

Juneau's Climate Action and Sustainability: What's Been Accomplished and Recommendations for a Proposed 5-Year Work Plan

Juneau Commission on Sustainability
December 2022

I. Introduction

It's been 11 years since the City and Borough of Juneau (CBJ) adopted its 20-year community climate plan, the *Juneau Climate Action and Implementation Plan* (JCAIP). The JCAIP set a goal of reducing GHG emissions by 25% by 2032 and identified numerous potential actions to accomplish this goal. One JCAIP Top 10 recommended action was to develop an energy plan for the community, which was completed in 2018 when the CBJ adopted the *Juneau Renewable Energy Strategy* (JRES).

The JRES sets a goal of shifting community energy use away from fossil fuels so that renewable sources provide 80% of the total energy used in Juneau by 2045. Juneau's JRES is different and more comprehensive than many communities' strategies in that our strategy targets 80% renewable energy for not only electrical energy production, but also Juneau's heating and transportation needs. This broad focus helps meet Juneau's climate action goals, reduces vulnerability to fuel price shocks as in 2022, and strengthens the community's economic sustainability and resilience.

The JRES provides a menu of hundreds of specific policies and actions for meeting Juneau's climate and renewable energy goals (drawn from the CBJ Comprehensive Plan and the JCAIP). Recommended actions and the development of action plans are placed in four general categories:

1. An internal CBJ energy management program - to track and reduce energy use and costs, contribute to climate and renewable energy goals, and lead by example.
2. Buildings' energy use and space heating – install energy efficiencies and electrify heating to reduce Juneau's dependence on fossil fuels,
3. Transportation – electrify fleets, buses, personal vehicles and cruise ship docks to reduce Juneau's dependence on fossil fuels, and
4. New renewable energy supplies - to meet demand as Juneau electrification continues.

This white paper offers a retrospective on what's been accomplished since the JCAIP and JRES were adopted, identifies actions currently underway, and makes recommendations for additional actions.

While this paper focuses on CBJ's role in reaching climate goals, JCOS recognizes that

1. The city is a leader but not the only player in strengthening Juneau's energy future. Residents, homeowners, businesses, utilities, organizations, and other government agencies all play an important role in reducing GHG emissions and our reliance on fossil fuels.
2. The community's climate actions do not happen in a vacuum, but are part of the overall efforts undertaken to sustain and enhance the livability and economic wellbeing of Juneau for current and future generations.
3. There are additional measures of a community's sustainability, including poverty, housing, and environment. Although these issues are important, this paper focuses on actions that address the community's underlying use of energy, its handling of wastes, and the impacts of the changing climate.
4. One intent of this paper is to position CBJ and community members to take advantage of and optimize the funding opportunities of recent federal legislation that can financially enable the CBJ to meet its strategic climate and sustainability goals. Underlying Juneau community values can also be strengthened using this federal assistance.

II. Are We on the Way to Meeting Our Goals? What's Been Accomplished in Recent Years?

A. Measuring Progress

Ideally, Juneau would publish (and regularly update) dashboard graphics that show where the community started, our goals, and the path (or paths) that will lead us to those goals in a timely manner. Although simple in concept, the unfortunate truth is that we can neither measure progress nor identify roadblocks to progress until we have good data on energy usage and greenhouse gas emissions.

Juneau does not have adequate and current data. Juneau's 2010 energy use inventory by sector showed: Buildings 40%; Transportation (highway, marine, air) 43%; Industrial (Greens Creek and Kensington mines) 12%; and Equipment & non-highway 5%.¹ At that time, 77% of Juneau's energy sources were petroleum products, which accounted for 94% of the GHG emissions produced by Juneau.

¹ *Juneau Climate Action & Implementation Plan*, November 2011. p. 12.

While Juneau's 2010 energy use profile and GHG inventory have not been updated, two actions contribute to getting the data needed:

- In 2020, the CBJ Maintenance staff began to compile 2015-to-present records and monitor energy use in CBJ facilities under an Energy Management and Information System. Now, energy use in approximately 60 CBJ facilities is tracked, and CBJ Maintenance, Engineering and Finance are automating ongoing electrical bills and fuel purchasing records.
- In 2022, CBJ contracted with a national firm to prepare a current energy use profile and GHG emission inventory for the Juneau community as a whole and for local government, with the capability to model future efforts that help inform decision making. Preliminary results of this update are expected in 2023.

