Capitalizing on Clean Energy: Foreign Direct Investment Trends Post-Inflation Reduction Act

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SELECTUSA®

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INTRODUCTION

The United States has become the leading destination for foreign clean energy investments. Over the past decade, there have been 435 announced greenfield foreign direct investment (FDI) projects in the country, resulting in an estimated $108.4 billion in total capital expenditures[1]. Notably, nearly a quarter of this FDI capital was announced in 2023 alone. This surge in clean energy and climate action investments can in part be attributed to the Inflation Reduction Act (IRA), signed into law by President Joe Biden in August 2022[2,3]. This landmark legislation represents the largest single investment in climate and clean energy solutions in U.S. history. It encompasses funding programs, including 20 different tax incentives, and tens of billions of dollars in loan and grant programs designed to accelerate investments and attract businesses, facilitating the transition to a clean energy economy[4]. The IRA provides $369 billion for climate investments, including clean energy production and investment tax credits, $27 billion for the Greenhouse Gas Reduction Fund, and $40 billion in loan guarantees for innovative clean energy projects. These provisions have catalyzed climate investments in the United States, bolstered efforts to reduce carbon emissions, and driven investment and manufacturing growth, leading to long-term economic benefits and job creation[5].

Foreign Investors unfamiliar with the clean energy sector might hesitate to commit to large-scale greenfield FDI projects in the United States due to concerns about market saturation. Despite the high number of investments since 2022, the reality is that demand for clean energy in the United States still significantly exceeds the sector's current capital investments. Legislation such as the Infrastructure Investment and Jobs Act and the IRA, have been enacted to address this gap by attracting investment through tax provisions and loan incentives. Falling costs, increasing demand, and supportive legislative initiatives have solidified the United States' position as the most attractive country for projects in solar, wind, geothermal, biofuels, clean hydrogen, carbon capture and sequestration, hydropower, tidal wave energy, electric vehicles, nuclear energy, and other clean technologies. Strong federal and state support, progressively lower construction costs, and a large, skilled workforce contribute to this appeal. With billions of dollars invested by the federal government in expanding infrastructure and strengthening the supply chain, both domestic and foreign investors are increasingly drawn to the U.S. clean energy

[1] https://www.fdimarkets.com/
[2] https://www.cleaninvestmentmonitor.org/reports/tallying-the-two-year-impact-of-the-inflation-reduction-act
[3] https://www.congress.gov/bill/117th-congress/house-bill/5376/text/eas
[4]https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook
[5] https://home.treasury.gov/policy-issues/inflation-reduction-act/impact-and-stories

economy. Moreover, to achieve the nation's ambitious carbon reduction goals, all 55 U.S. states and territories and the District of Columbia are poised to welcome substantial capital investments in their clean energy subsectors for years to come.

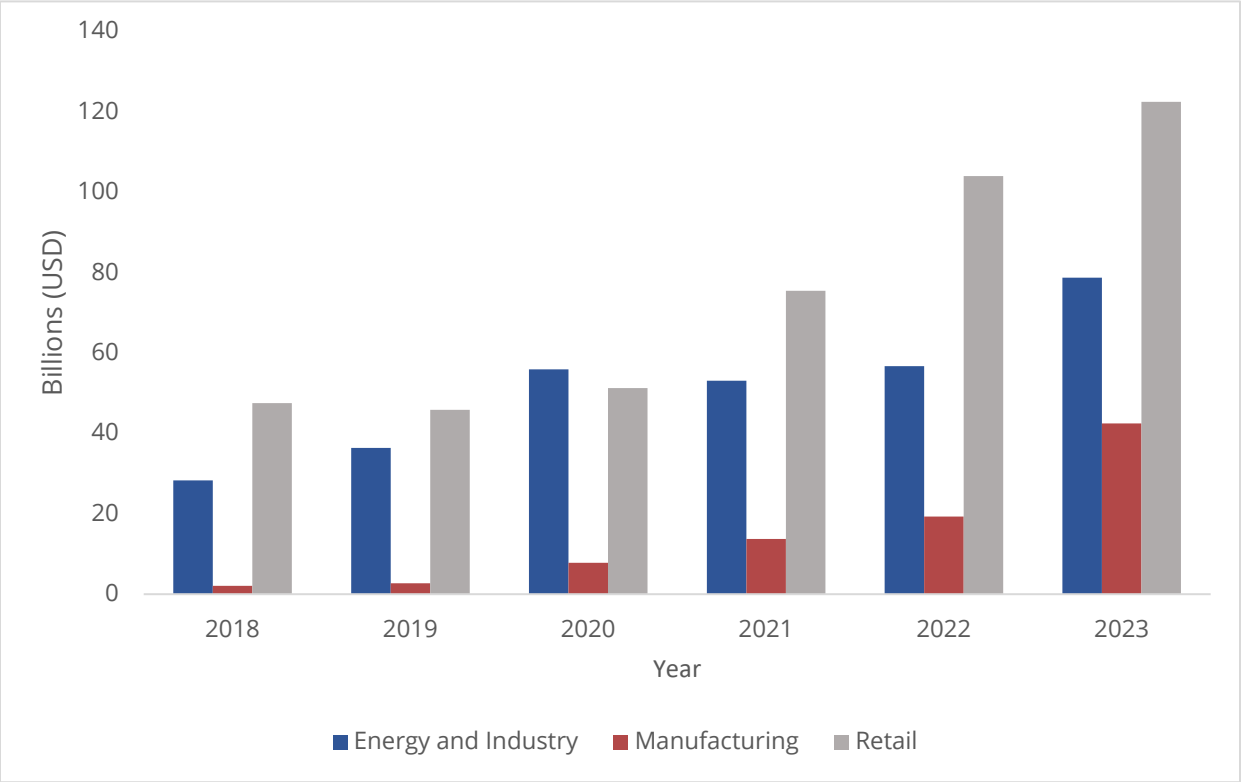
This report will detail FDI contributions to climate investments in the U.S. market following the passage of the IRA, focusing on renewable energy sub-sectors and clean technologies such as electric vehicles and carbon capture. Furthermore, the report will analyze the effects of costs on U.S. consumer behavior, trends in U.S. energy consumption, and potential future expansion in the U.S. renewable energy market. It will also analyze the IRA's impact and the role of SelectUSA, a program within the International Trade Administration of the U.S. Department of Commerce, designed to attract foreign direct investment into the American market and support domestic economic and job growth. The report aims to provide data-driven insights to help investors make informed decisions about greenfield FDI in the United States. Data for this report has been sourced from the U.S. Energy Information Administration (EIA), fDi Markets, the Clean Investment Monitor (CIM), and SelectUSA climate investment metrics. In this report, investments made in renewable energy and clean technology fall into the categories of clean energy investments and climate action investments, as outlined in the IRA Guidebook[6], and will collectively be referred to as "climate investments". The term "greenfield investments" refers to a form of FDI in which a company commences new operations in another country.

