Resilient Energy Economies

The Energy Transition and Public Finances in Oil Refining Communities

Christopher Malloy and Vincent Thivierge — October 2026

Background

How are local public finances affected by the energy transition? In this project, we seek to answer: How do property tax revenues change in local communities following an oil refinery closure?

Oil refineries are often large and complex industrial facilities that convert crude oil into refined petroleum products such as gasoline, diesel, and jet fuel, and other derivatives used to make chemicals and plastics. As economies transition away from fossil fuels, it is important to understand whether local governments of oil refining communities rely heavily on revenue from oil refinery operations. Anecdotally, refinery closures across the United States suggest that local government revenue used for funding important public services such as schools, hospitals, and libraries is dependent on continued oil refining activity. Indeed, refineries recently closed in Benicia, California; Gallup, New Mexico; St. James, Louisiana; and Yorktown, Virginia, were often the highest local taxpayers, leaving local government budgets with millions less in yearly property tax revenue.

While refineries can contribute significant property tax revenues to local governments, the overall effect of their closures is theoretically ambiguous, empirically understudied, and likely evolving over time. Prior work in economics has shown changes in housing values following the opening or closing of large polluting sites, suggesting that local property tax receipts could increase following the closure. Other potential counteracting effects include the establishment of new businesses that could replace the economic activity of the refinery, or separately, local governments could raise property tax rates to fund budget deficits.

To estimate the overall property tax per capita effect of refinery closures, we use a synthetic difference-in-differences research design where we compare “treated” counties (where a refinery has closed) to a group of “untreated” counties chosen to minimize the difference in property tax per capita trends before the closure.

To implement our approach, we combine comprehensive data on oil refinery status changes in the US from 1990 to 2022 from the Energy Information Administration (EIA), data on local public finances from the US Census’ Annual Survey of Government Finances and its Census of Governments from 1977 to 2024, as well as data on changes in housing prices, tax rates, and population. We supplement the data on oil refinery status changes with facility-level

geographic information and on post-closure land use from other government databases, reports, and news articles.

