

The Inflation Reduction Act and the Built Environment

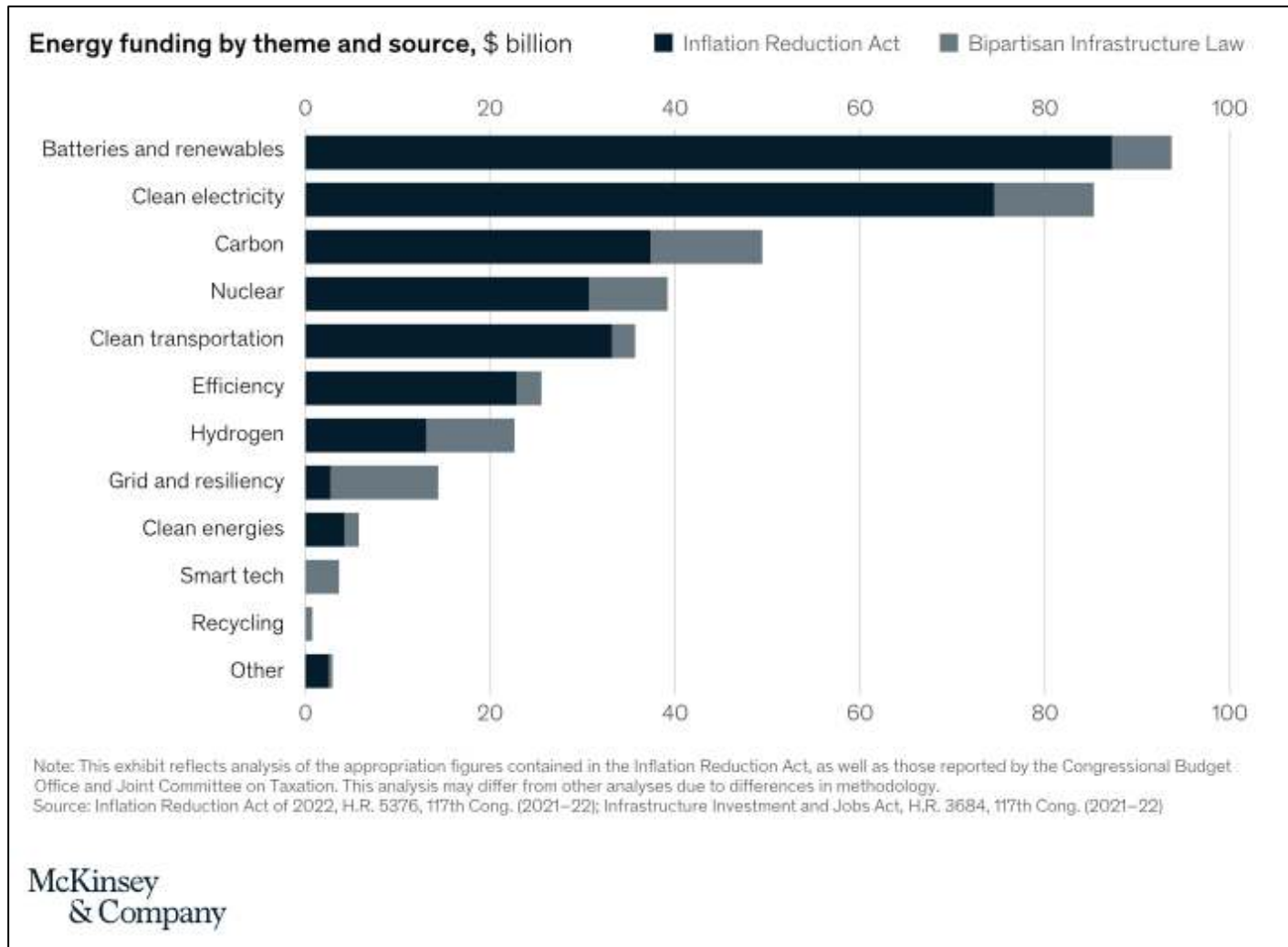
Tom Plant

2022

Center for the New Energy Economy



Bi-Partisan Infrastructure Law (BIL)



