



**Alliance for a
Sustainable Future
Cities Advancing
Climate Action**

*Unlocking the Potential
of the Inflation Reduction Act*

Alliance for a Sustainable Future

a joint effort by

The U.S. Conference of Mayors
and the Center for Climate
and Energy Solutions (C2ES)

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The Center for Climate and Energy Solutions (C2ES) is an independent, non-partisan, nonprofit organization working to forge practical solutions to climate change. Our mission is to secure a safe and stable climate by accelerating the global transition to net-zero greenhouse gas emissions and a thriving, just, and resilient economy. Learn more at www.c2es.org.

Acknowledgement

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Disclaimer: This document is for information purposes only and is not intended to provide legal or financial advice and should not be relied on as such. Readers should consult with their legal and finance professionals regarding the use of IRA tax credits.



Introduction


Across the country, cities have long been at the forefront of efforts to reduce greenhouse gas emissions and increase community resilience to climate change impacts. As extreme temperatures and climate related events such as storms and wildfires become more frequent and intense, cities are increasingly pressed to meet the needs of their residents while also reducing their carbon emissions and making their communities more resilient. A number of strategies exist, including investing in resilient, low-carbon infrastructure like microgrids and transitioning to electrified fleets, but these options present initial costs that may place them out of reach of many local governments.

Thanks to recent action by the federal government, new opportunities exist for cities to make climate goals a reality. The Inflation Reduction Act (IRA) of 2022, signed into law on August 6, 2022, puts the U.S. on a path toward achieving its Paris goals by enabling emissions reductions of 31-44% below 2005 levels, while also funneling billions to climate resilience needs.

The landmark legislation, for the first time, provides tax-exempt entities, including local governments, the opportunity to receive the monetary benefit of tax credits directly from the federal government.¹ This document focuses on this new opportunity for renewable energy systems and electric vehicle (EV) tax credits that are now available to cities through an elective payment mechanism commonly known as “direct pay” tax credits.²

What You’ll Learn

- How the Inflation Reduction Act creates new opportunities to fund climate change mitigation and resilience projects
- What a direct pay tax credit is
- How direct pay tax credits can improve the financial viability of climate and resilience projects
- When direct pay tax credits may work for your city
- How to start planning to use direct pay tax credits



Tax credits have long been used to reduce the investment costs of clean technologies such as solar panels, wind turbines, and battery storage but are for the first time available to cities in the same way they have been available to taxable entities for years. ***The ability to directly take advantage of tax credits changes the way that cities can approach climate change mitigation and resilience projects and will make more carbon reduction and resilience strategies cost effective.***

This document explores the potential financial impact that the new direct pay opportunity creates.³ Based on actual municipal projects, the analysis in this publication demonstrates how direct pay tax credits could be utilized to help fund climate and resilience projects. We show that these tax credits could shave tens of millions off the cost of a campus microgrid project, reduce the overall cost of creating a carbon-free, resilient power system for a wastewater treatment plant, and accelerate the payback period of a municipal fleet transition by one to two years.

Mayors and local leaders may find these examples useful in considering how to structure, locate, scale, and finance transformative projects to meet their community needs and climate goals. To help leaders get started, this document highlights planning considerations for the new tax credit opportunities.

This document builds off of previous work of the Alliance for a Sustainable Future, a collaboration between The U.S. Conference of Mayors and the Center for Climate and Energy Solutions (C2ES). In its most recent publication, “Cities Advancing Climate Action: Leveraging Federal Funds for Local Impact a Resource Guide,”⁴ the Alliance highlighted how cities could leverage federal and state funding to support their climate, resilience, and equity priorities as they explore opportunities afforded by the 2021 Infrastructure Investment and Jobs Act (IIJA).



Direct Pay Tax Credits: A New Opportunity for Cities

Congress passed the IRA, the nation's largest ever investment in climate and energy, authorizing approximately \$370 billion⁵ in spending in federal funding and tax credits. Tax credits are an effective means of advancing policy objectives through market mechanisms, and the IRA contains a wide variety of credits relating to clean energy and the reduction of carbon emissions. Historically, tax-exempt organizations could not directly access the financial benefit of tax credits as they have no tax liability against which to apply the credit. However, recognizing the need for climate action across all sectors of the economy, the IRA allows non-taxable entities to receive direct payments from the federal government equal to the value of certain credits. ***These provisions open new opportunities to fund and scale municipal investments in climate mitigation and resilience technologies*** such as low- or zero- emission vehicles, charging and refueling stations, and renewable energy systems, among others.

Through the provisions of the IRA, direct pay tax credits are, for the first time, refundable. This allows tax-exempt entities including cities and other municipal entities to receive the economic benefit of applicable credits.⁶ The Internal Revenue Service (IRS) recently released proposed rules which include information regarding the process by which cities and other tax-exempt entities can receive direct pay tax credit payments. While more information is expected in the future, the process currently includes completing a pre-filing registration with the IRS, meeting and documenting eligibility requirements, and filing the appropriate forms including Form 990-T and the applicable tax credit forms.⁷

Credits Now Available to Cities

Cities can utilize the new direct pay option to finance multiple types of projects including the purchase of zero- and low-emissions vehicles; certain vehicle charging and refueling stations; renewable energy generation systems; and microgrids.

The tax credits available to cities under the direct pay option are shown in **Table 1**.

Table 1: Direct Pay Tax Credits by Category Authorized by the Inflation Reduction Act

| Category | Direct Pay Tax Credits |
|-----------------------------------|---|
| Clean Electricity | Production Tax Credit for Electricity from Renewables |
| | Investment Tax Credit (ITC) for Energy Property |
| | Zero Emission Nuclear Power Production Credit |
| | Clean Electricity Production Tax Credit |
| | Clean Electricity Investment Tax Credit (ITC) |
| Clean Fuels | Clean Fuel Production Credit |
| | Clean Hydrogen Production Tax Credit |
| Clean Vehicles | Credit for Qualified Commercial Clean Vehicles |
| | Alternative Fuel Vehicle Refueling Property Credit |
| Clean Energy Manufacturing | Advanced Energy Project Credit |
| | Advanced Manufacturing Production Credit |
| Carbon Emissions Reduction | Credit for Carbon Oxide Sequestration |

The IRA sets forth base amounts of each tax credit. The amounts available for each tax credit may vary based upon the particular projects, however the base amounts are generally:

- 6% of qualified investments for investment tax credits (ITCs) listed in **Table 1**, including the Advanced Energy Project Credit and the Alternative Fuel Vehicle Refueling Property Credit.
- 0.3 cents/kWh for electricity produced and sold for clean electricity production credits.
- The lesser of 15% to 30% of clean vehicle cost or the amount the cost exceeds a comparable internal combustion engine vehicle, capped at \$7,500 for vehicles weighing less than 14,000 pounds and \$40,000 for all other vehicles.
- Other production and sequestration credits' base amounts are formulaic and take into consideration multiple factors.

Additional details regarding each of the tax credits listed above can be found in **Appendix A**. Information includes project eligibility, base amounts, maximum credit amounts, period of availability and other information known to date. This document introduces and explores the opportunities the IRA's direct pay tax credits create, with future IRS guidance expected to provide additional clarifying details. Given the continual release of implementation guidance and the intricate nature of the IRA's tax provisions, cities should consult with their tax counsel and financial advisors to fully assess how specific local projects are impacted by the law.

Opportunities to Increase the Value of Credits

Select tax credits may be increased from the base amount if certain criteria are met. These additional amounts are often referred to as bonus rates or bonus credits and can significantly increase the direct payment amount. The three primary types of bonus credits are intended to incentivize entities to meet labor requirements, use domestic content, or site projects in specific areas. Bonus rate opportunities by tax credit can be found in **Table 2** and **Appendix A**. When applicable, bonus rates include:

- **Five times the amount of the base credit** for meeting labor standards relating to prevailing wage and apprenticeship requirements.⁸
- **10% of the base credit** for meeting domestic content requirements for iron, steel, and manufactured products.
- **10% of the base credit** for projects located in Energy Communities^{9,10} if prevailing wage requirements are met or 2% if prevailing wage requirements are not met.

The Low Income Communities Bonus Credit provides an additional bonus credit of **10%** to the investment tax credit for small solar and wind energy projects in a low-income community¹¹ and **20%** if part of a federally subsidized housing project or qualified low-income economic benefit project.

