Don't Kill the Helium Supply Chain:

Selling the Federal Helium Reserve Defeats the Purpose of the CHIPS Act

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The federal government will make a major mistake if it follows through with plans to sell the Federal Helium Reserve (FHR). The sale will torpedo an already weak global helium supply chain and deal a major blow to the United States' ability to fulfill the goals of the CHIPS and Sciences Act, which dedicates $52 billion to establishing US dominance in semiconductor manufacturing. In fact, it's hard to imagine a worse time or a more wrong-headed way to offload our nation's largest domestic helium supply.

Don't get me wrong; I am all for selling the helium in the FHR to private entities. This is just the wrong way to do it for a lot of reasons. First and foremost, by selling the FHR lock, stock, and barrel to the highest bidder, the US government will practically give away almost two billion cubic feet (BCF) of helium we already own. Helium is a rare commodity fundamental to making semiconductor chips—which is the whole point of the bipartisan CHIPS Act Congress passed in August 2022. Selling the FHR is a lot like shooting yourself in the foot right before you start a marathon.

Dominating the global semiconductor industry is crucial to US interests. If we fail, our national security will suffer, as all major US defense systems rely on semiconductors. The health care sector depends heavily on semiconductors, which are central components in many medical devices, including lifesaving MRIs. Electric vehicles cannot be built without them, nor can cell phones, streaming internet, or thousands of other products integral to our daily lives. They are critical to the 5G transition. Literally every emerging technological advancement, including artificial intelligence (AI) applications, depends on smaller, faster and more powerful semiconductors.

Both the United States and China recognize this, and both countries are aggressively pursuing not only self-sufficiency but also global preeminence in chip manufacturing.

The US is the birthplace of semiconductor technology, but America's share of chip manufacturing has fallen from 37 percent in 1990 to 10 percent today. We make none of the most sophisticated chips. That's why CHIPS invests $52 billion to turbocharge domestic semiconductor production by building chip fabrication facilities here at home.

Today, Taiwan is far and away the global leader in semiconductor production, providing some 57 percent of the world supply, followed by South Korea, Japan, the United States, and China in that order. Why is Taiwan so successful in this industry? It has a robust end-to-end semiconductor supply chain made up of thousands of semiconductor-related companies that, collectively, can address every step of the chip manufacturing process. Further, Taiwan is home to many highly advanced manufacturing facilities producing semiconductors that currently cannot be made anywhere else in the world. Ultimately, the goal of the CHIPS Act is to create that kind of end-to-end supply and manufacturing chain here at home.

We simply must succeed. The CHIPS Act gives us the financial means to do so, but if we sell the FHR, we will be taking a wrong turn when we've barely left the chute.

Under the current government plan to sell the FHR, we'll be giving our helium away for cents on the dollar at a time when (a) an ongoing global shortage has driven helium prices to unprecedented levels, if you can buy it at all; (b) we are in a neck-and-neck race with China to gain dominance in the semiconductor market; and (c) independent explorers are looking for ways to capitalize on privatization opportunities the CHIPS Act presents and helium prices that will inevitably continue to rise.

So, maybe let's ***not*** sell the massive quantity of helium we already own at yard sale prices? Instead, let's sell it for top dollar on the open market, like any other commodity. Let's get the highest return for US taxpayers. Let's ensure we have a steady supply of helium for businesses and entrepreneurs who are willing to put it all on the line financially to advance US semiconductor technology and build and those new fabrication plants the CHIPS Act will help fund.

A Strategic Reserve Whose Highest and Best Use is Staring Us Right in the Face

A finite, nonrenewable element found in natural gas formations, helium is expensive to extract, transport, and store. When the world's helium is gone, it's gone. But with no reliable, published price point, explorers can't calculate return on investment, making it impossible to attract investor funding for their projects.

For nearly two decades, the US—indeed, the world—has experienced profound, ongoing helium shortages. The reason is due to lack of pricing. That's because a handful of major industrial gas companies control the world helium market and keep its actual price hidden. Establishing a true market price for helium is the way to end shortages.

