



SUBMITTED STATEMENT OF
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BEFORE THE
SELECT COMMITTEE ON THE CLIMATE CRISIS
UNITED STATES HOUSE OF REPRESENTATIVES

HEARING ON
A BIG CLIMATE DEAL: LOWERING COSTS, CREATING JOBS, AND REDUCING POLLUTION WITH THE
INFLATION REDUCTION ACT

SEPTEMBER 29, 2022

A BIG CLIMATE DEAL: LOWERING COSTS, CREATING JOBS, AND REDUCING POLLUTION WITH THE INFLATION REDUCTION ACT

Chairwoman Castor, Ranking Member Graves and honorable members of the Committee,

Thank you for inviting me to testify on the policy effects of the Inflation Reduction Act (IRA). My name is Philip Rossetti, and I am a senior fellow for Energy and Environment at the R Street Institute. The R Street Institute is a nonpartisan, nonprofit think tank that emphasizes market-based solutions to policy challenges in the United States. My work at R Street specifically focuses on providing policy analysis and education around climate change, energy policy, energy security and other environmental challenges facing the nation.

In my testimony on the IRA, I would like to make three key points:

1. While we expect the IRA could have a substantial impact on U.S. greenhouse gas (GHG) emissions assuming minimal regulatory barriers to new clean energy deployment, the already low costs of renewable energy means that most of the IRA's subsidies will go to clean energy that would have been produced anyway.
2. Our own estimates of emission impact from the IRA, as well as others, are likely overstating the environmental benefits of additional subsidy due to the challenges of modeling permitting and regulatory constraints to clean energy growth. Increasingly, research is showing these factors play a greater role in clean energy growth than cost competitiveness with fossil fuels.
3. While government spending stimulates economic activity in subsidized sectors, that spending is balanced by higher taxes elsewhere in the economy. The expected overall economic effects of the IRA are slightly negative, and the legislation is not expected to have any improving effect on inflation. While we praise the deficit-reducing outcome of the legislation, lawmakers should appreciate that the effect of the legislation is to transfer wealth from taxed Americans to subsidized energy companies or other subsidy claimants.

Effects of the Inflation Reduction Act on U.S. Greenhouse Gas Emissions

In our own analyses, we compared the estimated subsidy expenditures from the Congressional Budget Office (CBO) with the projected clean energy generation and alternative fuel vehicle deployments projected by the Energy Information Administration (EIA).¹ Essentially, we took at face value that the CBO's estimated level of subsidy is correct and

¹ Philip Rossetti, "Potential Effects of the Inflation Reduction Act on Greenhouse Gas Emissions," *R Street Institute*, Sep. 27, 2022. <https://www.rstreet.org/2022/09/27/potential-effects-of-the-inflation-reduction-act-on-greenhouse-gas-emissions>.

modeled a projection of clean energy growth assuming this as representative of the volume of clean energy and alternative fuel vehicle deployments through 2031. We then compared this to the projected levels in the EIA's 2022 Annual Energy Outlook (AEO) to estimate the effect of the IRA.

We caveat these assessments with the fact that such a methodology, which has been similarly employed in other modeling exercises of the IRA, assumes that there are minimal barriers to the market entry of new resources aside from cost, and further in my testimony I will explain the mounting evidence against such an assumption. As such, our assessment should be considered highly optimistic as a scenario that assumes minimal regulatory barriers to clean energy and infrastructure growth.

We found that the IRA, at estimated subsidy volumes, could support a 37 percent increase in clean electricity generation by the year 2031, and transportation-related carbon dioxide emissions could be 5 percent lower than the reference case. Overall, energy-related carbon dioxide emissions in the United States after the IRA could be up to 35 percent below 2005 levels by 2030, whereas the reference case projects 23 percent below 2005 levels by 2030, for an effect of the IRA of reducing energy-related carbon dioxide emissions by up to 12 percent relative to 2005 levels. This estimate is consistent with similar analyses, such as that of the Rhodium Group which estimated the IRA to bring emissions down an additional 8-12 percent below 2005 levels by 2030.²

The seemingly large effect of the IRA is mostly attributable to the sheer volume of subsidy that is directed at clean energy, and especially at the electric power sector. The IRA dedicates approximately \$391 billion of subsidy toward climate and energy related priorities.³ R Street's estimate of the IRA's impact on electricity focused on \$179 billion of subsidy. With such significant spending, there is certain to be an effect. However, we feel it is important to note that we found that 67 percent of new clean electricity generation that would be eligible for subsidy under the IRA would have been produced even if the IRA had never been signed into law. While the large volume of subsidy will incentivize some new market entry, most of it will reward clean energy investors for doing what they would have done anyway.

