

Why Kill Natural Gas?

The push for “artificial electrification” will hurt consumers and the environment.

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The U.S. natural gas industry has enjoyed great success over the last decade-plus. It has contributed to the economy by creating new, productive jobs and significantly reducing households’ and businesses’ energy bills. This was particularly important during the Great Recession when a boost from a major industry prevented the further downward spiral of the economy.

Natural gas also benefited the environment by accelerating the retirement of coal-fired generating plants. The shift from coal to natural gas was a major factor in lowering U.S. power industry carbon emissions by 33% between 2005 and 2019. Even after accounting for methane emissions, the most credible studies show that switching from coal to natural gas has mitigated climate change. Moreover, and possibly more important for human health, natural gas emits less air pollutants — like sulfur-dioxide, mercury, and nitrogen oxide — than coal.

Because of its abundant shale gas, the United States expects to be a net exporter of natural gas in the coming years. Until a little more than a decade ago, the worry was that the country would have to *import* increasing amounts of liquefied natural gas (LNG) from politically unstable parts of the world.

Overall, because of environmentally prudent development of natural gas resources using advanced technology for hydrocarbon extraction, natural gas would seem to have a bright future. About 80% of U.S. natural gas production comes from “fracking” techniques applied in shale formations, whereas just 15 years ago that percentage was virtually zero.

NATURAL GAS’S FOES

Until around seven years ago, most environmental groups viewed natural gas favorably as a bridge fuel in facilitating the transition to a low-carbon environment. Today, these groups and other climate activists have radically changed their position. They now see natural gas as an obstacle to achieving greenhouse gas (GHG) targets

that, in their minds, will help protect against climate catastrophe. They favor phasing-out, as promptly as possible, the consumption of natural gas for various uses like electricity generation and space and water heating in new buildings. Opponents of natural gas have also attempted, with some success, to block the building of new gas-infrastructure projects (like LNG export terminals and gas pipelines). These opponents include homeowners, people who generally oppose development, and environmentalists.

ADVOCACY FOR ELECTRIFICATION

Given concerns over climate change, policymakers (e.g., state utility regulators), electric utilities, and environmentalists are championing the idea of “electrification.” That is, they want to phase out fossil fuels and replace them with electricity for direct energy end uses like transportation and water and space heating.

Electric vehicles and heat pumps are the “electrification” technologies that have received the most attention up to now. Other



than power plants, the two largest sources of carbon emissions are motor vehicles and buildings. For buildings, the two largest emitting sources of carbon are for space and water heating.

Environmental groups and others warn that stringent climate goals are out of reach if widespread use of fossil fuels — including natural gas — continues to power home appliances and vehicles. The numbers just do not add up for deep decarbonization if fossil fuels remain a major source of energy for transportation and buildings. According to some climate activists, the safe level of carbon dioxide in the atmosphere is 350 parts per million. They argue that, to stay within that limit, it is necessary to transition the global economy away from fossil fuels immediately. This means an extremely short bridge for natural gas.

The electric industry sees electrification as an opportunity for revitalizing sales and revenues. A growing number of utilities now consider electrification an integral part of their future business plan. With smart dispatching, utilities can realize the added benefit of improving their capacity utilization from electrification of transportation and water heating.

Supporters contend that electrification should occur sooner than later, preferably over the next two or three decades, accelerated by subsidies and other governmental inducements. Some even advocate mandated electrification to avoid climate catastrophe. Others point to the less lofty goal of revitalizing the electric industry. Another group argues that electrification is already economical for end uses, like water and space heating, but it faces serious market and regulatory impediments.

THE SELF-DEFEATING “ENVIRONMENTALISM” OF NATURAL GAS BANS

Political attempts to curtail gas supply and demand have met

with limited success. Methane rules, drilling restrictions on public land, and opposition to new pipelines have incrementally slowed the growth of natural gas in the United States. But the anti-fossil-fuel lobby and their allies want much more: additional restrictions on natural gas production and new gas service and bans on natural gas usage and appliances as policy tools to foster “artificial electrification” (i.e., electrification induced by governmental mandates or inducements that fail a cost-benefit test).

Bans by municipal jurisdictions with (presumably) the legal authority to do so are in the news. In July 2019, Berkeley, CA prohibited the use of natural gas in new buildings. Since then, dozens of cities in other jurisdictions have adopted similar measures. In December of last year, New York City enacted a new law that mandated phasing out fossil fuels in new buildings. The law requires that new construction after 2027 use electricity for stoves, space heaters, and water boilers instead of gas or oil. Some cities have even considered banning or restricting natural gas appliances from existing homes and businesses. The main purpose of these efforts is to mitigate climate change, however infinitesimal in the whole, by supposedly making buildings zero-carbon.

Problem is, banning the direct use of natural gas by end users lowers energy efficiency when accounting for the full fuel cycle. It also may increase carbon emissions if utilities continue to rely on natural gas and other fossil fuels in electricity generation. At least half of the energy embedded in fossil fuels is lost during the generation, transmission, and distribution processes. An older, inefficient coal-fired plant may lose as much as two-thirds of its energy input in electricity generation.

As a public policy tool, a ban is much more drastic than just creating a tax to discourage consumption of a product. With a tax, consumers can still purchase the product, but they will have added incentive to economize on its use. This tax, called a Pigouvian tax, can counter a negative externality that is unaccounted for in the decisions of either suppliers or consumers. Such taxes have been used to reduce other forms of pollution and second-hand smoke. In contrast, a natural gas ban extinguishes consumer choice for meeting space and water heating needs, not to mention a flame for what experts consider a superior form of cooking.

