

Historic Climate Legislation Passed

by Perry Bryant

There's a lot to the Inflation Reduction Act (IRA). This article summarizes the major energy and environmental provisions of the IRA, provides details on retrofitting homes for greater energy efficiency, and details on the tax incentives for purchasing an electric vehicle. West Virginians will benefit from this historic legislation through money-saving incentives and additional support for communities on the frontlines in the transition to clean energy.

HISTORICAL CONTEXT

Climate legislation usually dies in the US Senate. For example, cap and trade legislation died there in 2009. But not this time. The Senate passed, and President Biden has signed into law, the Inflation Reduction Act (IRA), providing almost \$370 billion in funding over the next ten years to significantly reduce America's greenhouse gas emissions.

The IRA will cut the United States' emissions by 42% by 2030, instead of the 27% projected prior to the passage of the IRA, according to Princeton University's Zero Lab. The 42% cut puts the US close to meeting our Paris climate goals of a 50 - 52% reduction in emissions by 2030.

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Importantly, the IRA reasserts America's world leadership on climate, increasing the chances that China, India, and other countries will up their commitment during the upcoming UN climate conference in Egypt this November.

ENERGY PRODUCTION

Homeowners who install a solar array or a wind turbine can get a 30% tax credit. That credit is available for the next 10 years. A 30% tax credit for battery storage becomes available in January and will also last till 2032.

Utility-grade solar, wind, geothermal, and batteries also qualify for the 30% investment tax credit if the developer pays prevailing wages and has an apprenticeship program. Solar and wind projects can qualify for additional tax credits if they are located in "energy communities", which includes brownfield sites, communities with high unemployment, or in a census tract where a coal mine or a coal-fired power plant recently closed. Under those circumstances, a facility can qualify for a 40% tax credit.

By 2030, the amount of solar energy produced in the US is expected to increase fourfold; wind energy threefold; and battery storage fourteen-fold. The IRA could well make the 2020s the decade of renewables.

ENERGY EFFICIENCY



The IRA revives a tax credit program for homeowners who install energy efficiency measures. The *Energy Efficiency Home Improvement Credit* had lapsed. However, the IRA revived this program, making the benefits retroactive to 2022. The 2022 benefits only pay 10% of the improvements, with annual and lifetime caps. Beginning in 2023, the benefit increases to 30%, with improved lifetime caps. These benefits are available regardless of income.

The IRA also recognizes that many low and moderate-income families have limited or no tax liability, nor the luxury of waiting until next April for a tax return. Accordingly, the IRA establishes two new rebate (not tax credit) programs targeted to low- and moderate-income families to help homeowners retrofit their homes to make them more energy efficient.

One of two new rebate programs focuses on electrification of homes and is called the *High-Efficiency Electric Home Rebate Program*. Examples of this program include rebates for electric heat pumps or upgrading an electrical service. The greatest benefits go to low-income families, although there are significant benefits for moderate-income families. These rebates are available at the time of purchase.

The second new program – *Home Owners Managing Energy Savings* (HOMES) – also provides rebates depending on how much energy is projected to be saved from the retrofit. The larger the energy savings, the greater the rebates. It provides enhanced benefits to low-income households, but is available to moderate-income households.

Both of these energy efficiency rebate programs will be run by the state, which must submit a draft program to the US Department of Energy for approval before benefits will be available. It is unclear how soon West Virginia will do that. The revived tax credit program, however, is in effect now, with enhanced benefits beginning January 1, 2023.

Details on all three of these programs, including eligibility guidelines and what they will pay for are at the end of this article.

ELECTRIC VEHICLES (EVs)

Transportation is the largest source of greenhouse gas emissions in the country. Electric vehicles (EVs) have zero greenhouse gas emissions and will substantially reduce the nation's transportation emissions. During negotiations on the IRA, Senator Manchin expressed concerns about providing incentives that would encourage EV purchases with batteries made in China and reliance on critical minerals used to produce EV batteries mined in countries outside North America. The final version of the IRA places significant restrictions on EV tax credits that reflect Senator Manchin's concerns. These restrictions may well impact how successful the EV tax credits will be in promoting the sale of electric vehicles. The details of these tax credits and their restrictions are outlined at the end of this article.

