

Inflation Reduction Act (IRA) Framework: Energy Policy – Summary and Analysis

BROWNSTEIN CLIENT ALERT, AUGUST 1, 2022

On July 27, Sen. Joe Manchin (D-WV) and Senate Majority Leader Chuck Schumer (D-NY) announced a surprise [agreement](#) on a roughly \$750 billion tax, energy and health care package including \$370 billion in energy security and climate investments. The agreement comes following weeks of negotiations on a budget reconciliation deal that advances President Biden's policy agenda without significantly increasing inflation. The senators reached a compromise and introduced the Inflation Reduction Act (IRA) of 2022. The bill seeks to reduce greenhouse gas emissions by around 40% by 2030. Energy and climate provisions in the new package would represent the largest climate investment in American history. This memo outlines the new energy policy (Section 1) and related energy tax provisions (Section 2) within the bill.

The path forward for the proposed bill is currently unclear. Procedurally, the proposal must be reviewed by the Senate parliamentarian. Additionally, Sen. Kyrsten Sinema (D-AZ), who was heavily engaged in reconciliation discussions late last year, has not yet commented on the proposal. Beyond Sinema, passage of the bill will require the support of every Senate Democrat and almost every Democratic representative. The Senate is scheduled to begin its August recess at the end of this week, so it is unknown when Congress may consider the bill.

The full bill text is linked [here](#).

Section 1: Non-Tax Energy and Climate Provisions

Onshore Oil and Gas

- Increases the minimum onshore oil royalty rate to 16.66%, up from 12.5%.
- Requires the administration to offer 2 million acres of federal land onshore for lease annually, or half of all the land nominated for leasing and hold a lease sale within 120 days of issuing any wind or solar rights of way.
- Increases minimum lease bid and ends provision for non-competitive leasing.
- Increases annual rental rates for holding a lease.
- Imposes a new interest fee for leasing of \$5 per acre.
- Increases minimum financial requirements for bonding.

Offshore Oil and Gas

- Validates offshore oil and gas lease sale 257 and requires three more lease sales to take place by the end of 2023.
- Requires the administration to conduct an oil and gas sale of at least 60 million acres in order to issue any offshore wind leases the following year.

- Mandates offshore oil and gas lease sales in the Gulf of Mexico and off the coast of Alaska. Specifically requires offshore lease sales 258, 259 and 261 to be held. Sets offshore royalty rates at no less than 16.66%.

Onshore and Offshore Oil and Gas

- Creates fees for facilities that emit more than 25,000 metric tons of carbon dioxide annually beginning in 2025 if methane leakage rates exceed a certain threshold. This applies to facilities that support oil and gas production, including transmission, processing, storage or gathering facilities. The bill would allow companies that comply with future federal methane rules to avoid paying the fee as long as the same levels of emissions reduction are reached. The fees would apply as follows:
 - \$900 per ton for emissions reported for 2024;
 - \$1,200 per ton for emissions reported for 2025; and
 - \$1,500 per ton for emissions reported for 2026.
- \$850 million in financial incentives through the Methane Emissions Reduction Program for industry to monitor and reduce methane.
- Stipulates that royalties will be paid onshore and offshore for all gas produced, including gas that is vented, flared or negligently released. Exceptions are made for releases for health, safety and environment; gas used beneficially within the area of the lease; and gas unavoidably lost.

Offshore Wind

- Lifts the moratorium on offshore wind in the Southeastern U.S. and Gulf of Mexico.
- \$100 million for offshore wind planning, transmission and development.
- Provides staffing funding for the Bureau of Ocean Energy Management (BOEM) and the National Oceanic and Atmospheric Administration (NOAA).
- \$20 million for NOAA to expedite permitting and review processes.
- Allows for leasing in the U.S. territories.
- Interregional and Offshore Wind Electricity Transmission Planning, Modeling and Analysis

Decarbonization and Emission Reduction

The bill contains a number of provisions that address emissions across all sectors. Some of the new measures include:

- \$27 billion in federal investments through the Greenhouse Gas Reduction Fund to support the deployment of low- and zero-emission technologies. This set aside has been referred to as the "green bank" aimed at deploying clean energy projects.
- \$300 million to carry out a carbon sequestration and greenhouse gas emissions quantification program.
- \$244 million for projects relating to the production, transportation, blending or storage of sustainable aviation fuel.
- \$150 million for carbon sequestration projects through the Office of Fossil Energy and Carbon Management.
- \$1.5 billion for EPA to help oil and gas companies reduce methane emissions through technical assistance to improve greenhouse gas reporting, shut-in wells and deploying methane-reduction equipment and processes.
- \$3 billion to reduce air pollution at ports.
- \$250 million for EPA to develop and carry out a program to support the development, and enhanced standardization and transparency, of environmental product declarations for construction materials and products.

- \$100 million for EPA to develop a program for construction materials used in transportation projects and construction materials used for federal buildings, to identify and label low-embodied carbon construction materials and products.
- \$2.15 billion to be deposited in the Federal Buildings Fund to acquire and install low-embodied carbon materials and products for use in the construction or alteration of buildings.
- \$2 billion in low-carbon transportation materials grants.
- Allows for FEMA to provide financial assistance for costs associated with low-carbon materials; and incentives that encourage low-carbon and net-zero energy projects.

Clean Energy Investments

- \$9 billion for federal procurement of American-made clean technologies.
- \$9 billion in consumer home energy rebate programs, focused on low-income consumers, to electrify appliances and retrofit homes.
- \$30 billion in targeted grants for states and electric utilities to accelerate the transition to clean electricity.
- \$6 billion for a new Advanced Industrial Facilities Deployment Program to reduce emissions from the largest industrial emitters.
- \$1 billion grant program to make affordable housing more energy efficient.
- \$3 billion in Neighborhood Access and Equity Grants to support equitable transportation planning and community engagement activities, supporting President Biden's Environmental Justice initiative.
- \$60 billion for low-income communities that are disproportionately impacted by the environmental and public health effects of climate change.
- \$150 million to the Office of Nuclear Energy for activities to support nuclear infrastructure and general plant projects.
- \$2 billion for domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive and hydrogen fuel cell electric vehicles.

