U.S. DEPARTMENT OF ENERGY | Office of Policy

18 Months On: IRA and the Energy Storage Industry

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Investing in America's Energy Sector

- **Inflation Reduction Act or IRA** (Aug 2022) breathes life into our clean energy economy by incentivizing deployment of clean technologies and lowering energy costs for American families

- **Bipartisan Infrastructure Law** (Nov 2021) makes the largest long-term investment in our nation's infrastructure in nearly a century

- **CHIPS and Science Act** (July 2022) invests in cutting-edge science and innovation to boost American competitiveness, including for semiconductors, and to bring jobs and supply chains home

Delivering Multiple Objectives

Catalyzing the nation's equitable transition to a clean, secure, affordable, and resilient energy system

DOE's Role: New Mandates & Unprecedented Funding

- Hydrogen
- Buildings: efficiency & electrification
- Carbon Management
- Energy Storage
- Electric Grid
- Cybersecurity

$90B in Grants and Rebates
$400B+ In Loans and Loan Guarantees

- Critical Minerals/Materials
- Domestic Supply Chains
- EVs and Chargers
- State, Local, Tribal Partnership
- Workforce
- Clean Energy Projects

20 New or Expanded Energy Tax Credits

Clean Electricity

- 45 PTC Clean power production
- 48 ITC Clean energy facilities
  - Low-income adder for 48(e) ITC
  - Energy communities bonus
  - Domestic content bonus

Transportation

- 25E Used clean vehicle credit
- 30D Clean vehicle credit
- 45W Commercial clean vehicle credit
- 30C Alternative fuel refueling properties

Fuels

- 45V Clean hydrogen production
- 40B Sustainable aviation fuel production
- 45Z Clean fuels

Buildings

- 25C Energy efficient home improvements credit
- 25D Residential clean energy equipment credit
- 179D for energy efficient commercial buildings
- 45L Energy efficient new home credit

