A US Ban on Fracking: Implications for US and Global Energy Security

Thomas N. Russo

United States Senator Elizabeth Warren, a leading Democratic presidential nominee, wants to ban fracking "everywhere." The Massachusetts senator pledged to immediately sign an executive order to stop all new offshore drilling leases. Her rival, former Vice President Joe Biden, would ban fracking only in offshore areas.

A ban on fracking everywhere in the United States would have profound and significant adverse impacts on both the US and global energy security one year after the ban goes into effect. Specifically, prices of crude oil, refined petroleum products, and especially natural gas will significantly increase, making the latter too expensive for power generation. Many emerging economies, such as China, India, and other Asian countries, would turn to coal and heating oil to meet their power generation, heating, and cooking needs.

Warren's aggressive plan for fighting climate change could have profound consequences for the US oil and gas industry and may benefit the Organization of Petroleum Exporting Countries (OPEC) and Russia, referred to as OPEC+. Associated with the pledges to ban fracking is the New Green Deal, an aspirational proposal by the Democratic Party to eliminate fossil fuel use in the United States. Both proposals could affect US and global energy security in ways not contemplated by the proponents of such actions.

This column examines the effects of a full and partial ban on hydraulic fracking to US and global energy using the four As of energy security (availability, accessibility, affordability, and acceptability) introduced by the Asia Pacific Energy Research Centre (APERC)[1] and Kruyt.[2] Finally, this column offers some actionable policy recommendations in lieu of a fracking ban that will accomplish the same goals without endangering US and global energy security.

Thomas N. Russo (tom@russoonenergy.com) is an energy and environmental expert with unique regulatory knowledge of energy infrastructure, environmental impact assessment, markets, and physical/cybersecurity. Prior to starting Russo on Energy LLC, he worked for over 30 years as a manager and senior energy industry analyst at the Federal Energy Regulatory Commission. There, he gained experience in hydropower licensing, National Environmental Policy Act environmental impact assessment of projects, business process reengineering, natural gas and crude oil market oversight, and applicable federal statutes.

ENERGY SECURITY AND THE 4 AS

Energy security is the ability of an economy to guarantee the availability and reliability of energy supplies in a sustainable and timely manner with affordable energy prices that will not adversely affect a country's economy. The four As are a convenient way of visualizing energy security through the lens of:

[1] Asia Pacific Energy Research Centre. (2007). *A quest for energy security in the 21st century: Resources and constraints.* Tokyo, Japan: Author.

[2] Kruyt, B., van Vuuren, D. P., de Vries, H. J. M., & Groenenberg, H. (2009). Indicators for energy security. *Energy Policy*, *37*, 2166–2181.

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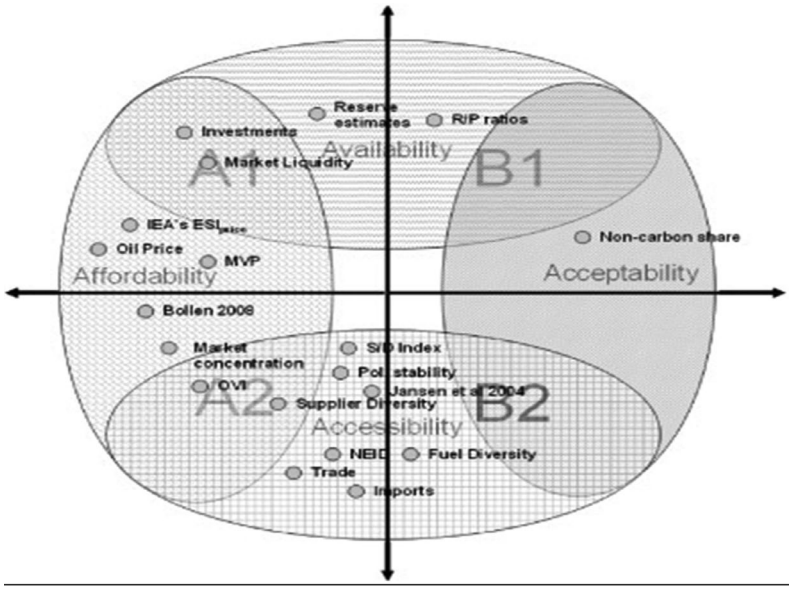
1. Energy availability (reliability),
2. Accessibility,
3. Affordability, and
4. Environmental acceptability.

