

BIDEN'S FOSSIL FUEL FAIL:

HOW U.S. OIL AND GAS SUPPLY RISES UNDER
THE INFLATION REDUCTION ACT, EXACERBATING
ENVIRONMENTAL INJUSTICE



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Cover Image: A massive shell ethane cracker petrochemical plant in Beaver County, PA. Mark Dixon (CC BY 2.0 DEED)

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Oil Change International is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the ongoing transition towards clean energy.

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An oil well fire in the Permian Basin, Texas.



INTRODUCTION

The Inflation Reduction Act (IRA) is touted by United States President Joe Biden’s administration as the “largest investment in climate and energy in American history.”¹ The energy part of that statement may turn out to be true, but how effective will the IRA be in addressing the climate crisis? Can it relieve the burden of toxic fossil fuel infrastructure on the United States’ frontline communities?

This report details the most recent oil and gas production projections from the Rhodium Group’s Climate Deck, which provide the first publicly-available analysis of energy and emissions under the implementation of the IRA.² The projections anticipate an overall rise in oil and gas production under the IRA. Specifically, the results demonstrate that the IRA supports a modest decline in United States (U.S.) oil and gas demand while allowing an increase in oil and gas production and a dramatic rise in oil and gas exports.

This analysis suggests that the United States is prolonging the era of fossil fuels. The implications of these findings are stark for everyone, but especially for frontline communities around the country living daily with increased rates of asthma, cancer, and other health and safety issues related to oil and gas production and processing.³



Gas flaring at an oil well in the Permian Basin, Texas.

The findings of this briefing underscore that the IRA by itself will not drive the phase-out of oil and gas production in the United States, which is widely recognized as necessary to achieve global climate goals.⁴ In fact, the IRA enables the continued expansion of oil and gas production, keeping the United States on course to be the biggest expander of oil and gas extraction in the world through 2050 and worsening a fossil-fueled public health crisis in frontline communities.⁵

If the Biden administration is to realize the purported goals of the IRA and live up to the President’s promises to lead on climate and environmental justice, it must urgently do more to phase out U.S. oil and gas extraction alongside demand. This means phasing out fossil fuel exports, ending leasing for extraction on federal lands, and stopping approval of new fossil fuel infrastructure projects.

RHODIUM GROUP DATA PROJECTS AN INCREASE IN U.S. FOSSIL FUEL PRODUCTION AND EXPORT UNDER THE INFLATION REDUCTION ACT

In July 2023, the Rhodium Group published its annual *Taking Stock* report, which projects U.S. greenhouse gas emissions under existing policies using the Climate Deck model (see Appendix).⁶ This 2023 report was the first to be published since the passage of the Inflation Reduction Act and is the first detailed projection of U.S. emissions affected by the legislation. The analysis drawn out here is based on these projections.

It should be noted that the Rhodium Group’s model incorporates expectations for emissions reductions from unproven technologies such as carbon capture and storage and hydrogen, which were given generous incentives in the IRA.⁷ As a result, the projections may overstate the extent of emissions reductions under the IRA if these technologies do not deliver.

The model projects that despite the IRA’s investment in renewable energy, electric vehicles, and batteries, the United States could still miss its Paris Agreement goal of reducing U.S. emissions by 50 to 52% below 2005 levels by 2030. The model’s mid-emissions pathway suggests that U.S. greenhouse gas emissions will total 4.42 billion metric tons in 2030.⁸ This is 34% below 2005 levels and misses the U.S. Paris Agreement goal by 16 to 18 percentage points.