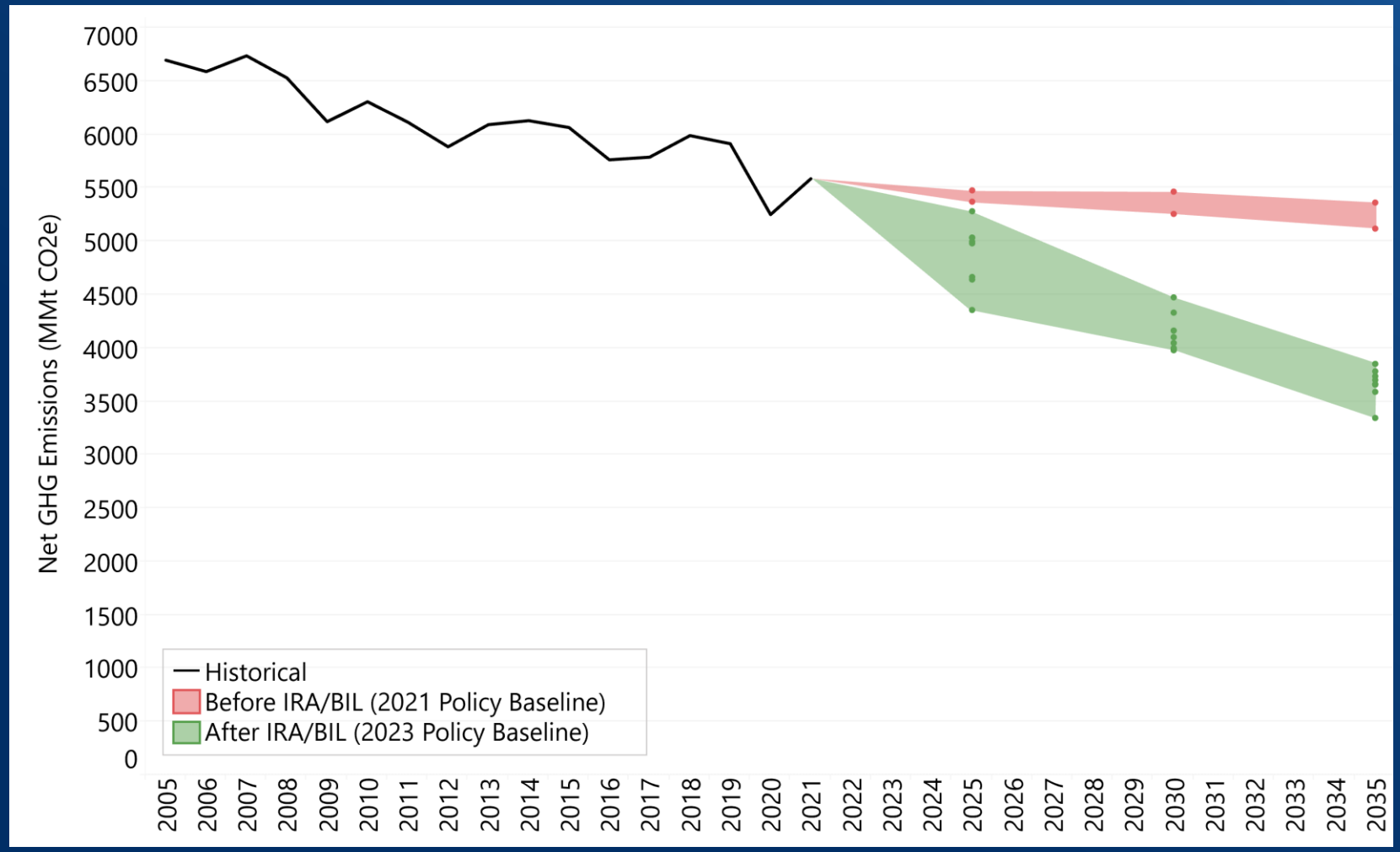
Manufacturing

- 48C Advanced energy projects
- 45X Advanced manufacturing PTC

Cross-Cutting

- 45Q Carbon sequestration
- Apprenticeship & prevailing wage
- Direct pay & transfer of credits

IRA and BIL are positioned to reduce U.S. net greenhouse gas emissions 40% below 2005 levels by 2030



Data Source: Voluntary Supplement to the U.S. Fifth Biennial Report, December 2023

IRA & BIL offer direct support for storage
Key examples:

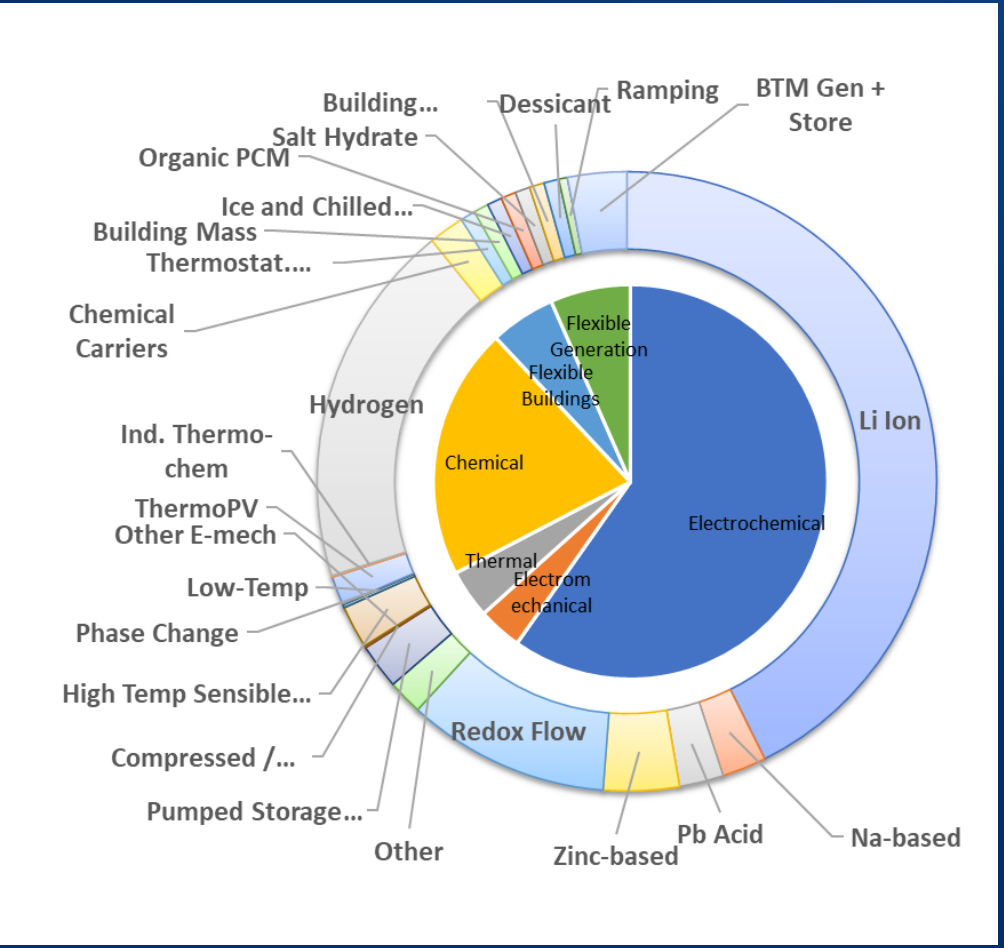
Section 48: 30% ITC for storage if labor standards are met	Section 45X Advanced Manufacturing PTC + 48C ITC	Grants and loans: from DOE, USDA, and beyond
• Bonus credits can boost value to 50%: domestic content & energy communities • Available for 10+ years: likely available to projects built at least through late 2030s • Elective pay and transferability promise to extend reach and impact of credit	• Significant supply-chain incentives to support domestic materials & manufacturing • 45X PTC: electrode active materials, cells, modules, critical materials • 48C ITC: $10B competitive process	• DOE Loans: Energy Infrastructure Reinvestment, Innovative Energy, Innovative Supply Chains • USDA Rural Utility Service: $9.7B for clean energy for co-ops • DOE GRIP: $10.5B for enhanced grid flexibility and resilience • DOE: $505M long-duration storage demos; $7B battery materials, manufacture, recycling