Table 2: Tax Credit Bonus Opportunities

| IRA Tax Credits | Bonus Rate Opportunities | | | |
|---|------------------------------------|---------------------|---------------------|---------------------------|
| | Prevailing Wage/ Apprenticeship | Domestic Content | Energy Community | Low Income Communities |
| Clean Electricity | | | | |
| Production Tax Credit for Electricity from Renewables | . | . | . | |
| ITC for Energy Property | . | . | . | . |
| Zero Emission Nuclear Power Production Credit | . | | | |
| Clean Electricity Production Tax Credit | . | . | . | |
| Clean Electricity ITC | . | . | . | . |
| Clean Fuels | | | | |
| Clean Fuel Production Credit | | | | |
| Clean Hydrogen Production Tax Credit | . | | | |
| Clean Vehicles | | | | |
| Credit for Qualified Commercial Clean Vehicles | | | | |
| Alternative Fuel Vehicle Refueling Property Credit | . | | | |
| Clean Energy Manufacturing | | | | |
| Advanced Energy Project Credit | . | | | |
| Advanced Manufacturing Production Credit | | | | |
| Carbon Emissions Reduction | | | | |
| Credit for Carbon Oxide Sequestration | . | | | |

Limitations and Requirements

TAX EXEMPT DEBT OR OTHER SUBSIDIES

In some instances, limitations are placed on the amount of tax credits that can be claimed when projects are funded through tax exempt bonds or other subsidies are used. Five of the tax credits¹² require a credit reduction of up to 15% if the project was financed with tax exempt bonds or, if less than 15% of the project was financed through tax exempt debt, the reduction will equal the percent financed.

The Zero Emission Nuclear Power Production Credit will be reduced if governmental zero-emission nuclear subsidies are received for the project.

The IRA does not limit the ability to use other incentives, such as federal or other grants, for projects receiving direct pay tax credits provided that the total amount of payments received do not exceed the total cost of the project.

In those cases, direct pay credits will reduce so that total payments received from grants and incentives equal the total cost of the project. Future guidance for the direct pay tax credits or federal incentive programs could be issued with additional limitations.

STACKING OF MULTIPLE TAX CREDITS

Some tax credits prohibit stacking multiple tax credits. For example, property owners cannot take advantage of both the Advanced Energy Project Credit and the Advanced Manufacturing Production Credit. These prohibitions may not prohibit all tax credit stacking and may be limited to specific credits, including those in effect before the IRA, or project types.

Tax credits with limitations relating to tax exempt debt, other subsidies, and stacking can be seen in **Table 3**. Additional information regarding limitations can be found in **Appendix A**.

Table 3: Direct Pay Tax Credits with Limitations

| IRA Tax Credits | Limitations | | |
|---|------------------------------------|--------------------------------------|-----------------------------|
| | Reduction for Tax Exempt Financing | Reduction for Governmental Subsidies | Credit Stacking Prohibition |
| Clean Electricity | | | |
| Production Tax Credit for Electricity from Renewables | . | | . |
| ITC for Energy Property | | | . |
| Zero Emission Nuclear Power Production Credit | | . | . |
| Clean Electricity Production Tax Credit | . | | |
| Clean Electricity ITC | . | | |
| Clean Fuels | | | |
| Clean Fuel Production Credit | | | . |
| Clean Hydrogen Production Tax Credit | . | | |
| Clean Vehicles | | | |
| Credit for Qualified Commercial Clean Vehicles | | | . |
| Alternative Fuel Vehicle Refueling Property Credit | | | |
| Clean Energy Manufacturing | | | |
| Advanced Energy Project Credit | | | . |
| Advanced Manufacturing Production Credit | | | . |
| Carbon Emissions Reduction | | | |
| Credit for Carbon Oxide Sequestration | . | | |

PERIOD OF AVAILABILITY

The availability, amount, and requirements for tax credits can be impacted by when project construction begins, the facilities are placed in service, or other activities occur. For example, the Production Tax Credit for Electricity from Renewables is being replaced by the Clean Electricity Production Tax Credit. Projects under construction prior to 2025 will be eligible for the former and those commencing after January 1, 2025, the latter. Still others, such as the Clean Electricity Production Tax Credit, will be phased out over a period of time commencing on a specific date or when greenhouse gas emissions targets are met.

Credits may also be paid over different periods. The ITC is received as a lump sum after the project is placed into service, while the Production Tax Credit is paid out over time. Owners and developers of renewable energy facilities can claim the Production Tax Credit based on every kilowatt-hour of electricity sold for a period of 10 years after a facility is placed into service.

OTHER LIMITATIONS

Certain tax credits require that projects which commence construction prior to January 31, 2023, meet prevailing wage and apprenticeship labor requirements to receive the base rate. For these credits, this is a requirement to receive the credit, not an incentive to receive bonus credits. The base rate for those credits is, however, the same as the bonus rate for meeting these requirements, so the financial impact is the same.

Tax Credits Most Accessible and Useful by Cities

Although complete guidance has not been provided for all direct pay tax credits or the manner in which they are claimed, based on the case study analysis and research, it appears that the **ITC for Energy Property** and its replacement, the **Clean Electricity ITC**¹³ may be among those which are most accessible and useful to many cities. For the following reasons:

- **Widely Applicable:** The two investment credits can be applied to multiple projects, municipal facilities, and critical infrastructure found in most cities.
- **Advance Established Goals:** The projects eligible for these credits help cities meet their climate, resilience, decarbonization, and cost savings goals.
- **Available Technology:** Although these projects can be complex, many of the technologies involved are becoming commonly used, available, and understood in the marketplace.
- **Available Expertise:** There is widespread expertise available, and more being developed, to run and maintain projects of these types.
- **Essential Services:** These projects generally provide essential services and do not involve the sale of energy or goods manufactured to third parties which can run afoul of governmental purpose requirements.
- **Simplified Tracking and Budgeting:** These two credits are paid out in a single lump sum making tracking and budgeting more streamlined and predictable than some other credits (e.g., production tax credit) which are paid out over a period of years.

The **Credit for Qualified Commercial Clean Vehicles** is also likely to be utilized by many cities given the number of vehicles, both passenger and heavy duty, needed in city fleets and frequency of replacement. Manufacturers and dealers are well versed in EV vehicle tax credits and often help their customers understand and take advantage of their benefits.

Given that the three tax credits described above are more likely to be used by cities than some others, the following case studies demonstrate the opportunity they provide to leverage other revenue sources for critical upgrades and resilience while also accelerating local decarbonization and other community benefits.

Case Studies

The following hypothetical case studies demonstrate how direct pay tax credits can help fund carbon reduction and resilience projects while enabling needed upgrades to existing infrastructure or equipment. The case studies are based on actual local governments and projects which they are executing or considering; however, project descriptions, parameters and costs, sources of payment, or other information may differ from those of the project upon which the case study was based. These case studies are intended to demonstrate potential opportunities provided by the direct pay tax credits and outcomes could vary based on many factors including additional IRS guidance.

Highlights and Summary

The case studies highlight three unique projects where IRA direct pay tax credits could be used to reduce overall project costs. The first case describes a now-completed campus district energy system where initial plans for a solar and battery storage microgrid were abandoned due to financial viability, but for which the new direct pay tax credits could have changed the microgrid's viability. The second case showcases a scenario where microgrid supporting system upgrades are also eligible for the ITC, effectively reducing the city's overall project costs to less than the cost of the supporting system upgrades alone. The third case shows how tax credits for EV purchases and EV charger installations can accelerate the realization of net benefits from a municipal fleet electrification project. Highlights from each case study follow:

Case Study 1: Increasing the Financial Viability of a Campus Wide Microgrid

- Initial plans for a district energy system for heating and cooling included a solar battery microgrid to produce additional electricity. The solar and battery microgrid portion of the project was deemed not financially viable and the project was completed without it.
- Had the **Investment Tax Credit** direct payment been applicable at the time, total principal and interest costs over the life of the loan for the microgrid would have decreased from \$69.4 million to \$41.6 million, which may have changed the decision about whether to invest in the microgrid.

Case Study 2: Reducing Costs of Carbon-Free, Resilient Power for a Wastewater Treatment Plant

- A carbon-free microgrid designed for a wastewater treatment plant reduces risk due to power outages and decreases operating costs.
- Existing systems necessary to support the microgrid needed repair and upgrades. The repair and upgrades cost \$69 million over the life of the loan.
- The repair and upgrades of the microgrid-supporting systems qualify for the **Investment Tax Credit**. Without the microgrid these systems would not qualify for the IRA tax credit.
- The microgrid supplies energy for the plant, saving \$822,000 in energy costs per year and reducing operating costs by \$26.5 million over a 30-year period.

- The ITC payment combined with interest savings, energy cost savings, and state-level rebates results in remaining costs to the city of \$48.3 million, lower than the \$69 million cost of the supporting system upgrades alone.