Just think of the oil industry: When prices are high, exploration and development increase; when prices drop, those activities slow. Although there are swings in the oil industry, the market price of oil is well known. This price certainty encourages exploration companies to develop projects, further ensuring market stability.

If we establish transparent market price for helium, we can create those same circumstances. Market pricing will boost exploration tenfold or more, and bigger players with bigger dollars will enter the fray. That's the only way to end the global helium shortage.

More about how to establish market pricing later, but first let's talk about the helium the US already owns and why selling it is a B.A.D. idea.

Only a few countries in the world have significant helium supplies. Primarily, they include the US, Qatar, Algeria, Russia, Canada, and China. Due to geopolitical instability in Europe and East Asia, the US helium supply is considered the most reliable.

For decades, the US has set aside strategic reserves of various commodities for states and the federal government in the case of supply chain disruption or a threat to national security. We have major reserves of pharmaceuticals, medical equipment and supplies; huge stockpiles of

petroleum products and heating oil; and huge caches of food, water, generators, and other resources stored across eight distribution centers throughout the US and its territories. There is even a vault in Fort Collins, Colorado, containing thousands of plant species and the genetic material of livestock.

The Federal Helium Reserve is securely stored in a massive underground natural geological formation called the Bush Dome at the Cliffside Storage Facility about twelve miles northwest of Amarillo, Texas. Overseen by the Bureau of Land Management (BLM), the FHR contains about 4 BCF of helium, about half of which the US government owns. The remainder, owned by more than a dozen privately owned companies, is mixed with our federal helium. The FHR supplies about 40 percent of the domestic demand for helium and about 35 percent of the international demand.

ExxonMobil is the largest producer of domestic helium via its operations at LaBarge Field in Wyoming. Virtually all the rest comes from the FHR, along with some production from the Hugoton Basin in southwest Kansas and the panhandles of Oklahoma and Texas. Discovered in the early twentieth century, Hugoton is nearing the end of its commercial life. So, if the FHR at Cliffside is shut down, ExxonMobil will have a virtual monopoly on domestic helium production. That would kill an already devastated supply chain.

A huge component of the FHR's value is the Bush Dome itself. Helium is one of the most abundant elements in the universe, but it is hard to capture on earth. Its atoms are tiny and lighter than air, so it can escape through even the most minuscule cracks. That's why NASA uses it to test air-tight seals on rockets, space suits, and life support systems. Helium can easily escape almost any above-ground container. Once released, it is almost impossible to recapture and eventually escapes earth's atmosphere.

About 3,000 feet below the earth's surface, the Bush Dome is a huge cave-like structure lined with brown dolomite—a mineral found in compact limestone beds—and capped by two layers calcium anhydrite covering the porous rock and acting as a containment lid. These properties make the Bush Dome unique in the world and enable the US to do what no other country can do: store helium long term.

Congress established the FHR under the Helium Act of 1925 (back when airships were a big thing in the aviation world) as a national strategic reserve to be withheld from normal use by governments, businesses, or organizations to ensure its availability if needed to pursue a ***particular strategy*** or to cope with an unexpected event.

We have now identified that "particular strategy." With the CHIPS Act, Congress tasked the US Department of Commerce (DOC) with a monumentally important goal: Achieve global dominance in the manufacturing of semiconductor chips.

While oil was long the world's most critical commodity, semiconductors are the nucleus of the emerging digital economy. Today, we stand only at its precipice. To succeed in the dizzying digital transformation of the world marketplace, major economies need to strengthen their chip-manufacturing capabilities and stabilize their semiconductor supply chain.

That's why Congress invested so heavily in the CHIPS mandate. Its odds of succeeding are boosted immeasurably because CHIPS wisely enlists the extraordinary ingenuity of American

businesses and entrepreneurs to achieve its goals and provides them a way to share in the rewards of success.