Countries have always wrestled with each of the four As when formulating energy security policies. However, most of the time the focus has been on the energy availability (reliability) and affordability (price). An obvious exception is Germany, which banned (denied accessibility) nuclear power plants while embracing solar and wind power. The benefits of Germany's energy security policies have been greater environmental acceptability, but at the cost of affordability. German consumers pay some of the highest electricity rates, at 30 cents per kilowatt hour (kwh), compared to the average US rate of 10.5 cents/kwh. Concerns about climate change are causing many countries to place more emphasis on environmental acceptability and to provide incentives to promote renewable energy.

The availability of oil, gas, coal, and other fuels has depended largely on a country's geological resources. Natural resources such as large rivers, wind, solar radiation, and geothermal resources also fall under availability. Countries like Japan and South Korea that do not have sufficient energy availability within their borders have relied heavily on markets to secure oil, gas, coal, and nuclear fuel. A country's ability to access these resources is one of the major challenges to securing energy supply to meet future demand growth.

Traditional barriers to energy supply accessibility have included economic factors, political factors, and technology. Prior to the US shale revolution, the United States was a net importer of oil and natural gas. Horizontal drilling and hydraulic fracking overcame the economic and technological barriers of extracting oil and gas from shale formations and increased the accessibility to these fuels. In turn, the affordability of oil and gas in the United States has improved as prices are lower. However, shale oil and gas are causing problems with environmental acceptability, which in turn is causing a political response, such as banning fracking and calls for greater regulation.

Figure 1. The Four As of Energy Security, With Examples



Source: Kruyt, B., van Vuuren, D. P., de Vries, H. J. M., & Groenenberg, H. (2009). Indicators for energy security. *Energy Policy, 37*, 2166–2181.

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Fracking affects acceptability as follows:

1. Flaring (burning) natural gas that is associated with oil wells because of insufficient infrastructure (*see 3 below*);
2. Fugitive leaks of methane[3] from natural gas infrastructure, such as drilling, gathering, treatment, processing plants, underground storage, pipelines, and LNG facilities;
3. Water pollution issues caused by fracking and the disposal of frac water;
4. Impacts from constructing and operating natural gas and oil infrastructure, especially pipelines; and
5. Inducing seismic disturbances and earthquakes in certain geographic areas.

As shale oil and gas production have increased, so have environmental impacts and the public's demands on government to take action to reduce these impacts and improve acceptability. The failure of many state and federal government regulators and the oil and gas industry's response to the above effects have caused Senator Warren and most of the other current Democrats seeking the presidential nomination to signal their willingness to ban fracking.

These issues have actually been affecting the energy security of the United States for years. For example, the state of California has limited accessibility to underground storage at the Aliso Canyon Natural Gas Storage Facility after a methane leak was discovered that affected the health of thousands of families in Los Angeles. As a result, California has severely limited accessibility to what was once an 87.5 billion cubic feet (Bcf) facility to 19 Bcf. Numerous electric power generating plants that used to rely on the storage at Aliso Canyon now have to rely on a constrained pipeline system in southern California for their gas requirements. Natural gas prices have been much higher as a result during periods of cold and hot weather. New England and New York have experienced similar availability and affordability issues in obtaining natural gas for heating and power. The principal reasons are that states like New York are denying accessibility to natural gas by not approving permits to construct pipelines. National Grid in New York and Con Edison in New York have wrestled with moratoriums on new natural gas services as a result of insufficient gas supply entering New York.

The proposals to ban fracking by current presidential candidates are not novel. France, Germany, Ireland, and, more recently, the United Kingdom have all banned fracking, and the Netherlands plans to do so in the near future. As far as natural gas is concerned, these countries can import liquefied natural gas (LNG) cargos or buy pipeline gas from Norway, Algeria, or Russia. The United States worries that some European countries are already too dependent on Russia for natural gas and that their energy security is vulnerable if Russia curtails supplies.