Forestry

- \$1.8 billion for hazardous fuels reduction projects on National Forest System land within the wildland-urban interface.
- \$100 million for more efficient environmental reviews under the National Environmental Policy Act (NEPA).
- \$200 million for vegetation management projects on National Forest System land carried out with a water source management or a watershed protection and restoration action plan.
- \$150 million competitive grant for non-federal forest landowners to carry out climate mitigation or forest resilience practices.
- \$150 million competitive grant for non-federal forest landowners to carry out climate mitigation or forest resilience practice in emerging private markets.
- \$50 million to states and other eligible entities for the implementation of forestry practices on private forest land that increase carbon sequestration and storage.
- \$100 million competitive grant for forest landowners who own less than 2,500 acres of forest land in emerging private markets for climate mitigation or forest resilience.

Domestic Mining and Manufacturing

- \$500 million in the Defense Production Act (DPA) for heat pumps and critical minerals processing.
- \$2 billion for National Labs to accelerate breakthrough energy research.
- \$20 billion in loans to build new clean vehicle manufacturing facilities across the country.

- Over \$60 billion to onshore clean energy manufacturing across the supply chain of clean energy and transportation technologies.
- \$2 billion in grants to retool existing auto manufacturing facilities to produce clean vehicles.

Section 2: Tax Energy and Climate Provisions

Subtitle D—Energy Security

Part 1—Clean Electricity and Reducing Carbon Emissions

IRA Section 13101 [SFC Section 126101]. Extension and Modification of Credit for Electricity Produced from Certain Renewable Resources.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Extends the section 45 production tax credit (PTC) allowing producers to claim a base credit of 0.3 cents per kilowatt-hour and bonus credit of 1.5 cents per kilowatt-hour (indexed to inflation). The bonus credit is subject to the producer satisfying the new prevailing-wage requirements during the facility’s construction and the 10-year credit period, as well as meeting the new apprenticeship requirements.
- Qualifying generation facilities include most sources of renewable electricity generation, including wind, solar, geothermal, hydropower, biomass and municipal solid waste.
- A qualified facility would be eligible for the bonus credit even if it does not meet the prevailing-wage and apprenticeship requirements provided construction of the facility begins prior to 60 days after the secretary of labor publishes guidance with respect to the wage and apprenticeship requirements—or if the facility has a maximum net output of less than one megawatt.
- The prevailing-wage requirement applies to the taxpayer and its contractors and requires that employees receive the prevailing-wage rates for construction, alteration or repair in the project’s locality as determined by the secretary of labor, in accordance with subchapter IV of chapter 31, of title 40, U.S. Code. Rules are provided to cure noncompliance, subject to a penalty of \$5,000 per affected worker. A \$10,000 penalty applies if noncompliance was due to intentional disregard.
- The apprenticeship requirement is satisfied by ensuring that for projects beginning in or after 2024, not less than 15% (10% for projects with construction beginning before 2023 and 12.5% for projects beginning in 2023) of the total labor hours for construction, alteration or repair work on any applicable project are performed by qualified apprentices. An exception can be obtained if the taxpayer demonstrates a lack of available qualified apprentices in the area for the construction, alteration or repair work and makes a good faith effort to comply with the requirement. Rules are provided to cure noncompliance, subject to a penalty of \$50 per hour (increased to \$500 per hour if the taxpayer intentionally disregards the rules) of apprenticeship requirement that has not been met, capped at the value of the credit.
- The credit value is increased by 10% if the facilities meet domestic-content requirements.
- **The domestic-content provision generally requires that a certain percentage of the total cost of the components are mined, produced or manufactured in the United States. The IRA framework sets this at 40% for most facilities (20% for offshore wind facilities). The Senate Finance Committee version included a scaling threshold that required increasing levels of domestic content depending on the**

year that construction begins; this no longer applies, and the domestic-content requirement is a flat percent.

- The Treasury Department secretary is permitted to make exceptions to domestic-content requirements where relevant components are not produced in sufficient supply in the United States, or the requirement would increase the overall cost of the project by more than 25%.
- The credit value is increased by 10% for projects in energy communities, where a coal mine has closed or a coal-fired electric generating unit has been retired.
- **The IRA version generally expands the definition of a qualified energy community to include brownfields or facilities that are located in, or adjacent to, a census tract that contains (or recently contained) "significant" employment in the processing, mining, transport or storage of coal, oil or natural gas (as determined by the secretary of the treasury).**
- Modifies the formula for calculating the reduced credit amount for tax-exempt bonds to allow for a greater reduced amount to be claimed.
- **Qualified hydroelectric production and marine and hydrokinetic renewable energy qualify for the full credit amount and are no longer subject to a rate reduction of one-half for electricity produced. The nameplate capacity rating for a qualified facility is reduced from 150 kilowatts to 25 kilowatts.**
- **All modifications are effective for projects which are placed in service after Dec. 31, 2021, and that construction begins before Jan. 1, 2025. Following this date, the credit switches to a tech-neutral version (see Section 13701 below). The Senate Finance Committee version allowed for facilities placed in service through 2026.**
- Impact: The credit would incentivize the production of clean electricity. The proposed IRA framework shortens the length of the PTC before it transitions to tech neutral. It would also make it easier to qualify for the domestic content restrictions and expand eligibility for the 10% bonus credit through the energy communities clause.

