



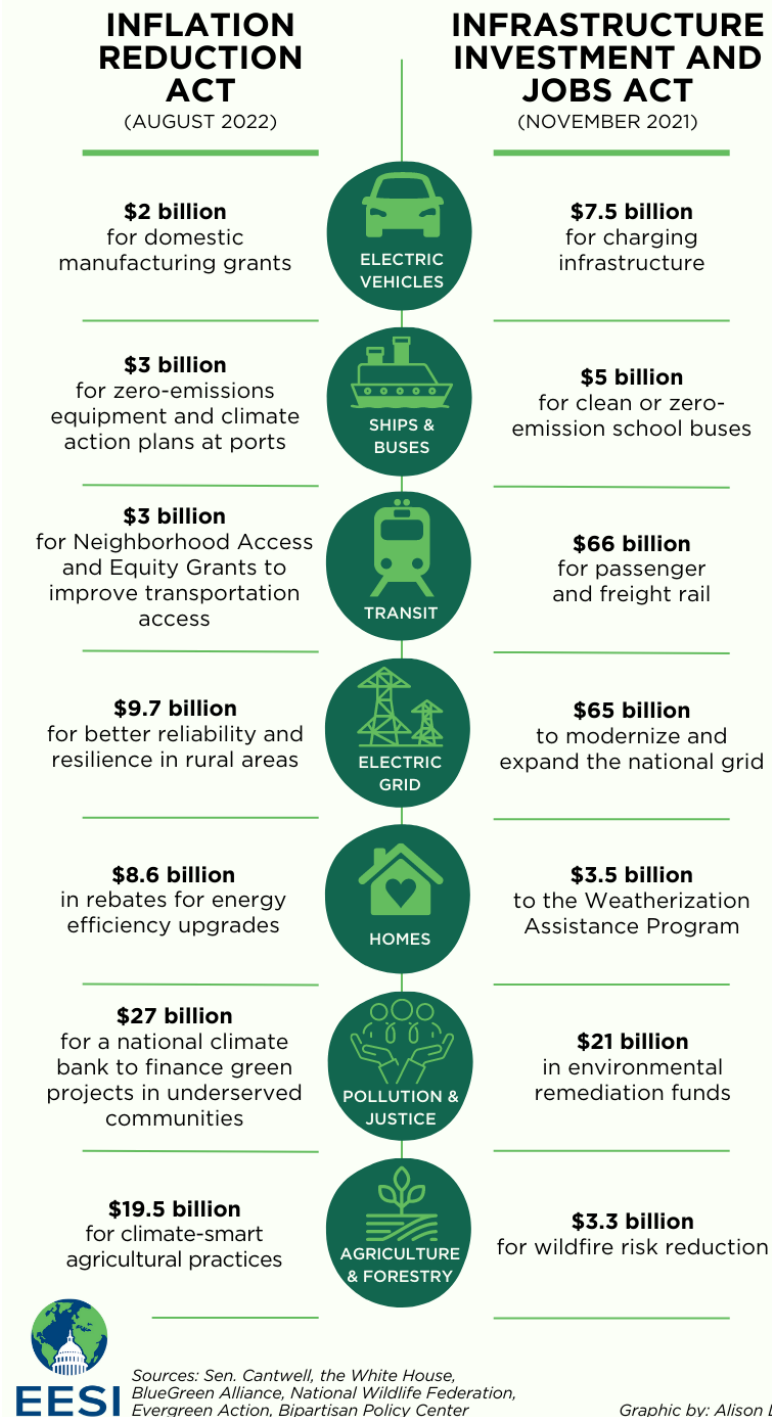
SUSTAINABLE & RENEWABLE ENERGY FEDERAL FUNDING OPPORTUNITIES

ENERGY & TECHNOLOGY COMMITTEE MEETING: 3/8/23

Commissioner Katie S. Dykes

OVERVIEW – FEDERAL ENERGY FUNDING

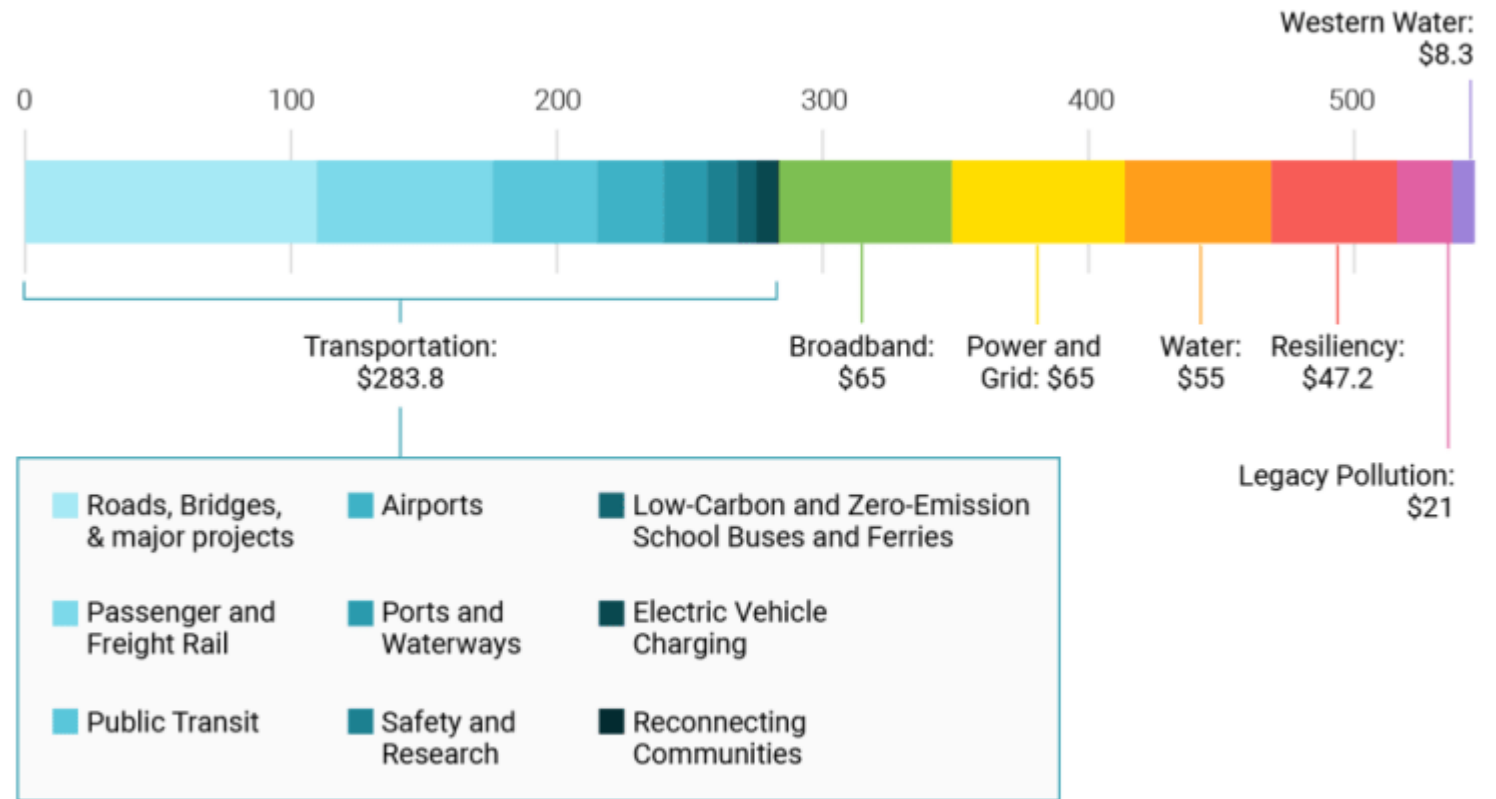
- Complementary Acts – the Infrastructure Investment and Jobs Act (IIJA) & Inflation Reduction Act (IRA) – investing billions in energy, climate, and infrastructure
- Both Acts incorporate Justice40 principles and objectives
- Moving the nation towards a cleaner, more sustainable, and resilient energy future
- Creating good-paying clean energy jobs and helping to on-shore clean energy industries



OVERVIEW – INFRASTRUCTURE INVESTMENT & JOBS ACT (IIJA)

- Passed Nov 2021
- Authorized \$1.2 trillion in funding - \$550 billion in new spending
- With IIJA funding, US. Dept of Energy will stand up over 60 new programs over the next 5 years