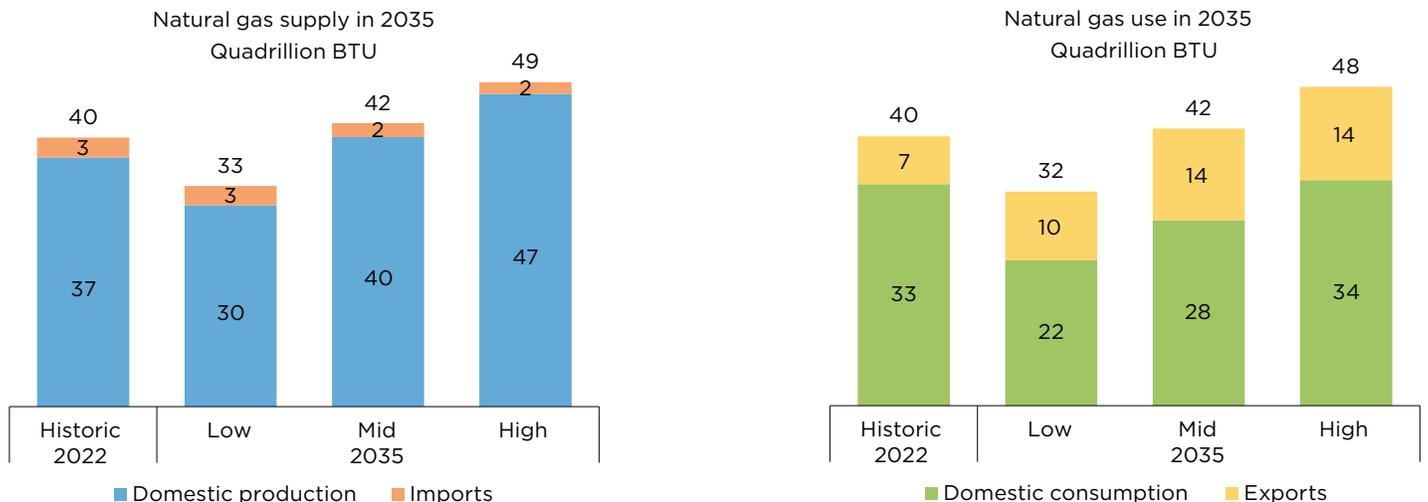
It is important to note that this goal is already insufficient to limit global temperature rise to 1.5 degrees Celsius. This is especially damning considering the United States’ responsibility as the world’s largest historical climate polluter to cut its emissions faster than the global average.⁹

The model’s low-emissions pathway suggests that emissions could be reduced by 51% by 2035. In other words, the best case outcome from the IRA would be the United States achieving its already insufficient 2030 goal five years late. Many of the IRA’s provisions expire in the 2030s;¹⁰ therefore, additional policies are needed to continue and accelerate emissions decline.

DECOUPLING FOSSIL FUEL CONSUMPTION AND PRODUCTION

Notable in the Rhodium Group’s report is a discussion of the “decoupling” of domestic fossil gas production and consumption, which is illustrated in Figure 1.¹¹ The chart shows that in the report’s mid-emissions scenario, U.S. production of fossil gas could rise despite declining domestic

Figure 1: Climate Deck Projection of Fossil Gas Production, Consumption, and Exports Under the Inflation Reduction Act



Source: "Taking Stock 2023," page 16

demand, with the difference exported to global markets. Only in the low-emissions scenario, which is based on assumptions of higher prices for fossil fuels and lower prices for clean energy, would gas production decline. However, even in this scenario, fossil fuel exports would substantially increase.

DIGGING DEEPER INTO THE DATA

We requested additional data from the Climate Deck team in order to get a better understanding of what the model says about oil and gas flows in the United States under the Inflation Reduction Act. The additional data revealed that in the mid-emissions scenario, moderate declines in U.S. domestic consumption of oil and gas stimulated by the IRA's support for renewable energy and electric vehicle adoption are countered by significant increases in U.S. oil and gas extraction, with the difference exported to global markets. This is in direct conflict with the urgent need for oil and gas extraction to peak immediately and decline rapidly by 2030 to hold open the path to a livable climate.¹² The projected growth in U.S. oil and gas exports substantially undermines domestic emissions reductions.¹³