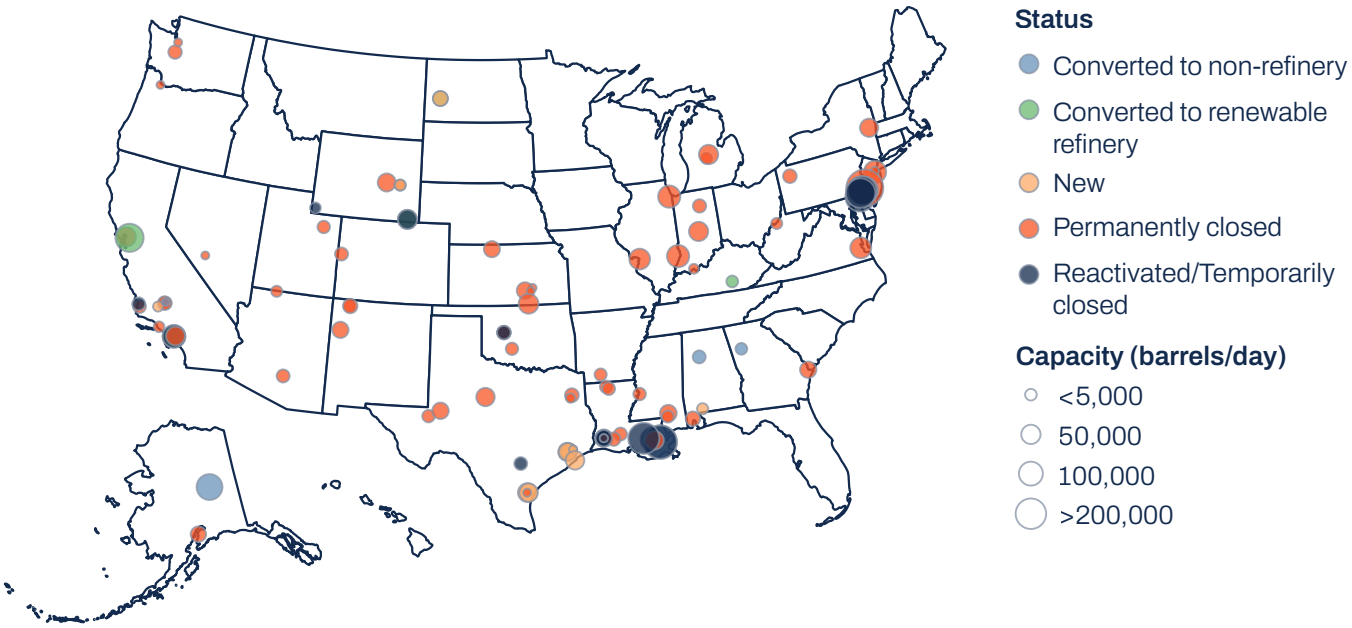
Key Findings

Permanent closures dominate status changes of oil refineries in the US over the last three decades. While this project focuses on permanent refinery closures as an important proxy for what may happen in oil refining communities as economies transition away from fossil fuels, the project gathered data on all operational changes for oil refineries to get a broader perspective of trends in the US oil refining industry over the last three decades. Figure 1 maps oil refinery status changes in the US from the EIA Annual Refinery Reports from 1990 to 2022, which record any new, temporarily shut down or reactivated oil refineries, and converted refineries to non-oil or renewable feedstock refining. The reports separately record permanently closed refineries.

After restricting the data to US states, there are 116 records of oil refinery status changes. Figure 1 shows their location and refining capacity, revealing a dynamic and evolving industry. Although not shown on the figure, about 44 percent of operation changes happened in the 1990s, while 19 percent and 36 percent of changes were respectively in the 2000s and 2010s. Sixty percent of status changes are permanent closures, with all other categories individually accounting for at most ten percent of the total changes.

Most permanently closed oil refineries in the US are either used as petroleum storage terminals or not redeveloped. Our analysis revealed that refining sites followed a wide range of trajectories after closure. Figure 2 provides a snapshot of the data collected on the post-

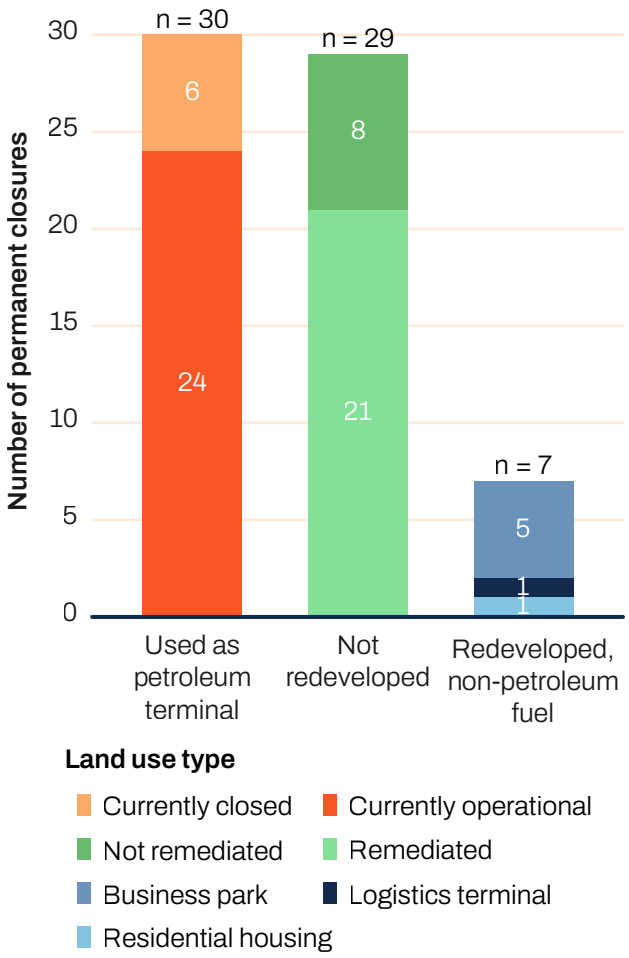
Figure 1. Oil refinery status changes in the US between 1990 and 2022



closure pathways for 66 of the 68 permanently closed refineries for which reliable data was found.

For 45 percent of permanent closures, the industrial sites are scaled back to a petroleum storage facility or terminal for either crude oil or refined petroleum products. Most of those sites are still used as terminals today, whereas 20 percent of the storage sites eventually ceased all petroleum-related activities. An almost equal share of permanently closed refineries saw no redevelopment after the closure date or later. Most of these sites are remediated or undergoing remediation, whereas nearly 30 percent of them are not redeveloped. Only 11 percent of all permanently closed refinery sites recorded in the data were redeveloped into non-petroleum activities, most of which are business parks. Whether refineries closed in the 1990s, 2000s, or more recently does not seem to affect their current land-use status.