- \$8.8 million has been awarded to CT for a Clean School Bus Program
- As of Nov 2022, about \$55.1 million has been allocated to CT for clean energy, energy efficiency, and power:
 - \$46.2 million for weatherization - application submitted
 - \$5.3 million for the State Energy Program (SEP) – application submitted
 - \$3.6 million to prevent outages and make the power grid more resilient
- As of Nov 2022, about \$74.6 million allocated to CT for infrastructure resilience including \$2.9 million for flood mitigation
- As of Nov 2022, \$4.5 million allocated to CT for cleaning up Superfund and brownfield sites.
- CT will receive at least \$100 million to support high-speed internet coverage

Figure 1. Topline above-baseline spending in IIJA (billions of USD)

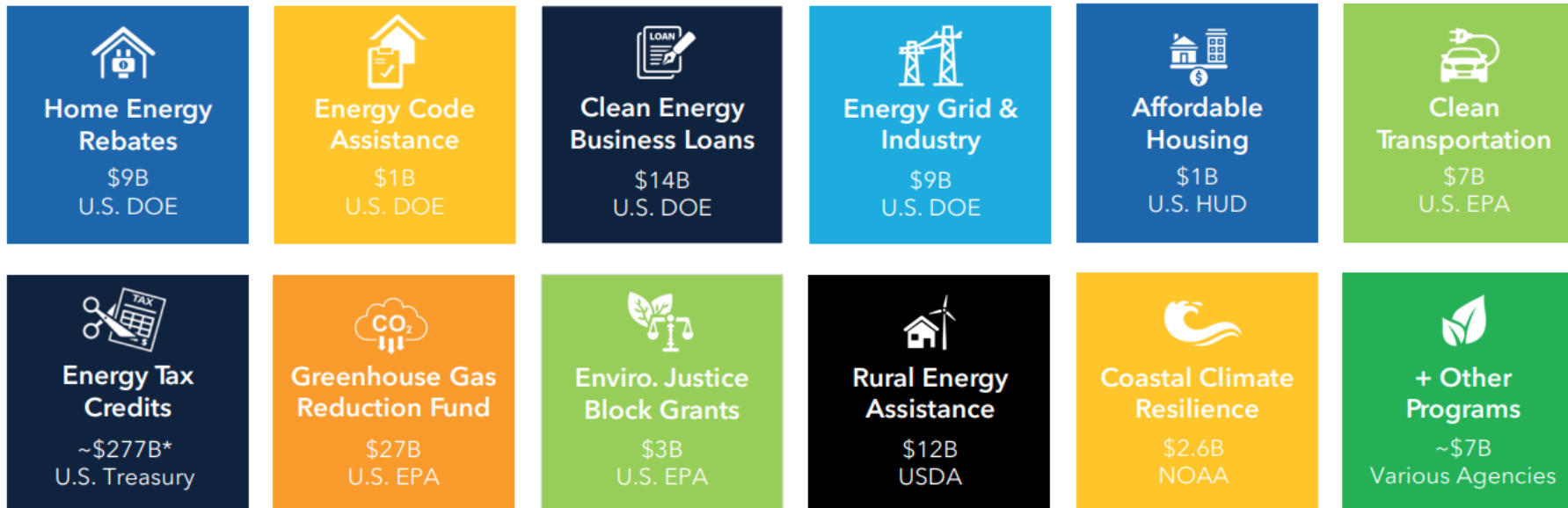
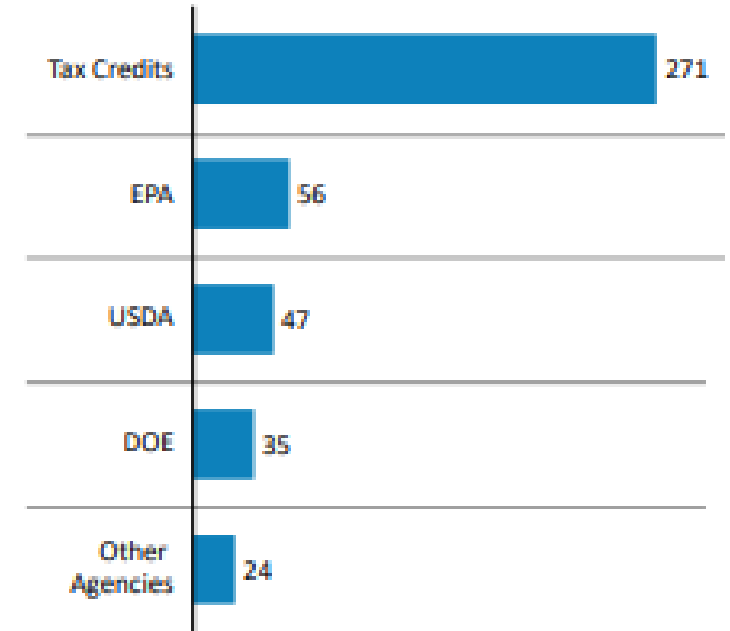