IRA Section 13102 [SFC Section 126102]. Extension and Modification of Energy Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- The section 48 investment tax credit (ITC) provides a base credit of 6% for fuel cell, qualified small wind, waste energy recovery and solar energy property (2% for all other energy properties) and a bonus credit of 30% for projects meeting the prevailing-wage and apprenticeship requirements. (See Section 136101 above.)
- **The credit also includes energy storage technology with a minimum capacity of at least 5 kilowatt-hours; qualified biogas property forming gas of not less than 52% methane; linear generators with a nameplate capacity of at least 1 kilowatt-hour; thermal energy storage property; dynamic glass; and microgrid controllers at a base credit rate of 6% (bonus credit rate of 30%).**
- **Hydropower environmental improvement property no longer qualifies as energy property for purposes of the credit. The Senate Finance Committee version allowed qualified property to receive a 6% base credit (30% bonus credit).**
- The base credit amount is increased to 26% for projects that began construction after Dec. 31, 2019, and were placed in service before Jan. 1, 2022.
- **The base credit is increased by 2% if the facilities meet domestic-content requirements and by 10% where the prevailing-wage and apprenticeship requirements are also met (see Section 13101 above for modified bonus credit requirements).**

- **Projects in energy communities are also eligible for a bonus credit (see Section 13101 above).**
- The tax-exempt bond rules similar to those applicable to the PTC apply (See Section 13101 above).
- **Applies to facilities placed in service after Dec. 31, 2021. Construction on the facility must begin before Jan. 1, 2025. Following this date, the credit switches to a tech-neutral version (see Section 13702 below). The Senate Finance Committee version allowed for facilities placed in service through 2026.**
- **However, the IRA extends the credit, with a phasedown, for taxpayers that begin construction of energy equipment that uses the ground or groundwater as a thermal energy source to heat a structure or as a thermal energy sink to cool a structure if construction begins before 2034. The Senate Finance Committee version required that construction begins on these facilities by the end of 2033.**
- Impact: The credit would incentivize investments in clean electricity facilities. The proposed IRA framework shortens the length of the ITC before it transitions to tech neutral.

IRA Section 13103 [SFC Section 126103]. Increase in Energy Credit for Solar Facilities Placed in Service in Connection with Low-Income Communities.

(Changes made to the Senate Finance Committee version of the bill are in blue)

- Expands the section 48 ITC to include solar and wind facilities located in low-income or Native American communities, including energy-storage technology property, provided the facility receives an allocation of environmental justice solar and wind capacity.
- Requires the Treasury Department secretary, in consultation with the Energy Department secretary and the EPA administrator, to allocate an annual environmental justice solar and wind capacity limitation to qualifying projects based on those with the greatest health and economic benefit, the greatest employment and wages and the greatest engagement with local governments, Indian tribal governments and community-based organizations.
- **Sets the annual capacity limitation from 2023 through 2024 at 1.8 gigawatts direct-current capacity and zero thereafter, taking into account the prior year's unused credit allocations through 2026.**
- Increases the allocation by an additional 10% if the project is located in a low-income community or on an Indian reservation, and 20% if the project is a qualifying low-income residential building project or low-income economic benefit project.
- The selection criteria for determining the allocation of environmental justice solar and wind capacity limitation to qualified solar and wind facilities has been eliminated.
- Impact: Creates an investment incentive for solar and wind facilities in qualifying low-income residential and Native American building projects. There would be no specific changes in comparison to previous iterations of the credit.

IRA Section 13104 [SFC Section 126106] Extension and Modification of Credit for Carbon Oxide Sequestration.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Extends and expands the section 45Q carbon oxide sequestration credit for facilities that begin construction before 2032. Direct-air capture (DAC) facilities would qualify for the enhanced credit if they capture at least 1,000 metric tons of carbon oxide per year. Electricity-generating facilities would be required to capture at least 18,750 metric tons of carbon oxide and at least 75% of total carbon emissions that otherwise would have been

released by the facility. All other facilities would be required to capture at least 12,500 metric tons of carbon oxide per year to qualify for the credit.

- For geological storage, the base credit rate is \$17, and the bonus credit rate is \$85 per metric ton of carbon oxide captured. For carbon oxide that is captured and utilized, the base credit is \$12, and the bonus credit rate is \$60 per metric ton. For the enhanced DAC credit applied to geological storage, the base credit rate is \$36, and the bonus rate is \$180 per metric ton. DAC carbon oxide that is utilized qualifies for an enhanced base credit rate of \$26 and a bonus rate of \$130 per metric ton.
- Requires taxpayers claiming the credit to satisfy the prevailing-wage and apprenticeship requirements during the facility's construction and the 12-year credit period. (See Section 13101 above.)
- Tax-exempt bond rules similar to those applicable to the PTC apply. (See Section 13101 above.)
- **Applies to projects placed in service after Dec. 31, 2021, and before Jan. 1, 2033. The Senate Finance Committee version required that construction begins before Jan. 1, 2032.**
- **Generally, the section 45Q carbon sequestration credit is one of three energy tax credits included in the IRA framework that is able to be claimed by any taxpayer as a direct payment.**
- **Impact:** Extends the carbon-capture credit and provides an additional incentive for investments in direct-air capture facilities. Any taxpayer can elect to receive this credit as a direct payment.

IRA Section 13105 [SFC Section 126108]. Zero-Emission Nuclear Power Production Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a new credit for electricity from a qualified nuclear facility. The base credit is 0.3 cents per kilowatt-hour and a bonus credit rate of 1.5 cents per kilowatt-hour.
- **Stipulates that as the price of electricity increases, the credit is reduced. The credit reduction formula reduces the credit by 80% of the excess of gross receipts from electricity produced and sold over the product of 2.5 cents times the amount of electricity produced and sold during the year. This reduction amount is what was included in the House-passed bill. The Senate Finance Committee version of the bill would have reduced the credit by 16% of the excess of gross receipts from electricity produced and sold over the product of 2.5 cents times the amount of electricity produced and sold during the year.¹**
- Applies to a facility owned by the taxpayer that uses nuclear energy to produce electricity, provided the taxpayer has not claimed a credit for advanced nuclear power facilities under section 45J.
- Requires taxpayers claiming the bonus credit to satisfy the prevailing-wage and apprenticeship requirements. (See Section 13101 above.)
- Permits taxpayers to elect the direct-payment option in lieu of the credit.

¹Several experts have speculated that the adjustment from 16% to 80% in the credit reduction formula for the section 45U Nuclear Power Production Credit is a drafting error. If this is the case, the phaseout attributed to the credit reduction will be adjusted to be calculated on the Senate Finance Committee language of "16% of the excess of gross receipts."

- **Applies to electricity produced and sold after Dec. 31, 2023. The credit expires after Dec. 31, 2032. In the Senate Finance Committee version of the bill, the credit expired after Dec. 31, 2027.**
- **Impact:** Creates a credit to support power production by existing nuclear facilities and power sources not dependent on sources like wind and solar. The IRA reverts the reduction amount to the House-passed proposal, limiting the value of the credit for some existing nuclear electricity producers.

