

Dyed Special Fuels and Off-Road Fuel Use Tax Expenditures



OFFICE OF THE STATE AUDITOR

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Tax Expenditure Evaluation • February 2024 • 2024-TE2

The Dyed Special Fuels Exemption and Off-Road Fuel Use Refund are available to individuals or businesses who purchase gasoline or special fuels and use them for off-road purposes, as well as to government entities. The Dyed Special Fuels Exemption fully exempts diesel and kerosene fuels that have been dyed from the State’s special fuel excise tax. Dyed diesel fuel can be used for any nontaxable purposes that are permitted by federal law, such as for fueling farm or construction equipment, off-road business vehicles and equipment, and stationary machines, such as generators and compressors. The Off-Road Fuel Use Refund is available to taxpayers and government entities who use gasoline or undyed special fuel for specified off-road purposes, which include operating a stationary gas engine, motor boats, and certain agricultural, commercial, and industrial uses.

These tax expenditures are likely intended to prevent individuals or businesses from having to pay the State’s fuel excise tax on gasoline or special fuel when the fuel is used for off-road purposes since off-road uses of fuel do not affect the condition of or benefit from public roads. **The Dyed Special Fuels Exemption and Off-Road Fuel Use Refund are likely meeting their purpose because stakeholders appear to be aware of and using the tax expenditures. Additionally, based on information provided by stakeholders, the sales price of dyed diesel appears to reflect the tax savings from the Dyed Special Fuels Exemption.**

Policy Considerations

We did not identify any policy considerations for these tax expenditures.

	Dyed Special Fuels Exemption	Off-Road Fuel Use Refund
Tax Type:	Fuel excise	Fuel excise
Expenditure Type:	Exemption	Refund
Statutory Citation:	Section 39-27-102.5(1.5) and (2)(a), C.R.S.	Section 39-27-103(2.7)(a-c), (e-h), and (3)(a), C.R.S.
Year Enacted:	1979	1931
Repeal/Expiration Date:	None	None
Revenue Impact:	\$43.1 million (2021)	\$4.4 million (2019)
Purpose given in statute or enacting legislation? No		



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Background

Colorado levies excise taxes on gasoline and special fuels based on the number of gallons acquired, sold, or offered for sale in the state. Revenue from these taxes is allocated to Colorado's Highway Users Tax Fund, which is used for the construction and maintenance of public roads in Colorado [Sections 43-4-203 and 204, C.R.S.]. The current fuel excise tax rates are \$0.22 per gallon on gasoline and \$0.205 per gallon on special fuels.

This evaluation covers two fuel excise tax exemptions for purchases of fuel that is used for off-road purposes—the Dyed Diesel and Kerosene Fuel Excise Tax Exemption (Dyed Special Fuels Exemption) and the Off-Road Fuel Use Excise Tax Refund (Off-Road Fuel Use Refund).

We inferred that the purpose of these fuel excise tax expenditures is to prevent individuals or businesses from having to pay the State's fuel excise tax on gasoline or special fuel when the fuel is used for off-road purposes since off-road uses of fuel do not affect the condition of or benefit from public roads.

The Dyed Special Fuels Exemption exempts diesel and kerosene fuels that have been dyed from the State's special fuel excise tax. Fuel in the United States is dyed in accordance with federal law to indicate that the fuel can be used for purposes that are exempt from the federal special fuel excise tax. Exempt purposes include fueling farm or construction equipment, off-road business vehicles and equipment, and stationary machines, such as generators and compressors. According to the Internal Revenue Service (IRS), Publication 510, dyed diesel fuel and dyed kerosene fuel are exempt from the federal special fuel excise tax when the fuels are (1) permanently dyed according to federal rules and regulations and (2) used for nontaxable purposes. If dyed diesel fuel or dyed kerosene fuel is used for taxable purposes, like in a motor vehicle on public roads, violators can be fined the greater of \$10 per gallon or \$1,000 by the IRS for the first violation.

Technical Note

Statute [Section 39-27-101(12) and (29), C.R.S.] defines the following:

- **Gasoline** means any flammable liquid used primarily as a fuel for the propulsion of motor vehicles, motor boats, or aircraft. Even though the definition of gasoline includes aviation fuels, these fuels are subject to their own excise tax in lieu of the gasoline excise tax. Therefore, this report does not include topics related to aviation fuels. We will cover the aviation fuel tax expenditures in other reports.
- **Special fuel** means diesel engine fuel, kerosene, liquefied petroleum gas, and natural gas used for the generation of power to propel a motor vehicle on public roads.

Technical Note

In the past, the U.S. Environmental Protection Agency (EPA) regulations required fuel distributors to add dye to high-sulfur diesel fuel in order to distinguish it from low-sulfur diesel. Beginning in 1993, the dyed high-sulfur fuel was restricted to off-road use, and by 2012, the EPA required all diesel to meet the lower sulfur content standards regardless of use. Today, IRS regulations require that distributors add dye to diesel solely for the purpose of distinguishing tax-exempt (dyed) fuel from taxable (undyed) fuel. The EPA still requires heating oils like kerosene to be dyed.