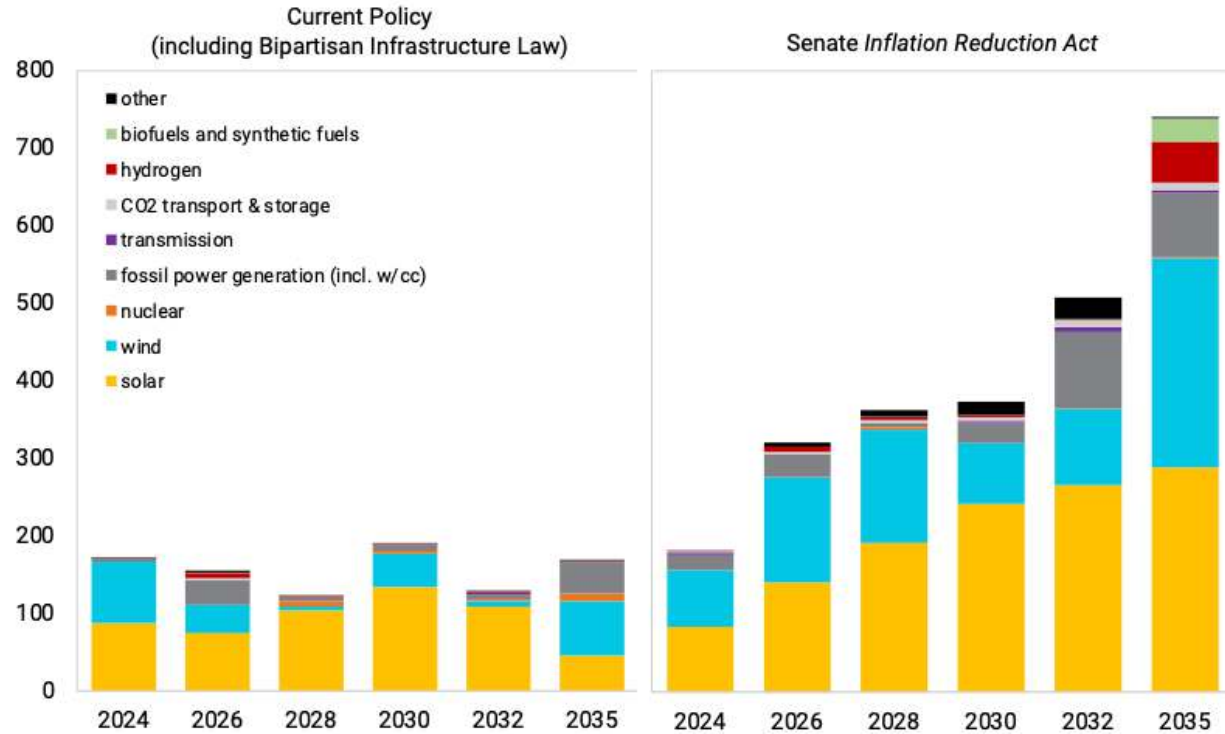
Passed in 2021

- Included \$70B in clean energy technology and demonstration projects
- A total of \$500B of new funding divided between core infrastructure and surface transportation
- \$8B toward hydrogen hubs
- \$3.5B toward low-income weatherization program
- \$550M toward EECBG
- \$500M toward SEP

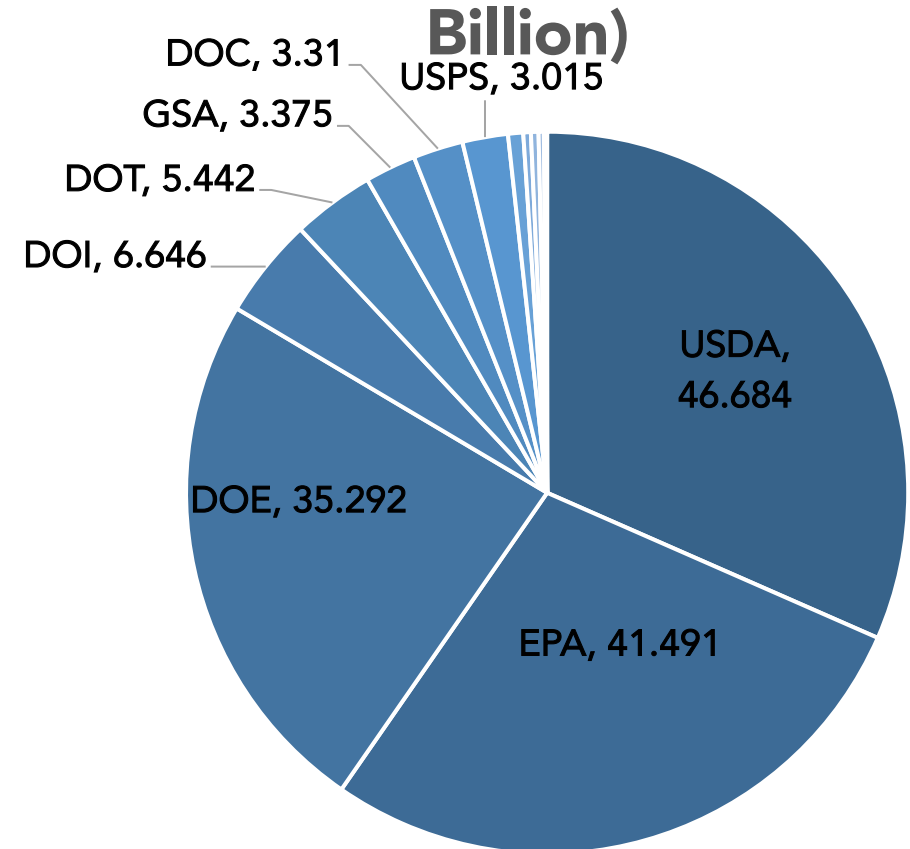
Inflation Reduction Act (IRA)