CLEAN ENERGY FDI GROWS TO RECORD LEVELS IN 2023

Since the passage of the IRA in 2022, there has been a sharp increase across all categories of investments in the U.S. clean energy industry. Total value of new investments in manufacturing clean energy and technology have more than doubled, while energy, industry, and retail investments have collectively grown by 25.2% between 2022 and 2023 (see Figure 1). Announced greenfield FDI has surged from $9.7 billion in 2022 to $26.2 billion in 2023 (see Figure 2). Consequently, 2023 has become the strongest year for renewable energy FDI in American history[7].

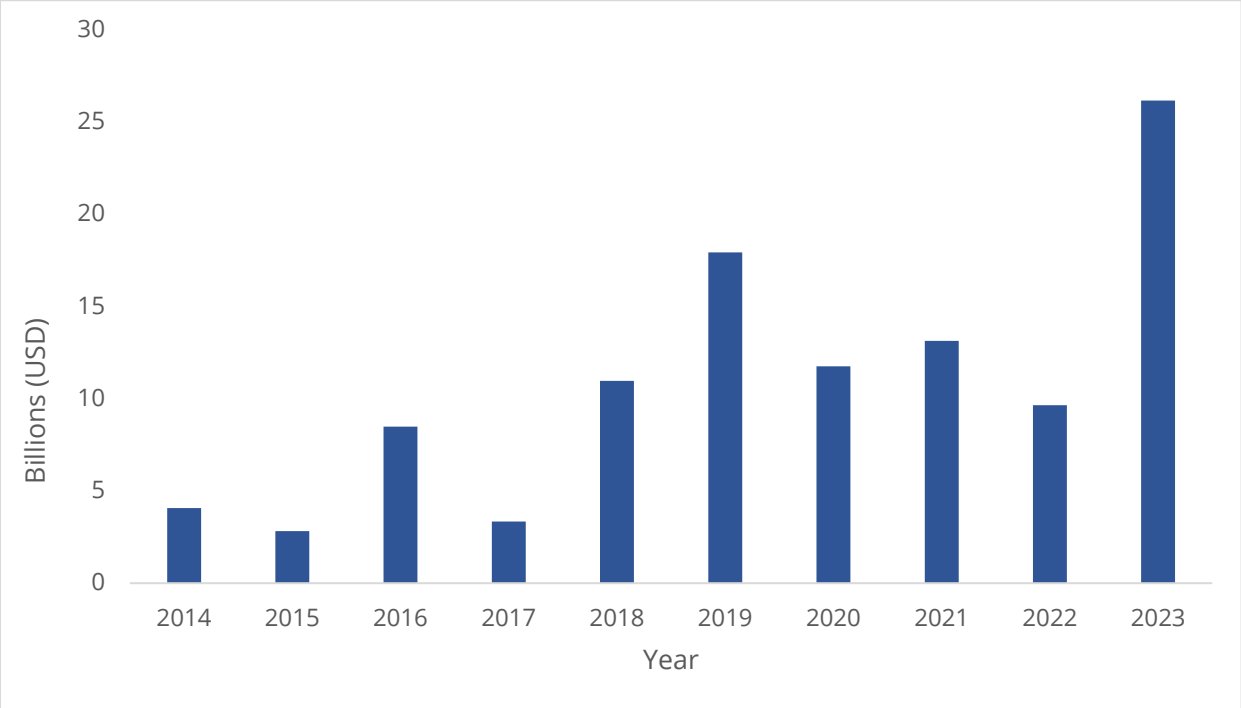
[6] https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook
[7] www.FDImarkets.com.

Figure 1: Annual Actual Clean Investment by Segment, 2018-2023



Source: Clean Energy investment monitor, 2024.

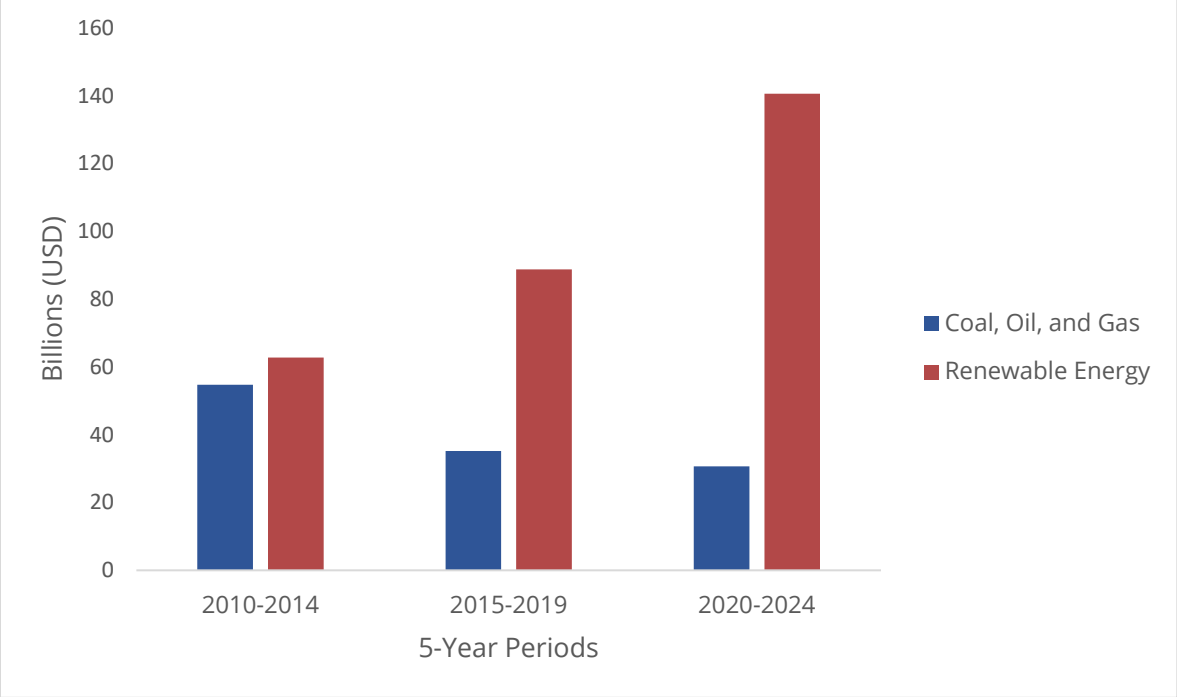
Figure 2: Estimated FDI Capital Expenditure in U.S. Renewable Energy, January 2014 – December 2023



Source: fDi Markets, 2024.