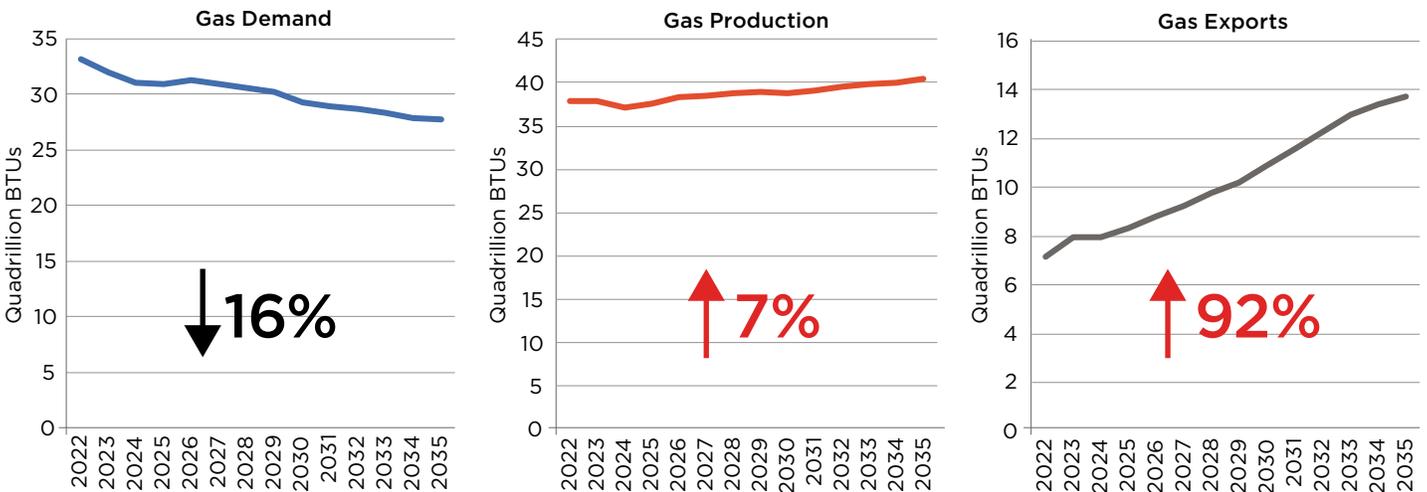


Oil drilling in Permian Basin, New Mexico

The Rhodium Group's projections of U.S. fossil gas trends under the implementation of the IRA paint a concerning picture. While domestic fossil gas demand in the United States is expected to decline by 16% by 2035,

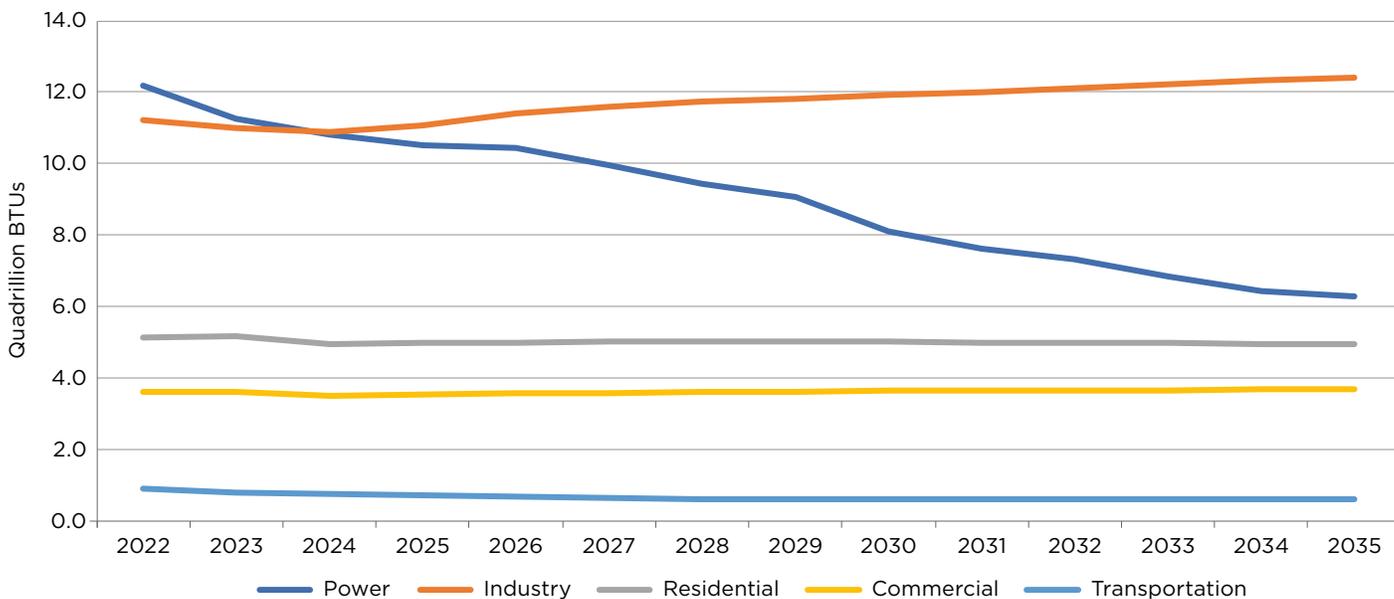
production is expected to rise by 7%, and gas exports are expected to almost double, driven by the expansion of U.S. fracking and liquefied natural gas (LNG) export terminals (see Figure 2).

