



MATERIALS USED IN IRON, STEEL, AND VANADIUM-URANIUM ORE MANUFACTURING AND PROCESSING EXEMPTION

EVALUATION SUMMARY | JULY 2021 | 2021-TE17

TAX TYPE	Sales and use	REVENUE IMPACT	Could not determine
YEAR ENACTED	1982	NUMBER OF TAXPAYERS	Could not determine
REPEAL/EXPIRATION DATE	None		

KEY CONCLUSION: We could not determine if any taxpayers continue to use this exemption, though it appears that there are only a few companies in the state that produce iron or steel and could potentially use it. Additionally, because vanadium-uranium ore is no longer processed in the state, the exemption, as it relates to these materials, is obsolete.

WHAT DOES THIS TAX EXPENDITURE DO?

The Materials Used in Iron, Steel, and Vanadium-Uranium Ore Manufacturing and Processing Exemption (Materials Exemption) [Section 39-26-706(3), C.R.S.] exempts from sales and use tax the purchases, sales, storage, use, or consumption of refractory materials and carbon electrodes used in manufacturing iron and steel for profit and inorganic chemicals used in the processing of vanadium-uranium ores.

WHAT IS THE PURPOSE OF THIS TAX EXPENDITURE?

Statute and the enacting legislation for the exemption do not explicitly state its purpose; therefore, we could not definitively determine the General Assembly's original intent. Based on the operation of the exemption, a Colorado Supreme Court decision prior to its enactment, along with recordings of legislative hearings, we considered a potential purpose: to ensure that sales tax is only applied to purchases made by final metal products consumers instead of at multiple steps through the iron, steel and vanadium-uranium production process.

WHAT POLICY CONSIDERATIONS DID THE EVALUATION IDENTIFY?

The General Assembly may want to consider:

- Establishing a statutory purpose and performance measures for the exemption.
- Repealing the exemption for inorganic materials used in vanadium-uranium ore processing, since there are no longer any facilities in the state that process vanadium-uranium ore.



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EVALUATION RESULTS

WHAT IS THE TAX EXPENDITURE?

The Materials Used in Iron, Steel, and Vanadium-Uranium Ore Manufacturing and Processing Exemption (Materials Exemption) [Section 39-26-706(3), C.R.S.] exempts from sales and use tax purchases, sales, storage, use, or consumption of refractory materials and carbon electrodes used in manufacturing iron and steel for profit and inorganic chemicals used in the processing of vanadium-uranium ores. The exemption was created in 1982 by House Bill 82-1168 and applies to manufacturers who use, rather than resell, refractory materials and carbon electrodes they purchase. Manufacturers use the eligible materials as follows:

- **REFRACTORY MATERIALS** are used in the lining and construction of furnaces and other equipment used in the steelmaking process. Examples of these materials include brick, clay, and plastic. The principal function of refractory materials is to protect the furnaces and other steelmaking equipment from the heat generated in the steelmaking process. When these materials are exposed to molten metal, they are slowly consumed and small amounts can be found in the finished steel products. The refractory materials that do not come into direct contact with the molten metal deteriorate and must be replaced periodically.

- CARBON ELECTRODES are used in the production of steel in an electric arc furnace. The electrodes, which are typically graphite rods, are lowered into this furnace and cause an electric arc that generates a high degree of heat. Some electrodes are also dipped into the molten metal to increase its carbon content.
- INORGANIC CHEMICALS used in vanadium-uranium ore processing include sulphuric acid and liquid solvents. The ore is treated with sulphuric acid to dissolve the vanadium and uranium. A liquid solvent is then used to separate the uranium, leaving the vanadium in an acid solution. The vanadium is used in steel production.

Purchasers, typically processors and manufacturers, claim the exemption at the time of the sale and the seller then reports the exemption on the Department of Revenue's Retail Sales Tax Return (Form DR 0100), Line 12 of Schedule A. If a seller does not apply the exemption to an eligible sale, purchasers may submit a Claim for Refund of Tax Paid to Vendors (Form DR 0137B) to the Department to request a refund. Statute [Section 29-2-105(1)(d)(I), C.R.S.] requires all local governments that have their sales taxes collected by the State to apply the Materials Exemption. However, Article XX, Section 6 of the Colorado Constitution gives self-collected home-rule cities and counties the authority to create their own tax policies.

WHO ARE THE INTENDED BENEFICIARIES OF THE TAX EXPENDITURE?

Statute does not directly state the intended beneficiaries of the exemption. Based on a Colorado Supreme Court case immediately prior to its enactment, legislative testimony, and its operation, we inferred the intended beneficiaries are iron and steel manufacturers and uranium-vanadium ore processors that purchase the required inorganic chemicals, refractory materials, and carbon electrodes. Steel and iron final consumers may be indirect beneficiaries of this exemption to the extent that processors and manufacturers pass their tax savings on in the form of lower prices.