Although both dyed diesel fuel and kerosene are covered by the State’s exemption, according to data from the U.S. Energy Information Administration (EIA), in 2020, a total of 100,000 gallons of kerosene fuel was sold in Colorado compared to 709 million gallons of diesel fuel. This suggests that the Dyed Special Fuels Exemption is primarily applied to purchases of dyed diesel fuel.

In addition to the nontaxable purposes that are permitted for dyed fuel under federal law, Colorado statute also specifically allows the exemption for construction companies using dyed diesel to work on

Colorado public road construction projects, farmers or ranchers using dyed diesel in agriculture, and government entities. Since these uses are already permitted nontaxable uses of dyed diesel under federal law, which also qualify for Colorado's exemption, this provision in Colorado statute does not create additional tax benefits. Exhibit 1 shows some typical uses of diesel fuel, categorized by taxability.

Exhibit 1

Taxable and Nontaxable Uses of Diesel Fuel for Federal and Colorado Fuel Excise Taxes

Tax Status	Use
Taxable	Diesel engines in vehicles operated by non-governmental personnel on public roads
Nontaxable	Farm/construction equipment; off-road business uses; stationary machines, such as generators and compressors; government use both on- and off-road; U.S. military tanks/trucks

Source: Office of the State Auditor analysis of U.S. Energy Information Administration fuel definitions, Internal Revenue Service Publication 510: Excise Taxes, and Section 39-27-102.5(2)(b)(II), C.R.S.

The Off-Road Fuel Use Refund is available to taxpayers and government entities who use gasoline or undyed special fuel for any of the following off-road purposes:

- Operating a stationary gas engine
- Operating a motor vehicle on or over fixed rails
- Operating a tractor, truck, or other farm implement or machine for agricultural purposes on a farm or ranch
- Operating a motor boat
- Cleaning or dyeing fuel

- Any commercial use other than the operation of a motor vehicle on Colorado’s public roads
- Any other use that is nontaxable under federal law

Individuals, businesses, and government entities, which for simplicity we will refer to collectively as taxpayers, who purchase and use gasoline or undyed special fuel for these purposes are eligible to claim a refund from the Department of Revenue (Department) for the state fuel excise taxes that were paid on that gasoline or special fuel by applying for a Gasoline/Special Fuel Tax Refund Permit and submitting a Fuel Tax Refund Claim form. Taxpayers may file refund claims as frequently as once per quarter, and the quantities of gasoline or undyed special fuel purchased must generally be at least 20 gallons within the previous 12 months at the time that the claim is being filed.

For businesses, the Department calculates the amount of the taxpayer’s refund by multiplying the total amount of fuel purchased by a specific percentage that the Department assigns to the taxpayer’s industry, then multiplying this by the fuel excise tax rate. The assigned percentage is an estimate of the amount of fuel that the taxpayer used for off-road purposes, which the Department may determine based on the historical average of how much gasoline or undyed special fuels are used for off-road purposes by the taxpayer’s industry or on an alternative data source, such as data provided by an industry association. Exhibit 2 shows the average assigned percentages for major industry groups.

Exhibit 2
Average Assigned Percentages for the Off-Road Fuel Use Refund by Industry Group

Industry Group	Average Assigned Percentage (Gasoline)	Average Assigned Percentage (Special Fuel)
Commercial	71%	62%
Agriculture	71%	71%
Construction	46%	79%
Transportation	77%	33%
Mining	57%	73%

Source: Office of the State Auditor analysis of Department of Revenue industry-assigned percentages used for calculating the amounts of taxpayers’ Off-Road Fuel Use Refunds.

The average assigned percentage is 64 percent across all industries. Although the assigned percentages might not precisely reflect an individual taxpayer’s use of fuel for off-road purposes, Department staff stated that the intention is for the administrative ease of filing for the refund to outweigh the imprecision. Gasoline/Special Fuel Tax Refund Permit holders also have the option of appealing the assigned percentage by providing documents that support a different percentage to the Department. Exhibit 3 provides two examples of how the Off-Road Fuel Use Refund is calculated.

Exhibit 3

Example Calculations of the Off-Road Fuel Use Refund for a Mining Business

Fuel Type (Colorado Excise Tax Rate)	Fuel Purchased	Industry Percentage Assigned by the Department	Estimated Amount of Fuel Used for Off- Road Purposes (Based on Industry Percentage)	Refund of Excise Tax Paid on Fuel Used for Off-Road Purposes
undyed diesel (\$0.205 per gallon)	150 gallons	73%	150 gallons x 73% = 109.5 gallons	109.5 gallons x \$0.205 per gallon = \$22.45
gasoline (\$0.22 per gallon)	200 gallons	57%	200 gallons x 57% = 114 gallons	114 gallons x \$0.22 per gallon = \$25.08

Source: Office of the State Auditor analysis of statute [Sections 39-27-102(1)(a)(II) and 39-27-103(3)(a), C.R.S.] and Department of Revenue data.