Source: Bipartisan Infrastructure Investment and Jobs Act Summary

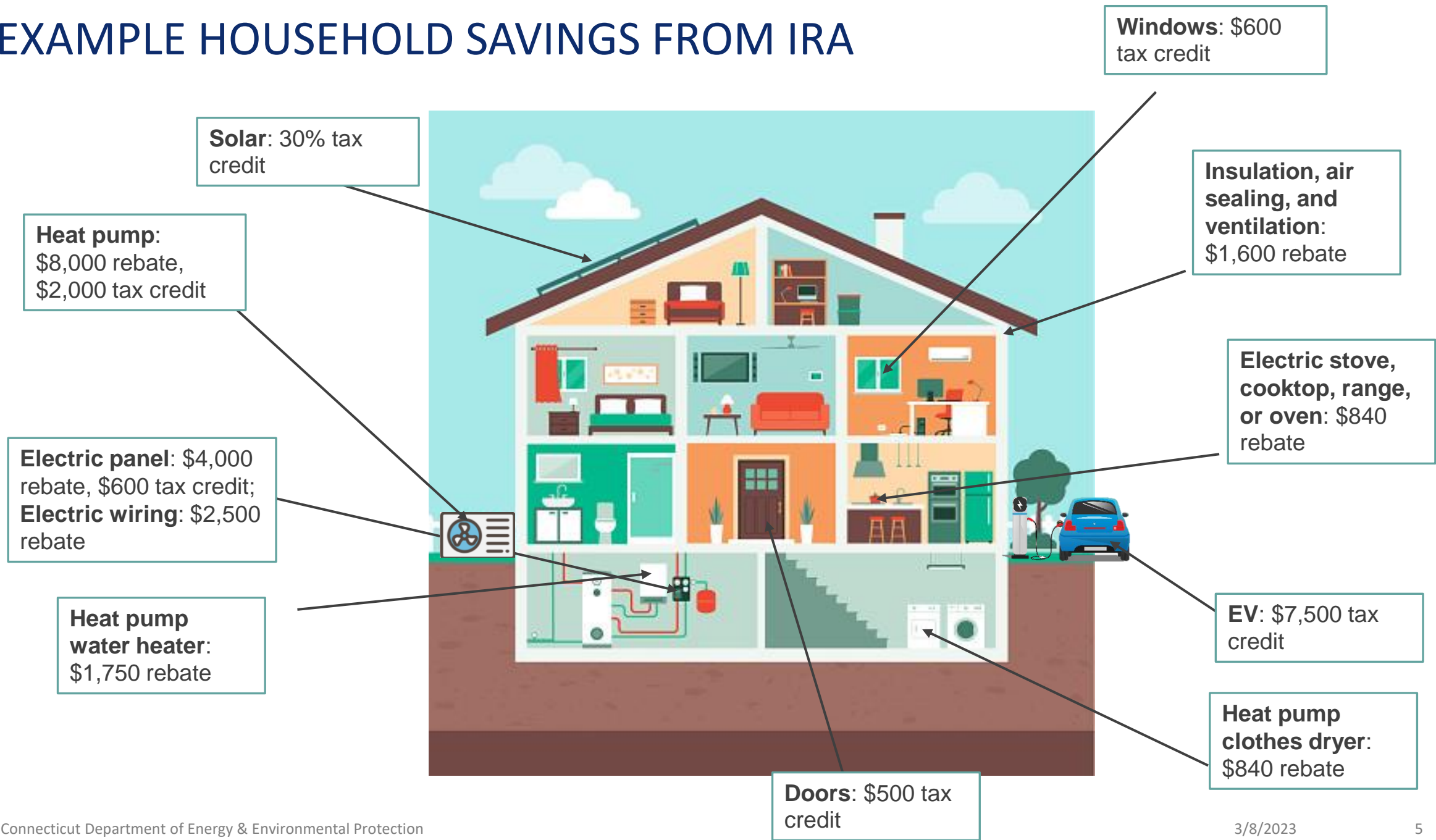
OVERVIEW – INFLATION REDUCTION ACT (IRA)