B. CBJ and Community Actions in Recent Years and What's Underway Now

1. CBJ Energy Management

- Several CBJ facilities have had or are slated for near-term energy efficiency & HVAC upgrades, including Treadwell Arena, Savikko Park, Douglas Fire Station/Library, Downtown Library, CBJ Street Shop (at 7-mile), Glacier Fire Station, Eagle Valley Center, Lynn Canal Fire Station, Syeik Gastineau Community School, Sheik Héen (formerly Riverbend) School, Auke Bay Fire Station, Zack Gordon Youth Center, Centennial Hall, Augustus Brown Pool, Dimond Park Field House, Dimond Park Aquatic Center, and Bartlett Regional Hospital emergency area.
- New construction and operation at the Juneau Airport's North Terminal and Bartlett Behavioral Health Facility incorporate numerous energy efficiencies.
- CBJ Engineering & Public Works incorporated energy use data for CBJ facilities into a 2021 Sustainability Report. <https://juneau.org/engineering-public-works>.
- Beginning in 2021, the CBJ now incorporates sustainability as a criterion for projects in its Capital Improvement Plan.
- CBJ replaced five of its 14 passenger vehicle fleet with EVs (36%), and is investigating consolidation of its downtown-located vehicles for more efficient utilization and potential future EV purchasing.
- CBJ Transit secured federal funding for eight electric buses (44% of fleet), bus-charging equipment, and bus barn upgrades. Juneau's first electric bus began operation in April 2021, and provided practical experience and trouble-shooting useful when it ordered the next seven electric buses in October 2022.

2. Buildings: Energy Use and Space Heating in Businesses and Private Homes

- Since 2020, the CBJ Assembly has funded Alaska Heat Smart (AHS), a local nonprofit that provides education & technical assistance to homeowners who then convert their home heating to air source heat pumps. As of November 2022, AHS conducted nearly 600 home heating assessments. AHS data shows, on average, homeowners save about 67% on annual energy costs (at \$5/gal fuel in 2022) and eliminate CO₂ emissions equivalent to those produced by one automobile annually.
- In 2022, AHS secured \$2.4 million in two federal grants to install energy efficiencies and heat pumps in lower-income Juneau homes over the next three years. The AHS's Heat Pump Incentive (DOE) program has 60 households on a wait list, and the Healthy Homes (HUD) program has about 120 households on a wait list. Also, AHS posts consumer information on its website about the potential energy efficiency upgrades and home heating rebates and tax credits available under the recent federal Inflation Reduction Act.
- The number of heat pumps has increased rapidly in Juneau. While it's difficult to get an accurate number, an estimated 1,500-1,800 Juneau homes have installed heat pumps, roughly 11-13% of Juneau's housing units.
- Air source heat pumps are a preferred heating system for new construction, renovations, and real estate sales. Newer housing developments at Pederson Hill, above Vanderbilt Hill, across from Safeway, and above Blueberry Hill have installed heat pumps.
- High demand for heat pumps has led to increases in hiring by local installers.
- As of November 2022, Renewable Juneau's Carbon Offset Fund has installed heat pumps in 35 lower-income homes, with two more installations pending. In fall 2022, JCOF applied for carbon offset certification under an international program, which will expand its reach particularly to travelers and tourism businesses.
- AEL&P is conducting a pilot program with the Cold Climate Housing Research Center and Information Insights that will replace electric resistance heating with heat pumps in approximately twenty rental units in Juneau. Data will be collected before and after installation of heat pumps to measure the energy and electrical capacity savings associated with the change to more efficient heat pumps. The study will explore the value of potential programs to encourage landlords to install heat pumps as lower cost, supplementary heating devices in multifamily rental units.
- Spearheaded by Interfaith Power & Light volunteers and others, an investigation of potential financing options is underway to accelerate the adoption of heat pumps and other energy efficiencies. An application for a federal USDA line of credit project may be feasible.

- A district heating system for the Aak’w Kwaan Village district and downtown is being designed.