Part 2—Clean Fuels

IRA Section 13201 [SFC Section 126201]. Extension of Incentives for Biodiesel, Renewable Diesel and Alternative Fuels.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends the income and excise tax credits for biodiesel and biodiesel mixtures at \$1.00 per gallon through 2024. Extends the \$0.10 per gallon small agri-biodiesel producer credit and the \$0.50 per gallon excise tax credit for alternative fuel and alternative fuel mixtures through 2024. Following this date, the credit switches to a tech-neutral version (see Section 13704 below). The Senate Finance Committee bill would have extended these credits through 2026.**
- The bill repeals liquid hydrogen as an alternative fuel under the alternative fuel and alternative fuel mixture credit.
- **Impact:** Provides a three-year extension of the tax incentives for the production of biodiesel and alternative fuels, affording greater certainty for these producers in the energy sector. The proposed IRA framework shortens the length of the excise tax credit before it transitions to tech neutral.

IRA Section 13202 [SFC Section 126202]. Extension of Second-Generation Biofuel Incentives.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends the second-generation biofuel income tax credit through 2024. Following this date, the credit switches to a tech-neutral version (see Section 13704 below). The Senate Finance Committee bill would have extended the credit through 2026.**
- **Impact:** Provides a three-year extension of the tax incentives for the second-generation biofuel income tax credit through 2024, affording greater certainty for these producers in the energy sector. The proposed IRA framework shortens the length of the excise tax credit before it transitions to tech neutral.

IRA Section 13203 [SFC Section 126203]. Sustainable Aviation Fuel Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a refundable blenders credit for each gallon of sustainable aviation fuel sold as part of a qualified mixture starting in 2023. The credit operates on a sliding scale, providing \$1.25 to \$1.75 based on the fuel's reduction in lifecycle greenhouse emissions above 50%. The credit may be claimed against section 4041's excise tax liability.
- Requires taxpayers to certify that the fuel reduces emissions by at least 50%.
- Eliminates the \$1.00 tax credit for aviation fuel produced from biodiesel under section 40A.

- **Only applies to fuel sold or used in 2023 through 2024. Following this date, the credit switches to a tech-neutral version (see Section 13704 below). The Senate Finance Committee version would have applied through 2026.**
- **Impact:** Creates a new tax incentive for the production of sustainable aviation fuel. The proposed IRA framework shortens the length of the excise tax credit before it transitions to tech neutral.

IRA Section 13204 [SFC Section 126204]. Clean Hydrogen.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a new tax credit for the production of clean hydrogen in the United States for sale or use by the taxpayer. Beginning in 2022, the credit applies to the 10-year period beginning on the date the clean-hydrogen facility is placed in service.
- **The credit is based on (1) a base amount of \$0.60 and the bonus amount of \$3.00 (indexed to inflation), multiplied by (2) the kilograms of clean hydrogen produced and multiplied by (3) an applicable percentage representing the ratio of kilograms of carbon dioxide (CO₂e) emissions to kilograms of hydrogen produced. The Senate Finance Committee bill included applicable credit amounts for any facility that produced hydrogen at a ratio of: up to a CO₂e to clean hydrogen ratio of 6:1; the IRA framework requires a lifecycle ratio of 4:1 or lower, eliminating the uppermost category for 6–4 kilograms of CO₂e per kilogram of clean hydrogen produced.**
- **The applicable percentage (ranging from 20% to 100%) is determined by the lifecycle greenhouse gas emissions rate achieved from producing clean hydrogen.**
- **Allows a taxpayer to submit a petition to the Treasury Department secretary to waive the lifecycle greenhouse gas emission requirements.**
- The applicable percentage (ranging from 15% to 100%) is determined by the lifecycle greenhouse gas emissions rate achieved from producing clean hydrogen.
- Permits taxpayers to claim the section 45 PTC for electricity produced from renewable resources that are used in a facility producing clean hydrogen.
- Permits taxpayers to elect to treat a qualified clean hydrogen facility as energy property under the section 48 ITC, in lieu of claiming the new PTC credit for clean hydrogen.
- **The credit is available for projects that begin construction before 2033. The Senate Finance Committee version required that construction begins before 2029.**
- **Generally, the section 45V clean hydrogen production credit is one of three energy tax credits included in the IRA framework that is able to be claimed by any taxpayer as a direct payment.**
- **Impact:** Creates a new tax incentive for the production of clean hydrogen. Any taxpayer can elect to receive this credit as a direct payment. The IRA reduced the maximum allowable amount of carbon emissions which will force taxpayers to limit their CO₂e to clean hydrogen ratio to below 4:1.

