

Paying for Surface Transportation Infrastructure: Four Wrong Routes, Four Good Paths

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KEY TAKEAWAYS

The best way to improve the country's roads and railways is to reduce the federal government's role to the greatest extent possible.

Revenue sources, such as increasing the federal gas tax, imposing a miles-traveled tax system, or taxing carbon emissions, would harm the American public.

Devolving gas tax revenue and highway responsibility to the states while reducing burdensome regulations would improve the value of infrastructure spending.

The vast majority of roads, bridges, and other public transportation infrastructure in the United States are paid for and used by state and local taxpayers. Following the effective completion of the Interstate Highway System in the early 1990s, the role of the federal government in infrastructure projects should have greatly diminished. Instead, elected officials have continued the practice of taxing Americans for projects well outside the proper scope of federal activity. This extends to the present, as both Congress and the Trump Administration have touted infrastructure spending as a top priority for 2019.

There are discussions underway regarding a funding source for the additional spending. The most commonly cited source of revenue is a higher federal tax on gasoline and diesel fuels. Others have proposed a carbon tax, a vehicle-miles-traveled tax, and selling the Strategic Petroleum Reserve. The addition of new

This paper, in its entirety, can be found at <http://report.heritage.org/bg3422>

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federal revenue sources to increase federal spending further removes states from their proper role of administering their own infrastructure. Increasing federal revenue for transportation would fuel bad policy. Additional taxes of any kind would hurt the economy, burden the poor, and prolong misguided surface transportation policies.

Instead, the best way to improve the country's highways, roads, and railways is to reduce the federal government's role to the greatest extent possible. Federal funding sources, such as the gas tax, should be gradually devolved to the states and deregulated, allowing states to adopt their own means of raising infrastructure revenues. Regulatory improvements will reduce the cost of infrastructure projects and put an end to hidden cross-subsidies between different modes of transportation. Empowering the private sector to invest more in infrastructure opportunities will ensure that infrastructure investments appropriately align with consumers' needs.

A Broken Status Quo

The core component of federal infrastructure spending is surface transportation, comprising roads, bridges, rail, and urban transit systems. The most recent federal authorization bill signed into law in December 2015, the Fixing America's Surface Transportation (FAST) Act, extends such spending through September 2020.¹

Funding for surface transportation is derived from the Highway Trust Fund, which consists of accounts for highways and transit. Revenues from the federal gas tax theoretically fill the Highway Trust Fund, with the principle that those who use the roads should pay for them.² However, while the gas tax rate has been constant since 1993, spending levels have increased.³ That has been used to excuse bailouts for the Highway Trust Fund from the general fund. In an era of annual deficits,⁴ this meant adding to the national debt. The FAST Act exacerbated this trend by increasing spending without addressing the underlying problem.⁵

In early 2018, the Administration proposed to spend \$200 billion on infrastructure over 10 years.⁶ The Administration's fiscal year (FY) 2020 budget proposal carries the proposal forward.⁷ Some Democrats have promised infrastructure spending in excess of \$1 trillion.⁸ A discussion on April 30, 2019, between President Donald Trump, House Majority Leader Nancy Pelosi (D-CA), and Senate Minority Leader Chuck Schumer (D-NY) led to an informal agreement to work on a \$2 trillion proposal.⁹

Recent estimates on the fiscal health of the Highway Trust Fund show that the transit account will run out of funds during FY 2021, and that

TABLE 1

Diversions to Non-Highway Programs

Program	Amount (FY 2019)	Diversion (%)
Mass Transit	\$9,939,380,030	17.8%
Congestion Mitigation and Air Quality	\$2,449,216,207	4.4%
Transportation Alternatives Program	\$850,000,000	1.5%
Tribal Transportation Program	\$495,000,000	0.9%
FHWA Administrative Expenses	\$473,692,304	0.8%
Research and Education	\$420,000,000	0.8%
Federal Lands Transportation Program	\$365,000,000	0.7%
Metropolitan Transportation Planning	\$350,360,775	0.6%
Federal Lands Access Program	\$265,000,000	0.5%
Emergency Relief	\$100,000,000	0.2%
Ferry Boats and Ferry Terminals	\$80,000,000	0.1%
Total	\$15,787,649,316	28.2%
Highway Trust Fund Total	\$55,946,976,030	

SOURCES: Federal Highway Administration, “Federal-Aid Highway Program Authorizations Under the Fixing America’s Surface Transportation (FAST) Act,” 2015, <https://www.fhwa.dot.gov/fastact/estfy20162020auth.pdf> (accessed April 20, 2017); Federal Transit Administration, “FAST Act Estimated Program Totals,” December 1, 2015, https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FAST_ACT_FTA_Program_Totals.pdf (accessed April 20, 2017); and Federal Highway Administration, “FY 2019 Apportionment and Obligation Limitation Notices,” <https://www.fhwa.dot.gov/fastact/fy2019comp.pdf> (accessed April 16, 2019).