But the task requires more than constructing new state-of-the-art semiconductor fabrication facilities; we must ensure those facilities have a steady supply chain of the raw materials necessary to produce those chips. And that's where the world helium shortage could pull down the CHIPS Act's odds of success.

Helium is used throughout the complex, precisely controlled semiconductor manufacturing process. Due to its unique properties, it is the only element that can provide the temperature control, stability, and thermal connectivity required throughout the process. It allows smaller die sizes and increased density, yielding more powerful chips that make more calculations, faster and without overheating. This temperature control will become increasingly crucial as technology firms continue making smaller, denser transistors and circuitry.

The CHIPS Act cannot succeed—the US cannot dominate the global semiconductor market—without a reliable supply chain of helium.

Today, America is engaged in a fierce global competition with European and Asian countries to control semiconductor production to avoid relying on other countries for vital technology and materials. The landscape is fluid, but the race between the US and China intensified after October 2022 when the US announced an export control policy on AI and semiconductor technologies to China.

Last June, in a move that analysts say will weaken export control measures aimed at Beijing, the US announced it will allow South Korean and Taiwanese chip makers to continue operations in China. Meanwhile, China's territorial claim over Taiwan and threats to take it over continue causing tensions in East Asia. An all-out Chinese invasion of Taiwan would cause the chip industry to implode.

The increasing focus on making smaller, faster advanced semiconductors also changes the dynamics significantly. Although China produces a little more than 5 percent of semiconductors, Taiwan makes 65 percent of them, including almost 90 percent of the world's most advanced chips, while the US produces only about 10 percent of the advanced chips. Clearly, we have our work cut out for us.

Yet just as we have identified this monumentally important strategic goal, dedicated $52 billion in funding, and set into motion a plausible plan to achieve it, the government is choosing to practically give away all our federally owned helium so essential to its success. If we sell the FHR, the leg up we have on China and the rest of the world—the largest stored supply of helium in the world—will be lost.

Selling the FHR: An Impending Blunder Directly Contrary to the CHIPS Act's Goals

In 2013, pursuant to the Helium Privatization Act of 1996, Congress ordered the BLM to sell the FHR and transition the helium in it, as well as all related assets, to private users. Those assets include the Cliffside Storage Facility, the Bush Dome underground helium storage reservoir, federally owned helium stored there, extraction wells and associated mineral rights, processing

equipment, support buildings, and 423 miles of pipeline extending via easements and rights-of-way through private land to private refiners in Texas, Oklahoma, and Kansas. Congress charged the US General Services Administration (GSA) with managing the sale.

The most likely buyers of the FHR are the major gas companies that already monopolize the helium market, keeping prices artificially high, quashing competition, and stifling new exploration. A foreign-owned company could even end up owning the FHR and use our own helium to compete against us in the race for semiconductor primacy.

James Weaver PE, CEO of Aeon Petroleum Consultants, expressed grave concerns about selling the FHR to a private entity.

"Currently, it is proposed to sell the federal helium in two lots," said Weaver. "The first lot is one billion cubic feet of helium gas. The second lot is 800 million cubic feet plus the infrastructure (wells, piping, compressors, etc.). Naturally, this puts the buyer of the first lot at the mercy of the buyer of the second lot, who will control the infrastructure and, therefore, the operations.

"Assuming the owners of the privately owned helium in storage at the Cliffside Field reservoir would have production precedence, none of the federally owned helium in storage could be produced for at least five years. It would take fifteen to twenty years to remove all the stored helium from the reservoir. Such a long period of time would invite potential mechanical problems, well bore problems, water encroachment, and dilution of helium concentration. Any of these circumstances could prevent removal of all federally owned helium.

"Selling to a private operator with no accountability to the DOC and no public visibility could cause the facility to be closed before all stored helium could be removed. The price paid for helium would be severely discounted by 15 to 20 percent due to the risks I just outlined. Considering a five-year wait to remove the first purchased helium, discounting at the sales price by 15 percent effectively reduces the current price of helium by 56 percent. This is less than half the value of helium that could be sold immediately."