Case Study 3: Accelerating Payback Period of Fleet Decarbonization

- A local government's fleet decarbonization strategy will transition 100 internal combustion engine vehicles to EVs with charging infrastructure over five years.
- Direct pay tax credits through the **Commercial Clean Vehicles Credit** and **Alternative Fuel Vehicle Refueling Property Credit** total a potential \$640,000 to offset project costs, allowing the project to break even and reach positive net benefits one or two years sooner.

IRA funding covers a wide scope of renewable energy and energy-efficient projects. As the cases show, cities can take advantage of IRA funding in many ways depending on project characteristics, location, and whether the projects meet certain IRA requirements. The cases also show that funding can vary greatly from under \$10,000 for individual clean vehicles to tens of millions of investment tax credit for large microgrid projects. Future projects may reference these case studies to benefit from the multitudes of IRA funding opportunities.

Case Study 1: Increasing the Financial Viability of a Campus Wide Microgrid

This case study demonstrates how the ITC could have increased the financial viability of a \$30 million solar battery microgrid that was considered and rejected as too costly during the early design phases of an innovative campus wide energy system.

PROJECT DETAILS

Prior to the passage of the IRA and availability of direct pay tax credits, this western city developed an innovative, diversified and integrated net zero district energy system for heating and cooling. The project constructed a sewer heat recovery (SHR) system designed to provide much of the heating and cooling energy necessary for the one-million square feet of building space on the 250-acre campus.

To complement the SHR system, the initial project design included a 3 MW solar battery microgrid. The microgrid could have generated approximately 4,800 MWh of electricity per year, creating \$360,000¹⁴ in annual energy procurement cost savings. A microgrid of this size can result in the reduction of approximately 2,000 metric tons of carbon.

THE NUMBERS & IMPACT: MICROGRID COSTS SIGNIFICANTLY REDUCED THROUGH THE DIRECT PAY ITC

During the planning and design phase of the project, the city and its partners determined that the \$30 million microgrid portion of the project was not financially viable. The project moved forward without the microgrid and the SHR is in operation today.

Relevant Direct Pay Tax Credits

- Investment Tax Credit

Project and Tax Credit Benefits

- **Direct Tax Credit Payments:** Approximately \$12 million to offset project costs.
- **Reduced Interest:** T
- he tax credit payment could have been used to pay down the loan, resulting in interest savings of \$15.8 million.
- **Operational Cost Savings:** Microgrid capacity to generate electricity could have reduced energy procurement costs by \$360,000 annually.
- **Further Net Zero Emissions Goals**

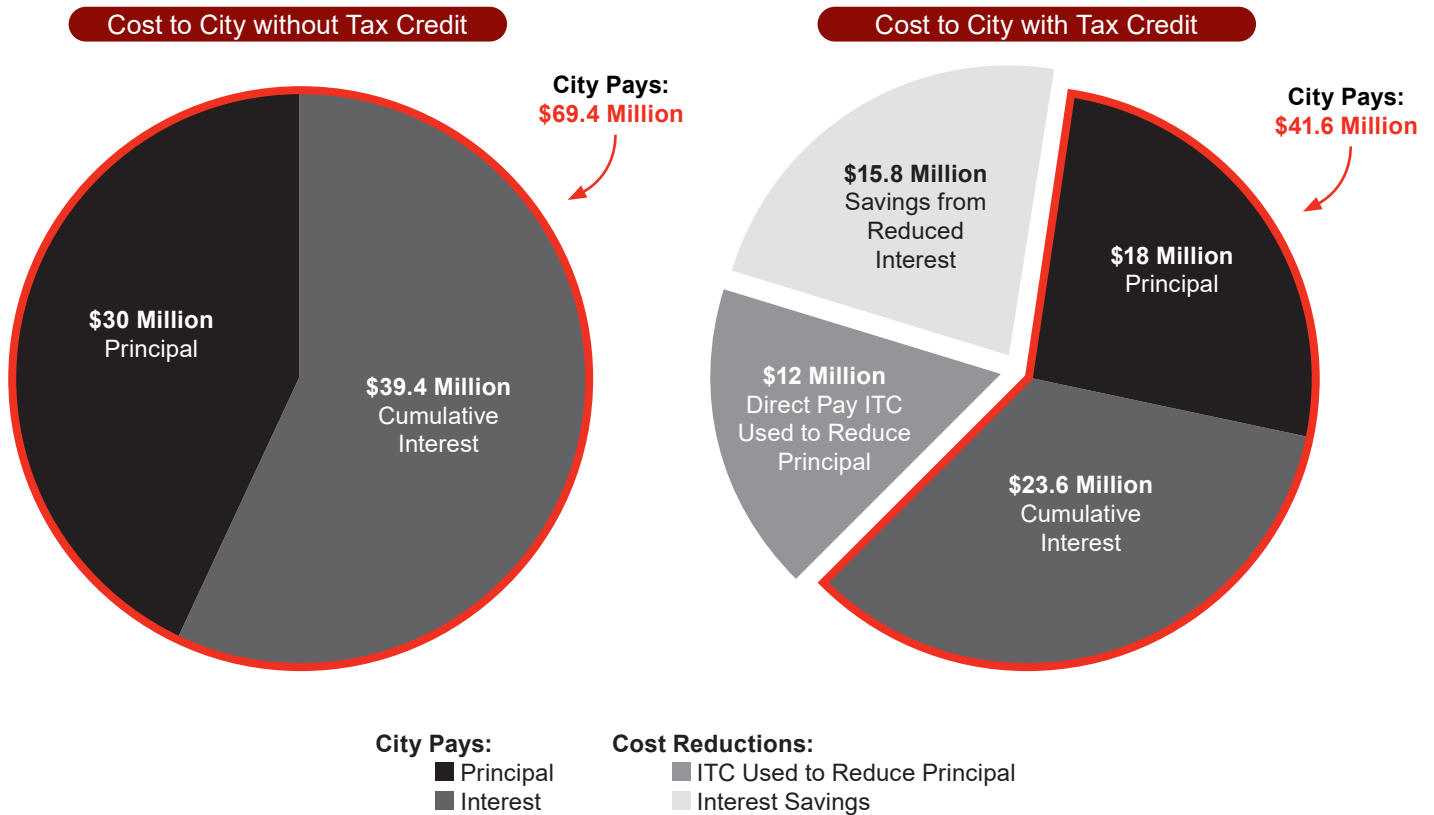
However, had the ITC direct payment tax credit been available to the city at the time, the microgrid portion of the project would have been eligible for significant incentives. Had the ITC been available to the city, the microgrid would have qualified for a 40% credit rate¹⁵ resulting in an ITC direct payment of \$12 million when the microgrid was placed in service.

Assuming the city would use the \$12 million payment to pay down the financed loan, the principal amount would be reduced from \$30 to \$18 million.¹⁶

Over the life of the loan, this would have reduced the interest costs by approximately \$15.8¹⁷ million. **Figure 1** shows the total microgrid cost including construction costs (principal) and interest without the ITC payment and the remaining costs to the city after the ITC and avoided interest costs are applied. The result is an overall reduction of project costs to the city from \$69.4 million to \$41.6 million, a reduction of \$27.8 million. ***Had the city been able to benefit from the ITC direct payment, the microgrid project would have been more cost effective and the city may have chosen to move forward with that portion of the project.***

Figure 1: Capital Costs of Microgrid with and without the ITC Payment

Microgrid Capital Cost to the City with and without Tax Credit



Case Study 2: Reducing Costs of Carbon-Free, Resilient Power for a Wastewater Treatment Plant

During the design phase of a carbon-free microgrid that will supply backup power to a city's wastewater treatment plant, it was discovered that a number of existing systems necessary to support the microgrid required repair and replacement. With the IRA direct pay tax credits, the overall project will cost less than the cost of the repair and replacement of the supporting systems alone.

Relevant Direct Pay Tax Credits

- Investment Tax Credit

Project and Tax Credit Benefits

- **Direct Tax Credit Payments:** Approximately \$16.5 million to offset project costs.
- **Technology Rebates and Lower Operating Costs:** Microgrid addition results in \$1.2 million in rebates and annual energy cost reduction of \$822,000. Total lifecycle savings is \$27.7 million.
- **Reduced Interest:** The tax credit payment can buy down borrowed funds resulting in interest savings of \$15 million.
- **With the ITC, Overall Project Costs are Lower than Upgrades to Supporting Systems Alone:** With microgrid supporting systems being ITC eligible plus operational savings from the project, the overall cost of the project is less than the upgrades to supporting systems alone.
- **Furthers Decarbonization, Sustainability and Resiliency Goals**

PROJECT DETAILS

The desire to increase the resilience of its wastewater treatment plant drove the city to plan for the addition of a backup power supply for this critical infrastructure asset. In the case of a power outage, a backup power supply will ensure that the plant would remain operational and decrease the likelihood that untreated wastewater will be discharged.