JUST TRANSITION

As the country transitions away from coal and towards renewables for electric generation, there will be loss of coal mining jobs. To compensate, the IRA provides for the creation of good-paying manufacturing jobs. There is \$10 billion in tax credits for manufacturing clean energy components such as solar panels, wind turbines, parts for EVs, etc. Section 48C of the IRS tax code provides a 30% tax credit for manufacturing clean energy components. Funding is not guaranteed, but is awarded on a competitive basis. Of the \$10 billion in funding, \$4 billion must be spent in “coal communities” where a coal mine or a coal-fired power plant has recently closed. This is a golden opportunity to diversify the state’s economy, particularly in southern West Virginia.

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METHANE FEE

Methane is a very powerful greenhouse gas. Over a 100-year period, it is 25 times more potent at trapping heat in the atmosphere than carbon dioxide (CO₂). Unlike CO₂, which impacts the atmosphere for hundreds of years, methane dissipates in 10 to 12 years. So, reducing methane emissions can have immediate impact on global warming.

The oil and natural gas industry is a top source of U.S. emissions of methane. They emit methane at every step in the production of oil and natural gas: drilling, processing, and distribution. The IRA imposes a fee on methane emissions of \$900 per metric ton beginning in 2024, increasing to \$1,500 per ton by 2026. The fee applies to large methane emitters, exempting small operators, who emit as much as 60% of all methane emissions, according to the Congressional Research Service. The IRA provides \$1.5 billion in grants and other incentives to oil and natural gas companies to help reduce their methane emissions. If companies comply with an anticipated new EPA regulation on methane emissions, they will be exempt from the methane fee.

BLACK LUNG

Last year, the tax on the mining of coal that historically funded the black lung program expired. The IRA permanently restores that tax on coal mining to fund the black lung program, making coal companies responsible for the harm they cause.



FOSSIL FUELS

The IRA reflects Senator Manchin’s “all of the above” strategy for energy development. For example, the bill prohibits the Department of the Interior from approving renewable energy development on federal property unless it also opens lands to oil and gas development.

To issue rights-of-way on federal property for solar and wind development, the Department of the Interior is required to lease as much as 2 million acres onshore each year and at least 60 million acres offshore each year for oil and gas development. (Inside Climate News, July 28, 2022.) Leasing reform is also included in the IRA. Measures include “raising royalty rates and rental rates to hold a lease, eliminating non-competitive bidding, (and) raising bonding requirements.” (West Virginia Rivers Coalition, August 9, 2022.)



The IRA also provides enhanced benefits for carbon capture and storage (CCS). CCS technology removes CO₂ from the flue gases at coal- or gas-fired power plants or industrial facilities (e.g., cement or steel plants). CCS technology is not currently economically viable. Demonstration projects have struggled or failed. The IRA increases the amount of tax credits that a company can claim for storing CO₂ from the current \$50 per ton of CO₂ to \$85 per ton of CO₂.

AGRICULTURE AND FORESTRY

The IRA provides \$20 billion to help farmers reduce and store greenhouse gases. An additional \$14 billion will help rural electric co-ops transition to renewable forms of energy production.

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ENVIRONMENTAL JUSTICE

The IRA supports low-income communities and communities of color with numerous provisions. Here are two examples. The Greenhouse Gas Reduction Fund, sometimes referred to as the “Green Bank,” provides EPA with \$27 billion in funding, intended to leverage private funding to develop low- and zero-emission projects. Nonprofit financing institutions will be eligible for \$20 billion, and 40% (\$8 billion) must be invested in low-income and disadvantaged communities.

The Environmental and Climate Justice Block Grants provide EPA with \$3 billion for environmental justice projects for disadvantaged communities. Eligible activities include pollution monitoring, transportation emissions reduction, and pollution prevention.

CONCLUSION

There is a lot in the IRA. This review touches only on some more important provisions. One weakness of the IRA is that it does not require individuals or most industries to take any action. There are plenty of carrots, but few sticks. President Biden will have to develop the sticks. One can only hope that the combination of the IRA carrots and President Biden's regulatory action will be enough to make the monumental transition away from fossil fuels to renewables; a transition the International Energy Agency called the most difficult in human history.