3. Transportation - Reduce Reliance on Fossil Fuels

- To date, Juneau residents have purchased over 600 EVs – roughly 3% of the community’s 20,000 cars.
- Beginning in 2014, through a collaborative effort among nonprofits, businesses and agencies, 33 public EV chargers in 20 Juneau locations are now installed and provide free charging. About 20 of these belong to the CBJ.²
- CBJ investigated the challenges, identified locations, and installed 10 public EV charging stations in 2022 with CIP funding approved by the Assembly, additional funds and in-kind logistical, standard drawings, and coordination support from Juneau EV Assn. and AK EV Assn., and coordination with AEL&P. The new Level 2 charger sites are: 8th St/Basin Rd (2 chargers), Twin Lakes (2), Harris Harbor (2), Eagle Valley Center (2), and Eaglecrest (relocated & added 2 to expand site to 4 chargers).
- In 2017, AEL&P developed (and RCA approved) an off-peak EV charging rate that allows EV owners to pay a reduced rate when charging between 10pm and 5am. Participation in the program has grown steadily, with 138 participants taking advantage of the rate during September 2022.
- AEL&P offers a Level 2 EV charger/metering unit for rent. In October 2022, there were 97 units deployed in the community.
- AEL&P developed (and RCA approved) a High-Power EV Charging rate effective April 1, 2022. This rate eliminates demand charges that could be cost-prohibitive to installation of Level 3 EV charging equipment.
- With a FY2023 \$5M State grant, CBJ is beginning a collaboration with the State on renovation of the State Office Building parking garage to accommodate substantially more parking and EV charging.
- Using 2022 Marine Passenger Fees (MPFs), the CBJ is analyzing the feasibility of electric bus circulators for downtown.
- The Visitor Industry Task Force (2021) recommended prioritizing dock electrification on Juneau’s waterfront.

² <https://www.plugshare.com/directory/us/alaska/juneau>

- In 2022, CBJ prioritized electrification of its two public docks for cruise ship shore power – through revenue bonds, MPFs, and potential federal grants.
- With 2022 MPFs, the CBJ commits to upgrade the 20-year-old electrical infrastructure serving the Franklin Dock shore power, as a precursor to electrifying the two city docks for shore power.
- Norwegian Cruise Lines stated that it expected to provide cruise ship shore power if a new dock were approved. That development is now under Huna Totem Corp. ownership.
- A local entrepreneur has an electric boat operational.

4. New Renewable Energy Supplies

- Studies and grant applications prepared by CBJ have raised community awareness that more hydroelectric energy is needed to replace fossil fuels used for heating and transportation, or to connect additional cruise ships to shore power. Key ways to increase the amount of hydroelectric energy available to replace fossil fuel usage and achieve Juneau’s climate/energy goals, include the following (from least to most expensive):
 - energy efficiency and conservation measures, such as replacing electric resistance space heating with more efficient heat pumps. Freeing up existing energy and capacity for other uses is generally the most cost-effective way to support community electrification goals.
 - modifications to existing hydroelectric facilities to reduce efficiency losses in equipment such as penstocks and turbine-generators.
 - building new generating facilities.
- Juneau Hydropower Inc. (JHI) continues to work through the interconnection process with AEL&P. JHI has conducted background studies to determine the impacts of adding the Sweetheart Lake Hydro project to the Juneau area grid. The parties are negotiating the terms of agreements for the interconnection and transmission services sought by JHI.
- Seasonal variability in weather conditions and the impacts of climate change have a prominent impact on predicting generation capacity in hydropower systems. Changes in precipitation levels and when it is available (snow pack or free-flowing water) significantly affect the supply available in any given year.

5. Community Sustainability

- Beginning in 2019, the CBJ Assembly identified annual sustainability goals and has taken actions to implement the *Juneau Renewable Energy Strategy* and solid waste management issues.
- In 2020, CBJ pursued USDA funding (unsuccessfully) to expand Juneau’s composting capability in partnership with a private business, local schools, and the Alaska Dept. of Environmental Conservation.

- In 2021, a local business (Juneau Composts) diverted about 180 tons of food waste from the landfill plus wood chips from tree service companies, manure from horse stables, and grains from microbreweries.
- The CBJ RecycleWorks program collects and ships out hazardous wastes, recycled materials, and junk vehicles under contracts with private businesses. Residents and businesses participate on a voluntary basis.
- In 2021, the CBJ Wastewater Utility staff began an analysis of the sources of high organic loads; fats, oils and grease (FOG); and infiltration and stormwater into the community's two larger wastewater treatment facilities (the Juneau and Mendenhall plants). Efforts are underway to address these sources which increase treatment costs equipment maintenance, energy use, and have contributed to some violations of ADEC water quality standards.
- In FY2023, the Assembly funded a zero-waste planning project to reduce & divert solid wastes and extend the life of Juneau's landfill. The CBJ also has a \$2.5 million request for congressionally designated spending to design and construct a municipal composting facility included in the pending FY2023 federal budget legislation.
- An Environmental Projects Specialist began work at CBJ Engineering & Public Works Dept. in November 2022 to work on CIP-funded zero waste, wastewater utility, EV, and energy/GHG inventory projects.
- A 2022 collaborative report by UAS, UAF, and CBJ, *Juneau's Changing Climate & Community Response*, identifies probable effects Juneau residents will face in coming decades. For example, due to heavy precipitation in recent years and most recently in September 2022, Juneau has experienced land and vegetation debris flows on steep slopes that have impacted private homes and public streets. A FEMA-funded hazards study updated downtown vulnerabilities to mass-wasting off steep slopes.