Over the previous three five-year periods, investments in the U.S. renewable energy sector have consistently outpaced investments in the coal, oil, and gas sectors (see Figure 3). Of the estimated $244 billion invested in the U.S. renewable energy sector between 2014 and 2023[8], $108.4 billion has come from foreign direct investment[9]. As of 2023, Canada leads as source of greenfield renewable energy FDI to the United States, with $21.5 billion in capital investments since 2014 (see Figure 4). The United Kingdom and France follow, contributing $13.9 billion and $11.5 billion, respectively. In 2023, the U.S. renewable energy sector attracted more capital from foreign sources than from domestic investments (see Figure 5), a trend last observed in 2018[10]. Solar and wind power are the most popular sub-sectors for FDI, receiving $49.4 billion and $37.6 billion, respectively (see Figure 6). Texas is the top destination state for these investments, attracting $27.2 billion in renewable energy investments over the past decade (see Figure 7), while California ranks second with $8.5 billion.

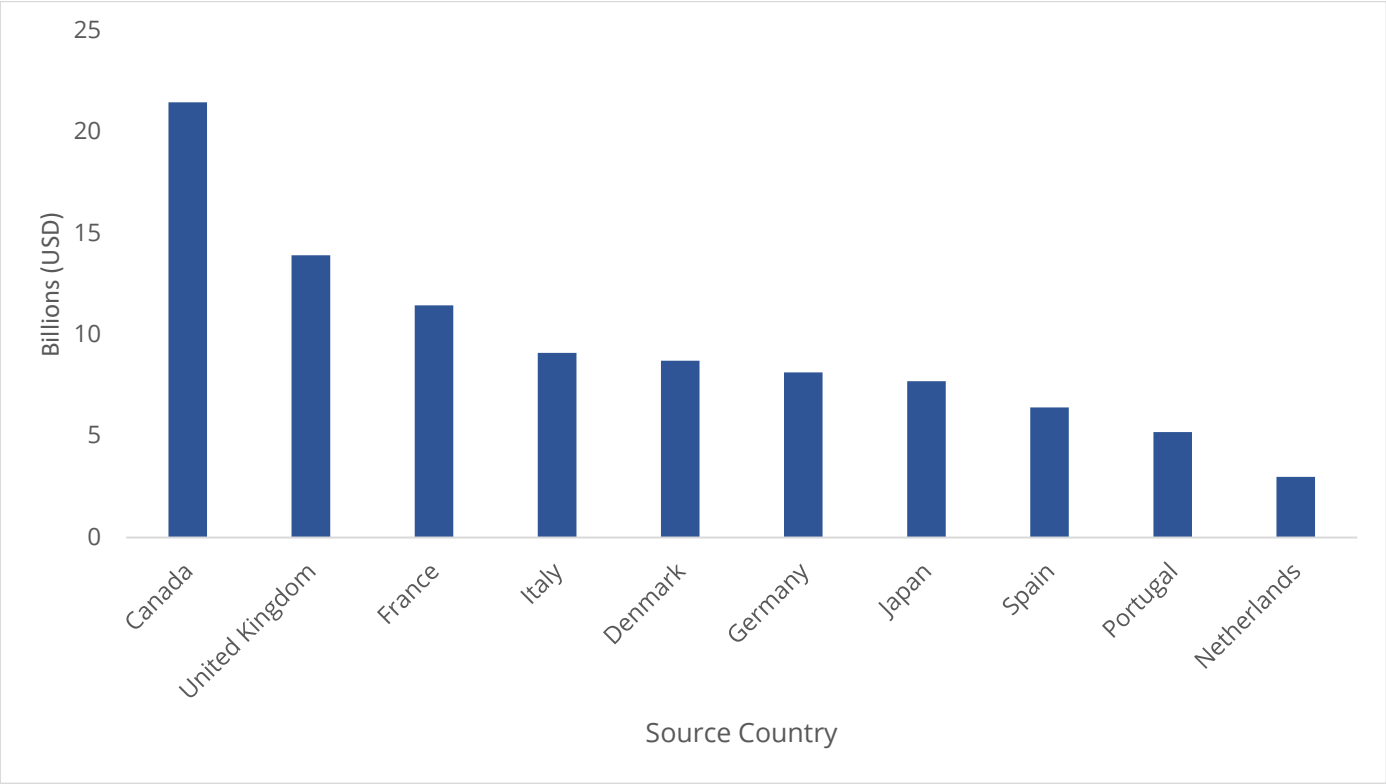
Figure 3: Total Estimated FDI Capital Expenditure by Five-Year Periods and Industry Sector



Source: fDi Markets, 2024.