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The IRA is foundational to this transition. This is not just the largest investment in clean energy ever passed by Congress. It is also the world's largest investment in clean energy ever. It creates an opportunity for the US to lead on climate reform and conceivably hold global warming to an increase of 1.5 degrees Celsius: a daunting challenge. But at least one we now have an opportunity to achieve, thanks to the IRA.

DETAILS ON THE ENERGY EFFICIENCY INCENTIVES

There is one revived tax credit program for energy efficiency and two new energy efficiency rebate programs in the IRA.

The *Energy Efficiency Home Improvement Credit* had lapsed. The IRA revives it and makes it retroactive to 2022. In 2022, tax credits are limited to a 10% credit on qualified efficiency measures, with a \$500 lifetime cap. Beginning in January 2023, the credit increases to 30%, and the lifetime cap on benefits is replaced with a cap of \$600 per measure with an annual cap of \$1,200. Exceptions to the limit of \$600 per measure are listed in parenthesis in the chart below.

Heat pumps and heat pump water heaters (\$2,000 tax credit)
Insulation and air sealing
Energy audits (\$150 tax credit)
Energy-efficient HVAC systems (including furnaces, boilers, and central AC)
Electrical panel upgrades; must be at least 200 amps capacity
Energy-efficient windows and doors (\$500 tax credit for doors)

Home improvements equipment must be highly rated by Energy Star or other rating system. The *Energy Efficiency Home Improvement Credit* program is open to all tax payers regardless of income.

The *High-Efficiency Electric Home Rebate Program* is one of the two new energy-efficiency rebate programs in the IRA. Both programs focus benefits on low-and moderate-income families, and make the rebates available at the point of purchase. This first program provides rebates (not tax credits) to low-income homeowners for 100% of the amount listed below for installing electrical upgrades:

Heat pump water heater	\$1,750
Heat pump for HVAC	\$8,000
Electric stove or heat pump clothes dryer	\$840
Electric service upgrade	\$4,000
Insulation and air sealing	\$1,600
Electrical wiring	\$2,500

Low-income homeowners are defined as households that earn less than 80% of the area median income as determined by the US Department of Housing and Urban Development (HUD) (see the chart below). Multi-family properties qualify if 50% of residents meet this income requirement.

Moderate-income households qualify for 50% of the maximum benefit. For example, a moderate-income family can receive a rebate up to \$4,000 for installing a heat pump if they earn between 80% and 150% of the area median income as defined by HUD (see the chart below). Multi-family properties qualify if 50% of residents meet these income requirements. Households earning more than 150% of median income do not qualify for these rebates.

According to the HUD website,¹ estimates for income levels for 80% and 150% of median income for West Virginia in 2021 are shown below. These are 2021 figures, so they will change. They are the best data available, and should be only considered estimates.

Household Size	80% of the median income in West Virginia	150% of the median income in West Virginia
1	\$33,750	\$63,300
2	\$38,600	\$72,300
3	\$43,400	\$81,450
4	\$48,250	\$90,450

The second energy efficiency program is the *Home Owner Managing Energy Savings* (HOMES) program. This open-ended program does not provide a rebate for installing a particular energy efficient measure. Rather the rebate is determined by how much energy is saved by the retrofit. To qualify, a homeowner must have an energy audit, to project how much energy will be saved. The greater the energy savings, the greater the rebates.

¹ See https://www.huduser.gov/portal/datasets/il/il2021/2021summary.odn?inputname=ST-TL*5499999999%2BWest+Virginia&selection_type=county&stname=West+Virginia&statefp=54.0&year=2021

<p>Retrofits that save 35% or more of the household's energy get a rebate of \$4,000 or 50% of the project costs, whichever is less. For low-income families making less than 80% of HUD's area median income, benefits increase to \$8,000 or 80% of cost, whichever is less.</p>	<p>Retrofits that save between 20% and 35% of the household's energy get a \$2,000 rebate or 50% of the project costs, whichever is less. For low-income families making less than 80% of HUD's area median income, benefits increase to \$4,000 or 80% of cost, whichever is less.</p>	<p>Alternatively, retrofits that achieve energy savings of at least 15% receive "a payment rate per kilowatt hour saved...equal to \$2,000 for a 20% reduction of energy use for the average home in the state." Benefits increase for households earning less than 80% of the HUD's area median income.</p>
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Benefits from these three energy efficiency programs cannot be combined. The tax credit program is administered by the IRS, and is currently in effect. Both of the new rebate programs will be run by the state. The state must submit a draft program to the US Department of Energy for approval, before benefits will be available. It is unclear how soon West Virginia will do so.