To further the city's carbon reduction goals, it chose to incorporate a carbon-free microgrid rather than rely on carbon intensive stand-by generation. The carbon-free microgrid will be powered through a unique combination of biogas cogeneration and a photovoltaic and battery energy storage system that will provide all of the treatment plant's electricity needs. The microgrid is expected to bring important resilience benefits including continuation of operations during power outages. It will also allow the plant to end flaring of the plant's biogas because the biogas is captured to power an engine in the microgrid. Flaring represents a safety concern as the gas contains a host of pollutants harmful to the city's residents.

As with many communities, portions of this city's wastewater treatment plant are decades old and in need of maintenance, repair, and upgrades. During the microgrid design process upgrades and challenges were identified with existing systems that are necessary to support the microgrid. If unaddressed, these issues will compromise the microgrid's reliability. However, addressing these challenges requires replacing the solids handling facility and upgrading the electrical system which will add significant costs to the project.

While the additional costs could have led the city to change technologies, with state incentives and energy cost savings, the carbon-free microgrid project is able to progress.

Now, with the passage of the IRA and its direct pay tax credits, the project not only increases the resilience, efficiency and reliability of the plant; accelerates decarbonization; and addresses aging infrastructure and deferred maintenance issues; but it also costs less than repair or replacement of the supporting infrastructure alone.

THE NUMBERS & IMPACT: TOTAL PROJECT COSTS ARE LOWER THAN SUPPORTING SYSTEM UPGRADES ALONE

Total construction costs for the planned project are \$55.8 million:

- Microgrid: \$20.1 million
- Electrical upgrades: \$8.9 million
- Demolition: \$2.4 million
- Solids handling facility replacement: \$24.4 million

Assuming the construction costs are financed through a loan, interest costs would be \$52 million,¹⁸ making the lifetime cost of the project \$107.8 million.

The microgrid itself is eligible for the ITC. Without the microgrid, the electrical upgrades, solids handling facility replacement and demolition are not eligible for tax credits. However, as both the electrical upgrades and solids handling facility are necessary, supporting systems for the microgrid, they become eligible for the ITC. The electrical system upgrades integrate the microgrid into the facility so 100% of the electrical upgrades cost becomes eligible. A component of the solids handling facility directs biogas into the microgrid to power an engine making 50% of the cost of the solids handling facility eligible for the ITC.

With each of these components being eligible, the ITC direct payment reduces the total construction costs of the project by \$16.5 million.¹⁹

Why Wastewater Treatment Plant Resilience Matters

With the increased frequency of climate related wildfires and severe weather events, the resulting risk of power outages and their impacts on critical infrastructure, such as wastewater treatment plants, is also increasing. For treatment plants, power supply disruption can be catastrophic, leading to environmentally damaging spills, negative impacts on natural habitats and human health, and the disruption of critical services. Microgrids can be key strategies to reduce power disruption and resulting spills.

In addition to reducing the project cost by the amount of the ITC, the ITC direct payment also reduces debt service. The microgrid also brings savings from reduced energy costs and is eligible for additional state incentives. All of these additional benefits are broken down below.

Debt Service Savings:

The ITC direct payment of \$16.5 million is received in a lump sum after the project is placed into service. Assuming the direct payment is applied to the principal of the loan, the interest savings over the life of the loan will be more than \$15.3 million.²⁰

Energy Savings:

The microgrid also supplies energy for the wastewater treatment plant. On average, the energy savings from the microgrid total \$882,000 per year which will reduce the operating costs of the facility by \$26.5 million over the microgrid’s 30-year lifecycle.

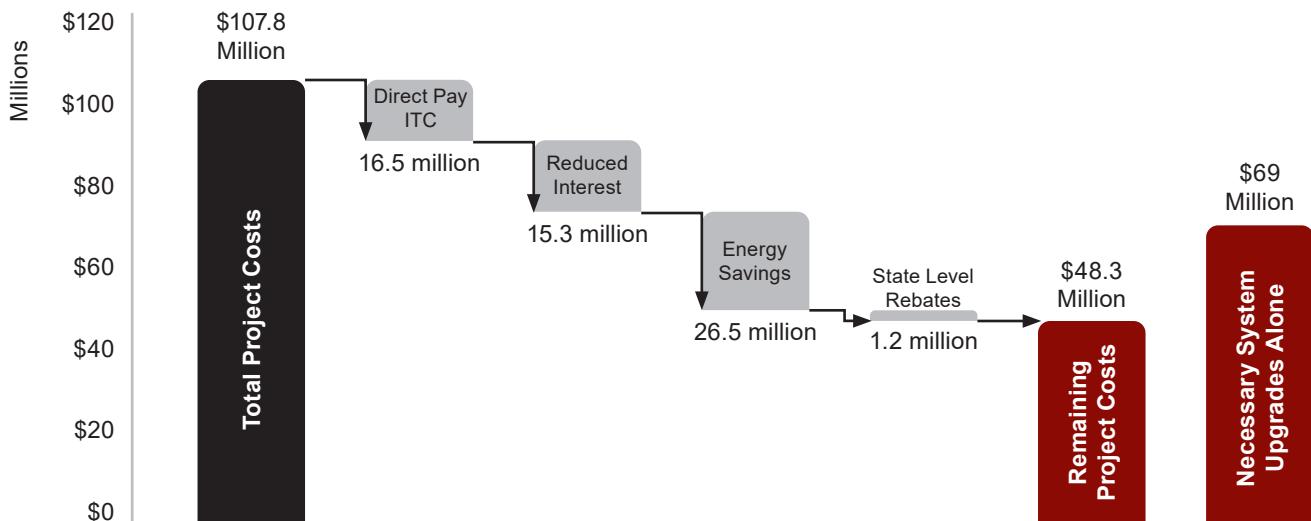
State-Level Rebates:

The microgrid also qualifies for the California Public Utility Commission’s Self Generating Incentives Program (SGIP). The SGIP is a rebate program that provides incentives to support emerging technologies for distributed energy sources. The SGIP rebate adds an additional \$1.2 million in benefits to the microgrid paid out over the first six years of the project which can offset project costs.

Figure 2 demonstrates the overall capital and interest costs of the microgrid project and the cost of the supporting system upgrades without the microgrid over the project’s life. The overall cost of the project with the microgrid, including supporting system upgrades, is \$107.8 million dollars.²¹ However, when the ITC payment of more than \$16 million, interest savings, energy savings, and rebates are accounted for, the overall project costs for which the city is responsible decrease to \$48.3 million. This total cost is lower than the cost of upgrading the supporting systems alone, without the microgrid, which would be \$69 million.²²

Figure 2: Comparison of Total Project Costs and Costs of Supporting System Upgrades

Microgrid Project Costs Vs. Cost of Necessary Supporting System Upgrades Alone



A Note about Tax-Exempt Financing and ITC Eligibility

Cities generally issue tax-exempt bonds and enjoy a lower cost of capital for project financing than taxable debt. However, the ITC decreases by up to 15% if the project is financed with tax-exempt bonds.²³ The decision to finance with tax-exempt or non-tax-exempt bonds will depend on the tradeoff between ITC amount and interest costs. By using a tax-exempt loan, the city will qualify for a smaller ITC but will receive a lower interest rate on its debt. As demonstrated in **Table 4** using figures from this case study,²⁴ given the recent interest rate environment, cities may realize the greatest economic benefit by using tax exempt bonds and a reduced ITC; however, a city's bond rating, the spread between tax exempt and taxable interest rates, and other factors could change that result. Cities should work with their tax and financial advisors to determine whether using taxable or tax-exempt debt is most advantageous.