Figure 2: Fossil Gas - Percentage Increase / Decrease 2022-2035



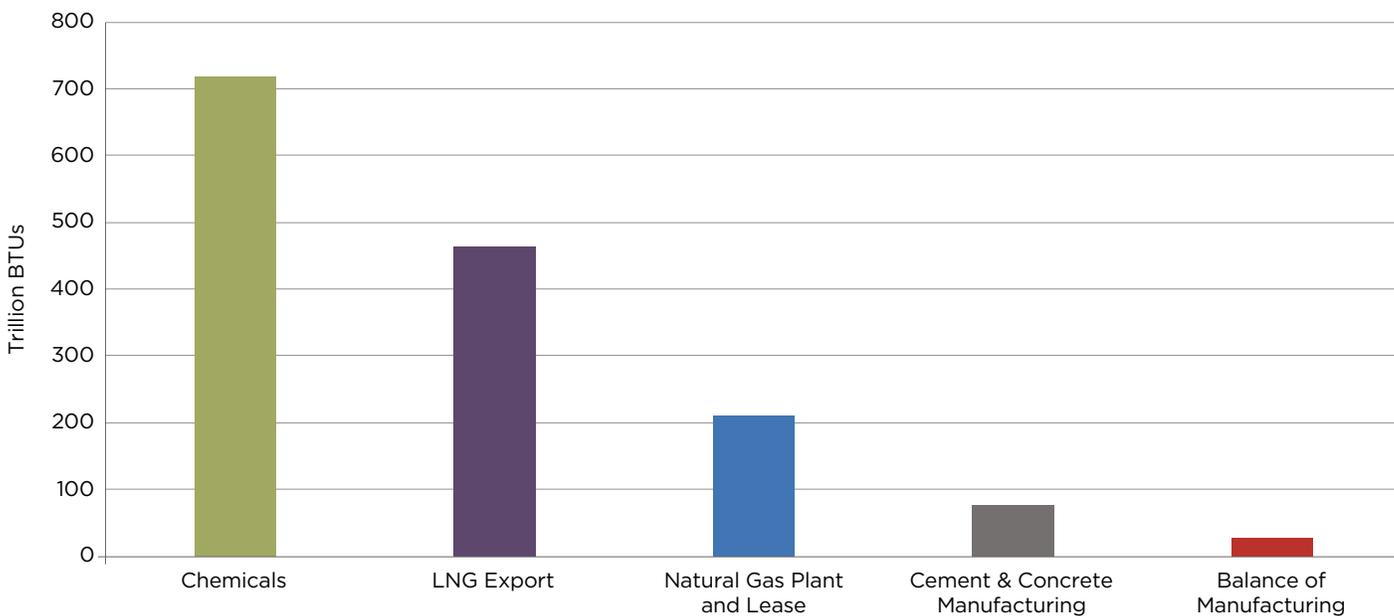
Source: Oil Change International based on data from Rhodium Climate Deck

Figure 3: Projected Fossil Gas Consumption by Sector, 2022-2035



Source: Oil Change International based on data from Rhodium Climate Deck

Figure 4: Top Five Industrial Sub-Sectors by Projected Growth in Fossil Gas Demand, 2022-2035