A natural gas ban forces consumers to do something they otherwise would not do. In effect, the ban confines energy consumers to relying largely on electricity (at least in urban areas) to meet their space and water heating demands. Its intent is to accelerate electrification beyond that achieved by the market alone or by special incentives (e.g., rebates for heat pumps and electric water heaters) offered to consumers for switching or choosing electricity over natural gas.

A natural gas ban is contrary to a free market, where consumers enjoy the right to purchase a product if they so desire. Energy consumers may find natural gas cheaper, in addition to providing more heating comfort and better cooking performance than electricity. Consumers cannot go without space or water heating, which means that consumers must find some substitute energy



form. Also, unlike some banned products, it would be impracticable to create a black market (e.g., illegal purchase of natural gas for homes or office buildings) for natural gas.

In economic terms, a gas ban fails miserably, with the benefits virtually zero and the costs likely more than minimal. As public policy, a ban is off the charts as being exceptionally bad. Here is why: Less than 9% of U.S. carbon emissions comes from direct use of natural gas in homes and buildings. The United States emits about 15% of world carbon emissions. Thus, converting all buildings to all-electric and assuming that all electricity is produced from “clean” sources (which won’t occur for some time) reduces worldwide emissions by less than 1.5%. According to climate models, that would not have a detectable effect on global climate, temperature, or sea level.

GHG emissions mitigation is a global public good. It can’t benefit anyone without benefiting everyone, and no matter how much one country or region benefits, there always are benefits for others. So, even if a natural gas ban has a detectable effect on climate change, the locale implementing it would receive a trivial share of the global benefits.

A ban can look good politically by giving the appearance that a severe problem is receiving immediate, absolute attention. And a ban is certainly less noticeable than a carbon tax or a budget gap from new taxpayer subsidies. But at least a carbon tax and subsidies preserve for consumers the right to choose their energy source rather than preclude them from doing so.

Strange bedfellows (akin to Baptists and Bootleggers) support government-promoted electrification: electric utilities and environmentalists who, of course, have different objectives. This is a particularly strong coalition and is likely to grow more popular in the years ahead. The problem is that vocal minorities who stand to gain economically or ideologically drive governmental action, overriding the wishes of the relatively unorganized majority who lose a lot in total but little individually.

The claim that the support for a natural gas ban derives primarily from a “religious” opposition to fossil fuels is credible given the lopsided cost-benefit calculus. Climate activists regard natural gas as a competitor for renewable energy in power generation and for electricity in end-use applications. Their position seems to be that “getting rid of the competitor” would make it easier to have more renewable energy and clean electricity. But is natural gas really bad?

THE BENEFITS OF NATURAL GAS EXCEED THE COSTS

The good that comes to energy consumers and society from natural gas far exceeds the bad. Natural gas has:

- abundant domestic availability
- low prices for the foreseeable future
- relative cleanliness compared to other fossil fuels
- promising technological prospects (e.g., blue hydrogen) for a more benign environmental footprint
- flexibility in electric power production, one application being a back-up to renewable energy

- economic use across a wide range of consumers and energy services

It seems absurd to ban or even restrict a product that has done, and is expected in the future to do, so much good for both energy consumers and the economy.

A SENSIBLE POLICY

Is it only because of special interests that policymakers would even consider prohibiting consumers from choosing natural gas as an energy source to meet their cooking and heating needs? After all, in most parts of the country where natural gas is available, it is the most economical and desired source of energy. It is not a stretch to say that natural gas bans and other forms of artificial electrification are little more than symbolic virtue signaling. This reflects a stance of “we have to do our part,” or, perhaps more accurately, do “whatever it takes,” even if bans resoundingly fail a cost-benefit test.

Instead of artificially promoting electrification through natural gas bans, subsidies, and other out-of-market inducements, we should wait to see where the technology takes us. Technology will determine the ultimate success of electrification, not subsidies and other governmental actions that could distort the diffusion of electric appliances and vehicles with possible obstruction of their long-term viability. Technological advancements are already moving in a direction that favors electrification with its emphasis on digitization (like smart meters, appliances, and power grids) and clean energy. If these developments continue on their current path, we should see a more electrified economy with less dependence on fossil fuels to meet future energy demands.

But let’s not prematurely promote electrification or phase out natural gas. Artificially promoting electrification can be a win-win for electric utilities and environmentalists, but it is likely a loser for the rest of society. The problem of new electric technologies subsidized by utility customers and taxpayers with only a distinct minority benefiting is hard to ignore, both politically and economically. Policymakers should place more trust in markets to assure that electrification, when it occurs, will be for the good of society, not just for special interests.

If we eliminate natural gas from the energy mix too quickly, then either (1) the likely increased use of coal for electric power generation would damage public health and aggravate climate change for a longer period, or (2) expensive renewable energy would lead to higher electricity bills and a less secure and reliable electric power system. Neither outcome would be good for society.

Good public policy balances economic and environmental objectives to advance the public interest. A natural gas ban — command-and-control policy at its worst — would have virtually no effect on global climate and is likely to increase costs and reduce quality for energy consumers. One would have to look far and wide to find another governmental action that is so intrusive, imbalanced, and detrimental to society’s welfare. R



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