Air Products, the company with the most private helium stored in the FHR, has thrown a monkey wrench into the works, and that may well be a good thing in the long run. On September 7, Air Products filed a lawsuit to delay the sale, ostensibly to protect its assets. In the filing, Air Products says it has about 800 million cubic feet of helium stored there. Of course, it is mixed with 1.8 billion cubic feet of US taxpayer-owned helium and helium owned by other companies. Below is the tax roll listing the companies that store helium at the FHR, how much, and its value.

INSERT TAX ROLL GRAPHIC HERE

The dollar value shown in the above graphic is based only on the cost of helium stored and in no way reflects its true market value. As you can see, Air Products' 800 million cubic feet stored at the FHR is valued on the 2023 tax rolls at $150,834,262, making it worth about $188 per thousand cubic feet (MCF). This helium could easily be sold for well over 100 percent of that cost.

Between 2014 and 2018, when the BLM held five auctions of helium from the FHR, Air Products bought just over 1 BCF of helium. At the time, all the major industrial gas companies tied to the

BLM system had helium stored in the reserve. Since then, some of them have undergone mergers and name changes, but suffice to say seventeen companies still own helium in the FHR. Air Products owns by far the most.

In its lawsuit, Air Products claims it should be able to get its helium out of the FHR before it is sold. Its rationale: A new private owner of the FHR might not work with Air Products to get its helium or have the expertise to run the newly acquired reserve.

The following excerpts from the Air Products filing underscore that (a) the FHR is an indispensable national asset; (b) the value of the helium it contains is significantly higher than indicated by tax rolls or the BLM; and (c) if not properly managed, the FHR's sale would cripple the helium supply chain, dealing a devastating blow to our chances of achieving the goals of the CHIPS Act:

> *This case is about a looming disruption in the nation's supply of helium. That crisis is precipitated by Defendants' forthcoming sale to a private entity of the sprawling collection of equipment, land, and pipeline that constitutes the Federal Helium System ("System"). The System is a vital and unique federal asset that serves America's energy, military, industrial, and medical needs. There is literally nothing like it in the country . . .*
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> *The System currently fulfills about 20 percent of domestic demand for helium, contains our country's largest reserve of helium, and boasts the largest demonstrated helium storage capacity in the world . . .*
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> *Plaintiffs, which previously purchased 2 billion cubic feet of helium for about $250 million from the Government, currently own about 800 million cubic feet of helium that is stored at the System, and its value far exceeds the amount Air Products paid for it . . .*
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> *The System's operations are closely tied to the helium market's health because helium is a scarce, non-renewable (sic) resource, and because the System is one of the few places around the globe that can store significant amounts of helium underground. Government helium sales have sometimes led to market disruptions. In 2006-07, 2011-13, and 2018-20, unexpected supply gaps around the world due to planned and unplanned maintenance outages led to helium shortages and dramatically increased prices, jeopardizing scientific, technological, and national defense projects . . .*
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> *True to Congress's instructions, the Secretary of the Interior (acting through the BLM) designated the System as excess property in September 2021. But things unraveled from there. Notwithstanding Defendants' clear statutory duty to act as a "steward of the System, Congress's admonition that the sale of the System must be conducted in a way that preserves helium market stability, and the vital importance of a stable helium supply to public- and private-sector buyers across various mission-critical fields. Defendants recklessly pressed ahead to sell and convey the System—no matter the consequences for supply and despite the lack of any operative deadline for the sale . . .*
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> *Defendants will close bids on November 15, 2023, and will sell and convey the System thereafter . . . the Invitation For Bid is contrary to the Helium Stewardship Act and arbitrary and capricious under the Administrative Procedure Act ("APA"), and thus unlawful, for multiple independent reasons . . .*

> *Defendants' failure to ensure continuity in operations throughout the sale and conveyance violates the Helium Stewardship Act's command that Defendants dispose of the System in a manner than maintains stability of the national helium market.*

Without question, the helium supply chain is incredibly fragile, leading to worldwide helium shortages eight years out of the last seventeen. The US itself has had a helium shortage since 2006. Many nations that were depending on Russia to supply them helium lost out because the war in Ukraine disrupted that country's global supply chain. According to some sources, the price of helium has doubled since January 2022 and contract prices have increased 50-100 percent. Selling the FHR now would further disrupt supply chains and cause bigger price hikes, all while we sell our US helium for cents on the dollar.