- Passed Aug 2022
- \$369 billion in incentives & funding spanning 10 years - 2023-2033
- Will bring \$630 million of investment in large-scale clean power generation and storage in CT
- Could create up to 9 million jobs in the CT clean energy economy
- Direct tax incentives to businesses and consumers
- New/expanded federal agency grant programs

Total Climate and Energy Funding (\$, billions)



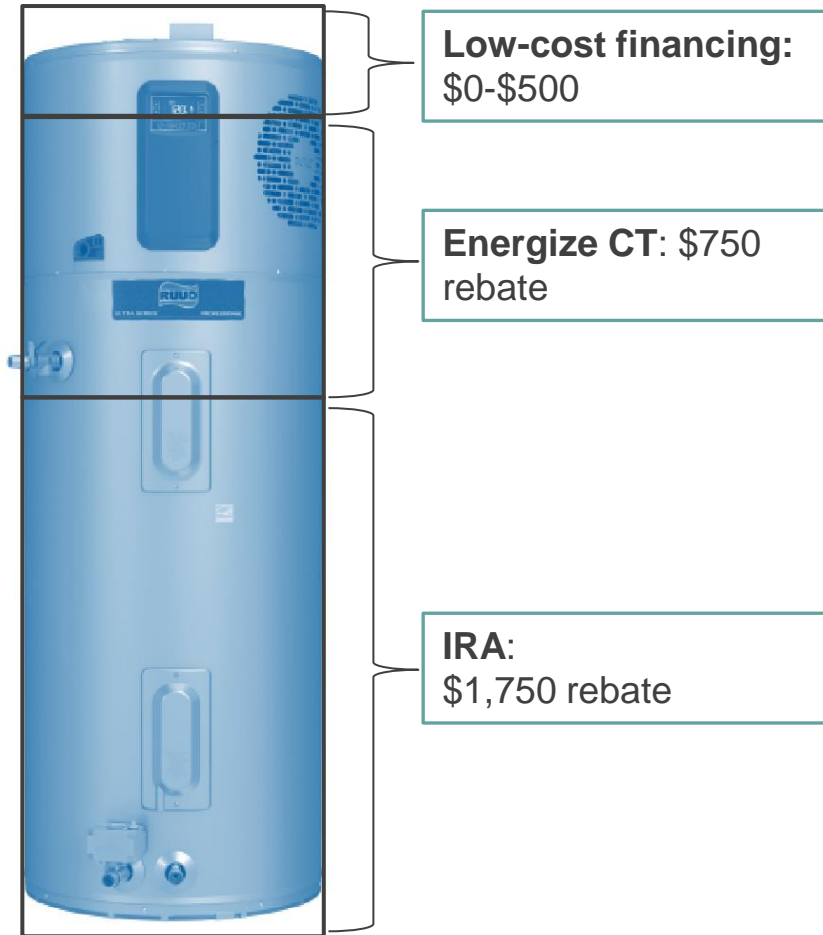
EXAMPLE HOUSEHOLD SAVINGS FROM IRA



Heat pump water heater example

Average initial cost \$1,700-\$3,000

Average Lifetime Savings: \$3,000-\$4,000



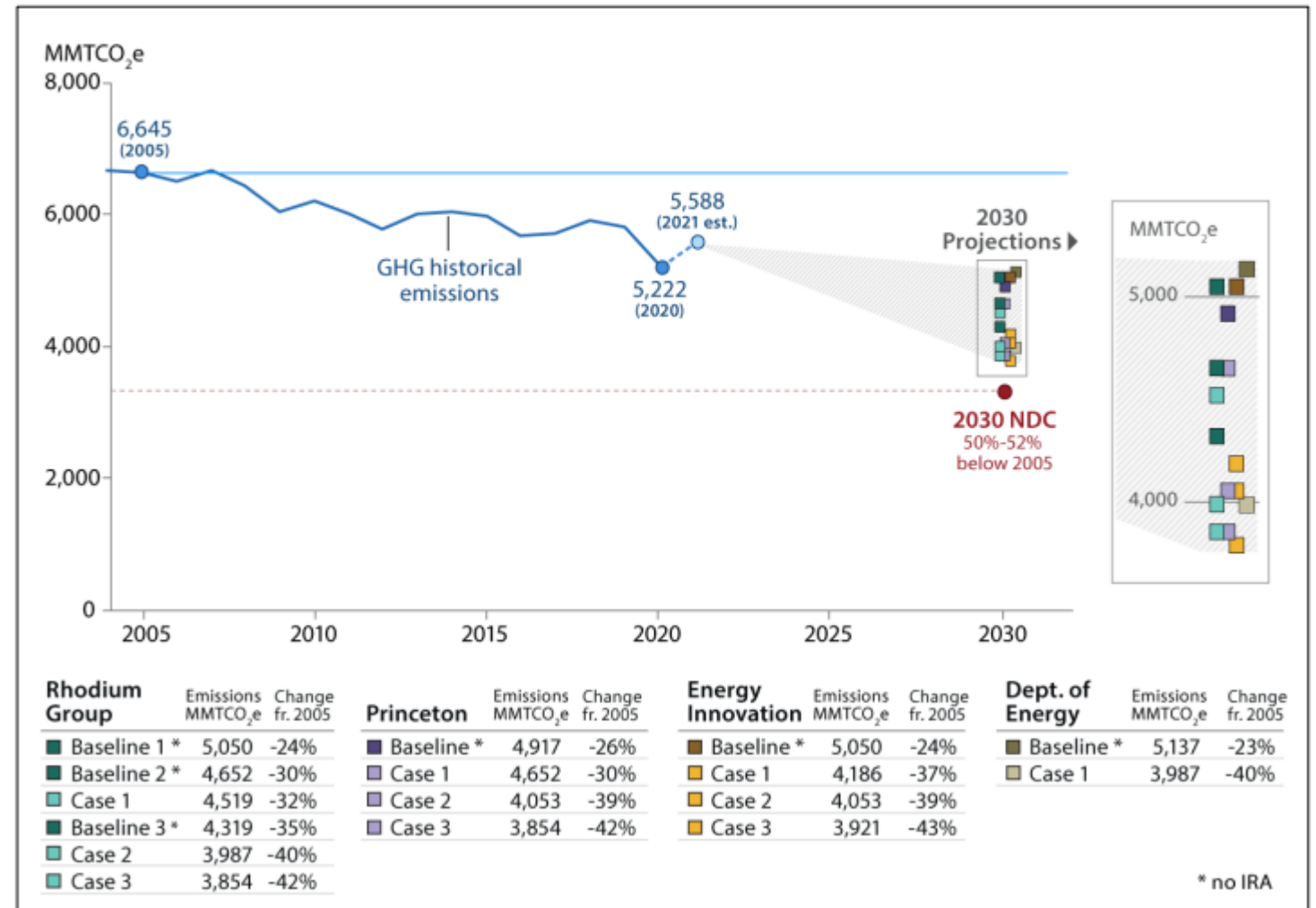
OVERCOMING UPFRONT COSTS TO REACH A MORE AFFORDABLE FUTURE

- Many energy efficient, cost-saving technologies have historically had higher upfront costs
- IRA and IIJA are helping to change that