III. Recommendations for A Proposed 5-Year Juneau Climate Action and Sustainability Action Plan

JCOS recommends that CBJ develop a 5-year plan that identifies specific actions where CBJ and others in the community can make notable progress toward energy goals, climate resilience and sustainability. The energy use profile and GHG inventory expected to be completed in early 2023 will help provide a basis for identifying cost-effective actions.

The CBJ's recent and ongoing actions previously identified give Juneau strong momentum in achieving its climate, renewable energy, and sustainability goals. Federal legislation in 2021 (Bipartisan Infrastructure Law - BIL) and 2022 (Inflation Reduction Act - IRA) present once-in-a-generation funding opportunities over several years to propel the Juneau community forward on its path to a more sustainable and resilient future. The CBJ has drafted a grant strategy for some projects that CBJ could seek funding under the 2021 BIL. Efforts to

understand the IRA funding opportunities related to climate, energy efficiency, electrification, GHG reduction, equity, and climate resilience are also underway.

It is JCOS's intention that development and implementation of an action plan:

- helps community members, businesses, CBJ staff, and the CBJ Assembly identify priority actions;
- provides guidance on implementing and funding sustainability projects in the CBJ budget and CIP processes;
- supports private, foundation and public funding requests;
- identifies and supports federal funding opportunities;
- contributes to public communications about Juneau climate and energy actions; and
- identifies the connections between climate/energy goals and other community goals such as affordable housing, reducing waste and landfill odors, cost-effective wastewater treatment, etc.

As a starting point for a 5-year plan, JCOS offers the following recommendations for action. The JCOS has considered ongoing efforts and federal funding opportunities and also sought to identify gaps in community-wide efforts to achieve equitable energy efficiency, climate resilience, and sustainability. Table 1 provides a preliminary list of potential BIL and IRA funding opportunities that address many of these recommendations.

A. Track the Community's Progress on Climate/Energy Goals

- Use the updated energy use profile and GHG inventory as a benchmark to establish measurable sustainability indicators, and then track and communicate the indicators to the public.³
- Continue to track and annually report CBJ facility energy performance and cost savings. CBJ should continue to lead by example. Publicize accomplishments and impacts to help the public understand that reducing GHG emissions can also save money and stimulate the local economy.
- Embed information on changes in energy use and GHG emissions and the projected costs to reduce or offset new GHG emissions into the analysis and decision making for significant CBJ actions and projects.
- Strengthen the modeling efforts from the pending energy use/GHG inventory study by establishing methods for tracking the amount of fossil fuel used locally for transportation, heating and other uses. Knowing the amount of energy use and GHG associated with

³ JCOS has identified GHG emissions and the relative proportions of energy provided by fossil fuels and renewable sources as initial sustainability indicators.

different activities will help focus policy and budget decisions on actions that produce the best results.

- Adjust outdated JCAIP and JRES goals to reflect current understanding of climate change and establish interim targets for renewable energy and GHG emissions. Track progress toward targets.
- Update the 2023 community energy profile and GHG emission inventory no later than 2027.

B. Accelerate Energy Efficiency and Electrification in Juneau Buildings

Undertake CBJ assembly actions to:

- Adopt a CBJ policy of “leading by example” in building decarbonization.⁴
- Update building codes to incorporate current energy efficiency standards: 2021 International Energy Conservation Code (IECC) and ASHRAE Standard 90.1-2019. Consider requiring heat pumps in new construction or major renovations. Consider a “stretch” code as a first step.
- Continue support for local efforts to upgrade the energy efficiency and heating systems of housing to enhance the affordability for lower income households.
- Establish financing options, such as “C-PACE” (Commercial Property Assessed Clean Energy), for commercial and multi-family building owners to install energy efficiency, heat pump systems, and climate resilience upgrades. Build on the experience of the Anchorage C-PACE program.
- Provide encouragement to homeowners to install heat pumps and energy efficiency upgrades by offering financing incentives via on-bill financing, LIDs, etc.
- Investigate district heating for the Capital Civic Center and thereby provide momentum to encourage nearby federal and state facilities to support the project.
- Investigate federal funding for air quality/energy efficiency upgrades in Juneau schools, including ARP/ESSER.

C. Accelerate the Electrification of Transportation in Juneau

Undertake CBJ Assembly actions to accelerate the transition to EVs:

- Adopt a CBJ policy of support for electrification of transportation.