Table 4: Comparison of Principal and Interest for Tax-Exempt and Taxable Loans

| ITC Rate | Type of Debt | ITC Amount (Reduced by 15% for Tax Exempt Loans) | Project Cost after ITC (Principal) | Interest on 30 Year Loan | Total Debt Service |
|----------|--------------|--|---------------------------------------|-----------------------------|-----------------------|
| 6% | Tax Exempt | \$2,101,200 | \$53,698,800 | \$27,804,000 | \$81,502,800 |
| | Taxable | \$2,472,000 | \$53,328,000 | \$49,731,000 | \$103,059,000 |
| 30% | Tax Exempt | \$10,506,000 | \$45,294,000 | \$23,452,000 | \$68,746,000 |
| | Taxable | \$12,360,000 | \$43,440,000 | \$40,510,000 | \$83,950,000 |
| 40% | Tax Exempt | \$14,008,000 | \$41,792,000 | \$21,639,000 | \$63,431,000 |
| | Taxable | \$16,480,000 | \$39,320,000 | \$36,668,000 | \$75,988,000 |
| 50% | Tax Exempt | \$17,510,000 | \$38,290,000 | \$19,826,000 | \$58,116,000 |
| | Taxable | \$20,600,000 | \$35,200,000 | \$32,826,000 | \$68,026,000 |

Case Study 3: Accelerating Payback Period of Fleet Decarbonization

Based on a community in Michigan, this case study demonstrates the potential to use direct pay tax credits to support the transition of 100 municipal fleet vehicles from internal combustion engines (ICEs) to electric vehicles. Through the direct pay option of two available tax credits, the payback period of purchasing new EVs and necessary charging infrastructure decreases and net-benefits are realized one to two years sooner.

PROJECT DETAILS

Implementing fleet decarbonization is a key strategy for a Midwest local government set on achieving climate action goals and co-benefits – like offering workplace charging and reducing fleet fuel and maintenance costs. The municipal fleet accounts for 15% of the local government’s operational emissions, making it the second largest contributor to its emission profile. To address this, they are replacing 100 mid-sized ICE fleet vehicles with EVs over the next five years. Charging units and associated infrastructure will be installed to support the electrified fleet.

Municipalities throughout the United States have similarly identified fleet decarbonization as a key climate action strategy. By utilizing tax credits, municipalities can gain payback quickly to recoup upfront costs. This case study focuses on how a municipality could use the IRA’s Qualified Commercial Clean Vehicles Credit as well as the Alternative Fuel Vehicle Refueling Property Credit to accelerate payback and accumulate savings.

Relevant Direct Pay Tax Credits

- Qualified Commercial Clean Vehicle Credit
- Alternative Fuel Vehicle Refueling Property Credit

Project and Tax Credit Benefits

- **Direct Tax Credit Payments:** Approximately \$640,000 in tax credit payments to offset project costs.
- **Accelerated Realization of Cost Savings:** Annual cost savings of EVs is realized one year sooner with tax credits. Over 10 years more than \$2 million in savings are realized and the project breaks even more than two years sooner than without the credits.
- **Further Carbon Reduction Goals**

THE NUMBERS & IMPACT: TAX CREDITS INCREASE FINANCIAL BENEFITS OF TRANSITIONING TO EVS

The cost of fleet electrification has two main components: the price premium of EVs over ICE vehicles and the installation and operation costs of chargers. Outside of the tax credits, the financial benefits from the conversion include utility rebates for the installation of chargers and state government rebates for the purchase of EVs, as well as the avoided costs realized from the reduced maintenance and fuel cost savings of EVs over ICE vehicles.

Most of the costs of fleet transitions occur when EVs are being purchased. For this example, most costs are incurred in the first five years. The financial benefits, however, accumulate over a longer period of time as fuel and maintenance savings are realized over the life of the vehicle. Over a ten-year span, this project has an overall net-positive cumulative benefit of almost \$1.4 million compared to business-as-usual procurement of ICE vehicles.

With the addition of direct pay tax credits from the IRA, the expenses from early phases of the project will be partially offset and the overall project will break even and reach positive cumulative benefits faster.

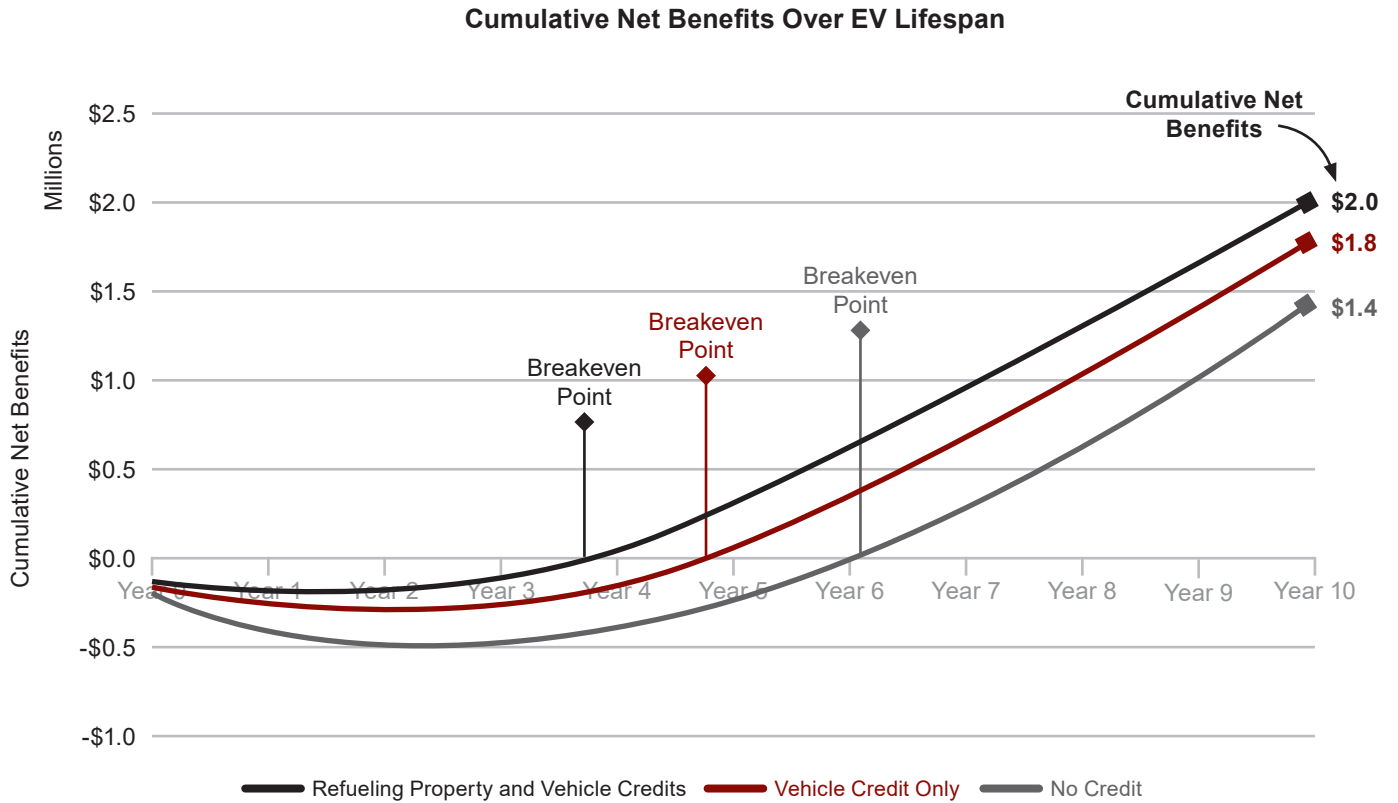
Fleet transition projects may qualify for two types of tax credits: the Qualified Commercial Clean Vehicle Credit and the Alternative Fuel Vehicle Refueling Property Credit. Most municipal fleet transition projects, including this example project, will qualify for the Qualified Commercial Clean Vehicle Credit. This credit is the lesser of 30% of the cost of the vehicle or the price difference between the EV and the ICE vehicle. The credit is capped at \$7,500 or \$40,000, depending on the vehicle's weight class.²⁵ For this project, the credit amount for each new EV purchase ranges from \$1,000 to \$7,500, totaling \$640,000 to offset project costs.

Incentives are also available for installing charging units if they are located in low-income or rural areas. The Alternative Fuel Vehicle Refueling Property Credit can offset up to 30% the cost of the chargers if they are located in eligible areas.

These tax credits reduce overall fleet transition costs, increase the overall cumulative benefit of the transition, and reduce the number of years that the project will take to realize net benefits.

Figure 3 shows these benefits for this project example over a ten-year period with three scenarios: using both the refueling and vehicle tax credits, using only the vehicle credit, and without any tax credits: The top (black) line represents the net benefits (i.e., benefits from rebates, tax credits, and fuel and maintenance savings compared to capital and operational expenditure) when both the vehicle and fueling property tax credits are used; the middle (red) line shows net benefits using only the Qualified Commercial Clean Vehicle credit; and the bottom (gray) line represents project net benefits without either of the two tax credits. When both the Alternative Fuel Vehicle Refueling Property Credit and the Qualified Commercial Clean Vehicle Credit are claimed, the project breaks even in approximately four years. With only the vehicle credit, the project breaks even in approximately five years, and when no tax credit is used, approximately six years. Utilizing only the vehicle credit, the cumulative net benefits to the municipality for the project also increase from \$1.4 million to \$1.8 million when one credit is claimed and to \$2 million when both credits are claimed.