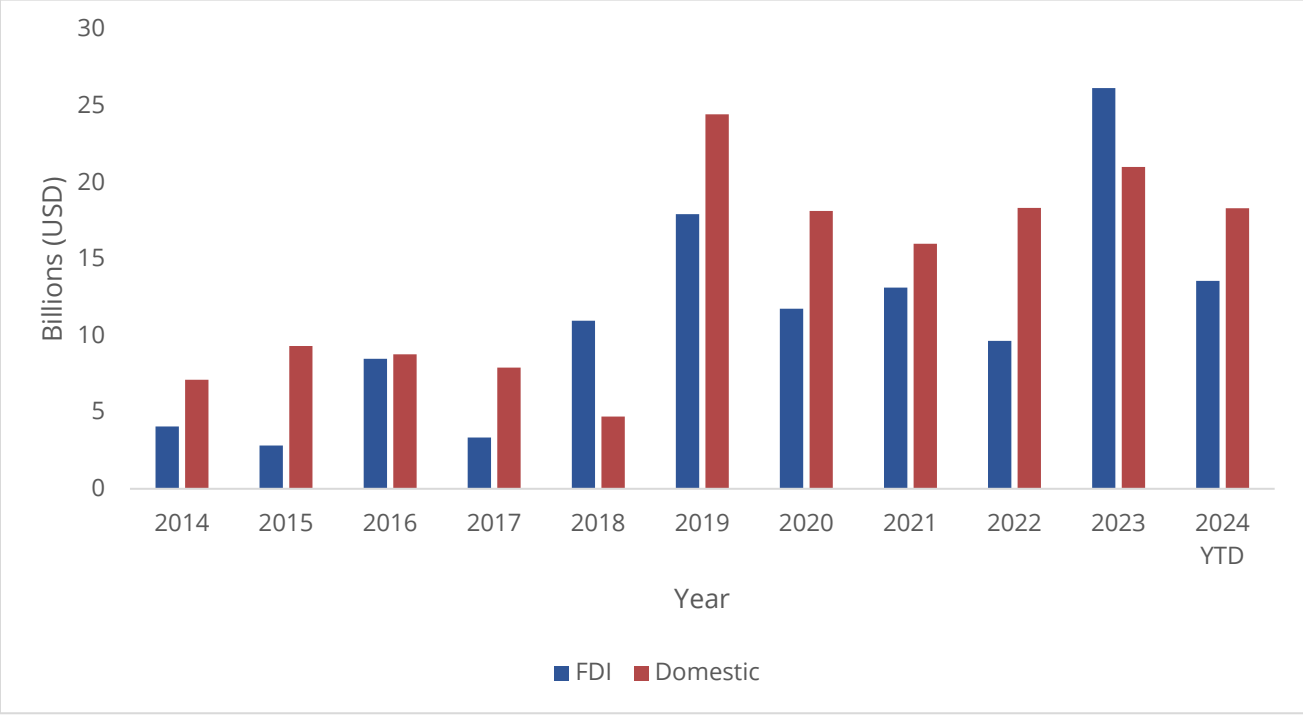
[8] https://www.cleaninvestmentmonitor.org/database
[9] www.FDImarkets.com
[10] https://www.cleaninvestmentmonitor.org/

Figure 4: Top 10 Countries Investing in the U.S. Renewable Energy Market, 2014 - 2023



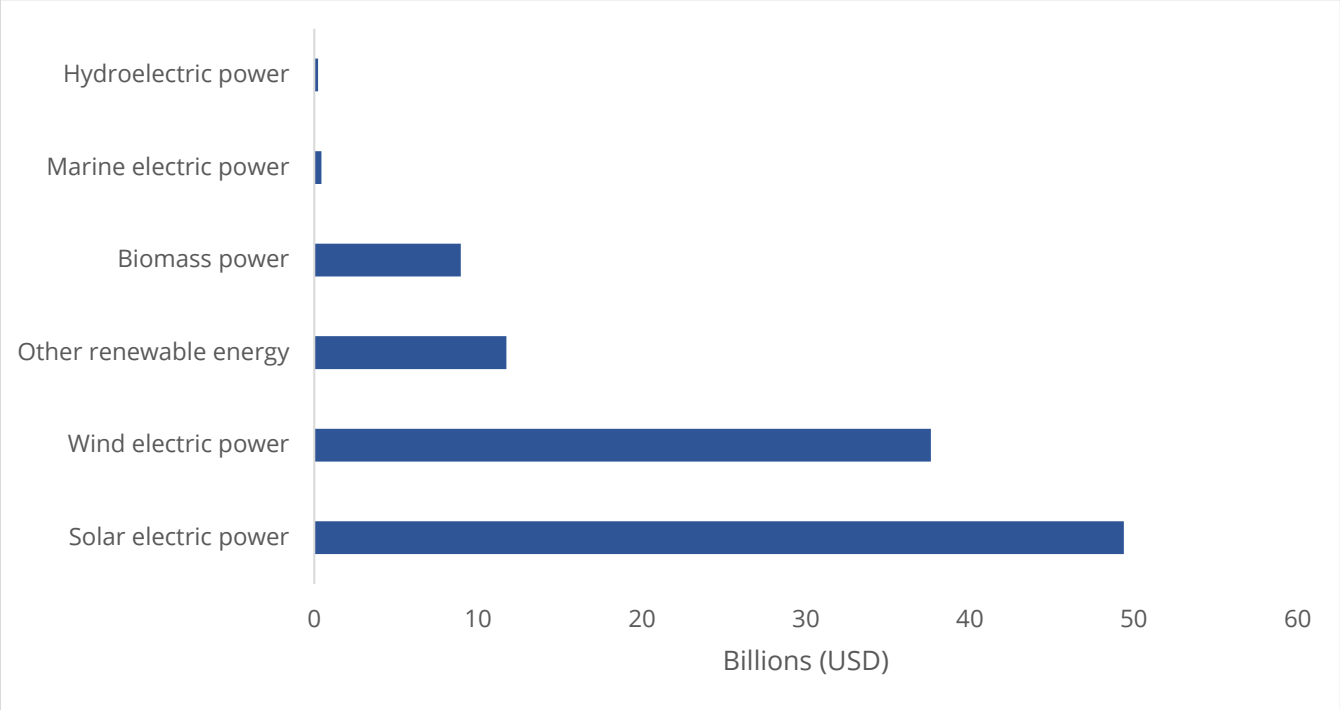
Source: fDi Markets Accessed August 2024.