⁴ The report “[Model Government Zero Emissions Buildings Policy](#)”, released May 2022, provides “plug-and-play” policy language for jurisdictions that consider taking a lead-by-example approach to building decarbonization to show what’s possible.

- Lead by example by continuing to replace CBJ's fleet with electric vehicles and prepare a fleet transition plan to facilitate federal funding opportunities.
- Collaborate on a community strategy to electrify transportation. Identify CBJ's role as a catalyst to overcome barriers and accelerate EV adoption.
- Continue to collaborate with businesses and other organizations on the installation of EV charging infrastructure.
- Consider CBJ actions to:
 - Finance EV charging infrastructure renovations for multi-family rental and condominium housing through LIDs, C-PACE, property tax deferments, etc.
 - Amend CBJ codes to incentivize EV charging infrastructure in parking lots of new commercial developments and to require EV chargers as a feature of new single and multi-family housing construction.
 - Coordinate with private businesses and government agencies to electrify vehicle fleets, including taxis, courtesy vans, tour buses, and school buses.
 - Provide waterfront electrification for EV charging infrastructure and work with the tourism industry to identify and implement incentives to assist in converting their fleets to electric buses, vans and vehicles.

D. New Renewable Energy Supplies & CBJ's Role

- Invite AEL&P, Juneau Hydropower Inc., and others to provide an annual update to the Assembly and the community about the prior year energy use, recent and forecasted weather/water conditions for power generation, current status of the electric system in Juneau and future infrastructure needs, and studies/planning for the future power supply additions.

<https://cleancities.energy.gov/technical-assistance/>

- Engage with the Regulatory Commission of Alaska and the Alaska Legislature with the intent of having AEL&P prepare and share a plan with the public for meeting the longer-term energy needs of the community.
- Seek independent, expert analysis of community power needs and potential rate agreements favorable to the community. Provide an analysis that examines the full beneficial electrification of downtown Juneau, including all cruise ship docks; tourism industry transportation; heating and transportation for residential, commercial and government users; and district heating.
- Provide letters of support, as appropriate, to private utilities seeking funding, tax credits, etc. under recent federal legislation.

E. Community Sustainability

- Construct a municipal composting facility as an essential foundation to a community-wide effort to divert organics from the Juneau landfill and Juneau's wastewater treatment

facilities. Based on the outcomes of the current zero waste planning project, implement other actions within a 5 to 10-year timeframe to reduce waste, divert waste, enhance local resource recovery businesses, and begin planning for a new landfill.

- Identify and address CBJ's vulnerabilities to climate change (e.g., heavy precipitation inflows to wastewater treatment facilities or runoff to drainage infrastructure, mass wasting off steep slopes, etc.). Prepare a community hazards mitigation plan or resilience strategy to prioritize action and facilitate federal funding opportunities.
- Advocate for and collaborate on local and state workforce training for construction/utility trades to meet demands for energy efficiency and climate resilience upgrades by residents, businesses, and agencies.

F. Advocacy

- Actively track actions and advocate for Juneau and Southeast Alaska in State agency planning and decisions regarding federal BIL and IRA funding opportunities to Alaska. Collaborate with the Juneau's legislative delegation, Alaska Municipal League, Southeast Conference, and other municipalities, as appropriate.
- Collaborate with other municipalities to engage with the Governor's Energy Office on how federal energy funding opportunities will optimize benefits to Alaska's communities.
- Engage with the Alaska Energy Authority on State planning and funding for EV charging infrastructure in Southeast Alaska and on the Haines and Alaska Marine Highways.
- Engage with the Alaska Housing Finance Corporation on the planning and use of federal IRA funds received by the State for energy efficiencies in Alaska's housing and buildings.

IV. Conclusion

JCOS applauds recent and ongoing efforts to meet community climate and renewable energy goals, but also realizes that Juneau has substantial work ahead of it. Municipal government, residents, businesses, and others will need to work together to achieve a predominantly renewable energy future and a climate-resilient community that is sustainable over the long term. We've made considerable progress and with a concerted effort Juneau will be well-positioned to take advantage of the tremendous federal funding opportunities in the next few years. The CBJ can play a key lead-by-example role, as well as acting as a catalyst for broader community efforts.