- DEEP is collaborating with state energy program administrators and contractors now – even before federal funding guidance is released – to establish relationships and processes for streamlined delivery of both federal and state incentives

THE GREENHOUSE GAS REDUCTION POTENTIAL

- With IRA, the U.S. is expected to decrease net greenhouse gas (GHG) emissions by 30-43% by 2030 (compared to 2005 levels)
- This is still short of President Biden's goal of a 50% reduction by 2030
- IRA could cut the social costs of climate change by up to \$1.9 trillion by 2050
- According to the Georgetown Climate Center, IIJA emission impacts will be largely dependent on how state, federal, and local governments implement the funds

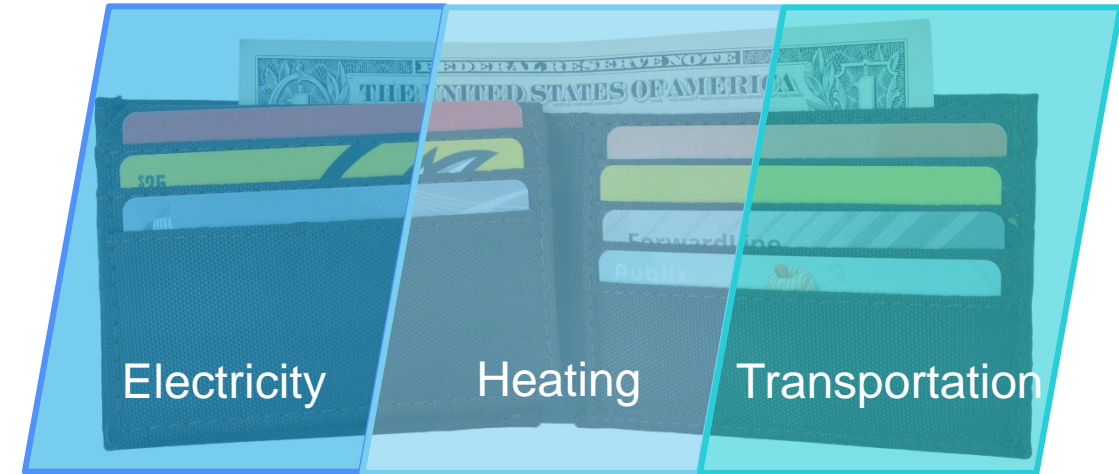
Figure 4. Net U.S. GHG Emissions, Selected Emission Estimates, and U.S. NDC