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the highway account will fall into the red a few months later.¹⁰ Thus, the forthcoming surface transportation re-authorization must grapple with a broken status quo. As with much of the federal government, there is a disconnect between how much politicians want to spend, the public’s willingness to pay, and the consumer value for what projects politicians want to pursue.

For instance, a significant factor behind the Highway Trust Fund’s chronic deficits is the diversion of 28 percent of gas tax revenue to transit and other non-highway spending. This runs contrary to the “user pays” principle behind linking the highway account and gas tax revenue. The policy has been in place since 1982.¹¹

For Congress, using gas tax revenue to pay for urban transit helps make highway-funding packages easier to pass with broad support. Urban and non-urban representatives alike gain something from the legislation. This

process is similar to the farm bill, containing both food stamps for urban areas and crop subsidies for rural areas.¹²

In both cases, strategic politics are bad policy that misallocates federal taxpayers' money. Any one type of federal spending should be able to stand up to independent scrutiny. Packaging disparate types of spending together, a practice known as "log-rolling," masks wasteful and inappropriate uses of taxpayer dollars.

There are many reasons to be skeptical about the value of increased federal spending on urban transit and local streets.¹³ However, even if that spending were worthwhile, it makes little sense to hobble the highways by continuing to divert a substantial amount of gas tax revenue away from the roads.

Federalism Is Working, Don't Stop It Now

The federal system empowers the 50 U.S. states to plan and manage their infrastructure needs at the state and local level. Nebraska, for example, likely needs different types of infrastructure than New York. Historically, the states have taken the lead on infrastructure spending. The federal government only owns 13 percent of all government-owned infrastructure assets in the U.S.—states and local governments own the other 87 percent. Among public highways and streets, state and local governments own an impressive 98 percent.¹⁴

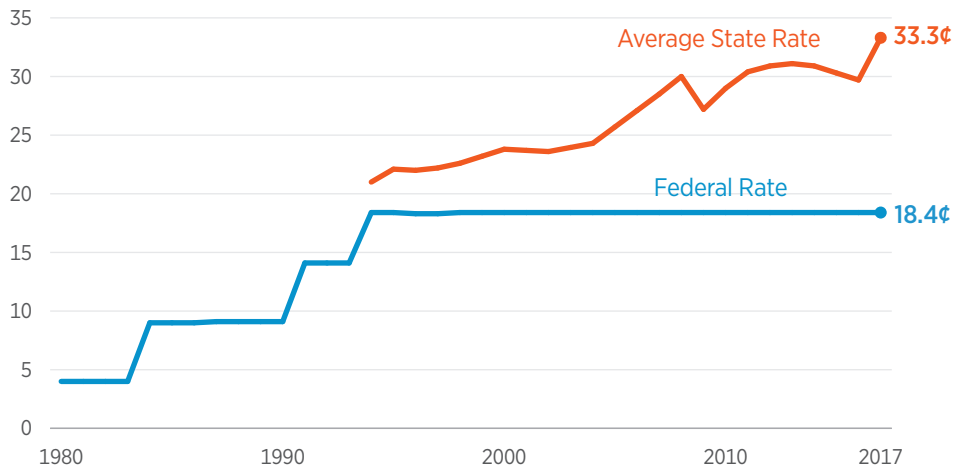
If subnational governments own and operate the assets, they should also be the responsible parties to levy the taxes. Even federal gas tax revenue is largely returned to the states through grants, but the money comes with federal strings attached. Laundering tax revenue through Washington is highly inefficient. States, not the federal government, have the best information to decide what infrastructure they need and how to fund it.¹⁵

Amid uncertainty about federal infrastructure spending, states have filled the void. For example, in 2015 alone, almost half of the states raised their own gas taxes. More than half acted on local transportation funding bills.¹⁶ Proponents of raising the gas tax note, correctly, that the federal gas tax rate has not increased since 1993. However, at the state level, the story is just the opposite. Since 1993, average state gas tax rates have increased from just above 20 cents to 33 cents.¹⁷ The trend toward individual states' power over their own transportation funding sources is a rare positive step away from the consolidation of power in Washington. Increasing the federal gas tax would increase the scope of federal power over state decision making and undermine the progress made since the 1990s.