In the transportation sector, we note that the additionality of the IRA's subsidies is even more diminished. The IRA is estimated by the CBO to expend \$7.5 billion on tax credits for new alternative fuel vehicles. At a tax credit value of \$7,500 per vehicle, the IRA would support the market entry of one million new clean vehicles through 2031. However, the EIA projects that through 2031 there will be 9 million new alternative fuel vehicle sales, including 5.8 million electric vehicle (EV) sales.⁴ The large difference between subsidy-supported vehicle sales and

² John Larsen et al., "A Turning Point for US Climate Progress: Assessing the Climate and Clean Energy Provisions in the Inflation Reduction Act," Rhodium Group, Aug. 12, 2022. <https://rhg.com/research/climate-clean-energy-inflation-reduction-act>.

³ "CBO Scores IRA with \$238 Billion of Deficit Reduction," Committee for a Responsible Federal Budget, Sept. 7, 2022. <https://www.crfb.org/blogs/cbo-scores-ira-238-billion-deficit-reduction>.

⁴ *Annual Energy Outlook 2022*, U.S. Energy Information Administration, March 3, 2022, Table 38. <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=48-AEO2022®ion=1-0&cases=ref2022&start=2020&end=2050&f=A&linechart=~~~~~ref2022-d011222a.59-48-AEO2022.1->

projected vehicle sales indicates that this particular government expenditure will have minimal environmental benefit.

The IRA does deliver some improvements to the design of clean energy subsidies though. The IRA's eventual transition to technology-neutral production and investment tax credits and clean fuel tax credits that are awarded based on emission ratios will help to mitigate the technological favoritism that has plagued clean energy subsidies for decades. Additionally, the income thresholds for vehicle subsidies will mitigate their regressive nature in the tax code. Overall, the IRA's changes that enable the market entry of new clean energy technologies on an equal footing to incumbent ones that may already be receiving subsidy is praiseworthy.

But it is important to caveat this acknowledgment with a reiteration that the large volume of subsidies directed toward environmental benefits that are projected to be attained anyway (clean electricity, EVs, etc.) yield no additional emission mitigation despite their burden to taxpayers. Continued subsidy of technologically mature energy sources, especially ones that are already cost-competitive with incumbents, functions as a wealth transfer from taxpayers to energy investors.

It should also be noted that the estimates referenced above are based on the CBO's expected changes to revenue from the IRA. If alternative claims that the IRA has a greater emission benefit than our estimate are true, then one should also expect that there will be more claimants to the IRA's subsidy and thus the overall cost of the bill will increase and the deficit reducing effects of the legislation would be reduced, worsening its net-economic outcomes. Similarly, if—as can be contested—our claims are too optimistic, then there would be fewer subsidy claimants and the costs of the legislation would be reduced, which would improve its deficit-reducing effects and overall economic impacts.

Regulatory Barriers to Clean Energy and Other Factors Mitigate Potential Benefits

A large portion of the IRA's subsidies focus on clean energy production, especially electricity. To realize these benefits, investors must be able to readily construct new facilities, and in the case of electricity interconnect them with the electric power grid. However, increasingly, research is showing that regulatory barriers are playing a larger factor in clean energy deployment than capital costs, which are not readily addressed by subsidies.

According to Lawrence Berkely National Laboratory (LBL), by the end of 2021 there were over 1,000 gigawatts (GW) of energy generation capacity in interconnection queues, and 427 GW of storage capacity.⁵ Of this, 930 GW was zero-carbon with solar (676 GW) being the largest share.⁶ LBL noted that fossil generation seeking grid interconnection is on the decline,

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⁵ “Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection,” Lawrence Berkely National Laboratory, April 2022. <https://emp.lbl.gov/queues>.

⁶ Ibid.

with 75 GW of natural gas and less than 1 GW of coal in interconnection queues. For comparison, the entire existing U.S. electric grid has a capacity of 1,144 GW.⁷ LBL also noted that time spent in queues for projects has increased from an average of 2.1 years to 3.7 years.⁸ The Department of Energy (DOE) notes that the IRA's additional subsidy for clean energy deployment will exacerbate delays.⁹

Prior to the IRA, the largest wholesale electricity market operator, PJM, planned to delay interconnection reviews for applications filed in 2021 until 2026.¹⁰ The other major grid operators face huge backlogs as well, and renewables developers report project development timelines ballooning to eight years.¹¹ This casts serious doubt on the additional deployment effects the IRA could have under current conditions.