In addition to Colorado's Off-Road Fuel Use Refund, taxpayers can also submit a refund form to the IRS for federal fuel excise taxes paid on gasoline or undyed special fuels used for nontaxable purposes. As in Colorado, the federal refund is available for farming use and off-highway business use, but it can also be claimed for some uses that are not specifically allowed for purposes of Colorado's refund, such as use by local buses, blood collector organizations, and in foreign trade. The IRS does not require a refund permit like Colorado does. The current federal fuel excise tax rates are \$0.184 per gallon on gasoline and \$0.244 per gallon on special fuels, including diesel and kerosene.

According to data from Bloomberg law, 29 other states have provisions that are similar to Colorado's Dyed Special Fuels Exemption because they have a broad exemption for dyed special fuel or dyed diesel and/or they exempt diesel fuel when it is used for road construction projects or for agricultural purposes. In addition, 34 other states offer a refund that is similar to Colorado's Off-Road Fuel Use Refund. Although each state has its own definitions and methods of administering the refund, the allowable off-road and nontaxable purposes are similar in other states to Colorado.

We used the following performance measures to determine whether these tax expenditures are meeting their purpose of preventing individuals or businesses from having to pay the State's fuel excise tax on gasoline or special fuel when the fuel is used for exempt purposes:

- To what extent are farmers, ranchers, construction companies that are performing public road construction projects, and businesses in Colorado aware of the Dyed Special Fuels Exemption and Off-Road Fuel Use Refund?

- To what extent are fuel distributors reducing the price of dyed special fuels to account for the Dyed Special Fuels Exemption?

Evaluation Results

The Dyed Special Fuels Exemption and Off-Road Fuel Use Refund are likely meeting their purpose because stakeholders appear to be aware of and using the tax expenditures. Additionally, based on information provided by stakeholders, the sales price of dyed diesel appears to reflect the tax savings from the Dyed Special Fuels Exemption.

Farmers, ranchers, construction companies that are performing public road construction projects, and businesses are likely aware of the tax expenditures. We found that the tax expenditures are applied to a substantial amount of fuel purchases in the state, which indicates that the intended beneficiaries are likely aware of and using the tax expenditures. Specifically, based on Department data, the Dyed Special Fuels Exemption had a revenue impact to the State of \$43.1 million and was applied to about 210 million gallons of fuel purchases in Tax Year 2021. In comparison, about 709 million gallons of diesel fuel—both exempt and non-exempt—were sold in the state in Calendar Year 2020, the most recent year for which EIA data was available. Additionally, we contacted 10 stakeholders in regards to Dyed Special Fuels Exemption, but we only received a response from one stakeholder who works with the construction industry. They mentioned that these exemptions make sense to them because the State’s fuel excise tax revenue funds the Highway Users Tax Fund, and therefore, it would not be fair for them or others to pay fuel excise tax on gasoline or special fuel when the fuel is used for off-road purposes. In the previous Dyed Diesel Fuel Excise Tax Exemption report, published in 2019, stakeholders mentioned the importance of dyed diesel fuel and how widely the fuel is used for off-highway or government use nationwide.

In addition, we found that the Off-Road Fuel Use Refund was used substantially, reducing state revenue by \$4.4 million in 2019, the most recent year for which data was available. We used this revenue impact and other Department data to estimate that the taxpayers who claimed the refund used about 21 million gallons of fuel for off-road purposes. We contacted 26 stakeholders from different industries listed on the Department’s Gasoline/Special Fuel Tax Refund Permit Application for feedback on the Off-Road Fuel Use Refund. The two stakeholders who responded mentioned the importance of keeping this tax expenditure, which is consistent with what stakeholders told us during our previous evaluation of the Off-Road Fuel Use Excise Tax Exemptions, published in 2019. We were unable to determine what portion of the refunds went to private businesses and what portion went to government entities.

Distributors appear to be reducing the price of dyed diesel fuel by amounts that are roughly equivalent to the sum of the State and federal fuel excise tax rates. We were unable to obtain Colorado market price data necessary to compare the price of dyed special fuels, which should be less expensive if the exemption is being passed on to consumers, to the price of undyed special fuels.

However, fuel distributors reported that the sales price of dyed diesel engine fuel is about 20 cents (reported by three out-of-state distributors that sell diesel fuel in Colorado) to 50 cents (reported by one in-state distributor and one in-state operating fueling station) less per gallon than the sales price of undyed diesel fuel. Another stakeholder stated that the price difference was a result of the nontaxable status of dyed diesel fuel and its intended off-road use. Fuel distributors also mentioned other factors that affect the price of fuel, including the diesel fuel quantity, delivery date and delivery location, and whether the storage tanks are owned or leased. Therefore, price differences between dyed and undyed fuel may depend on other factors in addition to the tax exemption. We were unable to get price information for dyed or undyed kerosene because most fuel distributors do not offer kerosene fuel for direct purchase, so we do not know if distributors are discounting the price for dyed kerosene to account for the tax exemption.

Policy Considerations

We did not identify any new policy considerations for the Dyed Special Fuels Exemption or the Off-Road Fuel Use Refund, nor were there any policy considerations in the previous evaluations of these tax expenditures, both published in 2019.

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