379-77cf-4591-b655-54b986c1883c](http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=82e43379-77cf-4591-b655-54b986c1883c).

<sup>14</sup> EIA, *Monthly Energy Review* (June 25, 2013), Table 4.2: [http://www.eia.gov/totalenergy/data/monthly/pdf/sec4\\_4.pdf](http://www.eia.gov/totalenergy/data/monthly/pdf/sec4_4.pdf).

<sup>15</sup> Ibid., Table 4.1: [http://www.eia.gov/totalenergy/data/monthly/pdf/sec4\\_3.pdf](http://www.eia.gov/totalenergy/data/monthly/pdf/sec4_3.pdf).

<sup>16</sup> EIA, *Annual Energy Outlook 2013*, pp. 3, 79, and 100-103: [http://www.eia.gov/forecasts/aeo/pdf/0383\(2013\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf). See also Table 63 of the Reference Case available on the EIA website.

partly as a result of “substantial global exports” of natural gas.<sup>17</sup> The International Energy Agency projects that the U.S. “emerges as an LNG exporter before 2020,” but cautions that those exports will be “fairly limited.”<sup>18</sup> Low levels of LNG have already in the past been exported to Japan or re-exported to an array of other countries, including Brazil, while imports have fallen by more than 77 percent since 2007.<sup>19</sup>

Exports are possible without a domestic surplus of natural gas. Yet it is the coming surplus that will facilitate the expansion of the U.S. natural gas trade beyond the North American integrated pipeline network and onto tankers across the world. Pipelines are regional, but LNG is global, and it is in the interest of the United States to pursue this global opportunity.

## **A GROWING GLOBAL TRADE**

The global natural gas resource base is enormous. At current rates of usage, it could well last centuries, not decades.

Natural gas resources in large regions of the world have not been adequately assessed for a variety of reasons, but geologists can make useful estimates based on existing information and technology. In 2012, the U.S. Geological Survey reported that undiscovered, technically recoverable conventional gas resources outside the United States stood at approximately 5,606 tcf.<sup>20</sup> Separately, the EIA estimated global, unproved, technically recoverable shale gas resources to be 6,634 tcf, excluding the U.S.<sup>21</sup> The total global resource base would include these numbers, as well as additional trillions of cubic feet from proved reserves and resource growth, and may grow substantially as technology improves.

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<sup>17</sup> National Intelligence Council, *Global Trends 2030: Alternative Worlds*, p. 35:

[http://www.dni.gov/files/documents/GlobalTrends\\_2030.pdf](http://www.dni.gov/files/documents/GlobalTrends_2030.pdf).

<sup>18</sup> International Energy Agency, *World Energy Outlook 2012*, p. 68.

<sup>19</sup> EIA, “U.S. Natural Gas Imports by Country,” [http://www.eia.gov/dnav/ng/ng\\_move\\_imp\\_c\\_s1\\_a.htm](http://www.eia.gov/dnav/ng/ng_move_imp_c_s1_a.htm).

<sup>20</sup> Christopher J. Schenk, “An Estimate of Undiscovered Conventional Oil and Gas Resources of the World, 2012,” U.S. Geological Survey (FS 2012-3042): <http://pubs.usgs.gov/fs/2012/3042/fs2012-3042.pdf>.

<sup>21</sup> EIA, *Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States* (June 2013), Table 3: <http://www.eia.gov/analysis/studies/worldshalegas/pdf/fullreport.pdf>.



Natural gas is widely distributed across the globe. There are basins in North America, Australia, South America, Eastern Europe, Western Europe, Africa, and Asia. Individual formations estimated to hold more than 100 tcf of natural gas can be found in the United States, Canada, Mexico, Australia, Colombia and Venezuela, Argentina, Brazil, Poland, Russia, France, Algeria, South Africa, China, and Pakistan.<sup>22</sup>