The countries in Europe that have banned fracking will have little effect on global energy security, as they do not rival US production. In contrast, the United States is the leading oil and natural gas producer in the world and has been able to enhance affordability for itself and global markets. Abundant natural gas from the United States combined with lower prices has enabled many countries to improve the environmental acceptability of their power and heating sectors by burning natural gas in lieu of coal.

Acceptability integrates the environmental impacts associated with energy into the policymaking that countries must consider in making decisions on energy security. Advocates of a fracking ban have placed more weight on acceptability and policies that promote renewable energy even when most renewables are intermittent. Environmental activists also ignore the benefits the US shale oil and natural gas revolution has accrued to the United States and other countries in terms of availability, affordability, and acceptability. Fracking ban advocates have also discounted the acceptability benefits of natural gas in the United States. By replacing coal-fired plants

[3] Natural gas mainly composed of methane. The Environmental Defense Fund believes that about 25% of the manmade global warming we're experiencing is caused by methane emissions. Environmental Defense Fund. (n.d.). Methane: The other important greenhouse gas. Retrieved from https://www.edf.org/climate/methane-other-important-greenhouse-gas.

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with gas in the United States, carbon dioxide levels have been reduced by two-thirds.

Politicians may not be fully aware of Mexico's energy reforms that rely on importing pipeline gas from the United States, and the role US LNG exports can play in reducing global LNG prices and accelerating coal-to-gas power switching. The reasons for the skepticism about natural gas are methane leaks, flaring natural gas, and the impacts of building pipelines on the environment.

International Energy Agency (IEA) Director Fatih Birol in September 2019 said that a US fracking ban was "not good news for energy security, because US natural gas provides a lot of security to the markets" as a cleaner fossil fuel in the global energy transition that is taking place.[4] In a recent report, the IEA said it believes that US shale supplies will prevent OPEC+ from controlling prices. A US fracking ban would cede control of oil prices to OPEC+.[5]

A ban on US fracking will have mixed effects on the United States and its allies, competitors, and adversaries around the globe. The fracking ban will produce some obvious winners and losers as the impacts work their way through the US and global energy markets (**Table 1**). All energy technologies will be affected by the fracking ban, some of which may be unanticipated.

FRACKING BAN EFFECTS ON THE US AND GLOBAL ENERGY SECURITY

The overall effects on the four As of energy security will depend on whether fracking is banned everywhere or just offshore. A US president could declare a national emergency regarding climate change and ban hydraulic fracking everywhere. Of course, court challenges would ensue and take time to resolve. Even if a nationwide fracking ban did not occur, a US president can ban fracking, or at least delay the issuance of new drilling permits, on federal lands administered by the Bureau of Land Management, US Forest Service, and Bureau of Ocean Energy Management. These executive actions would be challenged at these agencies and in the courts.

In the interim, changes to the four As may vary. In lieu of a total ban everywhere or just offshore, a president could require an environmental review of the effects on greenhouse gas (GHG) emissions from flaring at drilling sites and fugitive emissions from and oil and natural gas supply chains. Whether or not that would affect existing oil and gas production is an open question, but such an environmental review would slow down the number of new drilling permits issued. Since the production rate for shale wells is steep and environmental reviews take time, production and the availability of oil and gas production would decline.

Effects on Affordability

The US power sector uses 35 percent of natural gas to produce electricity, although this varies by each region.[6] Nevertheless, despite the growth in renewables across the United States, natural gas and electricity prices will increase for electricity consumers about a year after the ban takes effect. Prices may increase to levels seen before US shale oil and gas gained popularity in 2006. To mediate the effects of the fracking ban, electricity markets will look to find less costly baseload electricity power generation. Coal production and power generation, which have been declining in the United States, would see a resurgence, and once again may be more affordable than gas-fired power generation. Depending on the extent of new coal power plants brought online, coal may set the marginal cost of electricity and replace natural gas. Nuclear power plants may also look more attractive as electricity markets respond to increased natural gas prices.