Annual capital investment in energy supply related infrastructure

Billion 2018 USD per year



Inflation Reduction Act Agency Appropriations (\$ Billion)

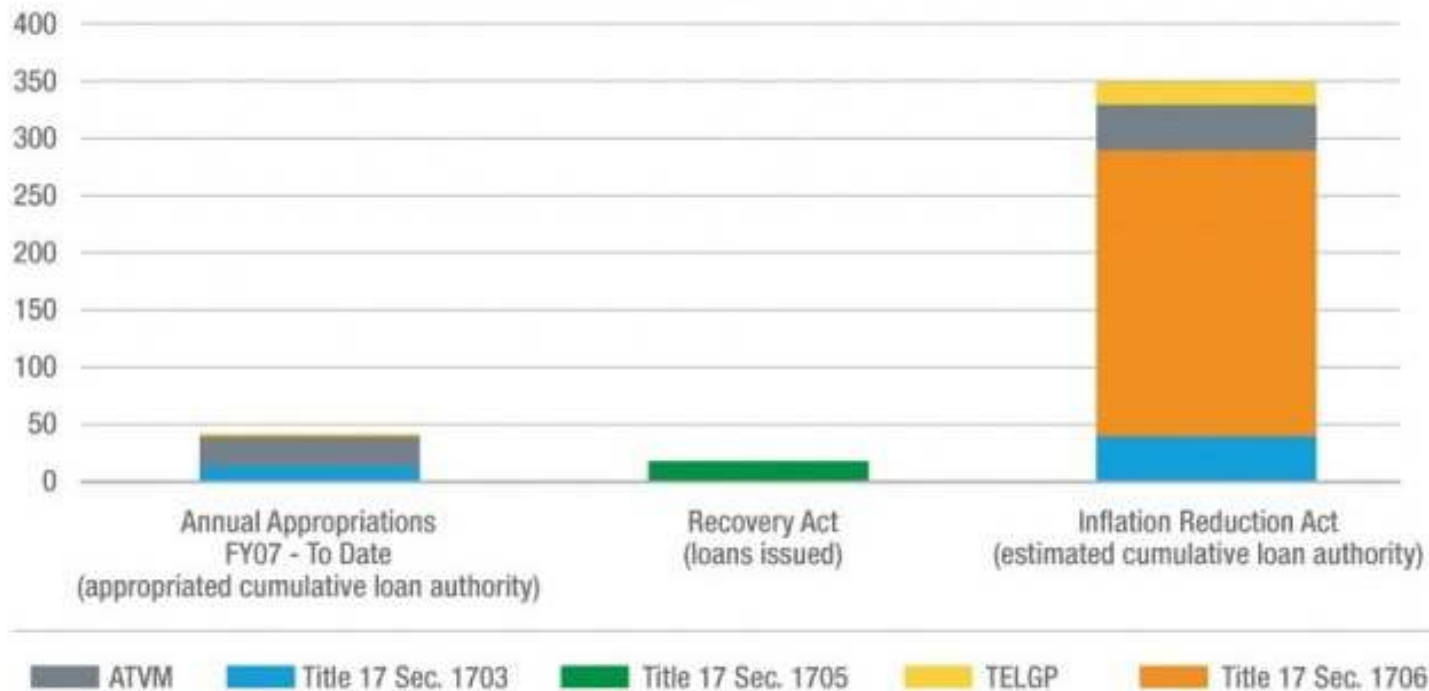


ZERO LAB

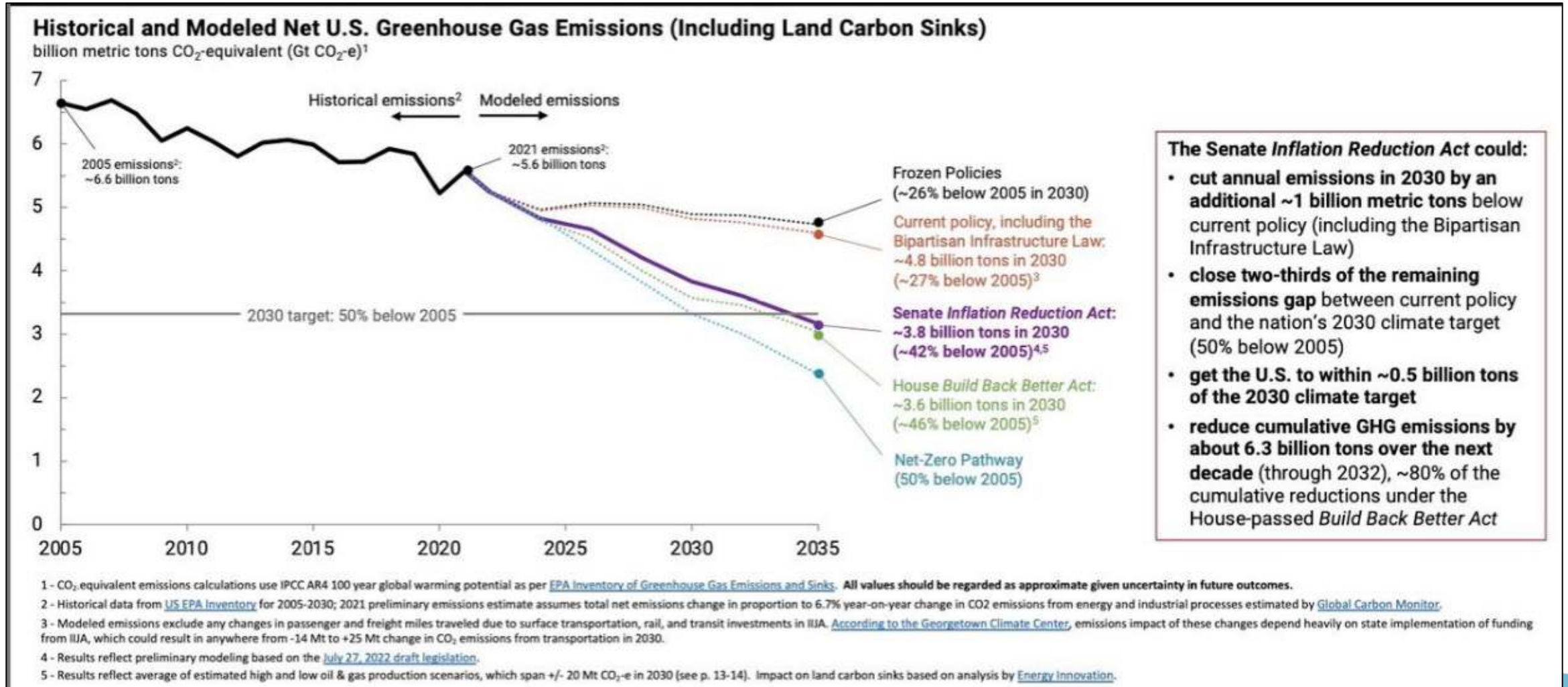


I'm not going to talk about loan authority except to say...