The prevalence of this resource is leading many countries, including the United States, to increase their usage of natural gas in various sectors of the economy. Natural gas vehicles, gas-fueled power plants, and other sources of demand continue to grow. In its *World Energy Outlook 2011*, the International Energy Agency asked: “Are we entering a golden age of gas?”<sup>23</sup> This scenario would be characterized by a world in which global demand for natural gas reaches new heights and is matched by rising global production from diverse regions of the world. The following year, the IEA noted: “The world’s resources of natural gas are large enough to accommodate vigorous expansion of demand for several decades.”<sup>24</sup>

A global gas market is developing to facilitate this rapid increase in both supply and demand. These trade flows are primarily via pipeline. According to BP’s *Statistical Review of World Energy 2013*, approximately 25 tcf of natural gas was traded globally by pipeline last year. Every region of the world participated in this pipeline trade, although most of the interest resided in North America and Europe. LNG exports are also contributing a larger portion to the total gas trade. Approximately 11.6 tcf of LNG was traded via tanker in 2012, most of which was ultimately imported by countries in Asia and Western Europe.<sup>25</sup> At present, relatively few countries are able to participate in the LNG trade. LNG export leaders, ranked in descending

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<sup>22</sup> Ibid.

<sup>23</sup> IEA, *World Energy Outlook 2011*:

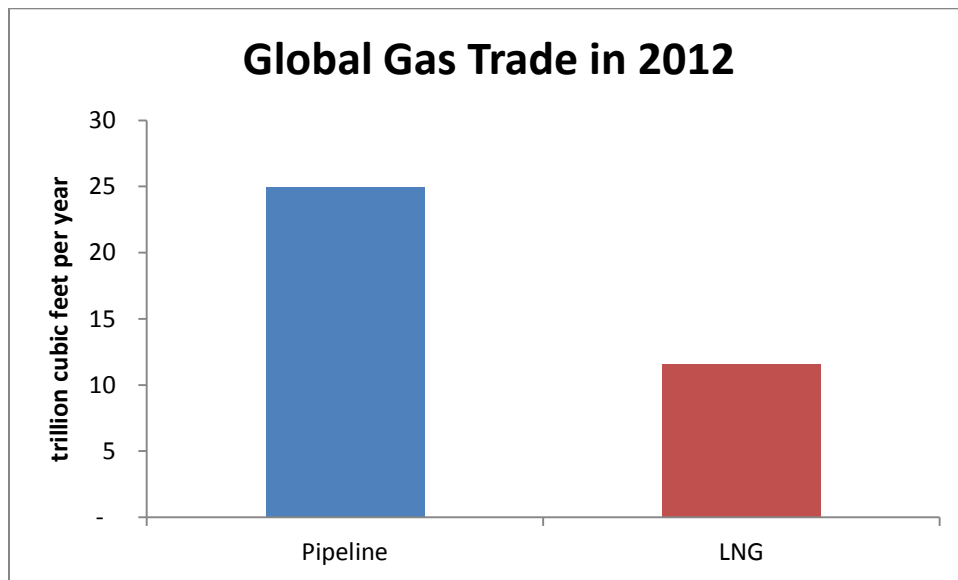
[http://www.worldenergyoutlook.org/media/weowebiste/2011/WEO2011\\_GoldenAgeofGasReport.pdf](http://www.worldenergyoutlook.org/media/weowebiste/2011/WEO2011_GoldenAgeofGasReport.pdf).

<sup>24</sup> IEA, *World Energy Outlook 2012*, p. 133.

<sup>25</sup> BP, *Statistical Review of World Energy 2013*: [http://www.bp.com/content/dam/bp/excel/Statistical-Review/statistical\\_review\\_of\\_world\\_energy\\_2013\\_workbook.xlsx](http://www.bp.com/content/dam/bp/excel/Statistical-Review/statistical_review_of_world_energy_2013_workbook.xlsx). Calculations made using BP conversion factors.

order, include Qatar, Malaysia, Australia, Nigeria, Indonesia, Algeria, Oman, Brunei, the United Arab Emirates, and Yemen. Smaller amounts of exports flow from Equatorial Guinea and Egypt. It is costly to liquefy natural gas and load it onto tankers. Export facilities also take years to construct and typically entail contracts with importing customers that span decades. Expensive infrastructure to convert LNG back into gaseous form is also a limitation on market participants. Japan and South Korea, alone, account for half of the world's LNG imports.