CHART 1

States Tax Gasoline at Nearly Twice the Federal Rate

GAS TAXES, IN CENTS PER GALLON



SOURCE: Data courtesy of Chris Edwards, Cato Institute. For more information, see Chris Edwards, “Federal Gas Tax Increase Misguided,” Cato Institute, January 12, 2018, <https://www.cato.org/blog/federal-gas-tax-increase-misguided> (accessed April 19, 2019).

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Historically, federal spending on infrastructure has been heavily weighted to capital spending (construction), while state and local governments cover the vast majority of operations and maintenance costs.¹⁸ One of the most pernicious aspects of federal involvement on infrastructure is the emphasis on funding new projects, which provides more political benefit to elected officials than simple maintenance. Developed infrastructure needs to be maintained, followed by rebuilding after decades of use. This has led to a steady growth of maintenance costs in real terms, which in turn has become a growing burden for state and local governments.

The allure of “free” federal dollars sometimes leads to infrastructure projects moving forward that would not have happened if local governments were solely responsible.¹⁹ This is followed by long-term upkeep costs for state and local taxpayers. Meanwhile, for worthwhile public investments, the multitude of rules and procedures linked to federal dollars leads to delays and added costs.²⁰ Federal subsidies can even cause projects to languish in anticipation of potential federal dollars.²¹ In all these instances, federal funds and one-size-fits-all red tape cause distortion and inefficiency.

CHART 2

Federal Spending on Infrastructure Capital Drives More State and Local Spending on Maintenance

FEDERAL SPENDING



STATE AND LOCAL SPENDING



NOTE: Figures are in 2017 dollars.

SOURCE: Congressional Budget Office, "Public Spending on Transportation and Water Infrastructure, 1956 to 2017," October 15, 2018, www.cbo.gov/publication/54539 (accessed April 11, 2019).

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Regardless of the revenue source, any move to increase the federal government's share of infrastructure investment will lead to worse outcomes than if states, local governments, and the private sector take the lead. Increasing the role of the private sector will also help fill the void and generate efficient investments. Market competition yields better results for customers in the immediate and long term and is the best antidote to cronyism and wasteful spending. Private-sector activity places risk on investors rather than (socialized) across taxpayers. Market pressures ultimately lead to cost efficiency, prioritization, and solutions that are more creative.

Instead of advancing regulatory improvements and reforms that empower the states and the private sector, many policymakers have focused on securing additional sources of revenue, from the taxpayer or otherwise. Legislators have proposed implementing a new carbon tax, instituting a federal vehicle-miles-traveled (VMT) tax, or selling crude oil from the federal government's Strategic Petroleum Reserve, but much of the discussion has centered on increasing the federal gas tax.

Gas Tax Background

The federal government first imposed a one-cent-per-gallon tax on gasoline under the Hoover Administration in 1932. The tax raised revenues to mitigate deficits during the Great Depression. The tax remained in force and was raised twice to offset spending during World War II and the Korean War. The Highway Revenue Act of 1956 created the Highway Trust Fund and redirected the gas tax to fund infrastructure construction for the first time. The Highway Trust Fund was initially a temporary program to fund the construction of the Interstate Highway System.

Many economists support the gas tax as a rough proxy for a user fee, allowing the government to collect more revenue for road construction and repairs from people who drive more often. Congress first shifted the Highway Trust Fund away from the user-fee model in 1982 when a portion of the gas tax revenue was diverted to fund mass transit infrastructure. Since then, the Trust Fund has survived by expanding well beyond its core function of maintaining the Interstate System, now supporting a growing portfolio of non-road and non-Interstate infrastructure.