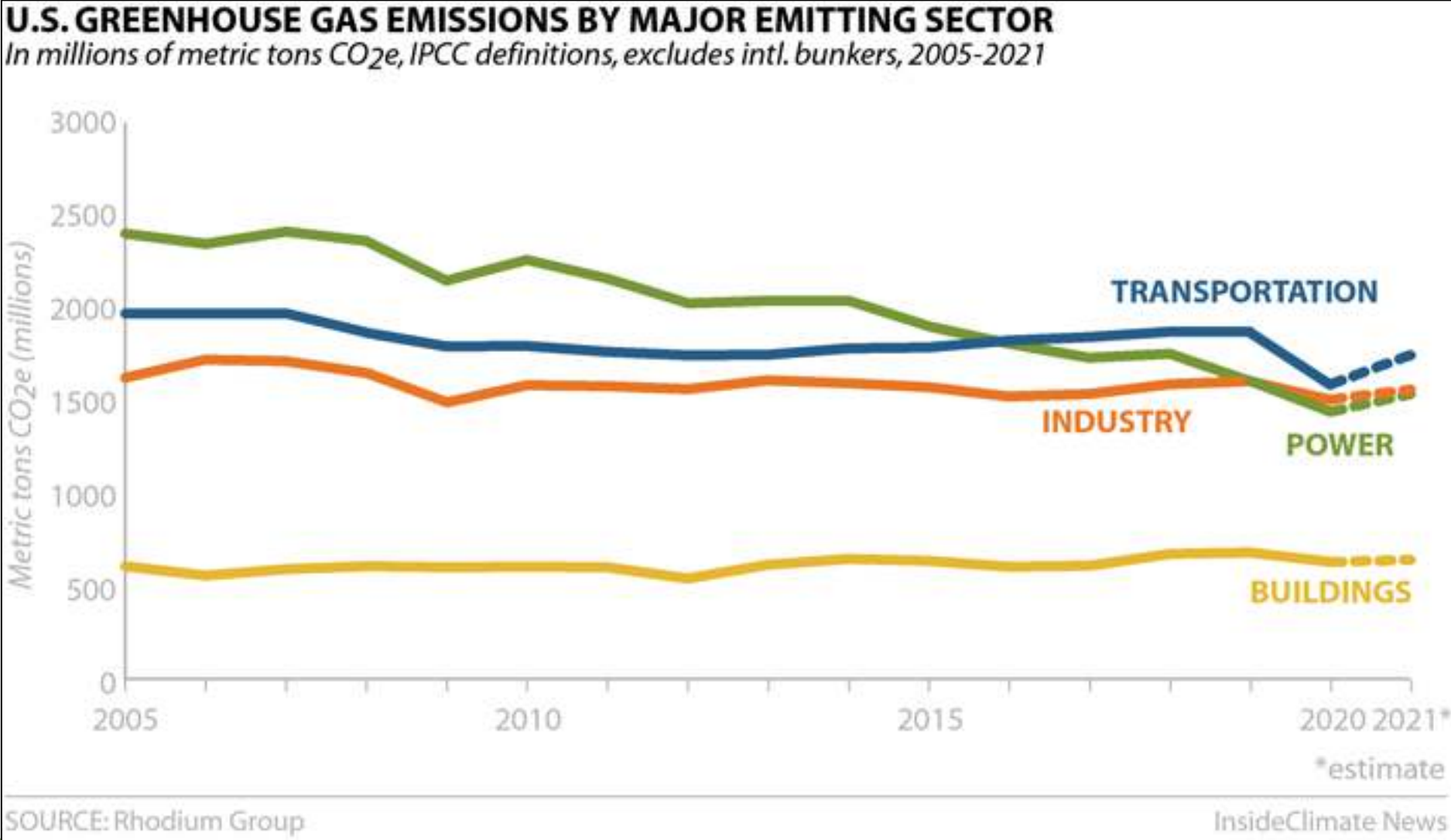
LPO Loan Authority by Funding Source



The Inflation Reduction Act of 2022- a new policy to supercharge the energy transition