Global demand for LNG is rising. Tankers can transport gas to any suitable port in the world, while pipelines are obviously more limited. The IEA projects that the size of the LNG trade will grow over 75 percent by 2035 and that the total export capacity of LNG projects around the world will rise to nearly 17 tcf by approximately 2018.<sup>26</sup> Although future utilization rates and LNG demand are uncertain, it is clear that market forces will shape the development of the network of export and import terminals.



Source: BP Statistical Review 2013.

<sup>26</sup> Ibid., pp. 146-48, using standard IEA unit conversion.

## THE OPPORTUNITY

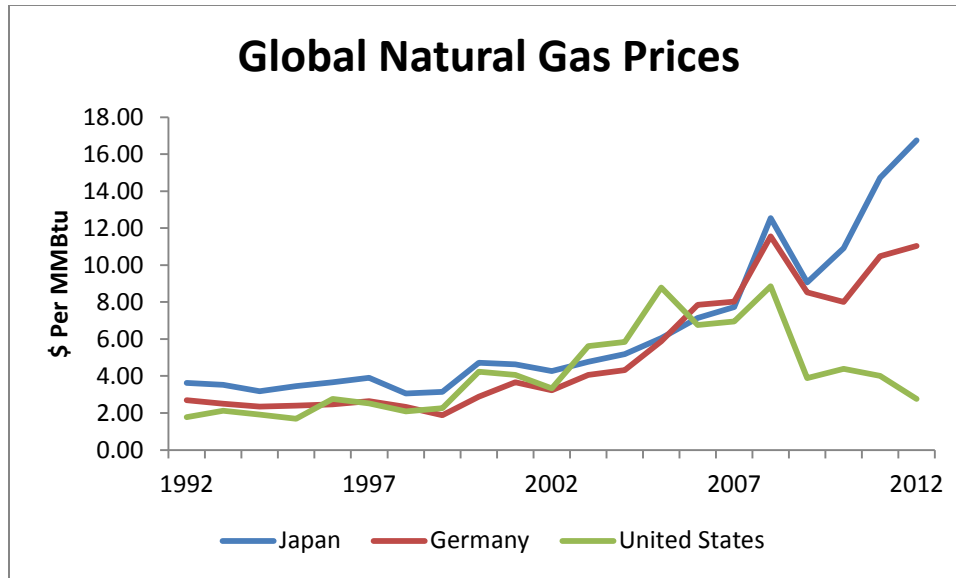
The combination of three factors – a vast domestic resource base, production outpacing demand (leading to a surplus), and a burgeoning global market – presents the United States with a historic opportunity to increase its exports of natural gas.

The relevant regulatory process is, in theory, straightforward. In order to export natural gas, a project must apply for authorization from the Department of Energy. Exports to countries with which the U.S. has a free trade agreement, known as FTA countries, are authorized automatically. Exports to non-FTA countries require a review by DOE, which must approve all applications unless they can be positively demonstrated to run counter to the public interest. Most of the growing demand for LNG emanates from non-FTA countries, which means that in practice all export terminals require DOE approval. The Federal Energy Regulatory Commission (FERC) is also mandated to permit onshore LNG terminals, including conducting environmental review in accordance with the National Environmental Policy Act. The Department of Transportation’s Maritime Administration is mandated to license each offshore LNG terminal.

Existing infrastructure that was originally constructed to facilitate the importing of LNG from other countries can be converted into export facilities. Conversion of these “brownfield” projects can save billions of dollars when compared to the construction of brand-new export terminals, also known as “greenfield” projects. There are currently 11 import terminals. These are located in Georgia, Louisiana, Maryland, Massachusetts, Mississippi, Texas, and Puerto Rico. Applications to convert two of these projects into export facilities already have been approved by DOE for non-FTA countries.<sup>27</sup>

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<sup>27</sup> The Sabine Pass project’s relevant FERC order is available here: <http://www.ferc.gov/EventCalendar/Files/20120416164846-CP11-72-000.pdf>. The DOE’s decision on the Freeport project is available here: <http://energy.gov/sites/prod/files/2013/05/f0/ord3282.pdf>.