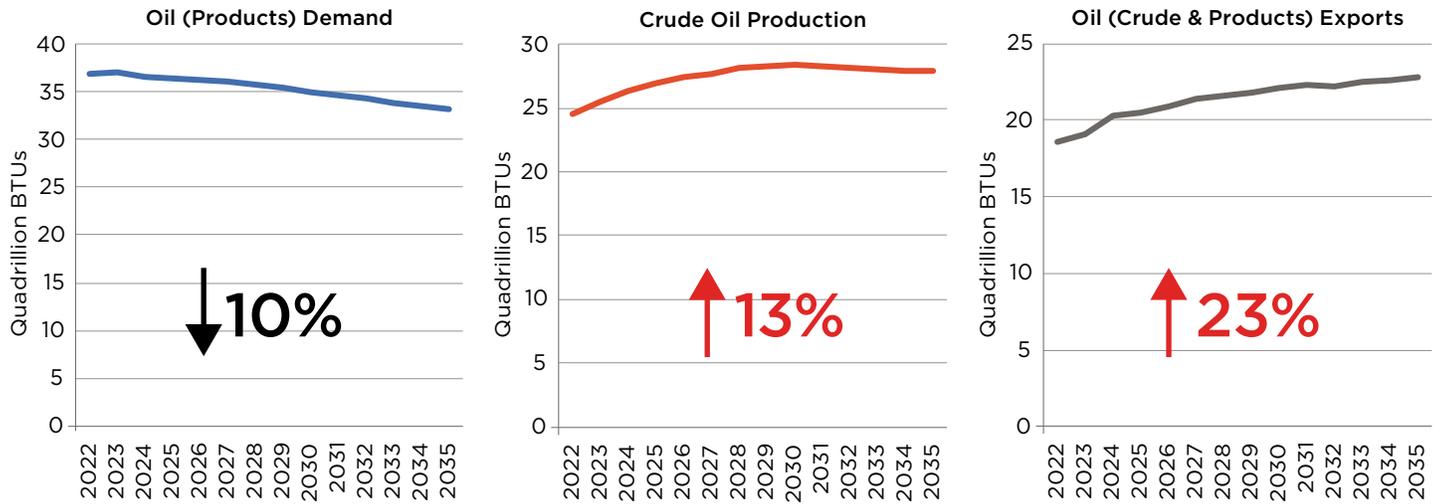
Source: Oil Change International based on data from Rhodium Climate Deck

The majority of fossil gas demand decline is expected in the power sector, where gas-powered generation is expected to be replaced by solar and wind power. However, this is offset by rising demand in the industrial sector and stagnant demand in other gas consumption sectors (see Figure 3).

Within the industrial sector, the model projects that the oil and gas industry itself will see the largest growth in fossil gas consumption. Of 20 sub-sectors tracked within the industrial sector, the three with the largest projected growth in gas consumption – Chemicals, Liquefied Natural Gas (LNG) Export, and

Natural Gas Plant and Lease (this includes gas used at well sites and gas processing plants) – are connected to extraction, processing, exporting, and manufacturing products from the oil and gas sector (see Figure 4). The demand for gas in the LNG export sector is projected to grow by 140% by 2035. This highlights the energy

Figure 5: Oil and Petroleum (Oil Products) – Percentage Increase / Decrease 2022-2035



Source: Oil Change International based on data from Rhodium Climate Deck

intensity of the oil and gas industry and the associated petrochemical industry.

The projections for oil under the implementation of the IRA are similar. However, production and imports are measured in crude oil, whereas consumption is measured in petroleum products, which are a mixture of products produced from crude oil at refineries and the natural gas liquids (NGLs, including ethane, butane, etc.) that are produced in abundance in U.S. oil and gas fields through the fracking process.¹⁴ These are processed separately from crude oil but find their way into the petroleum liquids supply and exports.

Overall, U.S. domestic petroleum demand is expected to decline by 10%. Despite this drop, production is expected to increase by 13% and exports by 23% (see Figure 5). This is, once again, a startling failure of current U.S. policy: As rising exports of oil and oil products fuel the climate crisis, the United States will be exporting emissions and claiming progress at home.¹⁵

Pipeline construction in Belmont County, Ohio



U.S. OIL AND GAS EXPANSION PLANS ARE THE MOST AGGRESSIVE IN THE WORLD

The United States is by far the largest oil and gas producer in the world – it was responsible for one in every five barrels of oil and gas extracted globally in 2022.¹⁶ In the same year, the United States led the world in new oil and gas extraction projects committed to development.¹⁷ The United States is also the world’s largest historical emitter of carbon dioxide.¹⁸