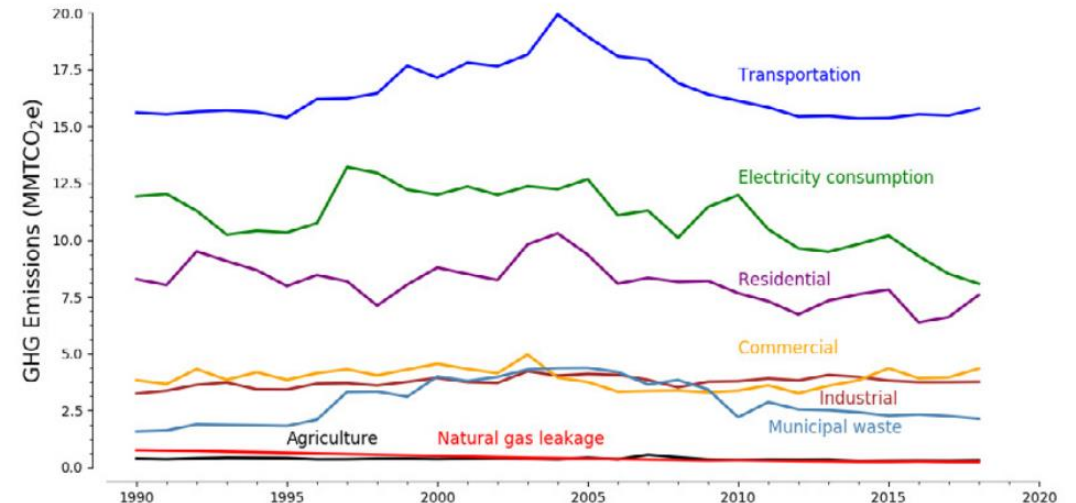
NDC: Nationally Determined Contribution

DEEP'S ENERGY STRATEGY FOR IIJA & IRA

- Maximize federal funding coming to CT
- Prioritize the main components of resident's energy wallets
- Prioritize the largest GHG-emitting sectors of CT's economy
- Leverage existing programs when applicable



Connecticut Greenhouse Gas Emissions by Sector





BUILDINGS

SNAPSHOT OF THE BUILDING OPPORTUNITIES

| Opportunity Name | Opportunity Type (Competitive or Formula) | Estimated Funding (\$) | Current Status |
|---|--|---------------------------|------------------------------|
| Energy Efficiency Revolving Loan Fund | Formula | \$1,200,000 | Application due 4/21/23 |
| Resilient and Efficient Codes | Competitive | \$500,000- \$10,000,000 | Application due 3/27/23 |
| Energy Efficiency and Conservation Block Grant (EECBG) | Formula | \$2,035,680 | Application due 7/1/23 |
| Home Efficiency Rebate Program | Formula | \$49,830,560 | Guidance Summer 2023 |
| Home Electrification Rebate Program | Formula | \$49,541,390 | Guidance Summer 2023 |
| State Energy Program (SEP) Annual & SEP BIL (IIJA) | Formula | \$770,000/ \$5,286,440 | Application Pending Approval |
| Weatherization Assistance Program (WAP) Annual & WAP BIL (IIJA) | Formula | \$3,700,000/ \$46,215,781 | Application Pending Approval |
| Greenhouse Gas Reduction Fund | Competitive | TBD | Guidance expected soon |

BUILDING OPPORTUNITIES – ENCOURAGING OTHERS TO APPLY

- **Industrial Demonstrations Program** – Fund projects that focus on the highest emitting and hardest to abate industries where decarbonization technologies can have the greatest impact
 - Eligible entities: Technology Developers, Industry, Manufacturers, Universities, National Laboratories, Engineering and Construction firms, State and Local Governments, Environmental Groups, and Community Based Organizations
- **Rural Energy for America Program** – loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements
 - Eligible entities: Agricultural producers and small businesses in eligible rural areas
- **Energy Improvements at Public Schools** – Provides funding to make public K-12 schools more energy efficient and helps to lower energy costs.
 - Eligible entities: Consortium of One Local Education Agency and one or more Schools, Non-Profits, For-Profits, and Community Partners

BUILDING TAX CREDITS

- **Credit for Residential Clean Energy** – extends credit through 2034 for residential solar, wind, geothermal, and biomass fuel. 30% credit for projects started between 2022 and 2032, decreases to 26% for 2033 and 22% for 2034. Expands eligibility to battery storage technology.
- **Credit for Energy Efficiency Home Improvements** – extends credit for energy efficiency home improvements through 2032. Increases credit to 30%, replaces lifetime cap with \$1,200 annual credit limit, increases limit to \$2,000 for heat pumps and biomass stoves, includes energy audits, electrical panel upgrades, doors, and windows.

How DEEP is Looking to Share this Information:

- Exploring options to create an online tool to bring together tax credits, rebates, and incentives for building owners and contractors

CONNECTIONS WITH DEEP POLICY PRIORITIES

- **Energy Affordability & Equity:** Federal funding supports existing energy efficiency and demand management programs including Energize CT initiatives that help Connecticut residents and business to save energy and money. Prioritizing funding for disadvantaged communities will also help those who are often living in the oldest and least efficient homes.
- **Decarbonization:** Communities, households and businesses must be supported in emissions reductions efforts to achieve Connecticut's climate goals of reducing statewide emissions 45% by 2030 and 80% by 2050, relative to a 2001 baseline.
- **Energy Reliability & Resilience:** Weatherizing buildings can help improve comfort during power outages. It also reduces strain on energy systems.
- **Economic Development:** Currently, over 75% of CT's clean energy jobs are focused on energy efficiency. Federal funds will continue to support this strong, local workforce



RENEWABLE ENERGY & A GRID OF THE FUTURE

SNAPSHOT OF DEEP'S CURRENT RENEWABLE & GRID PURSUITS

| Opportunity/Initiative | Opportunity Type | Estimated Funding (\$) | Current Status |
|---|------------------|--|--|
| Hydrogen Hub | Competitive | Up to \$ 1.25 billion per Hub | Application in development with other northeast states |
| Upcoming State Clean Energy Procurements | Tax Credits | E.g., the extended renewable energy PTC; Wind energy projects that satisfy the new wage and apprenticeship requirements will receive a credit of 2.6 cents per kWh | Request for Proposal (RFP) being drafted |
| Grid Resilience State/Tribe Formula Grant Program | Formula | \$3.26 million per year for 5 years | Funding request due March 31, 2023 |
| Grid Resilience and Innovation Partnership (GRIP) - Grid Innovation Program (GIP) | Competitive | Up to \$250 million per project | Concept papers were due on 1/13/23; full applications due by 5/19/23 |

RENEWABLE ENERGY TAX CREDITS

Production Tax Credits (PTC)