**Source: BP Statistical Review 2013. Additional notes contained therein.**

Domestic natural gas prices in the U.S. are considerably lower than gas prices in other parts of the world. The Henry Hub price, which is the U.S. benchmark, is approximately \$4 per MMBtu (million British thermal units). The price in Japan has been as high as \$16-18 per MMBtu, while \$9-10 per MMBtu is more the norm in Europe. Liquefaction of natural gas is an expensive process, however. The construction of facilities, the cooling and transportation of the gas, and the regasification all narrow the gap between U.S. and world prices. Despite these costs, a business opportunity remains.

In geopolitical terms, the build-out of LNG capacity also provides the U.S. an opportunity to provide relief to several of its allies. The mere entry of the U.S. into the global market will improve competition, reducing prices for importers. In fact, to some degree this has already begun. Imports of LNG from the U.S. will also enable other countries to diversify their sources of energy. Japan and India in particular, which do not have free trade agreements with the United States, have urged the federal government to approve LNG exports to those countries. Observers have also noted that American LNG would serve to reduce the leverage Russia can currently exert over Europe through its gas pipeline network. The argument is not that U.S. exports would necessarily replace Russian gas, but that clients of Russia would have a stronger

negotiating position, as well as access to additional supply. LNG exports from the U.S. would also strengthen global resilience to turmoil in the Middle East, including the capacity of the international community to impose sanctions on Iran.

Certain interests have objected to the possibility of LNG exports from the U.S. Some petrochemical producers have argued that exports of natural gas would raise the domestic price of natural gas, undercutting their own businesses and product exports by raising the cost of their fuel and feedstock.

A robust debate occurred in the analytical community, comprising universities, think-tanks, consultancies, and other research institutions. After months of discussion and analysis, the majority of reports concluded that LNG exports would provide net economic benefits to the U.S. and should be approved in a timely fashion.<sup>28</sup> Virtually all of these reports concluded that the impact on domestic natural gas prices would be manageable and limited. In addition, many of these reports have found that higher domestic natural gas prices would also actually serve to increase (and stabilize) natural gas production in the U.S. by making it economical to produce additional natural gas resources.<sup>29</sup> In other words, slightly higher domestic natural gas prices would lead to new production.

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<sup>28</sup> The relevant study commissioned by the Department of Energy is “Macroeconomic Impacts of LNG Exports from the United States,” NERA Economic Consulting (December 2012): [http://energy.gov/sites/prod/files/2013/04/f0/nera\\_lng\\_report.pdf](http://energy.gov/sites/prod/files/2013/04/f0/nera_lng_report.pdf). Others include Gary Clyde Hufbauer, et al, “Liquefied Natural Gas Exports: An Opportunity for America” (Policy Brief 13-6), Peterson Institute for International Economics (February 2013): <http://www.iie.com/publications/pb/pb13-6.pdf>; Charles K. Ebinger, et al, “Liquid Markets: Assessing the Case for U.S. Exports of Liquefied Natural Gas,” Brookings Institution (May 2, 2012): [http://www.brookings.edu/~media/research/files/reports/2012/5/02-lng-exports-ebinger/0502\\_lng\\_exports\\_ebinger.pdf](http://www.brookings.edu/~media/research/files/reports/2012/5/02-lng-exports-ebinger/0502_lng_exports_ebinger.pdf); “Made in America: The economic impact of LNG exports from the United States,” Deloitte Center for Energy Solutions and Deloitte MarketPoint LLC (2011): [http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Energy\\_us\\_er/us\\_er\\_MadeinAmerica\\_LNGPaper\\_122011.pdf](http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Energy_us_er/us_er_MadeinAmerica_LNGPaper_122011.pdf); “New Dynamics of the U.S. Natural Gas Market,” Bipartisan Policy Center (May 2013): <http://bipartisanpolicy.org/sites/default/files/Bipartisan%20Policy%20Center%20-%20New%20Dynamics%20of%20the%20U.S.%20Natural%20Gas%20Market%20-%20May%202013.pdf>.