Any Way You Slice It, If the FHR Sells, US Taxpayers Lose

Now, let's say Air Products succeeds in delaying the FHR sale and they, along with other private companies with helium in the reserve, get their helium out first. What happens to that nearly two billion cubic feet of US taxpayer-owned helium?

The chances of being able to get all the federally owned helium out would decrease with the drawdown by Air Products and other companies. Pressure drops every time you draw more molecules out of a storage reservoir, making it harder to get the last remaining molecules out of storage. Yes, Air Products would get what they want, but it would come at a heavy cost to US taxpayers. They have footed the bill for storing the private companies' helium for years, when they had no other place to store it; if anyone takes a hit, it shouldn't be taxpayers.

Even if the project does sell, the price would have to be heavily discounted by the mere existence of a lawsuit filed by a billion-dollar market cap industrial gas company. That is, any buyer would not only be purchasing the asset, but also the legal liability associated with it. The sales price would not reflect the true market value of helium. Taxpayers are the big losers.

So what is our government to do? If they sell the FHR for a low price, taxpayers get a low return. If Air Products (and others) succeed in getting their helium out first, due to pressure depletion, taxpayers might get even less. Further, BLM has laid off most of their Amarillo helium staff and there would be no one to run the Cliffside Field facility. Regardless, it's a lose-lose for taxpayers and a disaster for CHIPS and the American bid to win the global semiconductor race.

A Growing Consensus: Selling the FHR is a Bad Idea

For nearly a decade, scientists across the country have urged the government to hold onto the FHR, saying the decision to sell is reckless and could harm our national defense, not to mention a broad range of industries.

Based on costs, rather than market value, the BLM valued its helium inventory in 2013 at approximately $1 billion. In testimony before the US House Committee on Natural Resources that year, Department of the Interior Assistant Inspector General Kimberly Elmore said the FHR audit she led concluded "the BLM was not charging market value prices and that there were no

policies in place dealing specifically with sales to non-governmental customers." Further, she concluded, "We believe, under current market conditions, BLM's remaining helium inventory is worth considerably more than its current $1 billion valuation, and if the program continues, sales to non-governmental purchasers will continue."

That was a decade ago. A reasonable value for the federally owned helium stored in the FHR today is approximately $$$$$—if sold on a spot market, where it would be traded for immediate delivery.

"The disposal process was not well thought through and is now the subject of a federal legal challenge," says XXXXX, an attorney who works in helium. Air Products, a key supplier of helium with helium stored in Amarillo and as a part owner of the private helium processing facility integral to the operation of the federal helium facility, has sued both BLM and the General Services Administration for failing to comply with the Helium Stewardship Act's direction for the disposal. Why does this matter? Think CHIPS Act—restarting a domestic chips manufacturing sector—helium is critical to that effort."

There have been signs the government is becoming more aware of the volatile helium market and may be rethinking its decision to sell the FHR. On January 30, 2023, the US Geological Survey, Department of the Interior, posted to the Federal Register seeking public comments regarding "whether there is an increasing risk of helium-supply disruption."