Figure 5: FDI vs Domestic Capital Investments in Renewable Energy by Year, 2014 – 2023



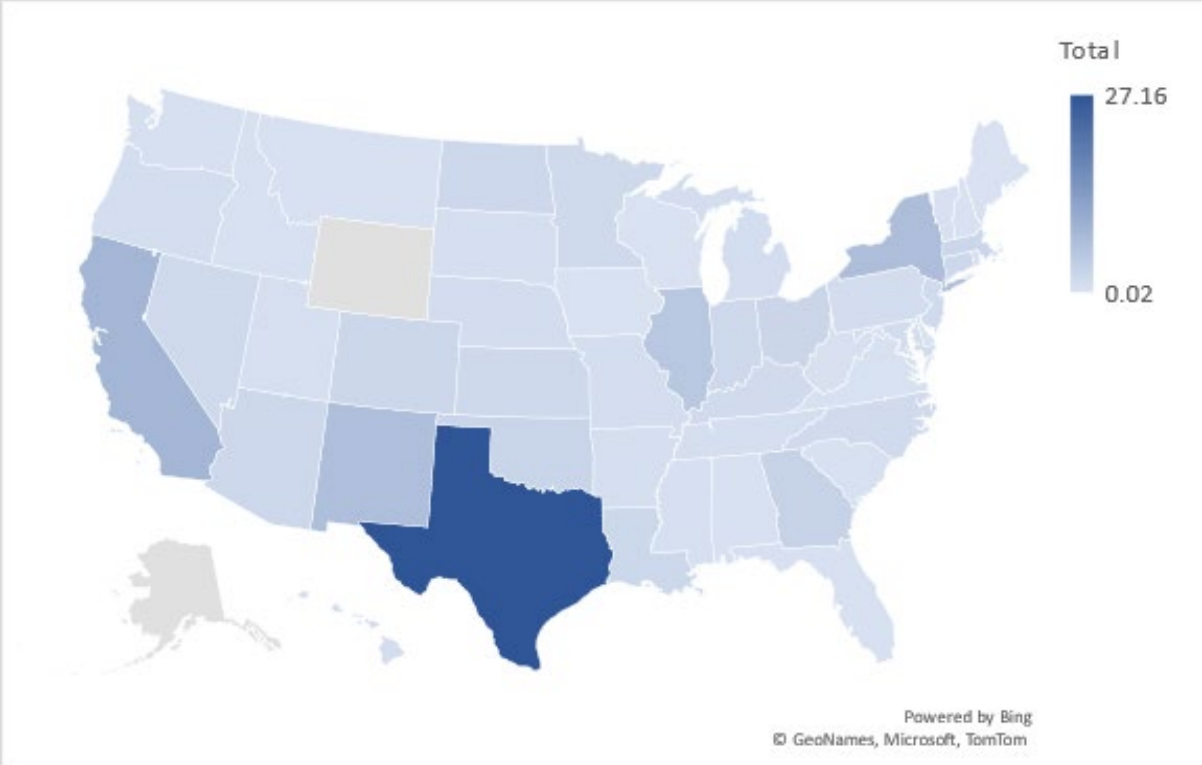
Source: fDi Markets, 2024.

Figure 6: Total Estimated FDI Capital Expenditures by Subsector, 2014 - 2023



Source: fDi Markets, 2024.

Figure 7: FDI in Renewable Energy by Destination State, 2014 – 2023, Billions USD



Source: fDi Markets, 2024.

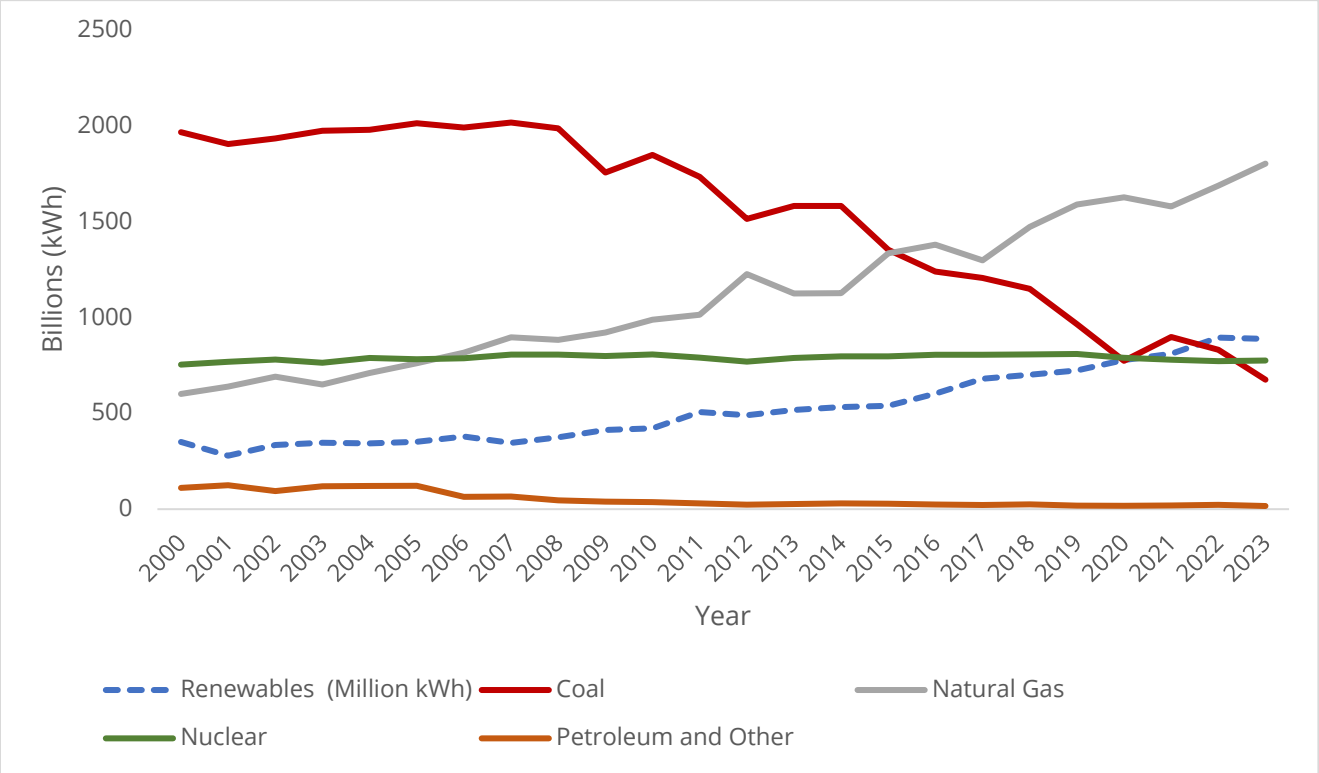
In addition to $108.4 billion in greenfield renewable energy investments between 2014 and 2023, an additional $123.2 billion has been invested in clean energy technologies [11]. The most popular destination states for these investments are California and Texas.