Aside from grid interconnection, conventional permitting issues are increasingly playing a larger role for clean energy-related projects than they are for fossil ones. Last year, an R Street report noted that the median timelines for environmental impact statements under the National Environmental Policy Act (NEPA) have increased from 2.3 years in 2010 to 3.5 years by 2019 and peaked at 4.7 years in 2016.¹² R Street also noted last year that for projects requiring either an environmental assessment or an environmental impact statement under the DOE, 42 percent were related to clean energy, conservation, or transmission and 15 percent were related to fossil fuel.¹³ Similarly, 24 percent of the Bureau of Land Management's (BLM) active environmental impact statements were for renewable energy and only 13 percent were for fossil fuels.¹⁴ Additionally, BLM data shows that only 0.3 percent of oil and gas projects required an environmental impact statement, but 12 percent of renewable projects did.¹⁵ More recently, an R Street assessment of the projects listed in the Federal Permitting Dashboard noted that 65 percent of the energy-related projects were for renewable energy and 16 percent were for electricity transmission projects which are needed for clean energy growth, while only 19 percent of projects were fossil fuel related.¹⁶

⁷ "Electricity Explained: Electricity generation, capacity, and sales in the United States," U.S. Energy Information Administration, last updated July 15, 2022. <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us-generation-capacity-and-sales.php>.

⁸ "Queued Up," https://emp.lbl.gov/sites/default/files/queued_up_2021_04-13-2022.pdf.

⁹ "DOE Launches New Initiative to Improve Clean Energy Interconnection," Department of Energy, Aug. 15, 2022. <https://www.energy.gov/eere/wind/articles/doe-launches-new-initiative-improve-clean-energy-interconnection>.

¹⁰ Ethan Howland, "PJM proposes 'first-ready, first-served' interconnection review process, steps to clear backlog," *Utility Dive*, June 15, 2022. <https://www.utilitydive.com/news/pjm-interconnection-request-FERC-proposal/625544/#:~:text=Dive%20Brief%3A,the%20Federal%20Energy%20Regulatory%20Commission>.

¹¹ Emma Penrod, "Why the energy transition broke the U.S. interconnection system," *Utility Dive*, Aug. 22, 2022. <https://www.utilitydive.com/news/energy-transition-interconnection-reform-ferc-qcells/628822/>.

¹² Philip Rossetti, "Addressing NEPA-Related Infrastructure Delays," R Street Institute, July, 2021. https://www.rstreet.org/wp-content/uploads/2021/07/FINAL_RSTREET234.pdf.

¹³ *Ibid.*

¹⁴ Philip Rossetti, "The Environmental Case for Improving NEPA," R Street Institute, July 7, 2021. <https://www.rstreet.org/2021/07/07/the-environmental-case-for-improving-nepa>.

¹⁵ *Ibid.*

¹⁶ Philip Rossetti, "Permitting reform is key for renewable energy, transmission and LNG exports," R Street Institute, Sept. 20, 2022. <https://www.rstreet.org/2022/09/20/permitting-reform-is-key-for-renewable-energy-transmission-and-lng-exports>.

Overall, the data increasingly shows that renewable energy projects get caught up in red tape even more frequently than fossil fuel ones. There is increasing recognition that interconnection and permitting reform is needed for clean energy growth, and Sen. Brian Schatz (D-Hawaii) noted in a tweet that, “The environmental movement of the last generation was partly organized around stopping things. But to save the planet we are going to have to build things at unprecedented speed and scale.”¹⁷

As the IRA was passed as a budget reconciliation effort, its provisions were constrained to budgetarily related policies. As such, permitting reforms outside of additional funding are not present in the IRA, and, overall, this blunts the level of impact that the IRA can have for clean energy deployment.