OPEC+ would welcome a US fracking ban, which would reduce global oil supply, balance the market and usher in higher oil prices—something OPEC and Russia have been attempting to do for some time. A fracking ban would also subject the US and global economy to oil price spikes caused by geopolitical events at oil choke points such as the Strait of Hormuz in the Persian Gulf. For example, while the drone attack on Saudi Arabia's oil

[4] Turak, N. (2019, November 11). Elizabeth Warren's fracking ban pledge shows a 'total lack of understanding,' oil guru Yergin says. CNBC. Retrieved from https://www.cnbc.com/2019/11/11/yergin-against-elizabeth-warrens-fracking-ban-pledge-adipec-2019.html.

[5] Hodari, D., & Faucon, B. (2019, November 13). IEA sees U.S. shale squeezing OPEC influence. Retrieved from https://www.wsj.com/articles/iea-sees-u-s-shale-squeezing-opec-influence-11573603201.

[6] EIA 2018 estimate, https://www.eia.gov/tools/faqs/faq.php?id=427&t=3.

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Table 1. Winners, Losers, and Impacts If a US Fracking Ban Is Enacted

Winners	Losers
1. OPEC+, because US shale oil will not be able to mitigate supply cuts	1. The United States would no longer be the leading oil and gas producer and be able to influence and temper rising oil prices
2. Non-US LNG exporters, because US LNG exporters would not be able to compete because of cheap gas	2. The United States would be a net importer of oil and gas, with higher prices for gasoline and diesel and natural gas
3. US LNG importers if pipeline gas from Canada was not sufficient to meet US requirements	3. US-based oil and gas producers and infrastructure companies, because many pipeline assets would be stranded
4. Coal, because higher gas prices will cause coal-fired generation to be more attractive to emerging economies	4. US heating and electricity consumers, because higher gas prices will cause higher heating and electricity rates
5. Renewable energy and transmission line companies, because gas power generation will increase	5. Gas-fired power generators, because higher natural gas prices will erode margins
6. Nuclear power, because the cost of coal may become the marginal cost of electricity in the United States	6. US LNG exporters and those approaching a final investment decision; profit margins would be reduced because of higher gas prices
7. China, India, and emerging economies would feel less pressure to fight global warming	7. People living in large cities, who would have to breathe air with more particulate matter due to burning coal
8. Russia's Gazprom and Novatek, because US LNG exports will be less competitive in Europe and Asia	8. Wind turbine and solar photovoltaic manufacturers due to higher costs associated with decreasing supplies of natural gas liquids
9. Canadian oil and natural gas producers and LNG exporters that are or will be selling oil and gas to the United States	9. Mexico, because it is depending on cheap and abundant natural gas to transform its electric sector but will have to pay higher prices
10. Companies that are successful in producing renewable natural gas and developing carbon capture and sequestration technologies	10. Big Oil companies that are trying to transform themselves into Big Energy by allowing the fracking ban to demonize the oil and gas industry and erode the benefits that natural gas can play in energy transition

processing plant at Abqaiq saw a short-term increase in Brent and West Texas Intermediate oil prices right after the initial attack, oil prices declined shortly thereafter.[7] The reason for the decline in oil prices was because the oil market factored in US shale oil production. Absent US shale oil, prices could have remained higher for a longer time. Overall, the affordability of oil and refined petroleum products would have declined. Banning fracking in the United States would reduce supply and be bullish for gasoline, diesel, jet fuel, and other transportation fuels. Energy consumers in the United States and globally would have to pay higher prices.

[7] Sheppard, D., Raval, A. and Sevastopulo D. Oil price spikes as fears mount over Saudi supply disruption. September 16, 2019, https://www.ft.com/content/353bce38-d806-11e9-8f9b-77216ebe1f17

Since the shale gas revolution, natural gas has been in an extended bear market for the last couple of years. Today, higher natural gas prices are largely driven by the weather and are seldom sustainable unless there are prolonged periods of cold and hot weather or shortages in underground gas storage.