TRENDS IN ELECTRICITY GENERATION FROM FOSSIL AND RENEWABLE SOURCES

Trends in energy consumption in the United States show a declining demand for coal, which was once a dominant source of electricity. As of 2022, renewable energy generation surpassed coal energy generation in the United States (see Figure 8). In 2023, renewable sources accounted for more than one-fifth of the United States' electricity generation[12]. Solar and wind power are leading this growth, with wind power making up 46.7% of all renewable energy generation and solar contributing 18.4% (see Figure 9). Although hydroelectric power accounted for less than 0.1% of all investments in the renewable energy sector in the last ten years between 2014 and 2023, its existing generation infrastructure remains a significant contributor, providing 26.8% of the country's renewable electricity generation. Wind energy leads in electricity production among renewable energy sources for utilities, closely followed by hydroelectric power. Solar energy is experiencing an upward trend, supported by ongoing investments in the industry (see Figure 12).

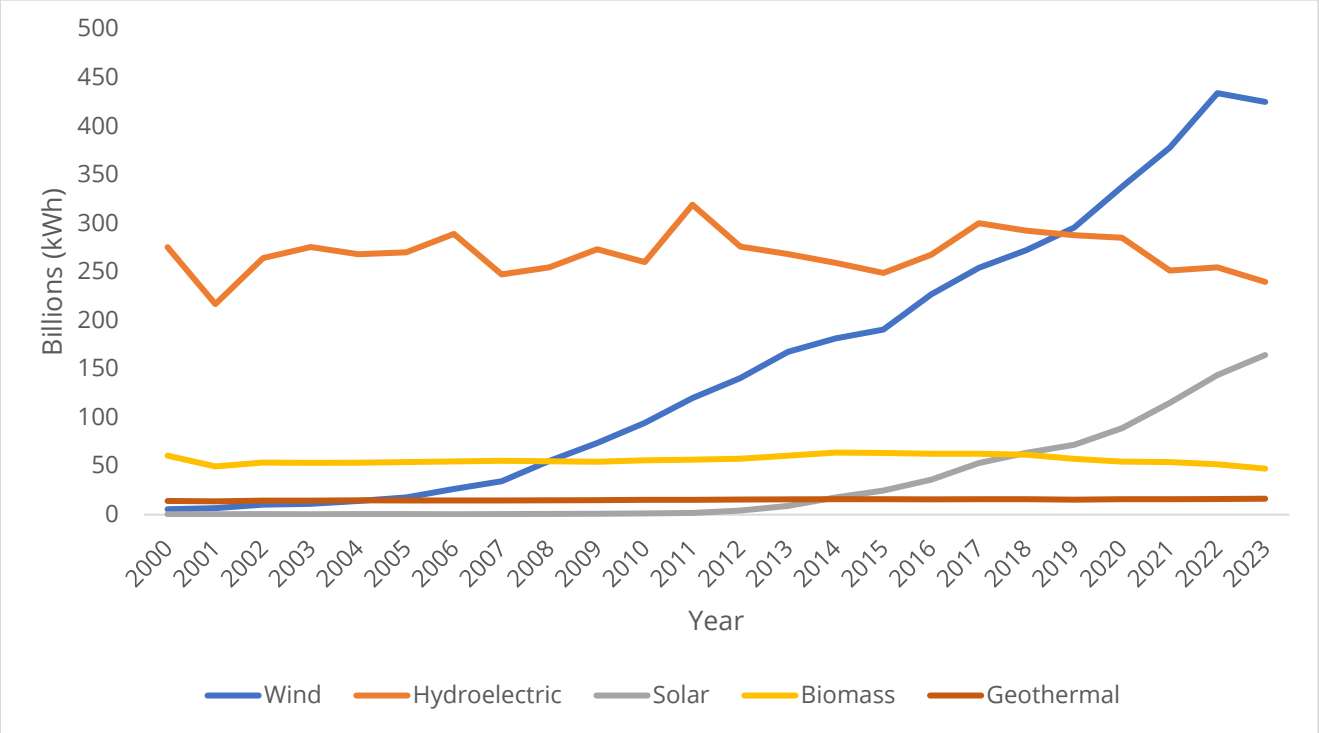
[11] www.fdimarkets.com
[12] www.eia.gov/electricity

Figure 8: U.S. Utility-Scale Electricity Generation by Source, 2000 – 2023



Source: U.S. Energy Information Administration, Total Energy, 2024.

Figure 9: U.S. Utility-Scale Electricity Generation from Renewable Energy Sources, 2020 – 2023