As noted above, R Street’s own estimate of the IRA’s potential climate impact, and others, presume environmental benefits are attained because capital is deployed to facilities that are built and utilized. These assumptions, though, are likely far too optimistic given current evidence of clean energy interconnection timelines, minimizing the likelihood that the potential climate benefits of the IRA will be fully realized, or even mostly realized. Perhaps the most optimistic assessment of the IRA was Princeton University’s REPEAT Project, but that study caveated that 80 percent of their emission benefits would be unrealized without transmission growth.¹⁸ Given the regulatory barriers to clean energy growth, it would have been more prudent for Congress to pursue either a bipartisan clean energy package that includes permitting reform or to have passed legislation on energy permitting before allocating substantial subsidies towards clean energy priorities.

In addition to overcoming massive regulatory barriers to new project development, integrating higher levels of renewables face growing economic headwinds and yields diminishing emissions displacement. The geographic profile of renewables create congestion on the transmission system, inhibiting the ability to transport the energy to areas of high demand or greater emissions displacement. In other words, the most profitable opportunities for clean energy have been claimed first, and parts of the grid are becoming saturated with renewables.¹⁹ This is inducing a sharp uptick in transmission congestion and renewables curtailments. For example, from 2019 to 2021, renewables curtailment in Texas tripled; wind curtailment in the Great Plains increased fivefold; and curtailment increased in other renewables-rich areas like California and the Midwest.²⁰ From 2019 to 2021, transmission congestion costs have increased

¹⁷ Brian Schatz @brianschatz, “The environmental movement of the last generation was partly organized around stopping things. But to save the planet we are going to have to build things at an unprecedented speed and scale. We need to make it easier, not harder, to build big, planet saving projects.” April 30, 2022. 2:22 PM. Tweet. <https://twitter.com/brianschatz/status/1520468607293030400?lang=en>.

¹⁸ Jesse Jenkins @JesseJenkins, “2. Over 80% of the potential emissions reductions delivered by IRA in 2030 are lost if transmission expansion is constrained to 1%/year, and roughly 25% are lost if growth is limited to 1.5%/year,” Sep. 22, 2022. 1:18 PM. Tweet. <https://twitter.com/JesseJenkins/status/1572998749131264000>.

¹⁹ Devin Hartman, “Liberty never looked so green: Policy implications of private carbon-free energy commitments,” *UtilityDive*, Aug. 17, 2022. <https://www.utilitydive.com/news/liberty-never-looked-so-green-policy-implications-of-private-carbon-free-e/629625>.

²⁰ Adam Wilson, “As IRA drives renewables investment, attention turns to transmission upgrades,” S&P Capital IQ, Sept. 21, 2022. <https://www.capitaliq.spglobal.com/web/client?auth=inherit#news/article?id=72172110&KeyProductLinkType=6>.

by between 8 and 1,173 percent across the seven organized wholesale electricity markets, which incorporate most of the country.²¹

In short, energy policy analysts are increasingly concerned that clean energy and the transmission needed to support it cannot readily be built, and the IRA's budget reconciliation-oriented design means that it will exacerbate rather than mitigate these trends, independent of other policy changes.

Economic Effects of the IRA Involve Tradeoffs

The IRA's provisions are expected to increase federal savings and revenue by \$738 billion, while at the same time expending \$499 billion, resulting in a net revenue increase of \$238 billion.²² The revenue raising provisions of the IRA primarily come from changes to corporate taxes, specifically the implementation of a new corporate minimum tax. Whenever the government spends money, the recipients of that subsidy are beneficiaries. For this reason, it is common for industry-specific analysis to claim substantial economic benefits from legislation. However, equally important is the other side of the equation, which is how the government either is raising or will raise funds to pay for that subsidy, which in this case will partially come from corporate taxes and other tax increases.

The clean energy industries that are on the receiving end of hundreds of billions of dollars of subsidies, as well as workers in those industries, will be beneficiaries of the IRA. But there is also the question of whether there will be harm caused to Americans outside of the subsidized industries through changes in the corporate tax structure. Despite the name of the policy, corporations do not pay taxes; ultimately it is people who pay taxes, and the burdens of corporate taxes fall among corporate investors, workers and customers to varying degrees depending on the prevailing economic conditions at the time.²³ Who bears corporate taxes is largely dictated by the openness of the economy to global competition, and empirical estimates of corporate tax incidence have found that between 50 and 100 percent of corporate income taxes fall on corporate workers.²⁴ Even corporate taxes on "super-normal" returns, like the corporate minimum tax in the IRA, are estimated to have half their costs fall on corporate workers.²⁵

My testimony today will not cover the literature or state of debate on corporate taxes in tax policy, but I do wish to draw attention to several key findings from modeling exercises of the IRA. Firstly, the CBO in its assessment of the IRA noted that the higher corporate taxes will negatively impact the U.S. economy:

²¹ Ibid.