Part 3—Green Energy and Efficiency Incentives for Individuals

IRA 13301 [SFC Section 126301]. Extension, Increase and Modifications of Nonbusiness Energy Property Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends the nonbusiness energy property credit by 10 years for property placed in service before Jan. 1, 2033. The Senate Finance Committee version of the bill extended the placed-in-service date to before Jan. 1, 2032.**
- Increases the credit amount from 10% to 30% for qualified energy efficiency improvements and residential energy property expenditures.
- Converts the lifetime limits under current law to an annual credit amount, which is increased from a maximum of \$500 to \$1,200.
 - The credit does not apply to the cost of any qualified energy property in excess of \$600 per year per taxpayer.
 - The maximum credit amount for exterior windows and skylights may not exceed \$600 per year per taxpayer.
 - The maximum credit amount for *any* exterior door may not exceed \$250, and the maximum credit for *all* exterior doors may not exceed \$500 per year per taxpayer.
- **The credits allowed under this section should not exceed, in aggregate, \$2,000 per taxpayer for energy-efficient building property including electric heat pumps, central air conditioners, or a qualified natural gas, propane, or oil furnace or hot water boilers.**
- **Removes the inclusion of electric load or service center upgrades that were included in the Senate Finance Committee version of the bill.**
- Removes metal roofs and asphalt roofs from qualifying as building envelope components and adds air sealing material and systems.
- Removes the requirement for purposes of the “residential energy property expenditures” that qualified energy property be used in the taxpayer’s *principal* residence. The bill requires qualified energy property only to be “used as a residence by the taxpayer.”
- Changes the definition of qualified energy property to mean:
 - Any of the following that meets the highest efficiency tier established by the Consortium for Energy Efficiency in effect at the beginning of the calendar year in which the property is placed in service: an electric heat pump water heater, an electric heat pump, a central air conditioner, a natural gas, propane or oil water heater, a natural gas, propane or oil furnace or hot water boiler;
 - A geothermal heat pump that meets the requirements of the Energy Star program;
 - A biomass stove that uses the burning of biomass fuel for heat or to heat water in a dwelling unit in the United States that is used as a residence by the taxpayer and that has a thermal efficiency rating of at least 75%; and
 - Any oil furnace or hot water boiler placed in service:
 - between 2023 and 2026 that meets the 2021 Energy Star efficiency criteria and is rated for use with eligible fuel blends of 20% or more, or
 - after Dec. 31, 2026, and achieves an annual fuel utilization efficiency rate of at least 90% and is rated for use with eligible fuel blends of 50% or more.
 - Defines eligible fuel as biodiesel and renewable diesel and second-generation biofuel.
- Creates a 30% credit for home energy audits that may not exceed \$150. Defines a home energy audit as an inspection and written report with respect to a dwelling unit located in the United States and owned or used by the taxpayer as the taxpayer’s principal residence, which (1) identifies the most significant and cost-effective energy efficiency improvements including an estimate of the energy and cost savings, and (2) is conducted and prepared by a home energy auditor that meets the certification or other requirements specified by the Treasury Department secretary.
- **Requires taxpayers to report product identification numbers for property, with respect to which the energy-efficient property credit is claimed, on their annual**

tax return if placed in service after 2024. The Senate Finance Committee version required the numbers for property claimed after 2023.

- **Renames section 25C the "Energy Efficient Home Improvement Credit."**
- Applies generally to property placed in service and to amounts paid for home energy audits after Dec. 31, 2021.
- Impact: Extends and triples the Nonbusiness Energy Property Credit, making it more affordable for homeowners to invest in energy-efficient home improvements, as well as encouraging home energy audits. The IRA places an aggregated \$2,000 credit limit on several, previously uncapped technologies.

IRA Section 13302 [SFC Section 126302]. Residential Clean Energy Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends the residential energy efficient property credit under section 25D by 10 years to property placed in service by Jan. 1, 2035, with adjustments to the corresponding phaseout dates. The Senate Finance Committee version required that the property be placed in service by Dec. 1, 2035.**
- **The initial credit value is 30%. It begins to phase down in 2032 until it reaches 22% in 2034.**
- Covers qualified battery storage technology expenditures for battery storage technology that is installed in the taxpayer's U.S. residence and has a capacity of at least 3 kilowatt-hours to qualify for the credit.
- Eliminates the carryforward of unused credits starting in 2023.
- **The IRA removes the qualified-installer requirements and reporting included in the Senate Finance Committee version of the bill.**
- **The IRA also removes the provision that contemplated a Treasury Department program to register installers and provide installation identification numbers. Installers would have been required to provide written receipt of qualifying purchases and installations and make periodic written reports to the Treasury Department secretary of such installation transactions.**
- Redesignates the credit as section 36C, the "Residential clean energy credit."
- **Generally applies to expenditures made after Dec. 31, 2021. However, in the case of residential clean energy credit for battery storage technology, it applies to expenditures made after Dec. 31, 2022.**
- Impact: Extends and makes refundable the Residential Energy Efficient Property credit so taxpayers can more easily pay for residential alternative energy equipment, such as solar hot water heaters, wind turbines and solar electricity equipment, subject to new compliance requirements regarding qualified installers.

IRA Section 13303 [SFC Section 126303]. Energy Efficient Commercial Building Deduction.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Modifies the energy-efficient commercial building deduction for taxable years beginning after Dec. 31, 2022:**
 - Requires "energy efficient commercial building property" to be part of a plan to reduce total energy and power costs with respect to certain systems of the building by only 25% as opposed to the 50% requirement under current law.

- Sets the maximum deduction equal to the applicable dollar value multiplied by the square footage of the building, divided by the aggregate amount of deductions with respect to the building for the three years immediately preceding the taxable year.
 - The applicable dollar value is \$0.50, which increases (but not above \$1.00) by \$0.02 for each percentage point by which the total annual energy and power costs for the building are certified to be reduced by a percentage greater than 25%.
 - A higher applicable dollar value—\$2.50, which increases (but not above \$5.00) by \$0.10 for each percentage point by which the total annual energy and power costs for the building are certified to be reduced by a percentage greater than 25%—generally applies if construction for a building or retrofit plan satisfies certain wage and apprenticeship requirements guidance (see Section 13101 above) and satisfies the requirements.
- Allows an alternative deduction for energy-efficient retrofit buildings based on the energy usage intensity and the aggregate adjusted basis for the building. A qualified retrofit plan is a written plan prepared by a qualified professional that specifies modifications to a building that, in the aggregate, are expected to reduce the building's energy usage intensity by at least 25%.
- Allows for the allocation of the deduction to certain tax-exempt entities in the same manner as is allowed for federal, state and local governments.
- Provides that for real estate investment trusts any amount deductible shall be allowed in the year in which the property is placed in service.
- Updates the energy-efficiency standard to the more recent of: (a) Standard 90.1-2007 published by the American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) and the Illuminating Engineering Society of North America (IESNA), or (b) the most recent Standard 90.1 published by ASHRAE.
- **Applies to taxable years beginning after Dec. 31, 2022. The Senate Finance Committee version was applicable after Dec. 31, 2021.**
- Impact: Increases the incentive for building owners to make energy-efficient commercial building improvements and retrofits.