The U.S. Census Bureau 2018 Economic Survey indicates that there are currently six companies in Colorado that manufacture steel and could potentially benefit from the exemption, though we lacked information necessary to determine whether they use the applicable materials as part of their production process. Additionally, although we identified at least one company that processed vanadium and uranium at the time the exemption was created, according to the Division of Reclamation, Mining and Safety within the Department of Natural Resources, Colorado no longer has any operating facilities that process vanadium or uranium. Processing requires a U.S. Nuclear Regulatory Commission license and the only licensed mill in the U.S. is at the White Mesa near Blanding, Utah.

WHAT IS THE PURPOSE OF THE TAX EXPENDITURE?

Statute and the enacting legislation for the exemption do not explicitly state its purpose; therefore, we could not definitively determine the General Assembly's original intent. Based on the operation of the exemption, a Colorado Supreme Court decision prior to its enactment, and recordings of legislative hearings for House Bill 82-1168, we considered a potential purpose: to ensure that sales tax is only applied to purchases made by final metal products consumers instead of at multiple steps through the iron, steel, and vanadium-uranium production process.

In the year prior to the enactment of the Materials Exemption, the Colorado Supreme Court ruled in *CF&I Steel Corp. v. Charnes*, 637 P.2d 324 (Colo. 1981) that refractory materials and carbon electrodes did not qualify for the broader Wholesales Exemption [Section 39-26-102(20) and 39-26-713(2)(e), C.R.S.], which exempts ingredients and component parts incorporated into manufactured goods from sales and use tax. The court stated that since refractory materials and carbon electrodes are only found in trace amounts in finished steel, they are not a constituent part of the process and not an essential ingredient in the finished product.

According to legislative hearings, the Materials Exemption was a direct response to this decision. Furthermore, during the hearings, the bill sponsor added an amendment to the bill, including inorganic chemicals used in the processing of vanadium-uranium ore into the exemption, due to an administrative case brought by the Department of Revenue against Union Carbide. In that case, the Department determined Union Carbide owed use tax on inorganic chemicals since they were determined not to be component parts in the process. The bill sponsor stated that their intent was to ensure that sales and use tax is only applied to purchases made by final consumers instead of at multiple steps through the processing and manufacturing of vanadium-uranium ores, iron, and steel. Similar structural provisions are common in states with a sales tax to prevent tax pyramiding, which refers to a process that increases the effective sales tax rate on a good by taxing its inputs and the transactions that occur prior to its final sale to a consumer.

IS THE TAX EXPENDITURE MEETING ITS PURPOSE AND WHAT PERFORMANCE MEASURES WERE USED TO MAKE THIS DETERMINATION?

We could not determine whether the Materials Exemption is meeting its purpose because no purpose is provided in statute or its enacting legislation. Furthermore, due to a lack of information, we could not determine if it is meeting the purpose we considered in order to conduct the evaluation.

Statute does not provide quantifiable performance measures for this tax expenditure. Therefore, we created and applied the following performance measure to determine the extent to which the exemption is meeting its potential purpose.

PERFORMANCE MEASURE: *To what extent is the exemption applied to eligible purchases of inorganic chemicals, refractory materials, and carbon electrodes for iron and steel manufacturing and vanadium-uranium processing?*

RESULT: We were unable to determine whether potential beneficiaries apply this exemption. Because the Department of Revenue does not collect data necessary to measure its use, we contacted stakeholders, including six metal fabricators and manufacturers in the state, to determine whether they are aware of and use the exemption. Out of the six, only one of the companies uses these materials and it was not aware of the exemption. The company stated that it pays sales tax on the refractory materials and carbon electrodes it purchases. According to industry stakeholders, electric arc furnaces, which use carbon rods eligible for the exemption, are less commonly used in steel production than in prior years, though they indicated that at least one steel-producing facility in the state might still use one. We attempted to contact the company that owns this facility, but did not receive a response. However, because this facility was owned by CF&I Steel, which challenged the taxation of these materials, leading to the Colorado Supreme Court decision that was the impetus for the creation of the exemption, it is likely that the facility claimed the exemption in the past and it is possible that it continues to do so.

There are currently no vanadium-uranium processors in Colorado, so the exemption for inorganic chemicals is not currently being used or meeting its purpose.

WHAT ARE THE ECONOMIC COSTS AND BENEFITS OF THE TAX EXPENDITURE?

Due to the Department not collecting data on the Materials Exemption (see Data Constraints section below) and a lack of information from potential beneficiaries that would confirm that it is still used, we are not able to estimate the exemption's revenue impact to the State or the potential economic benefits it provides. However, because there are only a few iron and steel producers in the state that may qualify, and vanadium and uranium are no longer produced in the state, it appears that this exemption has a limited economic impact.