<sup>29</sup> See, for example, “Realizing the Potential of Unconventional Gas,” Center for Strategic & International Studies (April 30, 2013): <http://csis.org/publication/realizing-potential-us-unconventional-natural-gas>.

Furthermore, domestic consumers benefit from trade, too. First, exports result in wealth creation, which leads to investment and jobs at home. Second, long-term export contracts provide a steady source of demand at a predictable price. Overall export volumes will likely be a small fraction of national production, but can certainly contribute to the stabilization of prices by providing another aspect of certainty to the natural gas market. Consumers will gain from this reduction in volatility.

The analytical debate about whether exports are in the national interest is settled. Nonetheless, models are imperfect and cannot guarantee the future. Natural gas prices will certainly fluctuate in the coming decades. Ultimately, it is not the role of the federal government to decide which industries should prosper and which should falter, nor to attempt to set a band of “acceptable” domestic natural gas prices. Past history has shown that attempts by the federal government to control domestic prices have resulted in unintended consequences and negative impacts to the U.S. economy.<sup>30</sup> The risks of building out LNG capacity are manageable, particularly for the government, while the potential gains to the nation’s economy are enormous.

## **THE ISSUE OF TIMING**

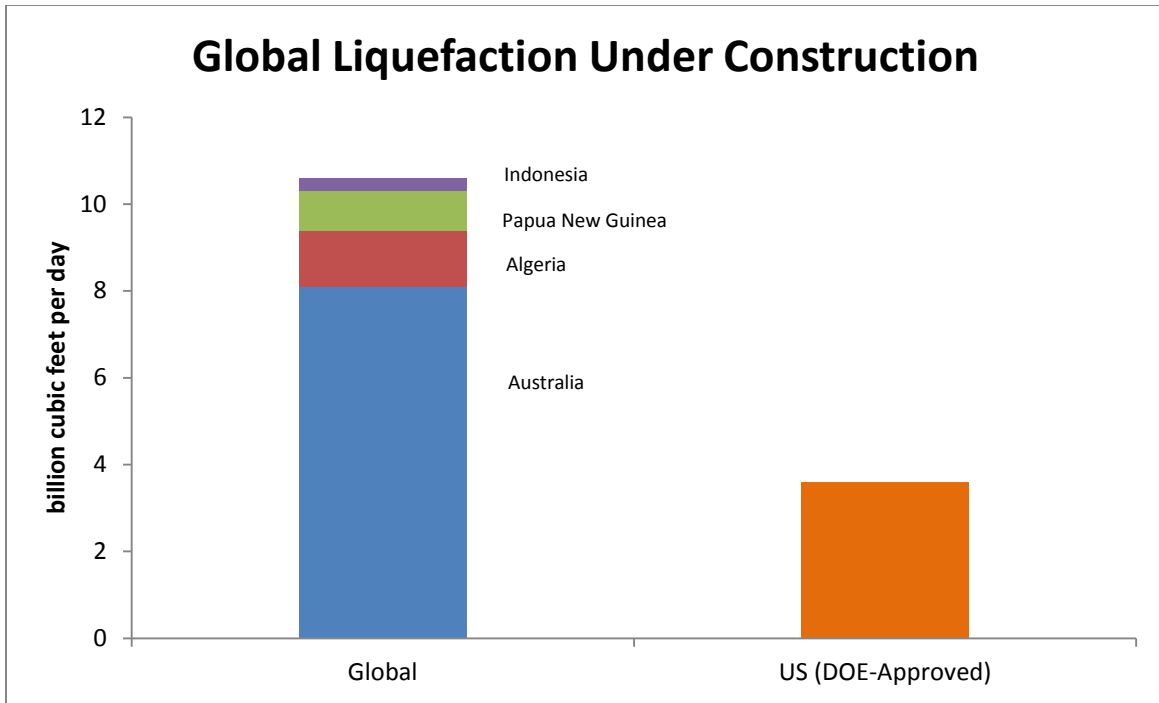
The window for the United States to join the global gas trade will not be open indefinitely. In fact, it is narrowing, and there is a real possibility that the nation will miss out on a historic opportunity.