IRA Section 13304 [SFC Section 126304]. Extension, Increase and Modifications of New Energy Efficient Home Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends the new energy efficient home credit for 10 years for qualified new energy efficient homes acquired through Dec. 31, 2032; the Senate Finance Committee version of the bill would have only extended the acquisition date threshold through Dec. 31, 2031.**
- Increases the credit amount applicable to single-family and multifamily housing construction:
 - Dwelling units in which heating and cooling energy consumption is at least 50% below the annual consumption of a comparable unit are eligible for a credit of \$2,500 (\$500 for units in which the building is eligible to participate in the Energy Star Multifamily New Construction Program), and
 - Units in which building envelope component improvements account for at least 20% of such 50% are eligible for a credit of \$5,000 (\$1,000 for units in which the building is eligible to participate in the Energy Star Multifamily New Construction Program).

- Provides that a dwelling unit meets the energy-saving requirements if it conforms to Federal Manufactured Home Construction and Safety Standards or is certified as a zero-energy ready home under the zero-energy ready home program of the Department of Energy.
- **The credit is also retroactively extended to dwelling units that are purchased after Dec. 31, 2021, but on or before Dec. 31, 2022.**
- Impact: Increases the incentive for developers to construct or substantially reconstruct energy-efficient residences and multifamily housing.

Part 4—Greening the Fleet and Alternative Vehicles.

IRA Section 13401 [SFC Section 126401]. Clean Vehicle Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Creates a refundable income tax credit for purchases of new plug-in electric motor vehicles through 2032. Sets the base credit amount at \$3,750 each for clean vehicles meeting the critical-mineral and battery-component requirements, for a total of \$7,500 in tax credits for vehicles placed in service after 2022 through 2032.**
- **Applies only to vehicles assembled in North America (i.e., in the United States, Canada and/or Mexico).**
- **Disallows the credit for vehicles with a manufacturer’s suggested retail price that exceeds:**
 - **\$80,000 for vans, SUVs and pickup trucks, and**
 - **\$55,000 for any other vehicle.**
- **Disallows the credit for buyers with a modified adjusted gross income of more than \$150,000 (\$300,000 for married couples filing jointly and \$225,000 for head of household filers). The Senate Finance Committee version included a higher threshold amount and a phaseout at a rate of \$200 per every \$1,000 in excess of the respective threshold.**
- Limits the credit to the purchase of one electric vehicle per year.
- Removes the current 200,000-vehicle per manufacturer cap for automakers.
- Requires dealers to report to the buyer and the IRS certain information regarding the vehicle.
- **Beginning in 2023, allows the buyer to transfer the credit to the dealer, thereby allowing the credit effectively to be taken into account in the purchase price. The transfer process includes significant requirements for vehicle dealers to qualify. The Treasury Department secretary is directed to establish a direct-payment program for dealers to monetize the transferred credits.**
- **Prevents the credit from being reduced under budget sequestration.**
- Impact: Encourages the purchase of electric vehicles for personal use and allows the value of the credit to be passed to the consumer by the dealer through the purchase price.

IRA Section 13402 [SFC Section 126402]. Credit for Previously Owned Clean Vehicles.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a refundable credit for the purchase of used clean vehicles through 2032.
- **Sets the base credit amount at the lesser of \$4,000, or 30% of the sale price.**

- Applies to the first resale of a used electric vehicle from a dealership for personal use following after 2022.
- Limits the credit to one used-vehicle purchase every three years.
- Applicable to qualifying electric and fuel cell vehicles (under the existing sections 30D and 30B credit) priced at \$25,000 or less and with a model year at least two years old at the time of sale.
- Disallows the credit for buyers with a modified adjusted gross income of more than \$75,000 (\$150,000 for married couples filing jointly and \$112,500 for head of household filers).
- **Beginning in 2023, allows the buyer to transfer the credit to the dealer, thereby allowing the credit effectively to be taken into account in the purchase price. Similar to the credit for new, clean vehicles. See IRA Section 13401 above.**
- Taxpayers must report the VIN on their tax return to qualify for the credit.
- **Prevents the credit from being reduced under budget sequestration.**
- Impact: Encourages the sale of electric vehicles in the used-car market.

IRA Section 13403 [SFC Section 126403]. Qualified Commercial Clean Vehicles.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a new credit equal to 15% (30% in the case of a commercial vehicle that does not run on gasoline or diesel fuel) of the incremental cost of qualified commercial electric vehicles acquired after 2022 through 2032. The incremental cost is the difference between the clean vehicle cost and that of a comparable gasoline- or diesel-powered vehicle.
- Taxpayers must report the VIN on their tax return to qualify for the credit.
- Extends the credit for the purchase of qualified fuel cell motor vehicles through 2032.
- Impact: Promotes the purchase of electric vehicles at the commercial level.

IRA Section 13404 [SFC Section 126404]. Alternative Fuel Refueling Property Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends the credit for alternative fuel vehicle refueling property placed in service after 2022 through 2032.**
- **Expands the credit for zero-emissions charging and refueling infrastructure with a base credit of 6% for expenses up to \$100,000. The Senate Finance Committee version included an additional 4% for excess expenses.**
- Provides an alternative bonus credit for taxpayers that meet certain prevailing-wage requirements during construction: 30% for expenses up to \$100,000.
- Limits the credit to property located in a qualifying census tract (i.e., low-income communities under the New Markets Tax Credit or non-urban areas).
- Expands the list of eligible property to include electric charging stations for electric two- and three-wheel vehicles and clarifies the eligibility of bidirectional charging equipment.
- Impact: Promotes and incentivizes the construction of electric vehicle refueling property in low-income communities and non-urban areas.

Part 5—Investment in the Green Workforce and Manufacturing

IRA Section 13501 [SFC Section 126501]. Extension Of The Advanced Energy Project Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- **Extends section 48C qualified advanced energy property credit and provides an additional \$10 billion, of which \$6 billion may be allocated to qualified investments that are not located in energy communities. The Senate Finance Committee version allocated \$5 billion in credits for each year from 2022 through 2023 and then \$1.875 billion for each year from 2024 through 2031.**
- Each applicant has two years from the date of acceptance to provide evidence that the taxpayer qualifies for certification and to place the project in service.
- Taxpayers receive a base rate of 6%, increasing to 30% if taxpayers satisfy prevailing-wage and apprenticeship requirements.
- Modifies and expands the definition of eligible projects to include energy storage systems and components, electric grid modernization equipment or components, renewable and low-carbon fuels, energy conservation technologies, electric and fuel-cell vehicles, charging and refueling infrastructure, hybrid-vehicle projects and the decarbonization of industrial facilities.
- Removes the selection criteria included in the House-passed provision.
- **Applies as of Jan. 1, 2023.**
- **Impact:** Provides additional incentives for advanced energy projects by providing a base credit and bonus credit for projects that create jobs and reduce carbon emissions.