A ban on fracking would reduce associated gas from oil wells in the Permian Shale in West Texas and New Mexico and gas wells in the Marcellus and Utica shales in Pennsylvania, Ohio, and West Virginia. The decline in natural gas would affect the affordability for heating and power purposes. Natural gas prices would increase and also affect electricity prices, because gas is a major fuel used in both organized and bilateral electricity markets.

Prices of natural gas exported to Mexico would increase, as well as the feedstock gas for US LNG

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export terminals operating on the US Gulf and East coasts. Profit margins of operating US LNG export terminals would also be eroded, and those projects that are being built or in the process of making final investment decisions may not go forward.

Global LNG-exporting countries like Qatar, Australia, and Russia will welcome the fracking ban, as it will discourage a growing LNG spot market with lower LNG prices and increase LNG prices overall. LNG-importing countries like China and emerging economies will have to rely on traditional LNG suppliers with oil-indexed LNG prices and destination clause restrictions. Countries in Europe that wish to reduce their reliance on Russian pipeline gas could turn to other LNG exporters, but they may find that LNG prices on the global market are higher. In fact, Russia's dominant position in the European gas market may benefit from a US fracking ban. Ships planning to use LNG as a bunker fuel may also see higher LNG prices. This would increase the reliance of many ship owners on low-sulfur marine fuel, which does emit higher levels of CO_2 than LNG.

Natural gas infrastructure investments needed to gather, treat, process, and transport natural gas to market may also be adversely affected by the decline in production and subsequent price hikes. Natural gas liquids (NGL) production may also decline with subsequent price hikes, which would have to be borne by the US petrochemical industry. The growth in US NGL exports would decline as the fracking ban in the United States takes effect. Saudi Arabia and China's petrochemical industries may benefit from the decline in US NGL production.

Effects on Availability

A fracking ban will limit the availability of oil and natural gas for export and especially affect alternative fuels and products used within the power sector. Abundant natural gas supplies and lower prices have favored the availability of gas-fired power generation. However, limiting supplies of natural gas and associated higher prices may be positive for baseload power plants using coal and nuclear fuel.

The availability and costs to operate gas-fired combined-cycle and combustion turbines used to respond to the evening ramp may be more costly to run and not be always available in certain electricity markets. Open- and closed-loop pumped storage projects and other electric storage technologies would be positively affected by a fracking ban.[8]

Renewables such as wind and solar power that have become increasingly available in recent years may experience higher costs. The IEA issued a report that underscored the role of petrochemicals and their link to renewable energy.[9] NGLs and refinery petroleum gases that come from oil and gas development are also used to manufacture wind turbines, solar panels, batteries, electric vehicle components, and tires. Banning fracking will mean that these petrochemicals will cost more and may have to be imported to sustain the growth of wind and solar power envisioned by the fracking ban and the New Green Deal.

Acceptability

A US fracking ban will also put pressure on the Federal Energy Regulatory Commission (FERC), which is the lead agency that reviews proposals to build and operate interstate natural gas pipelines and LNG export terminals. A new FERC chairman and a majority of commissioners from the Democratic Party at FERC will question and scrutinize new gas project proposals if a fracking ban has been announced. FERC will also require a GHG analysis of the upstream and downstream effects of the proposed pipelines, at a minimum. FERC may not approve some projects. In addition, FERC's 1999 Pipeline Policy Statement would be reviewed and likely include a greater emphasis on environmental effects and GHG findings in its decision on whether to approve proposed pipeline projects. Finally, state regulators of oil and natural gas production will also face pressure to limit flaring and to address fugitive natural gas emission from natural gas infrastructure.

Acceptability will increase, as a US ban on fracking will decrease the production of oil and natural gas. This is a double-edged sword, because it will limit accessibility to abundant and inexpensive natural gas and LNG to other countries who are involved in oil-to-gas and coal-to-gas switching

[8] Russo, T. N., Pumped Storage Hydro: Reliable Choice for the New Electric Storage Era, *Natural Gas & Electricity,* September 2019

[9] International Energy Agency, 2019, Future of Petrochemicals, https://www.iea.org/petrochemicals.