The United States is poised to be the world’s largest expander of oil and gas extraction from 2023 to 2050, single-handedly contributing more than one-third of planned global expansion.¹⁹ Much of the United States’ planned expansion is tied to oil and gas fracking and LNG export, centered in the Permian Basin of Texas and New Mexico, along the U.S. Gulf Coast, and in Appalachia. Communities that have long borne the toxic burden of oil and gas industry pollution, especially Black, brown, Indigenous, people of color, and low-income communities, are fighting a wave of new infrastructure primarily designed to serve export markets.²⁰ Analysis by the International Energy Agency shows that the Biden administration is responsible for 90% of new LNG export projects approved globally since the start of 2022, most of which

are along the U.S. Gulf Coast.²¹ The data presented in this report suggest that the Inflation Reduction Act does little to address this unjust legacy or its current trajectory.

APPROVING NEW FOSSIL FUEL LICENSING, EXPANDING EXTRACTION, AND ENABLING INFRASTRUCTURE BUILDOUT

Despite pledging climate leadership, President Biden’s policies have facilitated the continued expansion of fossil fuel production in the United States.²² In the last year alone, the Biden administration greenlit the Alaska Willow Project, approved oil and gas export facilities in Alaska and along the Gulf Coast, held two massive oil and gas lease sales in the Gulf of Mexico, approved five more years of offshore drilling, fast-tracked the Mountain Valley Pipeline, and oversaw the weakening of bedrock environmental laws, making it easier for fossil fuel infrastructure to move forward. More U.S. onshore and offshore oil and gas lease sales are planned in 2023 and beyond, despite President Biden’s promises to end federal leasing and drilling.²³

The Inflation Reduction Act includes mandates for new fossil fuel

leasing and incentivizes dangerous distractions like carbon capture and storage and fossil hydrogen production with generous tax breaks.²⁴ Carbon capture already has a 50-year history in the United States.²⁵ In that time, it has shown itself to be ineffective at reducing emissions.²⁶ The vast majority of carbon captured in the United States has been used to increase oil production in aging oil wells using a process called “enhanced oil recovery.” This not only leads to more emissions from oil production and consumption but also has a poor record of keeping the carbon underground.²⁷ Producing fossil hydrogen is similarly ineffective, as combining carbon capture with the steam reforming of fossil gas could be even worse for the climate than burning gas directly when upstream methane emissions are taken into account.²⁸ Furthermore, the buildout of carbon capture and hydrogen systems requires extensive pipelines that impact frontline communities.²⁹ Incentivizing these practices does not mitigate emissions; instead, it prolongs the life of the oil and gas industry and exacerbates impacts on frontline communities.

FRONTLINE COMMUNITIES FACE ONGOING AND WORSENING IMPACTS OF INCREASING OIL AND GAS PRODUCTION AND EXPORTS

The massive increase in oil and gas exports allowed by the Inflation Reduction Act means more extraction, pipelines, refineries, petrochemical facilities, and oil and gas export terminals. Impacts on frontline communities across the supply chain from this buildout will be severe and continue to undercut President Biden and the IRA's claims to work to ameliorate environmental injustice.³⁰ These impacts will fall predominantly on Black, brown, Indigenous, people of color, and low-income communities.³¹ Global communities living near LNG

infrastructure will experience similar impacts from imports.³²

The communities that will be most impacted by the IRA's failure to constrain oil and gas production are among those already most affected by environmental injustice and existing infrastructure, including communities in historic sacrifice zones such as the Permian Basin in Texas and New Mexico, "Cancer Alley" along the Mississippi River in Louisiana, the Gulf Coast, and Appalachia.³³ The environmental injustice already

shouldered by residents of these regions is severe, and while President Biden has claimed that addressing it is a priority of his administration, his policies and actions suggest otherwise. His officials have repeatedly ignored the advice of their own White House Environmental Justice Advisory Council and outside experts while using environmental justice rhetoric to justify increasing fossil fuel production and processing.³⁴

Expansion of oil and gas production and exports drives detrimental trends

Organizers march in St. James Parish, Louisiana, protesting the Bayou Bridge Pipeline.