Greenhouse Gas Emissions

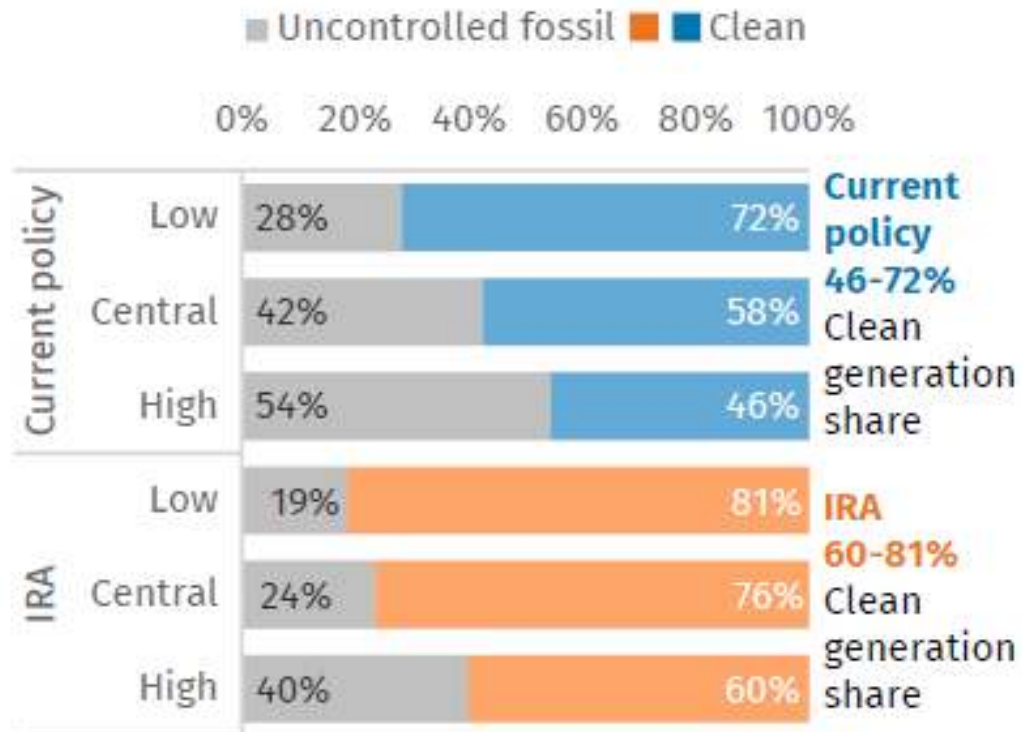


Greenhouse Gas Emissions Reductions Under IRA - Electric Sector

FIGURE 5

Clean electricity shares in 2030

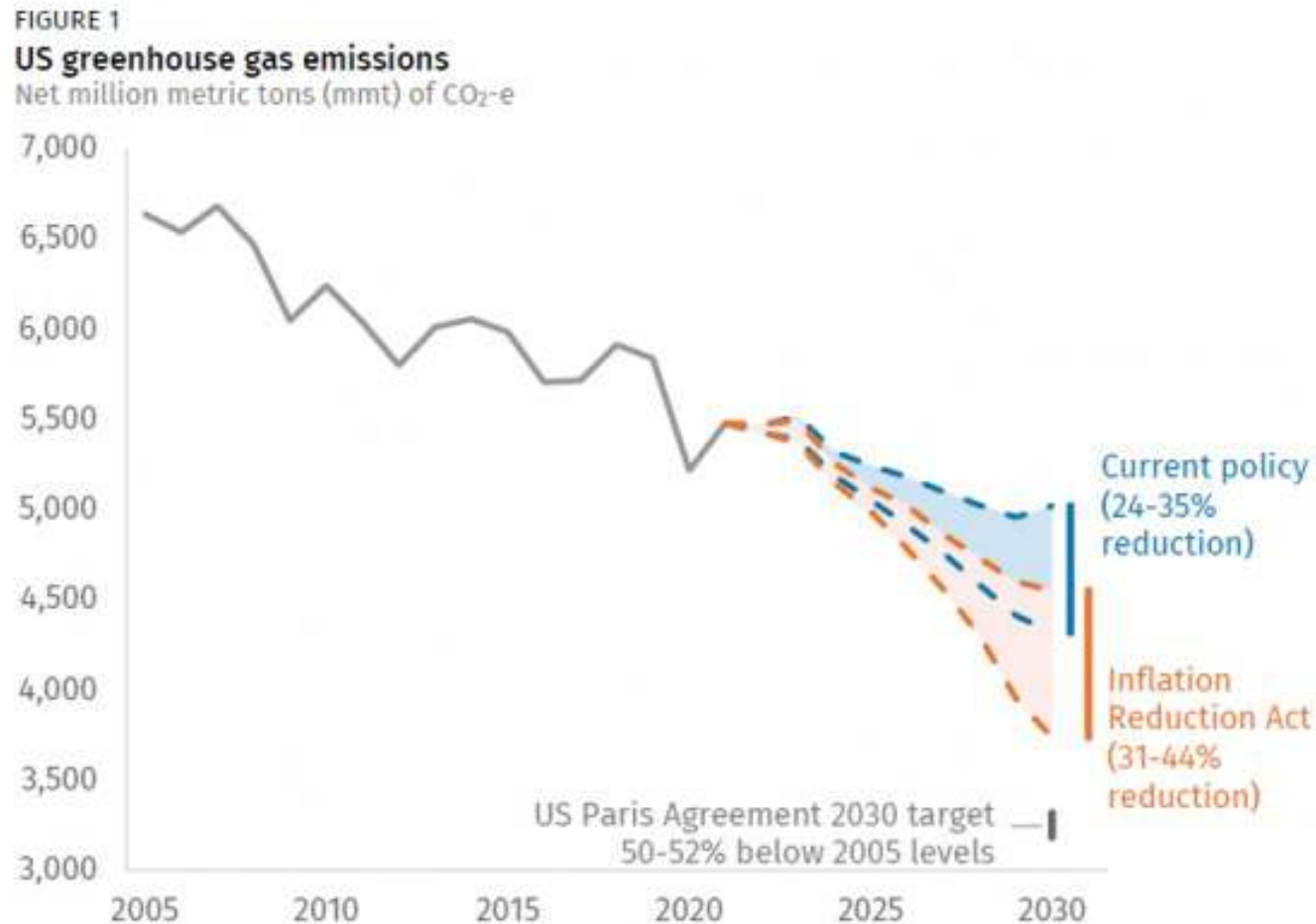
Percent of total generation



Source: Rhodium Group

- Already de-carbonizing electric sector will continue to decarbonize at an accelerated pace
- IRA should lead to 60-80% reduction by 2030
- Core of economy wide policies are to move more infrastructure to rely on decarbonized electric sector
- Even with increases in demand

Inflation Reduction Act of 2022



Source: Rhodium Group. The range reflects uncertainty around future fossil fuel prices, economic growth, and clean technology costs. It corresponds with high, central, and low emissions scenarios detailed in [Taking Stock 2022](#). Under the central scenario (not shown), the IRA accelerates emissions reductions to a 40% cut from 2005 levels.

Historic Investment

- \$369 Billion over the next 10 years
- Including \$280 Billion in Tax Credits
- Tax Credits can be claimed by state and local governments through Direct Pay Provisions

Quick look at some Tax Credit changes

Selected tax credit modifications in the Inflation Reduction Act,¹

					
\$2,000	\$30	\$15	\$4,000	\$1.75	\$3
per year consumer tax credit for the purchase of heat pumps, heat pump water heaters, biomass stoves, and boilers (25C, nonbusiness energy property credit)	per MWh for zero carbon electricity generation placed into service after 2024; reduces to \$23 in 2034 and \$15 in 2035 (45D, production tax credit; 45Y, clean electricity)	per MWh for power produced at a qualifying nuclear facility (45U, nuclear production tax credit)	per vehicle consumer tax credit for used electric vehicles (EVs) (36E, used EV tax credit; 30D, clean vehicle credit)	per gallon for production or mixture of sustainable aviation fuel; credit runs 2023–24 (40B, aviation; 45Z, renewable fuels credit)	per kilogram for the production of qualified clean hydrogen (45V, clean hydrogen tax credit)

Note: This exhibit reflects the key statutory requirements for the cited tax provisions contained in the tax provisions in the Inflation Reduction Act, as well as those reported by the Congressional Budget Office and Joint Committee on Taxation. This analysis may differ from other analyses due to differences in methodology.