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in their heating and electric power sectors. LNG will still be accessible from other global suppliers, such as Qatar, Russia, and Australia, but at a higher price most likely linked to oil indices. These countries will benefit from a US fracking ban and be better able to control the supply of oil and natural gas and raise prices.

Global Coal Power Generation Will Increase

An unanticipated effect of a US fracking ban is a resurgence of coal as a power-generating fuel. This is currently occurring in Asia. The appetite for coal-fired power plants is alarming[10] when compared to cleaner gas-fired power plants (**Figure 2**). Many countries in the region are already turning to coal-fired power generation right now as a result of a slowdown in economic activity and trade wars.

The United States, however, has *not* been building coal-fired power plants, largely due to abundant and cheap shale gas. An unanticipated result of the US fracking ban associated with higher natural gas prices may be ultimately resurrecting coal as a power fuel in the United States. The only thing that would prevent that from occurring would be economic utility-scale electrical storage able to store solar and wind energy for later use. Costs of electric storage are currently very high, even when combined with photovoltaic solar projects (**Figure 3**).

A US fracking ban will send stronger signals to other countries that higher natural gas and oil prices are on the horizon. China, India, and other Asian countries will take additional steps to strengthen their energy security by relying even more on inexpensive coal. Thus, they would maximize the availability and affordability of coal at the expense of environmental acceptability. If this occurs, a US fracking ban would erode any reductions in GHG emissions that presidential candidates hope to achieve. Furthermore, many developing countries might believe that because the United States is willing to shoulder a larger burden to fight climate change, they can relax their efforts and maximize their energy security by using coal, which generally is more affordable, readily available, and accessible than natural gas.

ALTERNATIVES TO A US FRACKING BAN

Fighting climate change is a global problem the United States can't undertake alone. Rather than imposing a US fracking ban, the United States should be undertaking three major actions:

[10] Mohanty, S., & Kannan, D. (2019, November 14). Analysis: China's coal addiction is too deep to quit too soon. Retrieved from https://www.spglobal.com/platts/en/market-insights/latest-news/coal/111419-chinas-coal-addiction-is-too-deep-to-quit-too-soon.

Figure 2. Upcoming Global Coal Power Generating Capacity in Asia Is Growing Despite the Paris Agreement