Figure 3: Cumulative Net Benefits of EV Fleet and EV Chargers under Three Tax Credit Scenarios



Considerations for Taking Advantage of Direct Pay Tax Credits

As cities move forward with existing sustainability, resilience, and decarbonization projects, and plan for the future, steps can be taken to identify opportunities to take advantage of the IRA's direct pay tax credits and to maximize bonus rates when available.

1. Consider Project Locations

Project locations can impact tax credit eligibility as well as bonus rates. When project locations are not predetermined, locations should be considered in light of the financial implications of the tax credit amount. Small wind and solar projects, as well as vehicle charging infrastructure tax credits in particular have eligibility criteria tied to low-income and rural locations. Communities should also determine whether the locations are, or could be, within Energy Communities by checking the Department of Energy's Online Energy Community Map.²⁶ Furthermore, projects in specific target communities can be prioritized to take advantage of these tax credits, realize additional community benefits, and stretch municipal budgets further.

2. Consider Project Timelines

The timing of construction initiation, purchase, or start of operations can impact which tax credit is available, the amount of the credit, and whether certain requirements, such as labor standards, are required.

3. Be Intentional and Explicit in Procurement to Receive Bonus Rates

Prevailing wage and apprenticeship requirements necessary for eligibility or bonus rates should be clearly stated in all procurement solicitations. Contractors may be less familiar with apprenticeship requirements and resources than other labor standards. Communities may wish to include lists of resources or more detailed information about these requirements in procurement documents to help contractors understand what is needed and where they can access additional information.

4. Understand Relationship of Available Tax Credit Rates and Other Project Financing

As discussed in Case Study 2, the use of other project financing, such as tax-exempt bonds, may impact the available tax credit rates. Cities may realize the greatest economic benefit by using tax exempt bonds and a reduced ITC; however, a city's bond rating, the spread between tax exempt and taxable interest rates and other factors could make it more attractive to use taxable debt options and receive higher ITC rates. Cities should work with their tax and financial advisors to determine whether using taxable or tax-exempt debt is most advantageous.

5. Work Closely with Tax Counsel

As previously mentioned, cities should work closely with their tax counsel or advisors to stay abreast of IRS guidance that continues to be issued and evolve as the tax credit programs are implemented.

Consultation with financial advisors and tax counsel should occur early in the process of determining how to pay for projects which may qualify for tax credits. These professionals can help identify various funding sources that can be stacked to complete the project, and which are prohibited. They can also perform financial market analysis to determine if taxable or tax-exempt debt would provide the best overall cost of financing when paired with direct pay tax credits.

6. Track IRS Guidance

Cities and their finance or tax professionals should also be on the lookout for IRS guidance on how direct pay tax credits can be claimed. This will ensure that cities have access to the appropriate forms, documentation, and other items necessary to file the returns on time and maintain all required records in case of audit or other actions.

Conclusion

The federal government continues to expand its support of local governments to invest in climate and resilience projects. The IRA's introduction of direct pay tax credits for municipalities creates a new tool in the municipal toolbox to make these types of projects a reality. In total, the IRA introduces 12 tax credits eligible for direct pay to municipalities. This document demonstrates how three of these tax credits - the Investment Tax Credit, Commercial Clean Vehicles Credit and Alternative Fuel Vehicle Refueling Property Credit - can help municipalities make climate change mitigation and resilience projects more financially viable.

Case Study 1 demonstrates how municipalities may be able to integrate additional resilience and clean energy investments, such as a solar and battery-powered microgrid, by leveraging the direct pay option of the Investment Tax Credit. In this real-world-inspired example, a city removed a planned microgrid from a campus district heating project because of the added cost. Had the city been able to benefit from the ITC direct payment, the microgrid project would have been more cost effective and the city may have chosen to move forward with that portion of the project.

Case Study 2 demonstrates how the ITC reduces the total microgrid project to less than the upgrades of the microgrid's supporting systems alone. This real-world planned project will increase the resilience of the plant, accelerate decarbonization, and address deferred maintenance all at a lower overall cost.

Case Study 3 demonstrates how tax credits for electric vehicles and charging infrastructure improve the already favorable financials of procuring and transitioning to EVs compared to business-as-usual procurement of internal combustion engine vehicles. Available direct pay tax credits can reduce overall fleet transition costs, increase the overall cumulative benefit of the transition, and reduce the number of years needed to realize net benefits from this transition.

As these examples show, the IRA presents a significant incentive for local governments to invest in capital projects that reduce carbon emissions, build resilience, and provide many other benefits. The incentives are so significant that they may warrant a re-evaluation of some previously assessed investment opportunities.

To maximize the ability to leverage the opportunities created by these new direct pay tax credits, cities should: (1) consider project locations, (2) consider project timelines, (3) be intentional and explicit in procurement, (4) understand the relationship of tax credit rates and other project financing, (5) work closely with tax counsel, (6) track IRS guidance.

Appendix A: Direct Pay Tax Credit Highlights²⁷

Production Tax Credit for Electricity from Renewables²⁸

26 U.S. Code § 45
 IRA Section 13101

- For production of electricity from renewable sources.
- Generation Facilities including wind, biomass, geothermal, solar, small irrigation, landfill and trash, hydropower, and marine and hydrokinetic renewable energy.
- Construction commences prior to 1/1/25.
- Credit reduced for tax-exempt bonds.

| | Bonus Credit | | |
|----------------------------------|------------------|------------------|------------------|
| Base Rate | Labor Provisions | Domestic Content | Energy Community |
| 0.3 cents/kW, inflation adjusted | 5x Base Rate | 10% Increase | 10% Increase |

Investment Tax Credit for Energy Property Property²⁹

26 U.S. Code § 48
 IRA Section 13102

- For investment in renewable energy projects.
- Fuel cell, solar, geothermal, small wind, energy storage, biogas, microgrid controllers, and combined heat and power properties.
- Solar, includes:
 - Equipment that uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat, and
 - Equipment that uses solar energy to illuminate the inside of a structure using fiber-optic distributed sunlight or electrochromic glass that uses electricity to change its light transmittance properties in order to heat or cool a structure.
- Credit reduced for tax-exempt bonds.
- Cannot stack with section 45 production facility credits.

| | Bonus Credit | | |
|---|------------------|------------------|------------------|
| Base Rate | Labor Provisions | Domestic Content | Energy Community |
| 6% of qualified investment (basis of energy property) | 5x Base Rate | 10% Increase | 10% Increase |

Low Income Communities Bonus Credit³⁰

26 USC 4(e); 26 USC 48E(h)
 IRA Section 13103, 13702(h)

- Additional investment tax credit bonus for small-scale solar and wind facilities on Indian land and in low-income communities.
- Solar and wind facilities with a maximum net output of less than 5 MW, including associated energy storage technology.

| | Bonus Credit | |
|---|------------------------------|--|
| Base Rate | Low-Income or on Tribal Land | Part of federally subsidized housing or offering at least 50% of financial benefits produced to low-income households. |
| 6% of qualified investment (basis of energy property) | 10% Increase | 20% Increase |

Zero Emission Nuclear Power Production Credit³¹

26 USC 45U
 IRA Section 13105

- For electricity produced from qualified nuclear power facilities and sold after 2023.
- Existing nuclear power plants at time of enactment that are not eligible for the 45J credit.
- Not available for tax years beginning after 12/31/32.
- Cannot stack with section 45J advanced nuclear production tax credit.
- Payments from federal, state, or local zero-emission nuclear subsidies reduce the credit amount.

| | Bonus Credit |
|---|------------------|
| Base Rate | Labor Provisions |
| 6% of qualified investment (basis of energy property) | 5x Base Rate |

Clean Electricity Production Tax Credit³²

26 USC 45Y
IRA Section 13701

- Technology-neutral tax credit for production of clean electricity.
- Replaces the Production Tax Credit for Electricity Generated from Renewable Sources (section 45) for facilities placed in service after 12/31/24.
- Credit is claimed over a ten-year period.
- Facilities generating electricity for which the greenhouse gas emissions rate is not greater than zero.
- Phase-out starts the later of:
 - 2032 or
 - when U.S. greenhouse gas emissions from electricity are 25% of 2022 emissions or lower.
- Credit reduced for tax-exempt bonds.

| | Bonus Credit | | |
|----------------------------------|------------------|------------------|------------------|
| Base Rate | Labor Provisions | Domestic Content | Energy Community |
| 0.3 cents/kW, inflation adjusted | 5x Base Rate | 10% Increase | 10% Increase |