Table 1. Potential Federal Funding Opportunities for Juneau's Climate Action and Sustainability

These federal funding opportunities include grant programs the Juneau Commission on Sustainability identified in the 2021 Bipartisan Infrastructure Law (BIL) and 2022 Inflation Reduction Act (IRA) of potential value to Juneau.⁵ Included are programs that the City & Borough of Juneau might apply for directly or seek through an Alaska state agency, as well as those that would benefit individuals and businesses, non-profits, public schools, utilities, and other government and tribal agencies. Some of these programs would have the most benefit to the community if the CBJ helps coordinate and share information about them.

The BIL programs are beginning to award funds in 2022. Implementing regulations for many of the IRA grant programs are still under development, but programs are generally required to take effect in 2023.

The funding opportunities below are listed in the order of the recommendations JCOS makes in Section III of this report.

A. Track the Community's Progress on Climate/Energy Goals

1. IRA - GHG Planning and Implementation Grants

\$5B in grants to public entities to develop plans for addressing GHG pollution. EPA to award one grant to each state for the costs of developing a plan to reduce GHG. Subsequent implementation grants awarded on a competitive basis.

2. IRA §60102 - Grants to Reduce Air Pollution at Ports

Provides EPA funding to prepare port climate action plans.

B. Accelerate Energy Efficiency and Electrification in Juneau Buildings

Residential Buildings

3. IRA - Affordable Housing

\$1B in grants and loans through HUD for sustainability improvements to affordable housing. Eligible projects include energy or water efficiency; indoor air quality or sustainability; climate resilience; and building electrification. Includes \$42.5M for energy and water benchmarking.

⁵The full Inflation Reduction Act is located at: <https://www.congress.gov/117/bills/hr5376/BILLS-117hr5376eas.pdf> Subtitle D, Energy Security, begins on p. 241. The Bipartisan Infrastructure bill is located at: <https://www.congress.gov/bill/117th-congress/house-bill/3684/text>.

4. IRA §50121-50123 - Home Efficiency and Electrification Rebates and Workforce Training

\$4.3 billion for Home Energy Performance-based Whole House Rebates through State Energy Offices [Alaska Housing Finance Corp, AHFC] for low-moderate income homeowners. Funded by the Dept. of Energy (State and Community Energy Program, SCEP). An additional \$4.5 billion in Home Electrification Rebates for low- and moderate-income homeowners. Also, \$200 million in State-Based Home Energy Efficiency Contractor Training Grants to support residential EE workforce.

5. BIL §40502 Energy Efficiency Revolving Loan Fund and Capitalization

Formula allocation to AK State Energy Office for programs that provide loans, loan reserves, interest rate buydowns, etc. for home energy efficiency upgrades. A portion also available for grants. Flexible uses.

6. IRA - Building Energy Code Adoption

\$1B for grants helping state and local governments adopt and implement building energy codes. \$330M for meeting 2021 IECC or ANSI/ASHRAE/IES 90.1-2019; \$670M for meeting or exceeding the zero energy provisions in the 2021 IECC or an equivalent stretch code.

7. BIL – Building Codes Implementation for Efficiency and Resilience

Competitive \$225M in grants to states through DOE/Office of EE&RE. Money available until expended to states to update energy codes for new residential and commercial buildings and renovations and to provide training to meet updated building energy codes. [Building Codes Implementation for Efficiency and Resilience | Department of Energy](#)

8. IRA §25C - Homeowner Tax Credit

Significantly increased home improvement incentives extended for 10 years, through the end of 2032. Credit of 30% of eligible expenses up to \$1,200 per year for most projects, with a higher cap of \$2,000 per year for heat pumps. The tax credits can be taken with BIL §50121-50122 home rebates.

9. IRA §25D - Residential Clean Energy Credit

Extends the full 30% credit for eligible expenditures for on-site residential solar electric, solar water heating, fuel cell, small wind energy, geothermal heat pumps and battery storage through the end of 2032; expires 2034.

10. IRA §45L - Homebuilder Tax Credit

Significantly expanded homebuilder tax credit extended for 10 years through the end of 2032. Increased to \$2,500 for meeting ENERGY STAR and \$5,000 for DOE zero-energy ready. Available to all multifamily at \$2,500/\$5,000 per unit. For affordable housing, credits do not reduce LIHTC basis.

11. BIL §40551 - Weatherization Assistance Program

An additional \$3.5B to existing grant program to states and tribes. AHFC administers AK state program. \$3.66M allocated to AHFC Aug 2022 for weatherization. RuralCAP provides weatherization program services for low-income households in Juneau. DOE/SCEP.

12. BIL §40552 - Energy Efficiency and Conservation Block Grant Program

The CBJ is expected to qualify for \$76,130 from the Energy Efficiency and Conservation Block Grant Program <https://eere-exchange.energy.gov/FileContent.aspx?FileID=a4d02ea1-16c4-4c49-8d0b-2e9907447e18>. The purpose of the EECBG Program is to assist eligible entities in implementing strategies to reduce fossil fuel emissions, to reduce total energy use, and to improve energy efficiency.