Congress last increased the gas tax to 18.4 cents per gallon for gasoline (24.4 cents for diesel) in 1993, where it has remained since. While annual revenues generally increased up until 2008 due to annual increases in national VMT, revenues have stagnated since then due to reduced VMT during the Great Recession and increases in fuel efficiency, partly mandated by federal regulation. Beginning in 1998, the Trust Fund expenditures were adjusted upward to spend projected revenues that are not yet collected. Following revenue shortfalls in the early 2000s, Congress intervened to keep outlays from falling to match recession-level revenues, setting the stage for the current large Highway Trust Fund deficits.²² Beginning in September of 2008, Congress began transferring general fund revenue into the Highway Trust Fund to forestall impending insolvency. Since 2008, Congress has transferred \$140 billion from general fund revenue, and \$3.7 billion from the Leaking Underground Storage Tank Fund.²³

To fully fund the Highway Trust Fund at current outlay levels and further increase spending, many have called on Congress to raise the gas tax.

Wrong Route #1: A Gas Tax Increase Would Leave Americans Fuming

The prevailing argument amongst proponents of increasing the per gallon tax on gasoline and diesel fuels—which currently stand at 18.4 cents

and 24.4 cents, respectively—is that these taxes serve as a user fee and have not been raised since 1993.²⁴ Because the tax is not indexed to inflation and because of increases in fuel efficiency and greater sales of electric vehicles (EV), the revenue that is allegedly necessary for federal investments has eroded over time. Inflation and increases in fuel efficiency and EV sales have certainly led to a decline in the real value of the fixed-rate tax.

Arguments to raise the tax, however, rest on two flawed assumptions. The first flawed assumption is that fuel taxes are an effective user fee that can efficiently generate federal revenues from those who use the roads. The second flawed assumption is that an increase in federal infrastructure spending, financed by higher taxes, is necessary. New infrastructure investments should be led by the private sector and local governments, not Washington, DC, and existing federal infrastructure and funding mechanisms should largely be devolved to the states. The reality, however, is that the gas tax is not a user fee, and increasing the gas tax to fuel more infrastructure spending would have numerous detrimental effects to the economy and to federal policy.

The Gas Tax Is Not a User Fee. Supporters of the gas tax argue that it is an effective user fee, in effect “charging” drivers for their use of the roads and resulting pollution. Gas taxes do not have to be perfect tolls. They are an efficient proxy for the more intrusive or administratively costly alternatives, such as carbon taxes, physical toll booths, or VMT taxes. However, when gas tax revenue is diverted to non-road infrastructure, and as electric or other alternative fuel vehicles increase in popularity, this argument becomes increasingly weak.

While gas taxes do charge most car owners indirectly for their use of the roads, in order for the user-fee tax model to work, the gas tax revenue must actually be set in coordination with road ownership, road repairs, and environmental mitigation. Instead, the gas tax is set arbitrarily at different levels of government and the revenue only partly funds the roads on which the users drive. Historically, the gas tax has been primarily used as a source of general revenue for general government operations.²⁵ Today, 2.86 cents of the 18.4 cent gasoline tax is explicitly earmarked for mass transit and not road maintenance. According to the Government Accountability Office, 32 percent of Highway Trust Fund money between 2004 and 2008 was obligated “for purposes other than construction and maintenance of highways and bridges.”²⁶

Rather than operating as a user fee, earmarking revenue to specific sources tends to simply mask a general increase in revenue and the size of government. Using data from U.S. state budgets, economists George Crowley

and Adam Hoffer find that “the majority of earmarks fail to increase spending in their target expenditure category,” and instead increase spending in other expenditure categories. They conclude that “the practice of earmarking tax revenue leads to larger government overall.”²⁷ In reality, the gas tax is not a user fee, it is a dishonest ploy to raise taxes on all Americans and allow the size and scope of the federal government to grow unchecked.

The Gas Tax Is Economically Harmful. Higher federal gas taxes would constrain economic growth. Households would incur higher prices at the pump. If households spend more on gas, they have less disposable income to save or to spend, whether on entertainment, on clothes, or on health care. Businesses will face higher costs for transporting their goods and will either pass those costs on to consumers or allocate investments away from capital and labor to make up for the higher fuel prices. Consequently, higher fuel prices would reduce household income, destroy jobs, and result in a weaker economy.