DETAILS ON THE ELECTRIC VEHICLES (EVs) TAX CREDITS

Before the IRA, the EV tax credit was limited to the first 200,000 customers for each car manufacturer. Tesla and General Motors have already reached that limit. Toyota will shortly. The IRA eliminates this cap. Additionally, eligible tax credits can now be applied at the point of the sale, rather than waiting for a tax refund. In order to qualify for a tax credit, EVs are now required to be assembled in North America.

The EV tax credit is up to \$7,500 per vehicle, and is split equally into two buckets. The first bucket, providing a tax credit up to \$3,750, requires batteries to be manufactured or assembled in North America. In 2023, when these tax credits become effective, 50% of the batteries have to be manufactured or assembled in North America. That increases to 100% by 2029.

The second bucket is a tax credit up to \$3,750, and is contingent on where minerals in the batteries are mined or processed. Beginning in 2023, 40% of these minerals (e.g., lithium, cobalt, and nickel) in EV batteries must be mined, processed or recycled in North America. This increases each year until 2027 when 80% of the battery's minerals must be mined, processed, or recycled in North America.



It is unclear how quickly EV manufacturers can develop supply chains to meet these requirements. The US is heavily dependent on China for lithium-ion battery cells (80%) as well as graphite used for battery electrodes. EV manufacturers that can break this reliance on China will have a competitive advantage over manufacturers that cannot do so.

There are also limits on the cost of EVs and income limits on taxpayers who can qualify for EV tax credits. EV cars must cost less than \$55,000 and SUVs and light trucks must cost less than \$80,000 to qualify for the tax credit. Individuals earning more than \$150,000 and couples earning more than \$300,000 do not qualify for the credits.

Used EVs sold by a car dealer qualify for tax credits of up to \$4,000 or 30% of the sales price, whichever is less. The sales price cannot exceed \$25,000 and the EV must be at least two years old. Individuals who buy a used EV cannot earn more than \$75,000 (joint filers \$150,000) a year. These tax credits take effect January 1, 2023.

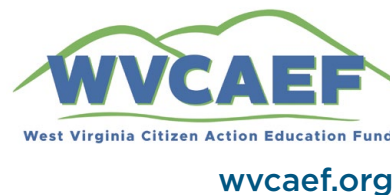
ABOUT THE AUTHOR

Perry Bryant wrote this summary of the Inflation Reduction Act and is solely responsible for its content. Perry was also the principal author of *A Citizens Guide to Climate Change: The Causes, Impacts, and Potential Solutions*. He helped found the West Virginia Climate Alliance, a broad-based coalition of environmental organizations, faith-based organizations, civil rights and civic organizations, and other climate organizations. Perry is retired from West Virginians for Affordable Health Care and lives in Charleston, West Virginia.

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West Virginia Rivers Coalition (WV Rivers) is a 501(c)(3) non-profit organization. For over thirty years, WV Rivers has served as the statewide voice for water-based recreation and clean, drinkable, swimmable, and fishable rivers and streams – from the headwaters to wherever water flows in West Virginia. WV Rivers is the West Virginia state affiliate of the National Wildlife Federation and a licensed program of the Waterkeeper Alliance.



West Virginia Citizen Action Education Fund (WV-CAEF) provides original research and public education on progressive issues facing the people of Appalachia such as environmental & consumer protection, media access, public policy, government & corporate accountability, universal health care, and elimination of all forms of discrimination. WV-CAEF feels it is essential for our state and nation to take a bold approach in addressing climate change and supports a swift and just transition to a renewable energy economy.



West Virginia New Jobs Coalition is a partnership of organizations seeking to bring the new energy economy's well-paying jobs to the Mountain State. We want our state to be a place where people stay to live and work, raise families, and retire. More new energy jobs means more money in our pockets, funds for retirement, better neighborhood schools for our kids, and more funds for the state to provide the resources we need.