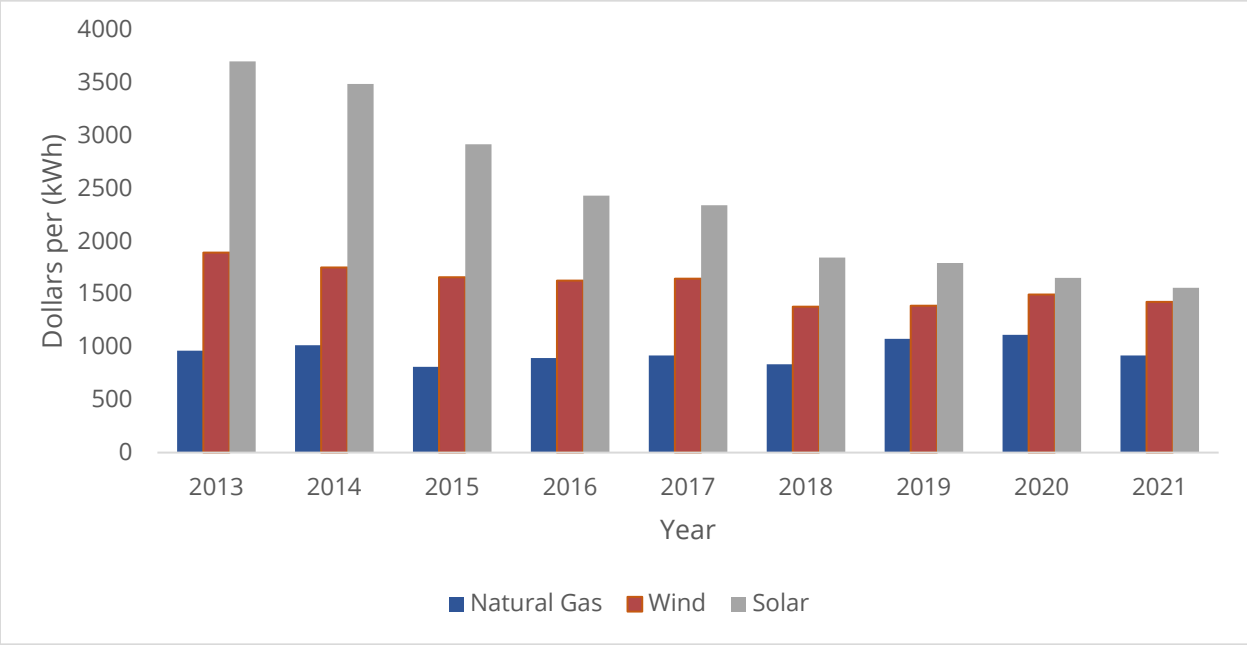


Source: U.S. Energy Information Administration, Electric Power Monthly, 2024.

POTENTIAL FOR CLIMATE FOREIGN DIRECT INVESTMENTS

Over the past decade, construction costs for electric generators in solar photovoltaics and wind energy have consistently decreased due to ongoing technological advancements, infrastructure improvements, investments and favorable tax incentives[13] (see Figure 10). These enhancements have made wind and solar energy adoption more accessible, affordable, and efficient. The United States is projected to generate more energy from renewables than from natural gas by 2040[14]. Projections show that solar energy is set to become the dominant sub-sector, outpacing all other renewable sources, as well as nuclear and fossil fuels like coal and natural gas (see Figure 11). To meet the rising demand for renewable energy, significant foreign direct investments will be crucial for developing the necessary infrastructure to support this growth.

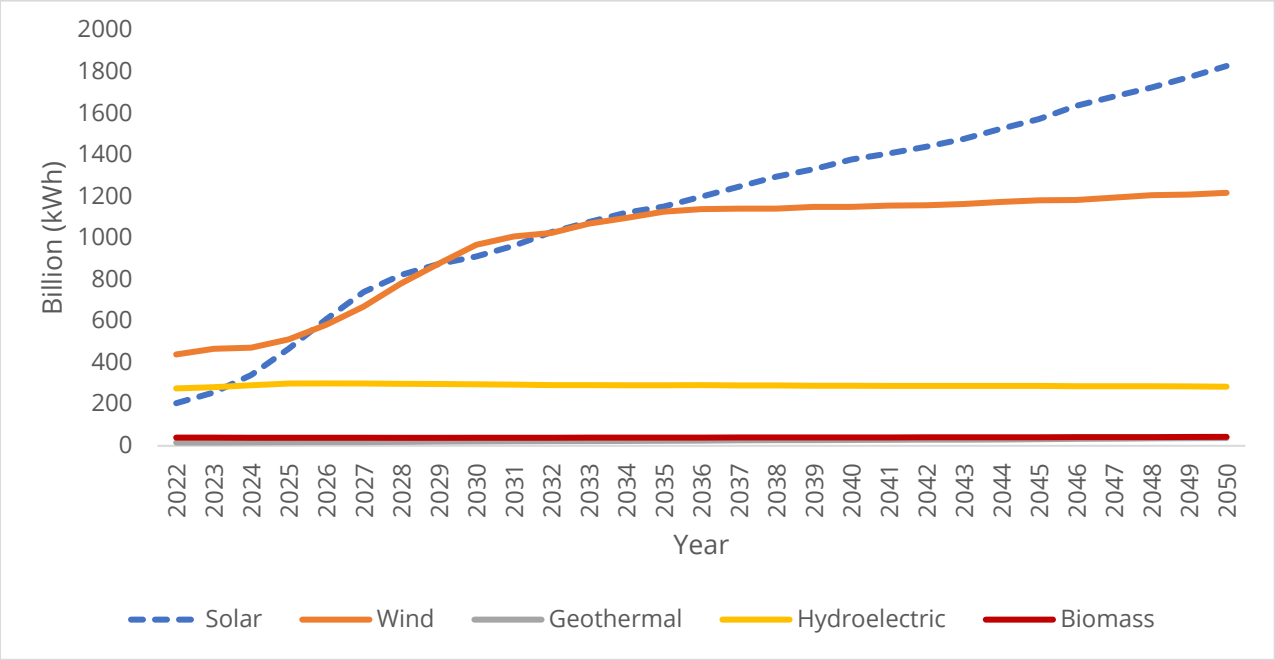
Figure 10: Average Construction Costs for Electric Generators by Source, 2013 – 2021



Source: U.S. Energy Information Administration, Construction Cost Data for Electric Generators Installed, 2024.

[13] https://www.eia.gov/electricity/generatorcosts/
[14] https://www.eia.gov/outlooks/aeo/pdf/AEO2023_Release_Presentation.pdf

Figure 11: Projected Renewable Electricity Generation by Source, 2022 – 2050



Source: U.S. Energy Information Administration, Total Energy, 2024.