In order to quantify the impact of implementing a gas tax on the American economy, we ran a series of simulations using the IHS Global Insight Model.²⁸ Through these simulations, we found that, by increasing the gas tax by 25 cents per gallon in 2020, the country will experience an average employment shortfall of 62,150 jobs and a peak employment shortfall of 364,000 jobs through 2040. The tax increase also leads to \$469 billion in lost gross domestic product (GDP) over the same period, amounting to \$5,400 in lost income per family of four.²⁹

The Gas Tax Is Regressive and Hurts Low-Income Americans Most. The negative impact of a gas tax increase would disproportionately fall on poorer and rural families. Low-income families spend a higher percentage of their budget on gas and have fewer substitute options (such as public transportation or electric cars).

For all Americans, the annual average number of gallons of gasoline consumed per household has remained relatively flat even as prices have increased.³⁰ In 2017, Americans consumed more than 143 billion gallons of gasoline.³¹ When prices are low, American families have more disposable income to spend and save. When gas prices fell by 45 percent between 2014 and 2015, American families were projected to save about \$700 on gas in one year.³² A JPMorgan Chase Institute report found that low-income Americans, as well as those in the South and Midwest, spend more of their monthly income on gas.³³ People who use more gas benefit the most when prices are low, and are harmed the most when prices rise.

The costs of taxes that artificially increase the price of gas fall most heavily on people who use the most gas—and lower-income taxpayers tend to

spend much larger shares of their income on gasoline. As a portion of their income, wealthier families tend to spend less on gas than other things in their budget, when compared to lower-income groups.³⁴ Thus, the gas tax is what economists call a regressive tax; a tax that falls most heavily on poorer taxpayers. Overall, the U.S. federal tax system is highly progressive—the rich pay significantly more in taxes as a share of their income.

Wrong Route #2: A Vehicle-Miles-Traveled Tax Is Not a Federal Solution

With the fuel efficiency of automobiles increasing over time as a result of technology and regulation, there has been a significant effort to develop alternative methods of generating revenue.³⁵ The concept being discussed most widely is taxing vehicles based on the amount of miles traveled on all roads in a given period of time. This would especially affect owners of hybrid and electrical vehicles, who currently pay little or no gas tax despite imposing costs on the road network.

Although no state has established a comprehensive VMT system yet, studies and pilot programs have been undertaken or are in planning stages in several states. Oregon's pilot program, which used 5,000 volunteers, has been the largest effort by far.³⁶

There are two primary variants for a VMT tax, both of which have some benefits but also clear drawbacks.³⁷

- **GPS-based systems.** These seek to pinpoint both the amount a car traveled and (under a “dynamic” system) the types of roads being used. The reason for wanting a dynamic system's level of detail is that the amount of wear that a free-flowing rural road takes per VMT is less than the amount that a congested urban road endures. As a result, knowing the rural, suburban, and urban mileage mix allows a government to set different pricing rates. Unfortunately, these tracking systems would need to be integrated into every car, which causes significant up-front costs. Many older cars will never be compatible with GPS. In addition, there are serious privacy concerns surrounding a demand for location data on every single vehicle if a dynamic GPS system were made mandatory.
- **Odometer reporting systems.** An alternative to pinpoint tracking is to issue a flat per mile fee based on changes to a vehicle's odometer. This could be done through self-reporting or through mandatory

odometer checks. Simple odometer monitoring would avoid the problem of giving the federal government access to travel data that American citizens prefer to keep to themselves, and it would work for cars of any vintage. Conversely, it would not distinguish between rural or urban mileage. There is also the potential aspect of foreign mileage for those who regularly travel to Canada or Mexico. In addition, odometer reporting is more cumbersome, as well as easier to avoid.

Replacement Fantasy and Centralization Reality. Some transportation analysts have advocated replacing the federal gas tax with a federal VMT tax.³⁸ The primary impetus behind this push is that Oregon's VMT-tax trial has been deemed by advocates as "successful," and as a recognition that the gas tax is unsustainable as a long-term source for the Highway Trust Fund's current operations.³⁹ While there might be potential advantages to a clean swap of the gas tax for a VMT tax system, there is no realistic potential for such an exchange.

With the debate about carbon emissions at a fever pitch, politicians who brand themselves as environmentalists would balk at a change that would reduce the price of gasoline.⁴⁰ More importantly, in the context of a campaign for the federal government increasing its infrastructure activity by spending \$1 trillion (or more), the likelihood of legislators eliminating coveted gas tax revenues is marginal at best.