The funds can be used for a lot of different purposes. <https://eere-exchange.energy.gov/FileContent.aspx?FileID=b3e1568b-2136-4bb4-b859-1ac82e2df37c> Potential uses include: residential & commercial energy audits, financial incentive programs, energy efficiencies in public facilities, bike lanes & pedestrian walkways that conserve energy, building codes upgrades/inspection services that promote building efficiency, energy distribution technologies (e.g., district heating), LED street lighting, financing (loans, rebates, grants) for zero-emission transportation installations, and activities to increase participation rates for source reduction and recycling that lead to increased energy efficiency.

Commercial Buildings

13. IRA §179D - Tax Deduction for Energy Efficient Commercial Buildings

Significantly expanded incentive for 10 years, with new pathway for existing building retrofits to access the deduction. Maintains provision to allocate the deduction for public projects (city, state, etc.) to project designer, and expands allocation option to be used for tribal government projects and projects by nonprofit entities.

14. IRA §45L - Homebuilder Tax Credit

As noted above, large multifamily residential buildings will be eligible, with credits of \$2,500 per unit for meeting ENERGY STAR or \$5,000 per unit for meeting DOE zero-energy ready. For affordable housing, new credits do not reduce LIHTC basis, allowing developers to take both 45L and LIHTC.

6. IRA - Building Energy Code Adoption

As noted above, \$1B for grants helping state and local governments adopt and implement building energy codes. \$330M for meeting 2021 IECC or ANSI/ASHRAE/IES 90.1-2019; \$670M for meeting or exceeding the zero energy provisions in the 2021 IECC or an equivalent stretch code.

15. BIL §40542 - Energy Efficiency Materials Program

\$50M for grants to NGOs to install EE equipment, structural improvements, etc.

Public Buildings

13. IRA §179D - Tax Deduction for Energy Efficient Commercial Buildings

The 179D tax deduction is commonly used in public building projects. As noted above under Commercial Buildings, 179D is expanded for 10 years, with a new pathway for existing building retrofits to access the deduction. Maintains provision for allocating the deduction for public projects (city, state, etc.) to project designer, and expands allocation option to be used for tribal government projects and projects by nonprofit entities.

Federal Buildings

16. GSA Federal Buildings Fund: \$250M in FY22 to be spent by 2031 to convert GSA-owned or managed buildings to high-performance green buildings (42 U.S.C. 17061, pg.108).

17. GSA Emerging Technologies: \$975M to GSA through 2026 for emerging and sustainable technologies and related sustainability and environmental programs;

18. GSA Procurement and Technology: \$2.15B to GSA through 2026 to acquire and install low-embodied carbon materials and products for use in the construction or alteration of GSA facilities.

Public Schools

19. IRA Air Pollution: \$37.5M in grants and other activities through EPA to monitor and reduce air pollution and GHG emissions at schools in low-income and disadvantaged communities, with an additional \$12.5M in technical assistance to schools to address environmental issues and air pollution and to develop school environmental quality plans that include standards for building, design, construction, and renovation. Funding through 2031

20. BIL – Energy Efficiency & Renewable Energy Improvements at Public School Facilities

1st Round (\$80M) Nov-Jan 2023. \$500M total available until expended. Can be used for building envelope, HVAC, lighting, controls, vehicles and infrastructure.

<https://www.energy.gov/bil/grants-energy-improvements-public-school-facilities>

C. Accelerate the Electrification of Transportation in Juneau

21. IRA - Clean Vehicle Incentives

Expands existing 30D clean vehicle tax incentive through 2032 for a \$7,500 tax credit on purchases of qualifying clean vehicles. Implements a new credit of up to \$4,000 for qualifying used clean vehicles. Also implements a new tax credit for clean commercial vehicles.

22. BIL §11401 – Grants for Electric Vehicle Charging and Infrastructure

Alaska is awarded \$52M over 5 years (through Alaska Energy Authority). Phase 1 is charging infrastructure in Railbelt corridor. AK Marine Highway Phase 2. A separate \$2.5B competitive grant program available to municipalities in 2023.

23. IRA §60101- Heavy Duty Vehicles

\$1B for clean heavy-duty vehicles for states, municipalities and nonprofit school facilities, with \$400M reserved for areas with poor air quality. Eligible expenses include rebates for purchases of eligible vehicles (school buses, garbage trucks, etc.) as well as investments in EV charging infrastructure and workforce training to support the maintenance, charging and operations.