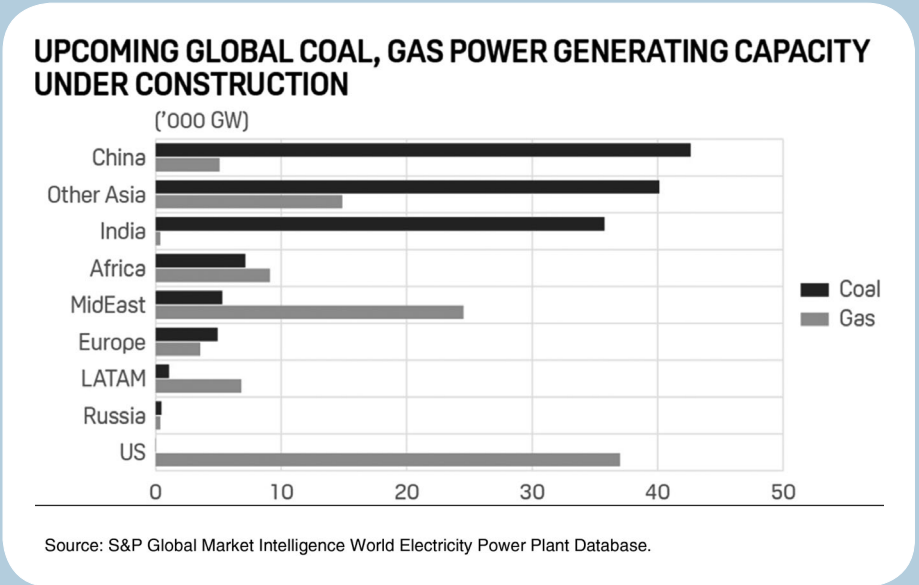

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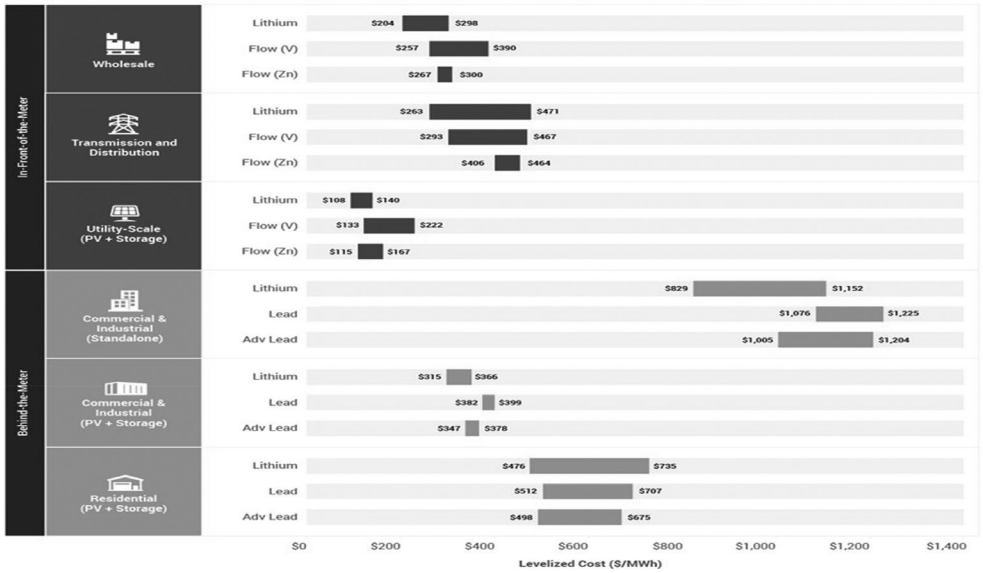
Figure 3. 2018 Levelized Cost of Electric Energy Storage



Source: Lazard's latest annual Levelized Cost of Energy Analysis (LCOE 13.0), https://www.lazard.com/perspective/lcoe2019.

1. Promoting coal-to-natural-gas switching as a global energy security policy to mitigate oil and gas price shocks and fight climate change;
2. Aggressively regulating the oil and natural gas industry to reduce gas flaring and to fix and prevent fugitive gas emissions from infrastructure and non–oil and gas sources[11] such as landfills, wastewater plants, and agricultural wastes; and
3. Providing tax incentives to bring down the cost of electric storage technologies, as it did with renewable energy.

Details of specific recommendations are found in **Table 2.**

Instead of banning fracking and reducing the accessibility to abundant and affordable US shale oil and natural gas, a better remedy may be to regulate and incentivize the oil and gas industry to reduce methane leaks in the supply chain through required monitoring. For example, after three years of overflights in California, NASA scientists determined the location of super methane emitters such as landfills. Oil and gas industry emitters were also identified, and the leaks have already been repaired.[12] Tax incentives could also be used to spur the development of carbon capture and sequestration technologies. States can also play a critical role by mandating Renewable Gas Portfolios to require gas utilities and the private sector to decarbonize natural gas and reduce methane emissions from landfills; dairy, hog, and poultry farms; and wastewater treatment plants. International oil and gas companies, such as British Petroleum, Royal Dutch Shell, Chevron, and Exxon Mobil, should accelerate their efforts to decarbonize natural gas and produce hydrogen.

Finally, Congress should pass legislation that provides incentives to build utility-scale electric storage technologies and hybrid solar + battery projects. Congress should demand that FERC expeditiously resolve outstanding issues under FERC Order 841 that are preventing electric storage technologies from participating in wholesale electricity markets.

[11] Lazard's Levelized Cost of Energy and Levelized Cost of Storage 2019, https://www.lazard.com/perspective/lcoe2019.