Thus, imposing a federal VMT tax would likely be done in addition to the existing gas tax, not in place of it. The infusion of new revenue from the VMT tax, and the effort required to implement and enforce it, would cement and expand the federal government's role in the nation's roadways for decades to come. Doing so would take America's transportation policy away from the direction it needs to go, which is toward more autonomy for states and the private sector.

In the process, the VMT system would be imposed in a top-down fashion on all 50 states at once. This one-size-fits-all approach is certain to cause problems given the disparate driving patterns between states and regions. When considering how to budget for roads, state legislatures must consider the number of miles driven per person, the amount of road surface miles per person, the rural/suburban/urban/highway mixture, the volume of freight trucking, and other factors.

For example, Montana and Rhode Island have comparable populations,⁴¹ but hugely divergent transportation needs and norms. Their respective state representatives are exponentially more capable of understanding those needs and creating suitable legislative solutions than is Congress.

Another flaw of a nationwide VMT tax is shared by the current federal gas tax: It masquerades as a user fee. The federal government would impose a cost for driving on any road, regardless of whether that road is the federal government's responsibility or has received a penny of federal support.

While some states might decide to pursue VMT taxes as a revenue source, it is not an appropriate system for the federal government to administer.

Wrong Route #3: A Carbon Tax Is Not the Solution

Eager to find additional revenue sources and to “do something” about climate change, some legislators have turned to taxing carbon-dioxide emissions. Although not explicitly calling for a carbon tax, Senate Minority Leader Schumer told President Trump that any infrastructure package must include measures for addressing climate change.⁴² Former Florida Representative Carlos Curbelo (R-FL), who failed to win re-election, introduced a bill last session that would have levied a \$24 carbon tax in 2020. The proposed legislation would have directed the \$700 billion (over 10 years) accumulated in revenue to the Highway Trust Fund for infrastructure spending.⁴³

Economically and environmentally, a carbon tax is a bad policy. An overwhelming majority of America's energy needs are met by carbon-emitting conventional fuels. Taxing carbon dioxide would inevitably raise electricity prices and fuel prices, and the economic damage would extend well beyond the direct energy-price increases. Energy is a fundamental input for nearly all the goods and services that Americans consume and use. Businesses, faced with higher energy costs, will likely pass those costs on to consumers. Consequently, families and individuals will pay more for food, health care, education, clothes, and much more. If a company did absorb the costs, pricier energy would squeeze profits and prevent businesses from investing and expanding.

To assess the economic impact a carbon tax would have on the economy, we used the Heritage Energy Model, a clone of the U.S. Energy Information Administration's National Energy Model. We estimate that through 2040, a carbon tax of \$100 per ton of carbon dioxide will cause:⁴⁴

- An average employment shortfall of 443,500 jobs;
- A peak employment shortfall of 2.85 million jobs;
- Electricity expenditure increase of 14.9 percent;

- An aggregate GDP loss of \$6.155 trillion (inflation-adjusted, 2019); and
- A total income loss of \$68,500 for a family of four.

Further details of our modeling are contained in the appendix. Proponents of a carbon tax have recommended rebating tax revenue back to families in the form of a dividend or cutting taxes elsewhere to ensure revenue neutrality. However, revenue generation is just one impact of a tax. The costs mentioned above do not illustrate all of the negative ripple effects a carbon tax would inflict. Households would incur economic losses multiple times over, for which no dividend check cut to American households could compensate. In fact, all of those losses occur under the assumption of revenue neutrality. And, to add insult to injury, a carbon tax would have no meaningful impact on climate change.⁴⁵

Wrong Route #4: Draining the Strategic Petroleum Reserve for Good

The Strategic Petroleum Reserve (SPR) is among the many gimmicks that policymakers have proposed or used in the past to pay for infrastructure spending. The 2015 FAST Act authorized the sale of 66 million barrels between 2023 and 2025 to pay for part of the bill.⁴⁶ Policymakers have no idea what the future price of a barrel of oil will be; therefore, it is extremely difficult to rely on SPR drawdowns for reliable revenues. Aside from that, if Congress believes that the SPR is no longer necessary and uses it for political purposes like it did with the FAST Act, Congress should liquidate the entire reserve.

Established in the 1970s after the Arab oil embargo, the SPR holds nearly 650 million barrels of crude oil to serve as an emergency stockpile for supply shocks that cause price spikes.⁴⁷ Intended to mitigate U.S. economic vulnerability to major supply disruptions, the stockpile has been a more successful political tool than policy tool.⁴⁸ The abundance of domestic resources, the geographic diversity of oil production worldwide and the abundant quantities of private stocks demonstrate that the SPR has marginal strategic value both in practice and in perception.