IRA Section 13502 [SFC Section 126504]. Advanced Manufacturing Production Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a production credit for eligible components produced by the taxpayer and sold to an unrelated person. Both the production and sale must be in a trade or businesses of such taxpayer.
- **The credit amount varies depending on the particular product or component, which include: thin film photovoltaic cells, crystalline photovoltaic cells, photovoltaic wafers, solar grade polysilicon, polymeric backsheet, solar modules, wind energy components, torque tube, structural fasteners, inverters, electrode active materials, battery cells and modules and critical minerals.**
- **Phases out the credit beginning after Dec. 31, 2029. Components sold during 2030 will only receive 75% of the credit, components sold during 2031 will only receive 50% of the credit and components sold in 2032 will only receive 25% of the credit. After Dec. 31, 2032, the credit is zero. The phase-out does not apply to critical minerals.**
- **Applies only to U.S. production of qualifying components.**
- **Eligible for direct pay or transferability of the credit.**
- **Applies to components produced and sold after Dec. 31, 2022.**
- **Impact:** Creates incentives for manufacturing components for clean energy property in the United States.

Part 6—Superfund

IRA Section 13601 [SFC Section 126701]. Reinstatement of Superfund.

(No substantive changes were made to the Senate Finance Committee version of the bill.)

- Reinstates the Hazardous Substance Superfund Financing Rate on crude oil and imported petroleum products at the rate of 16.4 cents per barrel, indexed to inflation.
- Applies as of July 1, 2022.

- Impact: Reinstates the Hazardous Substance Superfund tax to support environmental cleanup projects.

Part 7—Incentives for Clean Electricity and Clean Transportation

IRA Section 13701 [SFC Section 126801]. Clean Electricity Production Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a new 10-year clean energy production tax credit equal to the kilowatt-hours of electricity produced in the United States by a qualified facility and sold by the taxpayer multiplied by an applicable amount. In cases of a facility equipped with a metering device, the electricity may be sold, consumed or stored.
- The applicable base amount is 0.3 cents. An alternative amount of 1.5 cents applies to facilities with a maximum output of less than 1 megawatt or facilities that satisfy prevailing-wage and apprenticeship requirements. These amounts will be adjusted for inflation.
- **To qualify, the facility must be used for the generation of electricity, placed in service after Dec. 31, 2024, and the greenhouse gas emission rate must be not greater than zero. The credit applies to the expansion of an existing facility placed in service before Jan. 1, 2025, but only to the extent that the increased amount of electricity produced is the result of a new unit that is placed in service after Dec. 31, 2024, or additions of capacity that are placed in service after Dec. 31, 2024.**
- The credit is disallowed for facilities for which a credit is allowed under sections 45, 45J, 45Q, 45U, 48, 48A or 48D.
- In the case of facilities that produce electricity through fuel combustion or gasification, the greenhouse gas emissions rate is equal to the net rate of emissions released by that facility, excluding any carbon captured under the section 45Q credit. The Treasury Department secretary is required to publish annually a table that sets greenhouse gas rates.
- The credit is subject to phase out after the “applicable year,” which is the later of (1) the year in which the Treasury Department secretary determines the annual greenhouse gas emissions from electricity production in the United States is 25% or less or (2) 2032. For a facility that begins construction during the first calendar year following the applicable year, the percentage is 100; year two is 75%, year three is 50%, and subsequent years are 0%.
- Qualified facilities located in energy communities and facilities meeting domestic-content requirements receive a 10% increase in the credit.
- **Applies to facilities placed in service after Dec. 31, 2024.**
- Impact: Creates a tech-neutral incentive for emission reductions from electricity production.

IRA Section 13702 [SFC Section 126802]. Clean Electricity Investment Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates an investment tax credit for clean electricity production facilities and energy storage technology. The base rate of the credit is 6% and the bonus rate is 30% for facilities with a maximum output of less than 1 megawatt or that satisfy prevailing-wage and apprenticeship requirements.
- **The credit is increased for facilities in low-income communities. The base credit is increased to 16% and the bonus credit is also increased to 50%.**
- **A qualified facility is one that generates electricity, placed in service after Dec. 31, 2024, and the greenhouse gas emission rate is not greater than zero. This definition does not include facilities that can apply for credits under sections 45, 45J, 45Q, 45Y, 48 or 48A.**

- **Qualified investments in energy storage technology include property meeting the same definition under section 48(c)(6) (See Section 13102 above).**
- The credit is subject to phase out after the “applicable year,” which is the later of (1) the year in which the Treasury Department secretary determines the annual greenhouse gas emissions from electricity production in the United States is 25% or less or (2) 2032. For a facility that begins construction during the first calendar year following the applicable year, the percentage is 100; year two is 75%, year three is 50%, and subsequent years are 0%.
- The credit is subject to recapture if the Treasury Department secretary determines that the greenhouse gas emission rate for a facility is greater than 10 grams of CO₂e per KWh, in which case the property for which the credit was allowed will cease to qualify for the credit in the year of the determination.
- Impact: Creates a tech-neutral incentive to invest in clean electricity production facilities and energy storage technology.

IRA Section 13703 [SFC Section 126804]. Cost Recovery for Qualified Facilities, Qualified Property and Energy Storage Technology.

(No substantive changes were made to the Senate Finance Committee version of the bill.)

- Treats facilities qualifying for the clean electricity production credit and facilities or energy storage technology qualifying for the electricity investment tax credit as a five-year property under section 168.
- Applies to facilities placed into service after Dec. 31, 2024.
- Impact: Provide a shorter class life for designated clean energy property, thereby accelerating cost recovery with respect to such property.

IRA Section 13704 [SFC Section 126805]. Clean Fuel Production Credit.

(Changes made to the Senate Finance Committee version of the bill are in blue.)