[12] Doan, L. (2019, November 6). NASA flew gas detectors above California, found 'super emitters.' Bloomberg. Retrieved from https://www-bloomberg-com.cdn.ampproject.org/c/s/www.bloomberg.com/amp/news/articles/2019-11-06/nasa-flew-gas-detectors-above-california-found-super-emitters.

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Table 2. Specific Recommendations to Improve the Environmental Acceptability of Oil and Natural Gas Supply Chains

1. Promoting coal-to-natural-gas switching as a global energy security policy to mitigate oil and gas price shocks and fight climate change

a. Arrive at agreements with China and other countries to remove trade barriers for the export of US LNG.

b. Provide assistance through the Export-Import Bank to assist US LNG suppliers who export LNG.

2. Aggressively regulating the oil and natural gas industry to reduce gas flaring and to fix and prevent fugitive gas emissions from infrastructure and non–oil and gas sources

a. On federal lands and off-shore, regulate natural gas flaring so that the only flaring allowed is to ensure safety.

b. Only approve new drilling applications for oil and gas that are accompanied by an approved gas gathering-treatment-pipeline transportation plan.

c. Require that state oil and gas regulators conform to federal guidelines in item 2b.

d. Reinstate the US EPA methane regulations and require annual monitoring using NASA or similar technologies to identify and make public companies and municipalities that flare gas and have fugitive gas emissions.

e. Require that fugitive emissions be eliminated within six months of identification, with penalties of $500,000 per day for noncompliance by the Pipeline & Hazardous Materials Safety Administration and/or US EPA.

f. Encourage State Public Utility Commissions to issue mandatory Renewable Gas Portfolios to reduce methane emissions from landfills, wastewater treatment plants, and agricultural sources (pigs, chickens, and cattle) by producing renewable natural gas.

g. Create tax incentives at the federal and state levels to incentivize the construction of carbon capture and sequestration projects.

3. Providing tax incentives to bring down the cost of electric storage technologies as it did with renewable energy

a. Congress should implement investment tax credit and renewable energy tax credits for standalone electric storage technologies, hybrid renewable energy and storage projects, and electric transmission.

b. FERC should expedite action on Order 841 to facilitate participation of electric storage technologies in the wholesale electricity markets and report to Congress the progress made.

c. FERC should revise its 1999 Pipeline Policy Statement to include references to fugitive emissions and flaring and to address both upstream and downstream GHG emissions associated with pipelines.

Congress should also incentivize the construction of high-voltage transmission lines to connect renewables and electric storage projects to the grid.

CONCLUSION

Proposals to ban fracking everywhere in the United States will have significant effects on the energy security of the United States and its allies, competitors, and adversaries. Any decision to ban fracking will effectively limit accessibility to shale oil and gas supplies for US consumers and importing countries. The United States would have to rely on conventional drilling, which currently supplies 18 percent of the oil and 4 percent of natural gas as of 2017.[13] As a result, the United States will become, again, a net importer of oil and natural gas to fulfill its energy requirements. Within a year of a fracking ban, prices for oil and natural gas will greatly increase. Thus, oil, gasoline, diesel and jet fuel, NGLs, petrochemicals, and electricity will not be as affordable and adversely impact consumers and the ability of countries to compete globally.

Oil and gas–producing countries, especially those in OPEC+, will be the winners as oil and natural gas prices increase. US LNG and oil exporters and pipeline owners will also be adversely affected. The United States and most oil and gas–importing countries will be subjected to higher prices and geopolitical risks, as US shale oil will not be able to mitigate price spikes as a result of attacks on tankers and oil infrastructure in the Persian Gulf and other choke points.

A ban on fracking in offshore areas only will have a negligible effect on natural gas prices and especially on accessibility and affordability. However, it will affect the ability of US shale to mitigate price shocks caused by OPEC+ and geopolitical events. Therefore, shale oil and gas would continue to be an effective tool to enhance energy security, and natural gas could be used by emerging economies to displace dirtier fuels such as coal.

[13] Bureau of Ocean Management. (n.d.). Oil and gas energy. Retrieved from https://www.boem.gov/oil-gas-energy.

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