One problem for optimal SPR use is the federal government's inability to predict future events and, consequently, having a slow or late response. If concerns exist, for instance, that a conflict overseas will exacerbate supply disruption, the government may hold on to the reserves. The decisions, or lack thereof, by the Department of Energy may affect how the private sector responds to supply shocks as well.

More fundamental than that, however, is that it is not the federal government's role to respond to high prices. Whether a shortage or a surplus exists, the federal government should not distort the role of price signals in energy markets. Prices play a critical role in the market by efficiently allocating resources to their highest valued use. Private companies will respond more effectively to changes in prices, either by drawing down their private reserves, extracting more oil, or investing in alternative technologies.

The SPR did not make sense in the 1970s and makes even less sense today given America's massive abundance of oil. Rather than keeping the SPR available as a gimmick, Congress should instruct the Department of Energy to sell the oil held by the SPR. The Energy Department should auction 10 percent of the country's previous month's total crude production, so as to not disrupt oil markets, until the reserve is completely depleted. Congress should specify that all revenues collected from SPR sales are to be allocated for deficit reduction.

Four Better Alternatives for Infrastructure Investment

The best method of improving the country's highways and roads would be to remove as much power as possible from Washington, DC, not to entrench and expand its current level of control.

The status quo of surface transportation policy is overdue for an overhaul. These general principles should guide attempts to enhance surface transportation infrastructure for all Americans.

Good Path #1: End Arbitrary Revenue Diversions. The creation of the Interstate Highway System was the original impetus for the (supposedly temporary) federal gas tax. Over time this tax has been used to pay for more and more outside its original scope, from the trivial (bike paths) to the wasteful (urban light rail).⁴⁹ While most major changes in the federal government's approach to the Highway Trust Fund will require years to implement, the first step should be to eliminate non-road diversions from the fund as soon as possible. This would dramatically improve the sustainability of the highway account during any transition period and force serious conversations about how best to approach funding for urban mass transit.

Good Path #2: Empower States by Devolving Federal Control. When looking at uses of funds in the Highway Trust Fund's highway account, there is a significant amount of spending that falls outside the federal government's proper role. The Federal-Aid Highways program subsidizes state roads,⁵⁰ and most roads within the National Highway System are not part of the Interstate System.⁵¹ Congress should end all subsidies for state roads

immediately. The federal government should also transition to giving state governments primary control and responsibility for the National Highway System. In turn, the federal gas tax would be lowered and states would have authority to determine their own financing mechanism. Policy initiatives along these lines have been proposed in previous legislative sessions.⁵²

Good Path #3: Allow Tolling on Interstates. The “user pays” principle ought to be the foundation of surface transportation policy.⁵³ Extending the current federal gas tax to pay for the continued operations of the Interstate system is an incredibly inefficient method of implementing “user pays,” since there is significant variance in Interstate use from person to person and business to business.

The 1956 Interstate Highway Act prohibits tolling on the vast majority of the Interstate System’s highways.⁵⁴ Allowing state tolls on users of Interstate highways would be considerably more straightforward and fair than the gas tax.⁵⁵ Interstate highways account for just over 1 percent of national road surface, but fully one-quarter of vehicle miles traveled.⁵⁶

Accordingly, states can implement user-focused revenue methods on Interstates much more efficiently than on local roads. Further, modern tolling methods are much more efficient than what was available when the system was first authorized.

State toll revenue can be used to cover costs, fund improvements, fight congestion, and most importantly to lower the federal gas tax.⁵⁷ Federal highways with state tolls should be devolved to state ownership with proportional reductions in federal subsidies and the federal gas tax.

Good Path #4: Eliminate Federal Regulations that Hamper State and Private Investment. Red tape and bureaucracy are natural byproducts of federal activity. By adding layers of rules, politicians gain the ability to micromanage activity. As such, it should come as no surprise that this is the case in surface transportation policy.⁵⁸

For example, the Davis–Bacon Act serves to artificially inflate the cost of federally funded projects by requiring union wages and work rules.⁵⁹ “Buy American” mandates similarly inflate the cost for inputs.⁶⁰ Restrictions on public–private partnerships and tax-exempt private activity bonds serve to prevent an untold amount of capital from flowing to infrastructure projects.⁶¹ Moving away from this command-and-control approach would dramatically increase the purchasing power of taxpayer dollars, and in some cases remove the need for taxpayer dollars to begin with.