SELECTUSA HAS FACILITATED NEARLY $64 BILLION IN CLEAN ENERGY FDI SINCE 2021

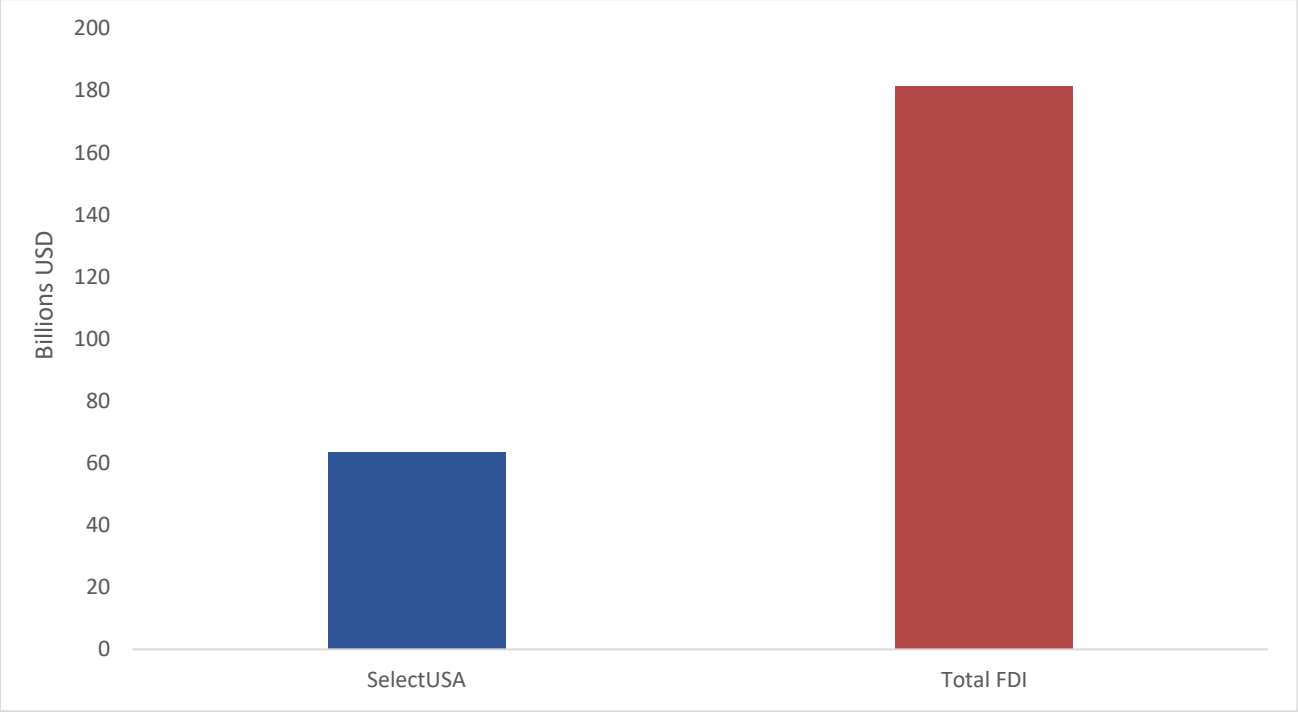
The SelectUSA program, part of the U.S. Department of Commerce, directly supports both potential and existing foreign investor companies by providing valuable information and resources to aid their investment decisions in the United States. SelectUSA offers one-on-one counseling and delivers comprehensive data reports and market research. The program also organizes the annual SelectUSA Investment Summit, the premier investment event in the United States, which connects thousands of investors, companies, economic development organizations (EDOs), and industry experts to facilitate business investment. The Investment Summit serves as a major platform for building connections, offering international client opportunities to engage with analysts, economists, and experts through various panels and networking receptions to discuss and refine FDI strategies.

To support the clean energy transition, SelectUSA as well as the IRA have worked to attract greenfield FDI projects in clean energy and technology. The substantial federal support for these greenfield climate investments highlights the United States' commitment to transitioning to a green,

advanced economy. SelectUSA continues to support clients beyond the annual SelectUSA Investment Summit by providing in-depth, on-the-ground expertise to facilitate greenfield FDI deals.

During the first three fiscal quarters of 2022, SelectUSA facilitated $4.4 billion in climate investments. After the IRA was signed into law in the fourth fiscal quarter, SelectUSA facilitated an additional $30.5 billion in climate investments. In 2023, SelectUSA was instrumental in facilitating $21.2 billion of the total $59.6 billion in climate foreign direct investments, accounting for nearly 35.5% of investments. From October 2021 to June 2024, SelectUSA facilitated a total of $63.6 billion out of $181.4 billion in greenfield climate FDI (see Figure 12). This translates to a contribution of $0.35 out of every $1.00 invested during this period, underscoring the significant impact of SelectUSA on climate investment FDI in the United States.

Figure 12: SelectUSA Outcomes as a share of Total Announced Greenfield FDI, FY 2022 – FY 2024 YTD



Source: SelectUSA climate metrics, SelectUSA, 2024. fDi Markets, 2024.

Foreign investor companies interested in investing in the United States' renewable energy sector are invited to contact SelectUSA, the United States' investment promotion initiative housed in the U.S. Department of Commerce, by emailing selectusa@trade.gov or by visiting the SelectUSA website https://www.trade.gov/selectusa-home

CONCLUSION

In addition to market-based business investment and policy commitments, extensive support from the U.S. federal government is an important driver of investments in clean energy infrastructure, generation, and adoption, and this momentum is expected to continue. Investment data and projections indicate that the demand for renewable electricity in the United States will grow significantly over the next two decades. The IRA has played a crucial role in meeting this demand by catalyzing climate investments. The U.S. Department of Treasury has outlined provisions from the IRA to encourage investment in clean and renewable energy and support future expansion. Key measures include extending the Business Energy Investment Tax Credit (ITC), which offers up to 30% in credits for qualifying climate investments[15]. These provisions are designed to stimulate a broad range of investments in solar, wind, geothermal, biofuels, clean hydrogen, carbon capture and sequestration, hydropower, tidal wave energy, electric vehicles, nuclear energy, and other clean technologies.[16]

This rapid growth in clean energy investments, manufacturing, and deployment is anticipated to lower energy costs both domestically and globally[17][18]. As the United States is projected to consume more clean energy, it will require even greater investment to meet this demand. The federal government has fostered a supportive environment for climate action through investments in clean technologies and renewable energy. The SelectUSA program significantly contributes to the supportive environment by facilitating FDI into climate investments, assisting international clients in launching projects within the U.S. clean energy market. The impact of the IRA is already evident in recent investment data and is expected to continue shaping the U.S. economy positively over time. As the United States continues its transition towards a green economy, new investment opportunities are anticipated to emerge. Investors interested in investing in the U.S. market should contact SelectUSA. The SelectUSA program conducts one-on-one client counselling and provides data and research to help investors understand and navigate U.S. market. To access these resources, investors are invited to contact SelectUSA by emailing selectusa@trade.gov or visiting the SelectUSA website https://www.trade.gov/selectusa-home.

[15] https://home.treasury.gov/policy-issues/inflation-reduction-act/ira-related-tax-guidance
[16] https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf
[17] https://laborenergy.org/wp-content/uploads/2022/08/8-6-22-IRA-Impact-Analysis-V14.pdf
[18] https://home.treasury.gov/policy-issues/inflation-reduction-act/impact-and-stories

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