That same day, the Semiconductor Industry Association (SIA) submitted comments in response to the USGS request. Following are excerpts from the SIA's comments:

> *Just like helium leaking out a helium balloon, cylinders of helium lose roughly 1% of the gas each day. Due to this fact alone, we are dependent of regular deliveries to our facility to maintain a stable supply line. Any disruption, even of a few days, could slow production in a semiconductor facility. A significant delay could result in the need to shut a facility down. This is an untenable option for our company and other industries, and for the country as a whole.*
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> *Therefore, the supply of helium for semiconductor manufacturing must be uninterrupted and available on-demand. Helium use for semiconductor applications should be prioritized in the face of any supply constraints due to the critical nature of helium in semiconductor manufacturing, which is important for the U.S. economy, national security, technology leadership, and supply chain resilience. The global semiconductor market is expected to grow at a 6.7% CAGR through 2025, and the helium supply will need to grow accordingly.*
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> *Should the supply of helium be immediately disrupted, there would likely be shocks to the global semiconductor manufacturing industry. One industry analyst predicts that the helium supply will be 24 percent short of demand if Russian helium was removed from the supply chain. While alternative sources of helium may be available, this will likely be accompanied by price spikes and a delay in securing additional supply. In this scenario, USGS should prioritize domestic supply and availability for semiconductor applications.*
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> *SIA recommends that USGS leverage every authority to continue the delay of the disposition of the Federal Helium Supply and consider other options that would allow for*

> *a stable supply of helium in order to avoid volatility and supply chain disruptions while maintaining a stable, predictable supply of helium from FHS. A strategic, intergovernmental approach, in addition to working with global partners, can lower the risk of disruption and ensure a sustained helium supply for semiconductor manufacturing uses in the short- and long-term (sic).*

There also appears to be a growing consensus among leaders in business and industry that selling the FHR is a mistake. On October 17, the Compressed Gas Association, AdvaMed, the Aerospace Industries Association, the Medical Imaging & Technology Alliance, and the Semiconductor Industry Association called for suspending the impending sale. In a joint letter to Dr. Lael Brainard, Director of the National Economic Council, they said the sale poses significant risks of disruption to the US helium supply chain and noted the health care, semiconductor, defense, and aerospace industries could all be at risk. The joint letter reads, in part:

> *We urge the White House to intervene and delay the transfer of the FHR until the transfer of the facility can be done in a manner that maintains the safety of the facility and the reliability of the helium supply chain.*
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> *In light of recent restrictions by Russia and China on US access to the global helium supply, it has become increasingly vital to ensure reliable and secure access to domestic helium sources. The FHR is a cornerstone to US helium supply and provides between 21-30% of the nation's supply.*
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> *The undersigned organizations, while supportive of the FHR's transfer to private ownership, emphasize the critical importance of a responsible and seamless transition.*

Without federal intervention to delay the disposal of the FHR, the group states, our federal helium supply would be reduced and important sectors of the economy, including government users such as the military, would be imperiled. US national security would be significantly and negatively impacted.

Finally, the joint letter from these five major industry associations states a poorly executed sale will ***hamstring efforts to bolster US competitiveness through increased manufacturing***. It also cautions the ramifications of the sale extend beyond just hindering growth and will ***severely undercut the Administration's own policy priorities*** and ***trigger a supply chain crisis at a time when helium is in highest demand for US priorities.***

A Smarter Way to Sell Federally Owned Helium: A Helium Spot Market

Right now, the FHR is still ours. Let's stop this train that's barreling toward a reckless sale and take a close look at another approach—one that will help America win the international competition to dominate the semiconductor industry and maximize return on federally owned helium for US taxpayers.

Do not sell the Federal Helium Reserve. Instead, transfer control of it to the US Department of Commerce to be managed in a way that supports the CHIPS Act initiatives. There simply is no more fundamental, pressing, or pivotal use for the federally owned helium in the FHR.

The 1.8 BCF of federally owned helium in the FHR at Cliffside Field near Amarillo, Texas, is literally the key to US success in winning the worldwide semiconductor race. No matter how many production facilities we build, it's uncontested: They can't make chips without helium. US semiconductor dominance depends on a robust domestic helium supply chain.

Selling the FHR will choke the supply chain. Selling helium on a spot market will optimize it.

Today, we have no certainty regarding the fair market price of helium. The major gas companies controlling the market keep it hidden to their own benefit. Explorers are anxious to find and develop new helium reserves, but without market pricing, they can't get funding.