The alternative to centralizing transportation policy in Washington, DC, is neither stagnation nor inaction. To the contrary: Decentralization and deregulation offer a pathway to better infrastructure built more quickly

and with fiscal sustainability. Lawmakers have an opportunity to choose more prosperity, more jobs, and more freedom of movement as they craft the next surface transportation reauthorization.

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Appendix: Methodology

The Heritage Energy Model

The analysis in this *Backgrounder* uses the Heritage Energy Model (HEM), a derivative of the National Energy Model System 2018 Full Release (NEMS).⁶² NEMS is used by the Energy Information Administration (EIA) in the Department of Energy as well as various nongovernmental organizations for a variety of purposes, including forecasting the effects of energy policy changes on a plethora of leading economic indicators.

The methodologies, assumptions, conclusions, and opinions in this *Backgrounder* are entirely the work of statisticians and economists in the Center for Data Analysis (CDA) at The Heritage Foundation, and have not been endorsed by, and do not necessarily reflect the views of, the developers of NEMS.

HEM is based on well-established economic theory as well as historical data and contains a variety of modules that interact with each other for long-term forecasting. In particular, HEM focuses on the interactions among

1. The supply, conversion, and demand of energy in its various forms;
2. American energy and the overall American economy;
3. The American energy market and the world petroleum market; and
4. Current production and consumption decisions as well as expectations about the future.⁶³

These modules are the:

- Macroeconomic Activity Module,⁶⁴
- Transportation Demand Module,
- Residential Demand Module,
- Industrial Demand Module,
- Commercial Demand Module,

- Coal Market Module,
- Electricity Market Module,
- Liquid Fuels Market Module,
- Oil and Gas Supply Module,
- Renewable Fuels Module,
- Natural Gas Market Module, and
- International Energy Activity Module

HEM is identical to the EIA's NEMS with the exception of the Commercial Demand Module. The Commercial Demand Module makes projections regarding commercial floor-space data of pertinent commercial buildings. Other than HEM not having this module, it is identical to the NEMS.

Overarching these modules is an Integrating Module, which consistently cycles, iteratively executing and allowing these various modules to interact with each other. Unknown variables that are related, such as a component of a particular module, are grouped together, and a pertinent subsystem of equations and inequalities corresponding to each group is solved via a variety of commonly used numerical analytic techniques, using approximate values for the other unknowns. Once a group's values are computed, the next group is solved similarly, and the process iterates. After all group values for the current cycle are determined, the next cycle begins. At each particular cycle, a variety of pertinent statistics is obtained.⁶⁵ HEM provides a number of diagnostic measures, based on differences between cycles, to indicate whether a stable solution has been achieved.

This report uses HEM to analyze the impact of a carbon tax on the economy. The tax begins in 2020 at \$50 per ton of carbon dioxide, increases to \$100 the following year, and subsequently increases annually by 2.5 percent. We ran two separate simulations: (1) rebating the revenue collected from the tax back to consumers in a deficit-neutral manner, and (2) using the revenues for the purposes of deficit reduction. The results presented are averages of these two simulations.⁶⁶

Endnotes

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29. It is impossible to know exactly how the tax will be implemented and how the revenue will be used, and historically, much of the revenue from these types of taxes is diverted to uses outside the stated purpose. Therefore, this *Backgrounders* presents the average results of simulations based on two different plausible assumptions: (1) the tax being implemented in a deficit-neutral manner with funds being rebated to consumers, and (2) the revenue being used to reduce overall deficit spending. If the gas-tax revenues are rebated back to consumers in a deficit-neutral manner, we find that through 2040, the country will experience an average employment shortfall of 9,300 jobs, a peak employment shortfall of 146,000 jobs, \$217 billion in lost GDP over the same period, and \$2,400 in lost income per family of four. On the other hand, using the same model and allocating the gas tax to be used for the purposes of deficit reduction, we find that through 2040, the same tax will result in an average employment shortfall of 115,000 jobs, a peak employment shortfall of 582,000 jobs, \$721 billion in lost GDP, and \$8,400 in lost income per family of four.
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