- **New Clean Hydrogen PTC**— creates new 10-year incentive for clean hydrogen production
- **New Advanced Manufacturing PTC**— for the production of clean energy technology components that are produced in the US or by a US possession
- **Nuclear Power PTC**— 1.5 cents multiplied by kWh of electricity produced minus 16% of facility's gross recipients in excess of 2.5 cents per kWh
- **Extension of Renewable Electricity PTC** — extends the existing tax credit for applicable renewable energy sources to end of 2024
- **New Clean Electricity PTC** — tech-neutral PTC replaces above tax credit once it phases out at end of 2024

Investment Tax Credits (ITC)

- **Extension of Energy ITC**— extends the existing tax credit for applicable energy projects until 2024
- **New Clean Electricity ITC** — tech-neutral ITC replaces above ITC once it phases out at end of 2024
- **Advanced Energy Project Credit** — extends 30% ITC to clean energy projects

- How DEEP is Taking Advantage

- Upcoming renewable energy procurements by DEEP will benefit from extended and/or new tax credits that will reduce bid prices and ultimately increase the benefits from any selected project.

RENEWABLE ENERGY OPPORTUNITIES – ENCOURAGING OTHERS TO APPLY

- **Clean Hydrogen Electrolysis, Manufacturing, and Recycling** – Development of manufacturing and recycling of clean hydrogen technologies, and for electrolyzer development

- Expected eligible entities: university or nonprofit will lead consortium and partners would include industry, national laboratories, and additional universities and/or institutes

- **US Tidal Energy Advancement** – support the development of tidal and current energy systems in the United States, and move the state of these technologies

- Eligible entities: TBD

- **Water Power Projects: Innovative Technologies to Enable Low Impact Hydropower and Pumped Storage Hydropower Growth** – Retrofit non-powered dams with environmentally sustainable hydropower; development and testing technologies that mitigate challenges to pumped storage hydropower deployment; and address and encourage emerging organizations to support hydropower development.

- Eligible entities: For-profits, educational institutions, nonprofits; state and local governments; tribal nations; federal agencies

- **Long-duration Energy Storage Demonstrations** – Demonstration projects capable of delivering electricity for 10-24 hours or longer to support a low-cost, reliable, carbon-free electric grid.

- Eligible entities: educational institutions, for-profits, nonprofits, state and local governments, tribal nations

FUTURE GRID OPPORTUNITIES – ENCOURAGING OTHERS TO APPLY

- **FOA to Address Key Deployment Challenges for Offshore, Land-Based, and Distributed Wind** – awards up to \$8 million issues including development of U.S. multi-terminal HVDC standards to interconnect offshore wind resources.
 - Eligible parties will include research organizations, utilities, and industry experts. DEEP is in contact with several potential applicants and will likely provide a letter of support due March 10, 2023.
- **Grid resilience and innovation partnership (GRIP):** grid resilience utility and industry grants & smart grid grants – grants to reduce impacts of extreme weather on the electric grid; grants to increase transmission capacity, prevent faults, better integrate renewables, and facilitate increased electrification and grid-edge devices
 - Eligible entities: Electric grid operators, electric storage operators, electricity generators, transmission owners/operators, distribution providers, fuel suppliers (resilience grants); higher ed, for-profit, non-profit, state and local gov'ts, and tribal nations (smart grid grants); Concept papers were due in Dec 2022
- **Energy Efficient Transformer Rebates** – Provide rebates to industrial or manufacturing facility owners, commercial building owners, multifamily building owners, utilities, or energy service companies for the replacement of a qualified inefficient transformer with a qualified energy efficient transformer.
 - Eligible entities: Owners of industrial or manufacturing facilities, commercial buildings, or multifamily residential buildings, a utility, or an energy service company

CONNECTIONS WITH POLICY PRIORITIES

- **Energy Affordability:**

- Increasing our share of clean energy resources will help to get us off the fossil fuel rollercoaster
- Supporting transmission development will lower the cost of achieving a 100% zero-carbon grid
- Maximizing Connecticut's share of federal funding will reduce costs for Connecticut residents and businesses.

- **Energy Reliability & Resilience:**

- Canadian hydropower is an excellent source of reliable clean electricity
- Green hydrogen can help to balance our grid and better utilize excess renewable generation over the long-term

- **Advancing Energy Equity:**

- The energy infrastructure proposals described include community benefit agreements and robust stakeholder engagement

- **Decarbonization:**

- Clean energy resource diversity is critical to a reliable, fully decarbonized electric grid > transmission and hydrogen will play a critical role in achieving this diversity

- **Economic Development:**

- CT has a robust fuel cell and electrolyzer sector – a green hydrogen hub would build upon these strengths
- Many federal opportunities have Davis-Bacon and Buy America requirements that will help ensure good-paying, American jobs



TRANSPORTATION & CLEAN AIR

SNAPSHOT OF THE TRANSPORTATION OPPORTUNITIES

| Opportunity Name | Opportunity Type/Agency | Estimated National Funding (\$) | Current Status |
|--|---|-------------------------------------|-------------------|
| Grants to reduce air pollution at ports- <ul style="list-style-type: none"> • Rebates and grants for ports to purchase zero emissions tech and develop climate action plans. • Carve outs for nonattainment areas • Ports Initiative US EPA | Competitive & Formula DEEP and DOT | \$3B | Under development |
| Clean Heavy-Duty Vehicles – grants to replace HDDEs with ZEVs See: Clean Heavy-Duty Vehicle Program US EPA | Could supplement DEEP's program on MHD vehicle voucher/rebate | \$1B/\$400M for nonattainment areas | Under development |
| DERA See: National Grants: Diesel Emissions Reduction Act (DERA) US EPA | Formula funding administered by DEEP | \$60M | "Coming soon" |
| Grants to Sec. 177 States (incl CT) to adopt and implement CA Air Resources Board's (CARB's) Zero-Emission Vehicle (ZEV) program | Formula funding to DEEP | \$5M | Under development |