¹Entities may need to meet certain domestic sourcing and procurement targets as well as prevailing wage/apprenticeship requirements.

Source: Inflation Reduction Act of 2022, H.R. 5376, 117th Cong. (2021–22)

30% Residential Clean Energy Tax Credit

Residential Clean Energy Credit (25D)

- Qualified purchases include:
 - Solar electric, solar thermal water heaters, geothermal heat pumps, distributed wind turbines, fuel cells, energy efficient exterior windows, doors, skylights, and insulation
 - Energy efficient heating and air conditioning, efficient water heaters, efficient biomass stoves
- Battery storage of at least 3kWh is eligible for the credit
- Qualified costs include labor costs
- Any rebates from utilities reduce the tax credit basis, but rebates from state governments do not

30% Residential Clean Energy Tax Credit

- Annual credit cap is \$1,200 (except heat pumps and biomass stoves credit may be up to \$2,000)
 - Credit for one item may not exceed \$600
 - Exterior windows or skylights may not exceed \$600 in aggregate
 - No single exterior door may exceed \$250 (\$500 in aggregate)
- Qualified items include- water heaters, heat pumps, central air conditioners, hot water boilers, biomass stoves, oil furnaces, air sealing materials and systems, home energy audits, and electrical panels installed to enable qualified improvements. Individual performance requirements for each item.

Energy Efficiency Tax Credits for Builders

Home Type	Qualify Requirement	Wage Requirement	Credit Amount
Single-Family	EnergyStar	No	\$2,500
Single-Family	ZERH	No	\$5,000
Manufactured	EnergyStar	No	\$2,500
Manufactured	ZERH	No	\$5,000
Multi-Family	EnergyStar	No	\$500
Multi-Family	EnergyStar	Yes	\$2,500
Multi-Family	ZERH	No	\$1,000
Multi-Family	ZERH	Yes	\$5,000

The 45L Tax Credit

- For single and multifamily homebuilders
- Changes run from 2023-2032
- (expired existing credit is extended through 2022)
- Credit doubles for meeting DOE Zero Energy Home Standard
- Multifamily gets a 5x increase for meeting prevailing wage requirements