- Creates a production credit equal to the amount per gallon of transportation fuel produced by a qualified facility in the United States, sold during the taxable year and meeting certain emissions requirements. The base credit is 20 cents per gallon and the bonus credit is \$1.00 if the fuel is produced at a facility that meets prevailing-wage and apprenticeship requirements. For sustainable aviation fuel, the base credit is 35 cents and the bonus credit is \$1.75. Sustainable aviation fuel is a liquid fuel sold for use in an aircraft that meets certain requirements.
- The calculation of the emission factor of transportation fuel is an amount equal to 50 kilograms of CO₂e per mmBTU minus the emissions rate for that fuel divided by 50 kilograms of CO₂e per mmBTU. The Treasury Department secretary will publish annually a table that sets the emissions rate for transportation fuels based on the amount of lifecycle greenhouse gas emissions.
- Clarifies the emissions standard and registration requirements with respect to sustainable aviation fuel.
- In calendar years beginning after 2024, the base rates and bonus rates will be adjusted for inflation.
- **The credit is subject to phase out after the “applicable year,” which is the later of (1) the year in which the Treasury Department secretary determines the annual greenhouse gas emissions from electricity production in the United States is 25% or less or (2) 2032. For a facility that begins construction during the first calendar**

year following the applicable year, the percentage is 100; year two is 75%, year three is 50%, and subsequent years are 0%.

- Applies to transportation fuels produced after 2024 and sold before 2028.
- Impact: Incentivizes investment in clean fuel to meet emission reduction goals.

Part 8—Credit Monetization and Appropriations

IRA Section 13801[SFC Section 126104]. **Elective Payment for Energy Property and Electricity Produced from Certain Renewable Resources, etc.**

New Code Sec. 6417. Elective Payment of Applicable Credits.

(Replaces the Senate Finance Committee version of the direct-payment election.)

- Generally limits direct pay to tax-exempt entities, tax-exempt organizations, state and local governments, political subdivisions, the Tennessee Valley Authority, Indian tribal governments and Alaskan Native Corporations.
- Tax-exempt entities may elect to receive all energy credits modified or enacted in the IRA as either: (i) a payment against their tax liability (if applicable) or (ii) a direct payment. In the case of governmental entities (or other taxpayers that are generally not required to file tax returns), elections must be made by a date and method to be determined by the Treasury Department secretary.
- Allows taxable businesses to elect to receive the credit through direct payment in three cases: (i) section 45V Clean Hydrogen Production Credit (see Section 13204 above), (ii) section 45Q Carbon Oxide Sequestration Credit (see Section 13104 above) and (iii) section 45X Advanced Manufacturing Production Credit (see Section 13502 above).
- The election for the hydrogen and carbon-capture credits applies to the year in which the property is placed in service plus the following four years. Elections must be made by the due date of a federal taxpayer's tax return (including extensions), and once made, revocation of an election is limited. No election is permitted before 180 days after the enactment of the bill.
- Excessive payments are subject to an additional 20% penalty.
- Direct payment elections are permitted for taxable years generally beginning after Dec. 31, 2022 (with specific effective dates relating to individual credits in certain cases) through Dec. 31, 2032.

New Code Sec. 6418. Transfer of Certain Credits.

(New provision supplementing the direct payment provisions in the bill.)

- Allows taxpayers to transfer any portion or all of an applicable tax credit to an unrelated party ("transferee taxpayer"). Transferability generally applies to any of the green-energy tax credits enacted or modified in the bill. Applicable credits may only be transferred once.
- Requires that all payments provided for the transfer of the credit be paid in cash. Payments with respect to transferred credits are not included in the gross income of the selling taxpayer and are not deductible by the transferee taxpayer.
- For partnerships and S corporations, elections may only be made at the entity level, and transfer payments are treated as tax-exempt income for the purposes of determining the basis and taxable income of the partner or shareholder.

- **Elections to transfer credits must be made by the due date of a taxpayer's tax return (including extension) for the year in which the credit is determined, and all elections are irrevocable. No election is permitted before 180 days after the enactment of the bill.**
- **A 20% penalty applies to transferred credits if the Treasury Department secretary determines that any portion of the original credit constitutes an excessive payment. This penalty may require indemnity agreements between the taxpayer originating the credit and the transferee taxpayer.**
- **Allows for a three-year carryback of credits transferred under the new provision. Current-law carryforward provisions are modified to allow for unused credits to be carried forward to the earliest of the succeeding 22 taxable years (instead of the current-law 20 years).**
- **Eligible credits are generally transferable after Dec. 31, 2022.**
Impact: While previous versions of the reconciliation bill allowed for almost-universal direct pay elections, the IRA limits direct pay with respect to most credits just to tax-exempt entities. All other taxpayers will be required to monetize their excess tax credits through the tax-equity market, with exceptions for the hydrogen credit, carbon-capture credit and advanced manufacturing production credits, which remain subject to direct payment regardless of the taxpayer's status

IRA Section 13802 [SFC Section 126901]. Appropriations.

(No substantive changes were made to the Senate Finance Committee version of the bill.)

- Appropriates \$500 million for fiscal year 2022 which is available until Sept. 30, 2031.
- Impact: Provides additional funding for the IRS to administer the new energy credits.

Energy Tax Sections Removed from the Senate Finance Committee Version

SFC Section 126105. Investment Credit for Electric Transmission Property.

SFC Section 126107. Green Energy Publicly Traded Partnerships.

SFC Section 126305. Modifications to Income Exclusion for Conservation Subsidies.

SFC Section 126404 Qualified Fuel Cell Motor Vehicles. (*Now included in the New Clean Vehicle Credit.*)

SFC Section 126406. Reinstatement and Expansion of Employer-Provided Fringe Benefits for Bicycle Commuting.

SFC Section 126407. Credit for Certain New Electric Bicycles.

SFC Section 126502. Labor Costs of Installing Mechanical Insulation Property.

SFC Section 126503. Advanced Manufacturing Investment Credit.

SFC Section 126601. Qualified Environmental Justice Program Credit.

SFC Section 126803. Increase in Clean Electricity Investment Credit for Facilities Placed in Service in Connection with Low-Income Communities.