in public health. Evidence from hundreds of studies demonstrates that drilling, fracking, storing, transporting, and disposing of oil and gas cause serious harm to human health, including respiratory illnesses, cardiovascular disease, and impairments to infant and maternal health.³⁵ LNG export terminals release not only planet-heating emissions but also harmful pollutants such as volatile organic compounds, nitrogen oxides, sulfur dioxide, carbon monoxide, and particulate matter.³⁶ The majority of planned and existing LNG terminals are in communities with higher minority populations and/or low-income populations that already experience high cancer risks and respiratory hazards due to exposure to pollutants.³⁷

Research and over a century of lived experience have made clear that fossil fuel production depends on and drives racism.³⁸ Each stage of the oil and gas supply chain results in toxic water and air emissions, harmful local

environmental pollution, and other impacts that fall disproportionately on Black, brown, Indigenous, people of color, and low-income communities. Even in communities of color, white workers are often hired at disproportionate rates – in Louisiana’s St. John the Baptist parish, home to the third-largest oil refinery in the nation, people of color represent nearly 70% of the working-age population but only 28% of the manufacturing workforce.³⁹ Indigenous communities, who have played a key role in resistance to fossil fuel expansion, are especially impacted as oil and gas production disrupts their sovereignty and traditional ways of life, threatens sacred sites and cultural resources, and exacerbates crises such as Missing and Murdered Indigenous Women due to the creation of man camps and boomtowns.⁴⁰

Communities outside extraction and processing zones will also be negatively impacted by expanded

oil and gas production and export. Fossil fuel dependency drives harmful boom-and-bust economic cycles while also driving conflict around the world.⁴¹ Additionally, as community resistance to fossil fuel buildout has grown successful in recent years, fossil fuel interests and their political allies have responded with a harsh crackdown to criminalize dissent, subjecting huge regions of the United States to draconian anti-protest laws and imprisoning community members standing up for their rights.⁴²

President Biden and the IRA’s exacerbation of sacrifice zones in historically impacted communities is particularly damning given the disparities that will result. While richer, whiter communities may see the benefit of reduced domestic consumption of fossil fuels through cleaner air and safer energy, rising oil and gas exports will increase the impacts of fossil fuels on marginalized communities.

The ExxonMobil Joliet Refinery near Chicago, Illinois.



COMMUNITY CASE STUDIES OF ENVIRONMENTAL INJUSTICE DRIVEN BY OIL AND GAS BUILDOUT

Freeport, Texas, is an instructive case on the multifaceted harms of oil and gas production infrastructure. Freeport is a Gulf Coast hub for fossil fuel processing and export, with an economy driven by chemical production and fossil fuel export and a population that is over 75% non-white.⁴³ In June 2022, a major explosion and fireball ripped through the Freeport LNG facility, driving flames dozens of feet in the air, outgassing toxic chemicals, and rattling windows miles away. The export terminal was initially shut down with plans to reopen within a month.⁴⁴ Following community opposition and pressure to release more information about the incident, the damage was revealed to be more extensive than initially reported, and the plant remained closed for over six months. After investigating, regulators found the explosion was entirely preventable and blasted the plant's management, finding "systemic failures" including inadequate operating procedures, insufficient testing, and human error.⁴⁵ The plant partially reopened just over seven months after the explosion and has continued to experience health and safety problems in attempts to return to its pre-explosion operation levels.⁴⁶

Southeast New Mexico's Permian Basin has seen a huge expansion in oil and gas production over the last decade, and this trend is expected to

continue under the Inflation Reduction Act.⁴⁷ New Mexico is an arid state with limited and precious water resources that are heavily impacted by oil and gas extraction and transport. The state leads the western United States in oil and gas spills thanks to a lax regulatory environment. Oil and gas wastewater pollutes Indigenous Peoples' territories with abandon and deadly "forever chemicals" threaten even non-industry water supplies.⁴⁸ Legal efforts are ongoing to address oil and gas production's deadly threat to New Mexico's water, but the Biden administration's policies and the IRA are driving these trends in the wrong direction.⁴⁹