WHAT IMPACT WOULD ELIMINATING THE TAX EXPENDITURE HAVE ON BENEFICIARIES?

The elimination of the Materials Exemption would cause any businesses currently using the exemption to be required to pay an additional 2.9 percent in sales tax for their purchases of eligible materials. Although we were not able to determine how many businesses use the exemption, as discussed, the U.S. Census Bureau 2018 Economic Survey data indicate there are only about six companies in Colorado that manufacture steel, which could potentially be users of the exemption. Furthermore, according to an industry group, the use of furnaces that require carbon electrodes is not widespread among the existing iron and steel fabricators and manufacturers in Colorado. Therefore, though we could not quantify the overall impact eliminating the exemption would have on intended beneficiaries, it would likely be limited to a small number of taxpayers.

ARE THERE SIMILAR TAX EXPENDITURES IN OTHER STATES?

We did not identify any other states that have an exemption explicitly for refractory materials, carbon electrodes, or inorganic chemicals used in vanadium-uranium ore processing. However, of the 44 states (excluding Colorado) that levy a sales tax, we identified 24 that have sales tax exemptions that appear to exempt the use of inorganic chemicals used in processing and manufacturing. Furthermore, the five principal steel-producing states (Indiana, Pennsylvania, Ohio, Alabama and Michigan), all have broader sales and use tax exemptions for materials used in processing that appear to allow an exemption similar to Colorado's Materials Exemption.

ARE THERE OTHER TAX EXPENDITURES OR PROGRAMS WITH A SIMILAR PURPOSE AVAILABLE IN THE STATE?

Colorado provides several other sales and use tax exemptions that aim to prevent sales tax from being applied at multiple steps in the manufacturing and processing of goods. Specifically, ingredients and component parts used to manufacture goods are exempt from sales tax

under the Wholesales Exemption [Section 39-26-102(20)(a), C.R.S.]. Energy used for industrial and manufacturing purposes is also exempt from sales and use tax [Section 39-26-102(21)(a), C.R.S.], as are purchases of machinery used in manufacturing [Section 39-26-709(1)(a)(II) and (1)(a)(IV), C.R.S.].

WHAT DATA CONSTRAINTS IMPACTED OUR ABILITY TO EVALUATE THE TAX EXPENDITURE?

The Department of Revenue could not provide data on the number of taxpayers that use this exemption or the amount they claimed. Specifically, this exemption is usually claimed by the purchaser at the time of the sale and then reported by the seller on the seller's sales tax return using the Department's Retail Sales Tax Return (Form DR 0100). There is no dedicated line for the exemption on the sales tax return and it is included on a line of the return for other exemptions, which combines reporting of several unrelated exemptions and cannot be disaggregated for analysis. Additionally, the information reported is not stored in a format that GenTax, the Department's tax processing and information system, can readily pull data from.

If the General Assembly determined that more information on this tax expenditure is necessary, it could direct the Department of Revenue to collect information specifically for the Materials Exemption on the Retail Sales Tax Return and make changes in GenTax to allow it to pull this data. However, according to the Department of Revenue, this would require additional resources to make changes to the form and complete the necessary programming in GenTax (see the Tax Expenditures Overview section of the *Office of the State Auditor's Tax Expenditures Compilation Report* for additional details on the limitations of Department of Revenue data and the potential costs of addressing the limitations).

WHAT POLICY CONSIDERATIONS DID THE EVALUATION IDENTIFY?

THE GENERAL ASSEMBLY MAY WANT TO CONSIDER AMENDING STATUTE TO ESTABLISH A STATUTORY PURPOSE AND PERFORMANCE MEASURES FOR THE MATERIALS EXEMPTION. As discussed, statute and the enacting legislation for the exemption do not state the exemption's purpose or provide performance measures for evaluating its effectiveness. Therefore, for the purposes of our evaluation, we considered a potential purpose for the exemption: to ensure that sales and use tax is only applied to purchases made by final consumers instead of at multiple steps through the manufacturing and processing of iron, steel, and vanadium-uranium ores. We identified this purpose based on our review of a Colorado Supreme Court decision at the time the exemption was established, and its legislative history, including recordings of the hearings for its enacting legislation [House Bill 82-1168]. However, the General Assembly may want to clarify its intent for the exemption by providing a purpose statement and corresponding performance measure(s) in statute. This would eliminate potential uncertainty regarding the exemption's purpose and allow our office to assess the extent to which the exemption is accomplishing its intended goal(s).

THE GENERAL ASSEMBLY COULD CONSIDER AMENDING STATUTE TO REMOVE MATERIALS USED IN VANADIUM-URANIUM ORE PROCESSING FROM THE EXEMPTION. As discussed, there are no longer any vanadium-uranium ore processors located in Colorado. Therefore, the exemption for inorganic chemicals used in vanadium-uranium ore processing could be repealed since it is not being used by any businesses in the state.