Clean Electricity Investment Tax Credit³³

26 USC 48E
IRA Section 13702

- Technology-neutral tax credit for production of clean electricity.
- Replaces the production tax credit for electricity generated from renewable sources (section 45) for facilities placed in service after 12/31/24.
- Facilities generating electricity for which the greenhouse gas emissions rate is not greater than zero.
- Phase-out starts the later of:
 - 2032 or
 - when U.S. greenhouse gas emissions from electricity are 25% of 2022 emissions or lower.
- Credit reduced for tax-exempt bonds.

| | Bonus Credit | | |
|----------------------------------|------------------|------------------|------------------|
| Base Rate | Labor Provisions | Domestic Content | Energy Community |
| 0.3 cents/kW, inflation adjusted | 5x Base Rate | 10% Increase | 10% Increase |

Advanced Energy Project Credit³⁴

26 USC 48C

IRA Section 13501

- Provides a tax credit for investments in advanced energy projects, as defined in 26 USC § 48C(c)(1).
- A project that:
 - re-equips, expands, or establishes an industrial or manufacturing facility for the production or recycling of a range of clean energy equipment and vehicles;
 - re-equips an industrial or manufacturing facility with equipment designed to reduce greenhouse gas emissions by at least 20 percent; or
 - re-equips, expands, or establishes an industrial facility for the processing, refining, or recycling of critical materials.
- The credit is available when the application and certification process begins and ends when credits are fully allocated.
- Provides \$10 billion of allocations, at least \$4 billion of which must be allocated in energy communities.

| | Bonus Credit | | |
|------------------------------------|------------------|------------------|------------------|
| Base Rate | Labor Provisions | Domestic Content | Energy Community |
| 6% of qualified investment (basis) | 5x Base Rate | 10% Increase | 10% Increase |

Advanced Manufacturing Production Credit³⁵

26 USC 45X
IRA Section 13502

- Credit for domestic manufacturing of components for solar and wind energy, inverters, battery components, and critical minerals.
- Cannot claim the section 45X credit for property produced at facilities that received the section 48C credit.
- Credit for critical minerals is permanent starting in 2023. For other items, the full credit is available between 2023 and 2029 and phases down between 2030 and 2032.

| | Bonus Credit | | |
|------------------------------------|------------------|------------------|------------------|
| Base Rate | Labor Provisions | Domestic Content | Energy Community |
| 6% of qualified investment (basis) | 5x Base Rate | 10% Increase | 10% Increase |

Credit for Qualified Commercial Clean Vehicles³⁶

26 USC 45W
IRA Section 13403

- For purchases of qualified commercial clean vehicles.
- Businesses and eligible governmental entities that acquire motor vehicles or mobile machinery for use or lease.
- The amount of the credit is the lesser of:
 - 15% of the vehicle’s basis (i.e., its cost to the purchaser) or 30% for vehicles without internal combustion engines, or
 - the amount the purchase price exceeds the price of a comparable internal combustion vehicle.
- The credit is capped at \$7,500 for vehicles weighing less than 14,000 pounds and \$40,000 for heavy duty clean vehicles.
- Vehicles must be placed in service after 1/1/23 and acquired before 1/1/33.
- Cannot claim both the section 30D credit and section 45W credit.

| | Bonus Credit |
|---------------------------------------|--------------|
| Base Rate | None |
| Varies by technology and vehicle cost | |

Alternative Fuel Vehicle Refueling Property Credit³⁷

26 USC 30C
 IRA Section 13404

- Provides a tax credit for alternative fuel vehicle refueling and charging property in low-income and rural areas.
- Alternative fuels include electricity, ethanol, natural gas, hydrogen, biodiesel, and others.
- 6% of the cost limited to a \$100,000 credit per item of property.
- Available January 1, 2023-December 31, 2032.

| | Bonus Credit |
|--|---|
| Base Rate | Labor Provisions |
| 6% for businesses and 30% for individuals with credit limits | Businesses can claim a 30% credit for projects meeting prevailing wage and apprenticeship requirements. |

Clean Fuel Production Credit³⁸

26 USC 45Z
 IRA Section 13704

- For domestic production of clean transportation fuels, including sustainable aviation fuels, beginning in 2025.
- Fuels with less than 50 kilograms of carbon dioxide equivalent per million British thermal units (CO₂e per MMBtu) qualify as eligible clean fuels.
- Producers must be registered and in the United States.
- The base amount is \$0.20/gallon for non-aviation fuel, \$0.35/gallon for aviation fuel, multiplied by the carbon dioxide “emissions factor” of the fuel. Inflation adjusted after 2024.

| | Bonus Credit |
|----------------------|------------------|
| Base Rate | Labor Provisions |
| Varies by fuel types | 5x Base Rate |

Credit for Carbon Oxide Sequestration³⁹

26 USC 45Q
 IRA Section 13104

- Credit for carbon dioxide sequestration coupled with permitted end uses.
- U.S. facilities within minimum volumes:
 - 1,000 metric tons of CO₂ per year for DAC facilities;
 - 18,750 metric tons for electricity generating facilities (with carbon capture capacity of 75% of baseline CO₂ production);
 - 12,500 metric tons for other facilities.
- \$17/metric ton of carbon dioxide captured and sequestered; \$12/metric ton for carbon dioxide that is injected for enhanced oil recovery or utilized. Those amounts are \$36 and \$26, respectively, for direct air capture facilities.
- Facilities placed in service before 1/1/33. Available for 12 years after the facility is placed in service.
- Credit reduced for tax-exempt bonds (rules similar to section 45(b)(3)).

| Bonus Credit | |
|----------------------|------------------|
| Base Rate | Labor Provisions |
| Varies by fuel types | 5x Base Rate |

Clean Hydrogen Production Tax⁴⁰

26 USC 45V

IRA Section 13204

- For the production of clean hydrogen at a qualified clean hydrogen production facility in the United States.
- \$0.60/kg multiplied by the applicable percentage. The applicable percentage ranges from 20% to 100% depending on lifecycle greenhouse gas emissions. The \$0.60/kg is adjusted for inflation.
- For hydrogen produced after 12/31/22.
- Facilities placed in service before 1/1/33 during their first 10 years in service.
- Taxpayers can choose the ITC in lieu of the 45V credit as long as they have not claimed the section 45Q credit for carbon sequestration.
- Credit reduced for tax-exempt bonds.

| | Bonus Credit |
|----------------------|------------------|
| Base Rate | Labor Provisions |
| Varies by fuel types | 5x Base Rate |

Appendix B: Additional Resources

The following governmental resources may be useful as cities explore opportunities to take advantage of direct pay tax credits.

White House Publications and Resources

Clean Energy Tax Provisions in the Inflation Reduction Act. Provides a quick reference to all energy tax credit provisions in the IRA. <https://www.whitehouse.gov/cleanenergy/clean-energy-tax-provisions/>

Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action, Version 3. This document provides an overview of the IRA along with potential benefits of many of its provisions. <https://www.whitehouse.gov/wp-content/uploads/2022/12/Inflation-Reduction-Act-Guidebook.pdf>

Internal Revenue Service Resources

A Notice of Proposed Rulemaking regarding the payment of direct pay tax credits was released on June 21, 2023. <https://www.federalregister.gov/documents/2023/06/21/2023-12798/section-6417-elective-payment-of-applicable-credits>

The Internal Revenue Service maintains general web pages with links to a variety of information relating to the IRA which are updated frequently as guidance and information is released:

- General IRA information including notices, announcements, procedures, proposed regulations, articles, reference sheets, and other information. <https://www.irs.gov/inflation-reduction-act-of-2022>
- IRA credits and deduction information including information relating to bonus credits. <https://www.irs.gov/credits-and-deductions-under-the-inflation-reduction-act-of-2022>

As of the time of this publication, the following contain information or guidance on specific direct pay tax credits:

- Frequently Asked Questions on Direct Pay (Elective Pay) following Guidance Update from June 14, 2023. <https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay>
- Commercial Clean Vehicle Credit: <https://www.irs.gov/credits-deductions/commercial-clean-vehicle-credit>
- Advanced Energy Project Credit Initial Allocation Guidance: <https://www.irs.gov/pub/irs-drop/n-23-18.pdf>
- Carbon Oxide Sequestration: <https://www.irs.gov/forms-pubs/about-form-8933>

- Production Tax Credit for Electricity from Renewables: <https://www.irs.gov/forms-pubs/about-form-8835>
- Low Income Communities Bonus Credit Initial Allocation Guidance: <https://www.irs.gov/pub/irs-drop/n-23-17.pdf>

Information is also available relating to bonus credits:

- Energy Community Notice of Forthcoming Proposed Regulations: <https://www.irs.gov/pub/irs-drop/n-23-29.pdf>
- Prevailing Wage and Apprenticeship Initial Guidance: <https://www.federalregister.gov/documents/2022/11/30/2022-26108/prevailing-wage-and-apprenticeship-initial-guidance-under-section-45b6bii-and-other-substantially>

Interagency Working Group on Coal & Power Plant Communities and Economic Revitalization

- Interactive Energy Community Tax Credit Bonus Mapping Tool: <https://energycommunities.gov/energy-community-tax-credit-bonus/>
- Energy Community Tax Credit Bonus FAQs: <https://energycommunities.gov/energy-community-tax-credit-bonus-faqs/>

Endnotes

1. The IRA also allows certain entities to transfer tax credits to third parties, however, cities and other tax-exempt entities eligible to receive direct pay tax credits are precluded from transferring tax credits.
2. Both the Inflation Reduction Act and proposed rules and other documents recently released by the Internal Revenue Service refer to these tax credits as elective pay tax credits; however, they are more commonly called direct pay tax credits. This document will use direct pay, but the names are interchangeable.
3. This document is for information purposes only and is not intended to provide legal or financial advice and should not be relied on as such. Cities should consult with their legal and finance professionals regarding the use of IRA tax credits.
4. Alliance for a Sustainable Future, (January 2022). Cities Advancing Climate Action: Leveraging Federal Funds for Local Impact a Resource Guide. <https://www.c2es.org/document/cities-advancing-climate-action-leveraging-federal-funds-for-local-impact-a-resource-guide/>
5. Inflation Reduction Act Guidebook. <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/>
6. Proposed rules issued by the Internal Revenue Service on June 6, 2023, clarify that tax exempt organizations, State and local governments, Indian tribal governments, Alaska Native Corporations, the Tennessee Valley Authority, and rural electric cooperatives are “applicable entities” allowed to take advantage of direct pay tax credits. <https://www.federalregister.gov/documents/2023/06/21/2023-12798/section-6417-elective-payment-of-applicable-credits>
7. See Elective Pay and Transferability Frequently Asked Questions: Elective Pay for additional information regarding the process to receive direct pay tax credits. <https://www.irs.gov/credits-deductions/elective-pay-and-transferability-frequently-asked-questions-elective-pay> Additional information will be posted on the following web page under the heading “Elective Payment and Credit Transfer” when available. <https://www.irs.gov/credits-and-deductions-under-the-inflation-reduction-act-of-2022>
8. See Internal Revenue Service Notice 2022-61 for guidance relating to prevailing wage and apprenticeship requirements for applicable tax credits. <https://www.federalregister.gov/documents/2022/11/30/2022-26108/prevailing-wage-and-apprenticeship-initial-guidance-under-section-45b6bii-and-other-substantially>
9. The IRA defines Energy Communities as a brownfield site; an area which has had significant employment or tax revenues relating to coal, oil, or natural gas at any time since 1999; or a census tract in which a coal mine has closed since 1999 or coal-fired generation unit has been retired since 2009 and census tracts adjacent thereto. 45 USC 45(b)(11)(B). See Internal Revenue Service Notice 2023-29 for guidance relating to eligibility requirements for energy communities. <https://www.irs.gov/pub/irs-drop/n-23-29.pdf>
10. The US Department of Energy maintains an online map showing those census tracts that meet the eligibility requirements for an Energy Community. <https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d>
11. Low-income community is defined as any population census tract in which the poverty rate is at least 20%, if not located within a metropolitan area in which the median family income (MFI) does not exceed 80% of the statewide MFI, or if within a metropolitan area the MFI of the tract does not exceed the greater of the statewide or metropolitan area MFI. 26 USC 48(e)(s)(A) and 26 USC 45D(e)(1).
12. Projects claiming the Production Tax Credit for Electricity from Renewables, Clean Electricity Production Tax Credit, Clean Electricity Investment Tax Credit, Credit for Carbon Oxide Sequestration, or Clean Hydrogen Production Tax Credit are subject to this credit reduction.
13. Given the similarities and nature of the ITC for Energy Property and its replacement, the Clean Energy ITC, throughout the report we will refer to these credits as Investment Tax Credit or ITC without differentiation.
14. Assuming electricity procurement costs of \$75 per MWh.

Endnotes continued

15. The 40% rate includes the ITC base rate of 6%, the credit bonus for meeting labor standards (increasing the rate to 30%), and an additional 10% bonus for meeting domestic content criteria.
16. The ITC direct payment is received when the project starts service. At the beginning of construction, the project may need to finance the full \$30 million. Once the ITC is received after completion of construction, the portion of the loan equal to the \$12 million in ITC direct payment can be paid immediately so that interest will not accrue long-term over that \$12 million. The interest that would accrue during the construction period would be small compared to the cumulative numbers represented in this case study.
17. Assuming a 40-year, taxable loan at a 5% interest rate, capital costs would have been \$30 million and interest \$39.4 million over the life of the loan without the ITC payment. With the ITC, capital costs would have been \$18 million and interest \$23.6 million. The 40-year loan term mirrors that utilized for the SHR system.
18. Assuming a 30-year loan at 5% interest.
19. 40% ITC rate includes base rate and bonus credits for meeting labor and domestic content criteria.
20. The ITC direct payment is received when the project starts service. At the beginning of construction, the project may need to finance the full cost of the project. Once the ITC is received after completion of construction, the portion of the loan equal to the ITC direct payment can be paid immediately so that interest will not accrue long-term over that amount. This will reduce the amount of principal from \$55.8 million to \$39.3 million. The project may need to pay interest on the direct pay amount in the period between the start of construction and the start of service. This period can vary in length, but the interest for this gap is small relative to interest over a long-term loan. For example, the interest from 1 year for a 30-year loan at 5% interest is 3% of total interest for the full 30 years.
21. Project costs with the microgrid are \$55.8 million. After ITC, the capital cost is reduced to \$39.32 million plus interest of \$36.7 million assuming a 30-year, taxable loan at 5%. The city is financing this project with a combination of a Clean Water State Revolving Loan Fund (SRF) loan, a WIFIA loan, and an additional higher interest rate loan. The combined average cost of capital across all loans for the project is 5%.
22. Capital costs of \$35.7 million plus interest of \$33.3 million assuming a 30-year, taxable loan at 5%.
23. If less than 15% of the cost of the project was financed with tax exempt debt, the reduction will equal the percent financed.
24. Table 4 assumes ITC eligible project costs of \$41.2 million, 3% interest rate for tax exempt loans and 5% interest rate for taxable debt.
25. The maximum amount of the Commercial Clean Vehicle Tax Credit per vehicle is determined by the vehicle weight. The credit is capped at \$7,500 for vehicles below 14,000 pounds and \$40,000 for heavier vehicles.
26. <https://arcgis.netl.doe.gov/portal/apps/experiencebuilder/experience/?id=a2ce47d4721a477a8701bd0e08495e1d>
27. This appendix reproduces information from the following source from The White House: <https://www.whitehouse.gov/cleanenergy/clean-energy-tax-provisions/>
28. [https://uscode.house.gov/view.xhtml?req=\(title:26%20section:45%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:26%20section:45%20edition:prelim))
29. [https://uscode.house.gov/view.xhtml?req=\(title:26%20section:48%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:26%20section:48%20edition:prelim))
30. <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section48E&num=0&edition=prelim>

31. [http://uscode.house.gov/view.xhtml?req=\(title:26%20section:45U%20edition:prelim\)](http://uscode.house.gov/view.xhtml?req=(title:26%20section:45U%20edition:prelim))
32. <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section45Y&num=0&edition=prelim>
33. <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section48E&num=0&edition=prelim>
34. [https://uscode.house.gov/view.xhtml?req=\(title:26%20section:48C%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:26%20section:48C%20edition:prelim))
35. <https://uscode.house.gov/view.xhtml?req=26+USC+45X&f=treesort&fq=true&num=3&hl=true&edition=prelim&granuleid=USC-prelim-title26-section45X>
36. [https://uscode.house.gov/view.xhtml?req=\(title:26%20section:45W%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:26%20section:45W%20edition:prelim))
37. [https://uscode.house.gov/view.xhtml?req=\(title:26%20section:30C%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:26%20section:30C%20edition:prelim))
38. <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section45Z&num=0&edition=prelim>
39. [https://uscode.house.gov/view.xhtml?req=\(title:26%20section:45Q%20edition:prelim\)](https://uscode.house.gov/view.xhtml?req=(title:26%20section:45Q%20edition:prelim))
40. <https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title26-section45V&num=0&edition=prelim>



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