PROVISION	NEW IRC SECTION 179D EFFECTIVE FROM JAN. 1, 2023	PREVIOUS IRC SECTION 179D EFFECTIVE FROM JAN. 1, 2006-DEC. 31, 2022
Eligibility	<ul style="list-style-type: none"> Commercial building owners Designers of buildings owned by: <ul style="list-style-type: none"> Government entities Not-for-profit organizations Churches and other religious organizations Tribal organizations Not-for-profit schools and universities REITs 	<ul style="list-style-type: none"> Commercial building owners Designers of buildings owned by government entities
Tax deduction range	<p>Base deduction: Sliding scale of 50 cents/sqft for energy savings of 25% and up to \$1/sqft for energy savings of 50% or greater</p> <p>Bonus deduction: Sliding scale of \$2.50/sqft for energy savings of 25% and up to \$5/sqft for energy savings of 50% or greater</p>	63 cents/sqft – \$1.88/sqft per eligible system
Deduction cap	A three-year cap that allows IRC Section 179D to be claimed on buildings if the previous full deduction claim occurred more than three taxable years ago	Since 2006, there's been a lifetime cap of \$1.80/sqft or \$1.88/sqft with inflation adjustment
Technical requirements	ASHRAE standard in effect from four years prior to completion of construction	ASHRAE standard in effect from two years prior to start of construction
Bonus deduction	<ul style="list-style-type: none"> Meet local prevailing wage Meet apprenticeship percentage hours for up to 15% of labor hours 	Not applicable

Energy Efficient Commercial Buildings

- 179D Deduction Changes in 2023
 - Lowers minimum changes from 50% to 25% reduction from ASHRAE standard 4 years prior
 - 50¢/sqft for 25% reduction and no prevailing wage or apprenticeship
 - Can increase to \$5/sqft for 50% reduction and meeting wage and apprenticeship
 - Once lifetime of building limit lifted – can qualify every 3 years
- For non-profit and public entities transferability of credit to design firm
- Expanded to include Real Estate Investment Trusts (REITs)

Rebates

High Efficiency Electric Home Rebate (4.275B) to State Energy Offices

Up to \$14,000 for new construction purchases, replacement of non-electric appliances or new electric appliances

- 100% project cost for households below 80% of AMI
- 50% project cost for households between 80% and 150% of AMI
- 100% project cost for multifamily where 50% are below 50% of AMI
- 50% project cost for multifamily 50% are between 80% and 150% of AMI
- Appliance upgrades
 - \$1,750 heat pump water heater
 - Up to \$800 for heat pump space heating/cooling
 - Up to \$840 electric stove, cooktop, range or oven or electric heat pump clothes dryer
- Non-Appliance upgrades
 - Up to \$4,000 for electric load service center upgrade
 - Up to \$1,600 for insulation, air sealing and ventilation
 - Up to \$2,500 for electric wiring
- Installation
 - Up to \$500 commensurate with the scale of upgrades installed and labor practices

Whole Home Rebates

Whole house rebate programs – issued to state energy offices to develop and implement (\$4.3B)

- Single Family Homes
 - Retrofits with savings of 20% - 35%: \$2,000 or 50% project cost
 - Retrofits over 35% savings: \$4,000 or 50% project cost
 - Measured savings of 15% or more in home or home portfolios: payment rate per kWh saved equal to \$2,000 or 50% project cost
- Multifamily Building Owners
 - Retrofits with savings of 20-35%: \$2,000 per dwelling, up to \$200,000 per building
 - Retrofits with savings over 35% : \$4,000 per dwelling, up to \$400,000 per building
 - Measured savings of 15% or more in home or home portfolios: payment per kWh saved equal to \$2,000 or 50% cost
- Low-income
 - Retrofits with savings of 20%-35%: \$4,000 or 80% project cost
 - Retrofits savings over 35%: \$8,000 or 80% project cost
 - Measured savings of 15% or more in home or home portfolios: \$4,000 or 80% of project cost

Up to 20% may be used by CEO for planning/admin/technical assistance

Policy Opportunities for State Legislators

- Re-examine IRPs
- Enact lead by example programs
- Facilitate tax credit monetization for low-income populations
- Capitalize green banks and streamline processes
- Supercharge community solar - particularly for low-income and brownfields development
- Establish climate resilience and adaptation programs
- Establish workforce training to meet apprenticeship requirements
- Fill-in tax credits for EVs until manufacturing requirements are met
- Adopt advanced building codes and training
- Build capacity in small communities with sustainability coordinator network