Figure 2. Land use of permanently closed oil refineries in the US between 1990-2022



The share of oil refineries converted to renewable refineries in the US is small but growing. The conversion of oil refineries to renewable feedstock refining from plants or animals is a potentially important pathway for decarbonization. Our project's data provides anecdotal evidence of the beginning of such a transition for the US oil refining industry. Of the 135 oil refineries that were operating in the US in 2018, five have converted to full or partial renewable feedstock refining. Note that many of these conversions are due to policy-driven supply and demand for low-carbon fuels. Four additional closed oil refineries have expressed the intention of converting to renewable feedstock in the future. If all four are completed, renewable refinery conversions as a share of total oil refineries in the US would go from none before 2018 to seven percent.

County-level property tax receipts per capita decline after a refinery closure relative to comparable counties. On average, county-level property tax receipts per capita decrease by 10 percent following a refinery closure, relative to a weighted average of counties that never experienced a refinery closure. Compared with pre-closure revenue, this effect translates into a decline in property tax revenue of $23 per capita in a median county experiencing a refinery closure. For a median-population sized county

experiencing a closure (approximately 75,000 people), this corresponds to a $2 million decline in property tax revenues.

On average, property tax revenue declines slowly after a refinery closes and persists more than five years later, suggesting a long-term shift in property tax receipts.

The diminished taxable value of refinery sites drives the post-closure decline in public revenue. Besides changes in direct property tax payments from the refinery, post-closure changes in property taxes could also be the result of changes in property tax rates or housing prices. Indeed, local governments could increase property tax rates to compensate for direct payment losses or decrease rates to attract investment. While local housing prices could also change because of the amenity effects of post-closure refinery site redevelopment on housing values, we do not find statistical evidence that these effects drive the overall decline in property tax revenue. We find that the impact of the closure on property tax revenue at the county level is driven by the loss of direct taxable value from the refinery rather than changes in property tax rates or housing prices.

Declines in county-level property taxes per capita are driven by counties where no redevelopment of closed refinery sites occurs. On average, county-level property taxes per capita decline by 19 percent following a refinery closure when the refinery site is not redeveloped. Assuming the median level of pre-closure property taxes per capita and median population for counties with closures, this effect translates to $37 per capita and $2 million total. The total effect is similar to our results for all refinery closures, since counties where closed refinery sites are not redeveloped are typically less populated. We find no statistical evidence that per capita property tax revenues change in counties with sites which are operated as petroleum storage terminals after a refinery closes. Since there are only seven permanently closed sites that were redeveloped following refinery closures, our estimates for this land-use change are statistically imprecise and inconclusive.

Policy Implications

This project finds evidence of reduced property taxes for counties that experience an oil refinery shutdown. This effect appears to be driven by reductions in direct tax payments from the refineries, as opposed to changes in housing prices or property tax rates. The counties that experience the largest per capita property tax reductions are counties where the oil refinery site has not been redeveloped. Specific policy implications that follow from this research are:

- To avoid reductions in property tax revenue, state governments can implement regulations requiring advance notification of refinery closures to allow for long-term planning and to increase the likelihood of refinery site redevelopment. For example, California SB X1-2 (2023) and AB X2-1 (2024) require refineries to notify the state at least one year before a planned closure.

- County-level property tax revenues do not change at refinery sites that are used as petroleum storage terminals after the closure. Providing incentives for the firm to operate as a terminal can maintain local revenues in the short term and provide extended time for redevelopment planning in the long term. Although

outside of the scope of the project, we note that maintaining petroleum activities may also entail important costs, such as remediation delays and ongoing climate, air, and water pollution.

- Redevelopment of closed refinery sites to non-petroleum activities like business parks could maintain local tax bases, but more research is needed.

- Conversions to renewable feedstock refineries are becoming increasingly common and could maintain a part of the local tax bases, but more research is needed.

Contact the Authors

Christopher Malloy, University of Oklahoma (christopher.malloy@ou.edu)

Vincent Thivierge, University of Ottawa (vincent.thivierge@uottawa.ca)

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About the Resilient Energy Economies Initiative

The REE Initiative was established in 2024 to develop strategies that support the economies of fossil fuel–dependent communities across the United States as the energy system transforms. In addition to supporting action-oriented research to find what works, REE has built a community of scholars, policymakers, and economic development practitioners from the local, state, tribal, and federal levels to share knowledge and build relationships across the nation's energy communities.

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