24. IRA - Neighborhood Access and Equity Grants

\$3 billion for a neighborhood access and equity grant program at the DOT to help states and local governments make walkability, safety, affordable transportation access, and other improvements, including by removing existing transportation infrastructure that adversely impacts communities.

25. IRA §60102 - Grants to Reduce Air Pollution at Ports

\$3 billion to establish an EPA program to award grants and rebates for the purchase and installation of zero-emission equipment and technology at ports as well as the development of port climate action plans. Available through 2027.

26. BIL – Port Infrastructure Development Program

\$2.25B for existing DOT/Maritime Administration grant program expanded to include projects that reduce/eliminate criteria pollutants and GHG emissions, including port electrification.

27. BIL §71101 - Clean School Bus Program.

\$1B/year thru 2026; “rural” priority. In the first year (2022), Wrangell awarded 1 bus; about 20% of 2,000 applications funded. <https://www.EPA.gov/cleanschoolbus>

28. BIL – Grants for Buses & Bus Facilities

Increased funding to states under existing FHA program. www.transit.dot.gov. For technical assistance on electrification of school bus fleets: <https://cleantechnica.com/2022/07/27/electric-school-buses-technical-help-video-series-for-k-12-schools/>.

D. New Renewable Energy Supplies & CBJ’s Role

29. IRA - Clean Electricity Incentives

Expands and extends incentives for a variety of clean power technologies, including the Investment Tax Credit and Production Tax Credit for renewable energy projects. For projects

beginning construction after 2024, the incentives are replaced by new technology-neutral incentives based on emissions reduction.

30. BIL – Clean Power

\$700M available to utilities for upgrades to existing hydropower.

31. BIL §40331-§40336 – Hydroelectric Power

Incentive grant programs for capital investments that improve grid resilience, reliability, dam safety, efficiency, production, transmission, and environment of existing hydroelectric facilities.

www.energy.gov/bil/hydroelectricity.

E. Community Sustainability

32. IRA §60103 - Greenhouse Gas Reduction Fund

\$27B through EPA for a GHG green bank initiative. Includes three categories of grants to local entities to provide loans, grants, technical assistance and other financing: \$7 billion in competitive grants for low-income and disadvantaged communities to use zero-emission technologies; \$11.97 billion for competitive grants for projects that reduce or avoid GHG emissions through 2024; and \$8 billion in competitive grants for low-income and disadvantaged communities for climate-related activities.

33. IRA - Environmental and Climate Justice Block Grants

\$3B in EPA grants to local governments, universities, community-based nonprofits (or partnerships) for a variety of environmental projects benefiting disadvantaged communities. Eligible activities include: community-led pollution monitoring, prevention, and remediation; low- and zero-emission resilient technologies and related infrastructure; workforce development tied to GHG reduction; mitigating climate and health risks from urban heat islands; climate resiliency and adaptation; and reducing indoor air pollution.

34. IRA - Coastal Communities and Climate Resilience

\$2.6 billion in NOAA grants to help coastal communities conserve, restore and protect coastal and marine habitats and resources, and to prepare for extreme storms and other changing climate conditions, among other activities.

35. Building Resilient Infrastructure and Communities

Allows FEMA, under the Stafford Act, to use BRIC funding for low-carbon materials and incentives that encourage low-carbon and net-zero energy projects, including an increase in federal cost-share for such programs.

36. IRA - Rural Energy for America Program

\$2 billion for the USDA REAP program until 2031 to provide competitive grants and loan guarantees to farmers, ranchers, and rural small businesses for renewable energy systems or energy efficiency improvements. Communities under 50,000.

37. BIL §50204 - Sewer Overflow and Stormwater Municipal Grants

\$280M/year thru 2026. State ADEC grant program with at least 25% for rural communities.

38. BIL §50205 - Clean Water Infrastructure Resiliency and Sustainability Program

\$25M/year thru 2026.

39. BIL - Drinking Water/Clean Water State Revolving Funds

\$23.4B available through EPA to states (ADEC). Prioritizes projects serving disadvantaged communities. Uses include: construction of wastewater and stormwater treatment facilities and collection systems, and non-point source pollution management.

40. BIL – Solid Waste Infrastructure for Recycling

\$275M; \$55M/year through 2026 in grants for recycling programs and improvements to waste management systems. New EPA program.

41. BIL – Reuse, Recycle Education and Outreach

\$75M; \$15M/year through 2026. Grants to improve effectiveness of community recycling program through public education and outreach. New EPA program.