²² "CBO Scores IRA with \$238 Billion of Deficit Reduction," Committee for a Responsible Federal Budget, Sept. 7, 2022. <https://www.crfb.org/blogs/cbo-scores-ira-238-billion-deficit-reduction>.

²³ Greg Mankiw, "Corporate Tax Rates," Greg Mankiw's Blog, May 3, 2006. <https://gregmankiw.blogspot.com/2006/05/corporate-tax-rates.html>.

²⁴ Stephen J. Entin, "Labor Bears Much of the Cost of the Corporate Tax," Tax Foundation, Oct. 24, 2017. <https://taxfoundation.org/labor-bears-corporate-tax>.

²⁵ Ibid.

In CBO's assessment, the proposed new corporate minimum tax would reduce the incentive for those large corporations to invest, primarily by limiting the tax benefit of accelerated depreciation and by decreasing the after-tax return on their new investment...By setting a new minimum tax, section 10101 would limit the tax benefit of accelerated depreciation for affected corporations and, all else being equal, reduce their business investment.²⁶

The CBO noted that reduced deficits could offset the negative effect of the changes in corporate taxes but stated that achieving as much depends on various factors. Additionally, the Joint Committee on Taxation (JCT), in estimating who will bear the costs of the IRA's tax increases, noted that the distributional changes are most prominent at the top and bottom income ranges. Americans earning less than \$10,000 per year are expected to have a 3.1 percent increase in federal taxes in 2023, and a 1.8 percent increase in 2031.²⁷ Americans earning more than \$1 million per year are expected to have 1.9 percent higher taxes in 2023, and 0.1 percent higher taxes in 2031.²⁸

The governmental analyses from the CBO and the JCT are also consistent with the estimated effects on GDP and income by the Tax Foundation. The Tax Foundation estimates that in the long run, the IRA will reduce GDP by 0.2 percent, reduce real wages by 0.1 percent and reduce capital stock in the economy by 0.3 percent, resulting in a loss of 29,000 full-time equivalent jobs overall.²⁹ The Tax Foundation also finds that although subsidies may buoy incomes in the near term, in the long run all income groups have lower income.³⁰

Any impact on inflation, which would potentially improve after-tax incomes, is expected to be minimal. The CBO estimated that the IRA will have between -0.1 and +0.1 percent change in inflation next year, which is consistent with the Tax Foundation's estimate that the IRA's impact on inflation is "likely close to zero."³¹

In effect, the IRA has two sides to its provisions. On the one hand, deficit reduction and subsidy yield benefits to select sectors, but the method of paying for these creates hardship in other sectors of the economy that counteract these benefits. R Street also noted in its analysis of the IRA that monetized environmental benefits are unlikely to make the IRA net-beneficial, due to its inefficient subsidy structure. When considering opportunity costs, the IRA is more likely to

²⁶ Phillip L. Swagel, "Economic Analysis of Budget Reconciliation Legislation," Congressional Budget Office, Aug. 4, 2022. <https://www.cbo.gov/system/files/2022-08/58357-Graham.pdf>.

²⁷ "Distributional Effects of Title I – Committee on Finance of an Amendment in the Nature of a Substitute to H.R. 5376, The Inflation Reduction Act of 2022," Joint Committee on Taxation, July 29, 2022. https://www.finance.senate.gov/imo/media/doc/jct_distributional_effects_inflation_reduction_act.pdf.

²⁸ Ibid.

²⁹ Alex Durante et al., "Details & Analysis of the Inflation Reduction Act Tax Provisions," Tax Foundation, Aug. 12, 2022. <https://taxfoundation.org/inflation-reduction-act/>.

³⁰ Ibid.

³¹ Phillip L. Swagel, "Economic Analysis of Budget Reconciliation Legislation," Congressional Budget Office, Aug. 4, 2022. <https://www.cbo.gov/system/files/2022-08/58357-Graham.pdf>; Durante et al. <https://taxfoundation.org/inflation-reduction-act>.

be a negative event for the U.S. economy than a positive one, but overall, the counteracting positive and negative effects of the law largely cancel each other out.

Conclusion

Thank you again Chairwoman Castor, Ranking Member Graves and honorable members of the committee for holding this hearing. If I can be of any assistance to members of the Committee, please feel free to contact me or my colleagues at the R Street Institute.

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