As with any commodity, price discovery is critical to jump-starting helium exploration and production. It facilitates the ability to set helium's price by matching buyers and sellers according to a figure both parties find acceptable. Driven largely by supply and demand, it is an indispensable mechanism for gauging whether helium is being overbought or oversold.

"The government should contract with a private operator for the Cliffside facility who has no vested interest in the production or sale of helium, i.e., not an industrial gas company such as the current operator, Messer," said Jim Weaver. "The operator would run the facility until all the federal and private helium is removed or becomes uneconomical to remove. This may allow more helium to be removed than is currently forecast, further increasing the value."

"Allow the federal helium to be removed along with private helium at a proportion of 20-50 percent of the total monthly production rate," Weaver continued. "Once all private helium is sold, the federal helium will comprise 100 percent of the sales.

"Sell all federal helium on a spot market, via brokerage, at a monthly rate to any buyer. Federal helium would likely be sold to the major industrial gas companies currently on the pipeline or with helium storage contracts. Brokered helium would establish a global market price for helium. Visible pricing would encourage more exploration, further satisfying the intent of the CHIPS Act to secure a reliable supply chain."

He also suggested requiring periodic reports from the operator, at least annually, to the US Department of the Interior, which is responsible for the management of most federal land and natural resources, to ensure public visibility of the process.

Weaver is right. Selling the federal helium at Cliffside on a spot market would (a) maximize the value of stored federal helium for US taxpayers; (b) reduce the time required to produce it, keeping a valuable helium resource alive during a critical shortage and helping ensure maximum domestic production; and (c) fulfill the mandate of the CHIPS Act to help alleviate concerns about the helium supply chain.

There's one hitch: Currently, no helium spot market exists.

The Department of Commerce should seriously consider using CHIPS dollars to fund creation of the first transparent spot market for helium and the first helium benchmark price reporting agency. Based on the factors of pricing—location, quality of gas, volume, and freight—the PRA would publish price assessments of the prevailing open-market price of helium according to

universally accepted methodologies and publish its assessments daily, weekly, or monthly. It would also publish databases, analysis, and real-time market news—all independent of the market it reports on and with no vested interest in the level of any price assessment it publishes.

Price reporting agencies are a long-standing, critical part of the global commodity market infrastructure, and a PRA would fill this void in the helium market. It would provide much-needed transparency, allowing the market to function efficiently, clear surpluses, and optimize costs. It would report on and stabilize the price of helium in the physical commodity markets, breaking up existing price suppression by a monopoly of multimillion-dollar companies, encouraging new exploration, and driving domestic semiconductor manufacturing.

The foundational work required to get the trading portal up and running could likely be accomplished within XXXX, compared to a minimum of five years minimum wait time likely before any federal helium is produced if the FHR is sold.

In Summary

For many years, as the nation's largest helium provider, the BLM has essentially driven the domestic market price, which is based on costs rather than on the market value of the resource. About 90% of the BLM's helium sales have been to nongovernmental customers, mostly to large industrial gas companies that have kept the price hidden from the public.

We recently learned there is likely more helium in the FHR than was thought when the FHR sales plan was devised. Even if it is not all recoverable, there is more than enough to secure the CHIPS Act's needs. And regardless of how much helium is in the FHR, if it is sold today, the US taxpayer is basically giving this helium away to some lucky, undeserving buyer—likely one of the big industrial gas companies that caused the helium shortage in the first place.

The status quo holds: Shortages continue. Prices remain hidden. New exploration is unfeasible.

Selling the Federal Helium Reserve is a mistake. Retaining control of the FHR, hiring a private operator to operate it, and partnering with a private contractor to create a price reporting agency and broker helium on a spot market would be shrewd moves for the DOC. This approach has no downside, and the upsides are practically limitless. CHIPS manufacturers have a secure supply of helium. Selling FHR helium through a PRA creates price transparency that spurs new exploration and discovery well into the future. The mandate of the CHIPS Act instantly becomes exponentially more likely to succeed.

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