TRANSPORTATION TAX CREDITS

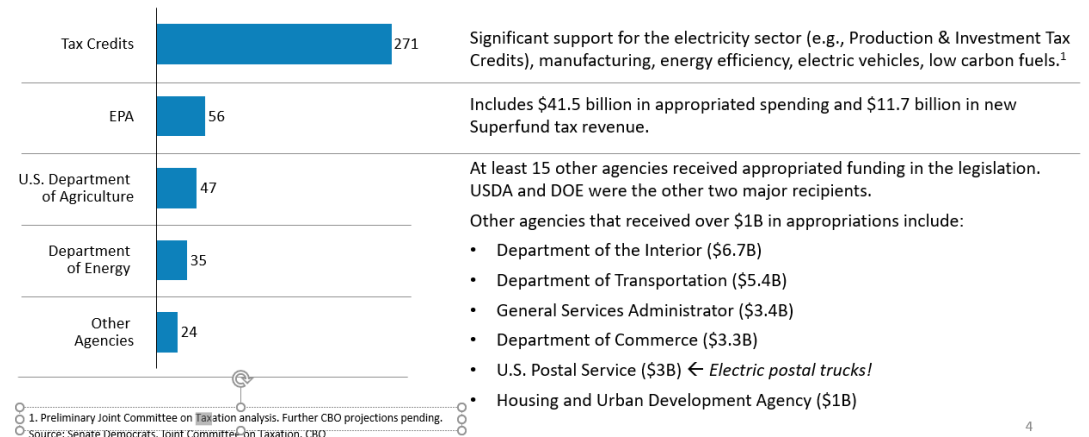
- **Clean Vehicle Tax Credit** – up to \$7,500 new
- **Previously Owned Clean Vehicle Tax Credit** – up to \$4,000
- **New Commercial Clean Vehicle Tax Credit** – businesses and tax-exempt organizations qualify for:
 - Up to \$7,500 for vehicles under 14,000 lbs GVWR
 - Up to \$40,00 for vehicles over 14,000 lbs GVWR
- **Extension of Alternative Fuel Refueling Property Credit** – fueling equipment for natural gas, propane, hydrogen, electricity, E85, or diesel fuel blends containing a minimum of 20% biodiesel, is eligible for a tax credit of **30% of the cost or 6% in the case of property subject to depreciation, not to exceed \$100,000.**

How DEEP is Taking Advantage

- Leveraging vehicle credit program information with CHEAPR upon issuance of IRS guidance

BREAKDOWN OF CLIMATE & ENERGY FUNDING

Total Climate and Energy Funding (\$, billions)



SNAPSHOT OF THE CLEAN AIR OPPORTUNITIES

| Opportunity Name | Opportunity Type (Competitive or Formula) | Estimated Funding (\$) | Current Status |
|--|---|------------------------|---|
| Air Monitoring and Screening* (fence line monitoring, regulatory monitors, state grants, methane monitoring, wood heaters) See: ARP Enhanced Air Quality Monitoring for Communities - Competitive Grant US EPA | Both | ~\$200M | Under development |
| Clean Air Act Grants see: Delivering Cleaner Air US EPA | Formula | \$25M | Single supplement to STAG Appropriation. Expect funding via CAA 103 (no match req'd) mid-2023 |
| Climate Pollution Reduction Grants – Planning see: Climate Pollution Reduction Grants US EPA | Formula | \$25M | Expect funding via CAA 105; expect more info mid-February 2023 |
| Climate Pollution Reduction Grants – Implementation see: Climate Pollution Reduction Grants US EPA | Competitive | \$4.75B | Under development |

WHERE TO FOLLOW OUR PROGRESS & FIND NEW OPPORTUNITIES

Opportunities from the Federal
Infrastructure Investment and
Jobs Act (IIJA) and Inflation
Reduction Act (IRA)

Federal Funding and Comment Opportunities - Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA)

The table below includes both federal funding and comment opportunities.

Funding: opportunity to submit applications for loan or grant funding.

Comment: opportunity to submit opinions on federal programs or initiatives.

| Opportunity Title | IIJA or IRA | Status | Eligible Entities | DEEP Submissions |
|--|--------------------|---------|--|--|
| Grid Resilience State/Tribal Formula Grant Program - Funding | IIJA | Open | States, territories, tribes | DEEP RFI  |
| Industrial Demonstration Program - Funding | IIJA and IRA | Pending | Technology Developers, Industry, Manufacturers, Universities, National Laboratories, Engineering and Construction firms, State and Local Governments, Environmental Groups, and Community Based Organizations | |

GENERATIONAL OPPORTUNITY

- The Inflation Reduction Act & The Bipartisan Infrastructure Law provide almost \$1 Trillion over the decade
- DEEP is actively monitoring or pursuing over \$220 M in energy, clean air, and transportation federal funding for CT; More opportunities are expected and additional work is looking to bring substantial funds to the region (e.g., H2 Hub and Transmission opportunities)
- Connecticut has established policies and structures which can be enhanced to facilitate equitable access to incoming funding opportunities statewide:
 - Whole-of-Government Approach
 - Connecticut Equity and Environmental Justice Advisory Council (CEEJAC)
 - Governor's Council on Climate Change (GC3)
- Meaningful stakeholder engagement at the community, municipal, agency, and regional level is essential to meet planning and implementation demands while advancing economic, climate, and environmental justice.





THANK YOU

Commissioner Katie S. Dykes