Global demand for LNG is growing but limited, and it is quickly being met by forthcoming supply. Current worldwide capacity is about 37 bcf per day, most of which lies in the Middle East and Asia. North American LNG export capacity is miniscule in comparison. Additional exports projects, totaling over 10 bcf per day, are already under construction in

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<sup>30</sup> J. Bennett Johnston, “Natural Gas Exports and the Mythical ‘Sweet Spot,’” *Wall Street Journal* (March 4, 2013): <http://online.wsj.com/article/SB10001424127887323478304578329952822121118.html>.

Algeria, Australia, Indonesia, and Papua New Guinea. In contrast, each project being considered in the U.S. can bring only 1-3 bcf per day of additional capacity. With additional projects in the planning stages in Qatar, Australia, Canada, and elsewhere, the world simply may not need LNG from the U.S. to meet new demand in the future. Consumers will have other options.



Source: Modified from Peterson Institute (2013).

There is also a unique opportunity for Alaska, given that state’s proximity to markets in Asia. Until this spring, the liquefaction facility at Kenai had been licensed to export small quantities of LNG to Japan since 1969. Before more substantial trade materializes, however, a major pipeline must be constructed from the North Slope, where the USGS estimates about 42 tcf of shale gas alone may be recovered, to the southern coast of Alaska.<sup>31</sup> A larger liquefaction facility will also be required. A project proposed by BP, ConocoPhillips, ExxonMobil, and TransCanada is

<sup>31</sup> North Slope Source-Rock Resource Assessment Team, “Assessment of Potential Oil and Gas Resources in Source Rocks of the Alaska North Slope, 2012,” U.S. Geological Survey (FS 2012-3013): [http://pubs.usgs.gov/fs/2012/3013/pdf/fs2012-3013\\_2-28-2012.pdf](http://pubs.usgs.gov/fs/2012/3013/pdf/fs2012-3013_2-28-2012.pdf).

estimated to cost between \$45-65 billion.<sup>32</sup> Alaska will also face competition from projects overseas, in Canada, and in the continental United States.

The gap between U.S and world prices for natural gas will narrow in the coming years. As other suppliers come online, importers will pay less for the LNG they purchase. Other nations will be competing for long-term contracts, which are important for export approvals and necessary for securing long-term financing. The capacity of the financial markets to support such costly projects is not infinite and will serve to limit the number of projects that are ultimately built.

The narrow window that this creates is not confined to our nation. Potential LNG producers in other countries, such as Canada and Australia, have warned that projects in their own countries may miss opportunities. Delays in permitting, problems with construction, lack of financing, environmental and special interest opposition, and other issues can all negatively impact the feasibility of export facilities. We in government should do what we can to help alleviate those problems.

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<sup>32</sup> ExxonMobil, Press Release (June 21, 2013): <http://news.exxonmobil.com/press-release/more-progress-alaska-south-central-lng-project>.



## RECOMMENDATIONS

1. The Department of Energy should move forward on all export applications in a timely manner. DOE itself has already determined that exports of LNG are in the national interest. There may be valid reasons for the denial of certain applications, but this should not stop DOE from moving forward on other applications, reviewing them, and making final decisions. Artificial timetables, such as an arbitrary gap of six to eight weeks between decisions, should be avoided.
2. Any legislation requiring additional economic studies, more restrictive rulemaking at the Department of Energy, or any other policy that serves to delay or prohibit the exporting of liquefied natural gas should be opposed.
3. If the Department of Energy considers revisions to its application review procedures, any such modification should expedite, rather than delay, the process.
4. The development of natural gas resources should be a priority for the United States. Funding for research and development of unconventional gas resources, including methane hydrates, should be maintained or increased. Congress should also support efforts to streamline the permitting process for natural gas exploration, development, and production projects; reject attempts to increase taxes that make natural gas less viable to produce; and oppose efforts to make the regulatory process uncertain, inefficient, overly burdensome, or duplicative. This should include natural gas pipeline construction, maintenance and rehabilitation projects.
5. Federal agencies with natural gas-related projects and programs overseas should collaborate to ensure there is no duplication of effort and that all policy goals are properly aligned.