Cancer Alley in Louisiana is infamous worldwide as a site of stark environmental injustice – the 85-mile stretch from Baton Rouge to New Orleans is lined with over 200 petrochemical plants and refineries.⁵⁰ The location of these facilities is a direct legacy of U.S. slavery, as many of the riverside plantations owned by enslavers were sold for profit and provided extensive acreage for petrochemical and industrial buildout in the twentieth century.⁵¹ Despite recent improvements in air quality across the United States as a whole, air quality in Cancer Alley is steadily decreasing as the fossil fuel industry doubles down on expansion and production.⁵² The Biden administration has professed a desire to address the environmental injustices of Cancer Alley, but despite advocates repeatedly raising the alarm to President Biden and his officials,

progress has been minimal and has not kept pace with the industry's expansion driven by the IRA and other White House policies.⁵³

Appalachia's petrochemical buildout in the Ohio River Valley of Kentucky, Ohio, Pennsylvania, and West Virginia has continued a centuries-long legacy of the region being used as a resource colony and sacrifice zone for rich East Coast industrialists and absentee landowners. The proliferation of infrastructure has accelerated in recent years, with huge increases in fossil gas processing capacity accompanied by dozens of new and expanded facilities.⁵⁴ This trend is set to accelerate, with federal support for the Appalachian Petrochemical Hub and the Biden administration's selection of Appalachia as a location for one of the IRA's new "hydrogen hubs" paving the way for billions of federal dollars to flow into expanding fossil fuel infrastructure in the region.⁵⁵

The IRA and the Biden administration's actions continue a long and damaging pattern of federal policy that supports oil and gas extraction, production, and export, exacerbating environmental injustice in overburdened communities also beset by the impacts of racism, poverty, and systemic disinvestment. Far from representing a change in course, President Biden and the IRA are doubling down on this harmful legacy by offshoring pollution through exports and doing little to shift the on-ground reality for millions of people across the fossil fuel supply chain.

CONCLUSION

The Inflation Reduction Act incentivizes clean energy adoption but fails to curb oil and gas production and, in fact, enables its continued expansion. The legislation deploys tax incentives and budgetary commitments, but has no mandatory targets for emissions reduction or fossil fuel phase-out. In fact, it provides generous tax incentives for dangerous distractions such as carbon capture and fossil hydrogen that serve only to boost the oil and gas industry and prolong its life and political power.⁵⁶

The data we have presented suggests that oil and gas production and exports will continue to grow under the IRA until at least 2035. Production and export growth mean more oil and gas wells, more processing capacity, more pipelines, more LNG



Indigenous leaders at the March to End Fossil Fuels in New York City September 2023.

plants and terminals, and other toxic infrastructure. This will inevitably place an even greater burden on already overburdened communities, primarily on the Gulf Coast and in Appalachia.

The Biden administration needs to act to prevent this outcome.

Key actions to protect our communities and climate and realize the Inflation Reduction Act's climate goals include:

- **End fossil fuel leasing on public lands;**
- **Stop permitting new fossil fuel infrastructure; and**
- **Phase out exports of oil, gas, and products derived from them.**

APPENDIX – THE RHODIUM GROUP’S CLIMATE DECK AND THE MODEL IT IS BASED ON

The Rhodium Group's Climate Deck is an online portal featuring greenhouse gas emissions estimates and energy data derived from Rhodium's climate and energy policy research. Rhodium uses a modified version of the U.S. Energy Information Administration's (EIA) National Energy Modeling System (NEMS). Rhodium's modified version is known as RHG-NEMS.

The NEMS is used to produce the EIA's Annual Energy Outlook (AEO), and the Reference Case in the AEO is the starting point for the RHG-NEMS. Rhodium then revises some

of the input assumptions in the AEO Reference Case with announced power plant retirements and additions, recent and projected electric vehicle sales, and electric vehicle charging costs. It has also added projections for all six greenhouse gases targeted for reduction under the Kyoto Protocol, as well as added modeling for all 50 states.

To reflect market uncertainties, Rhodium adjusts projected costs for electricity generation, electric vehicle batteries, oil and gas production, carbon capture, and some additional

policy factors in order to produce the low and high emissions scenarios. Due to these assumptions, the low-emissions scenario is based on lower clean energy and carbon capture costs and higher fossil fuel costs than the default mid-emissions scenario. The high-emissions scenario is based on the opposite configuration.

The Rhodium Group's *Taking Stock* report is produced annually from the results of the model. The 2023 edition of the report included the projected impacts of the Inflation Reduction Act for the first time.

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