Find opportunities at energy.gov/infrastructure

We are positioned to double the share of American electricity generated by clean sources to 80%, while saving families up to $38 billion on electricity bills

SOURCE: Investing in AmericanEnergy

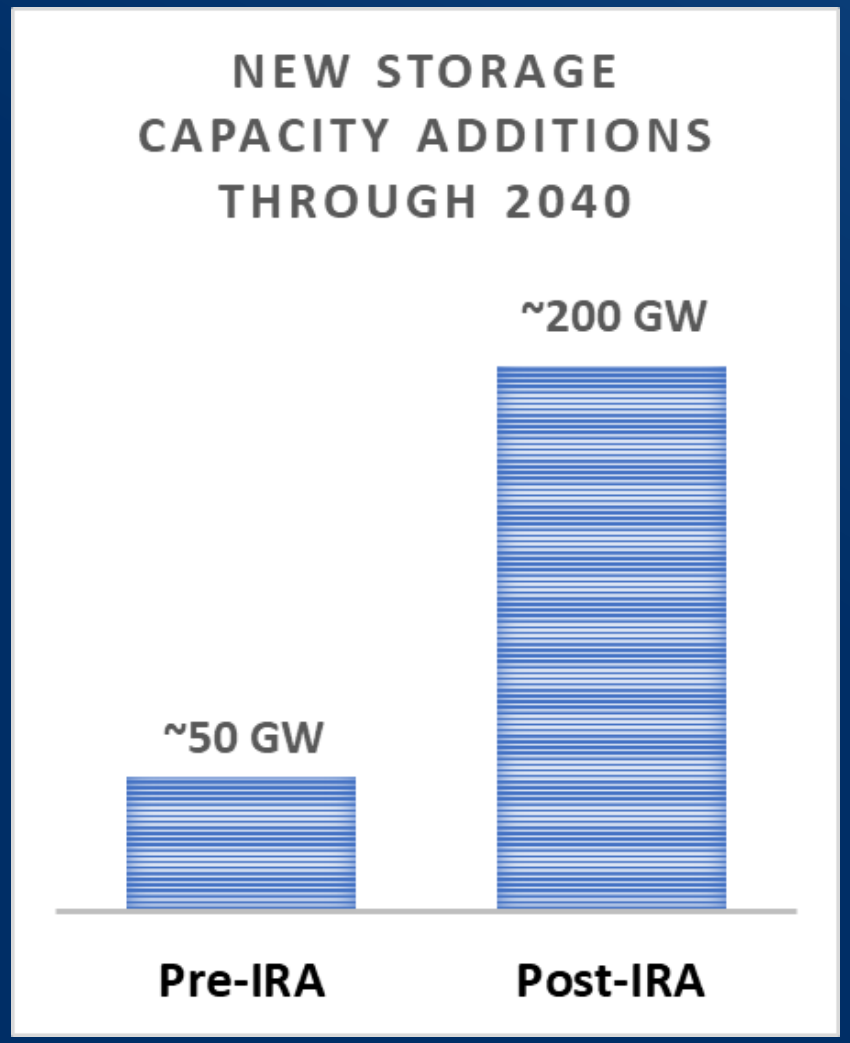
DOE is working across 30+ storage technologies and from basic research to deployment scale-up



A Few Recent Highlights

- **Basic Research**
  - Long duration Earthshot research center
  - Critical Materials Accelerator program
- **Applied RD&D**
  - Storage Innovations Prize
  - Solid state and flow battery manufacturing
  - Long duration energy storage demonstration
- **Deployment and Scale-Up**
  - Conditional loan commitments for storage/manufacturing
  - Battery materials processing and manufacturing
- **Technical Assistance**
  - Capacity building for regulators & communities

Policies, programs, and economics promise to supercharge power-sector storage deployment



Source: NREL Standard Scenarios 2021 and 2023

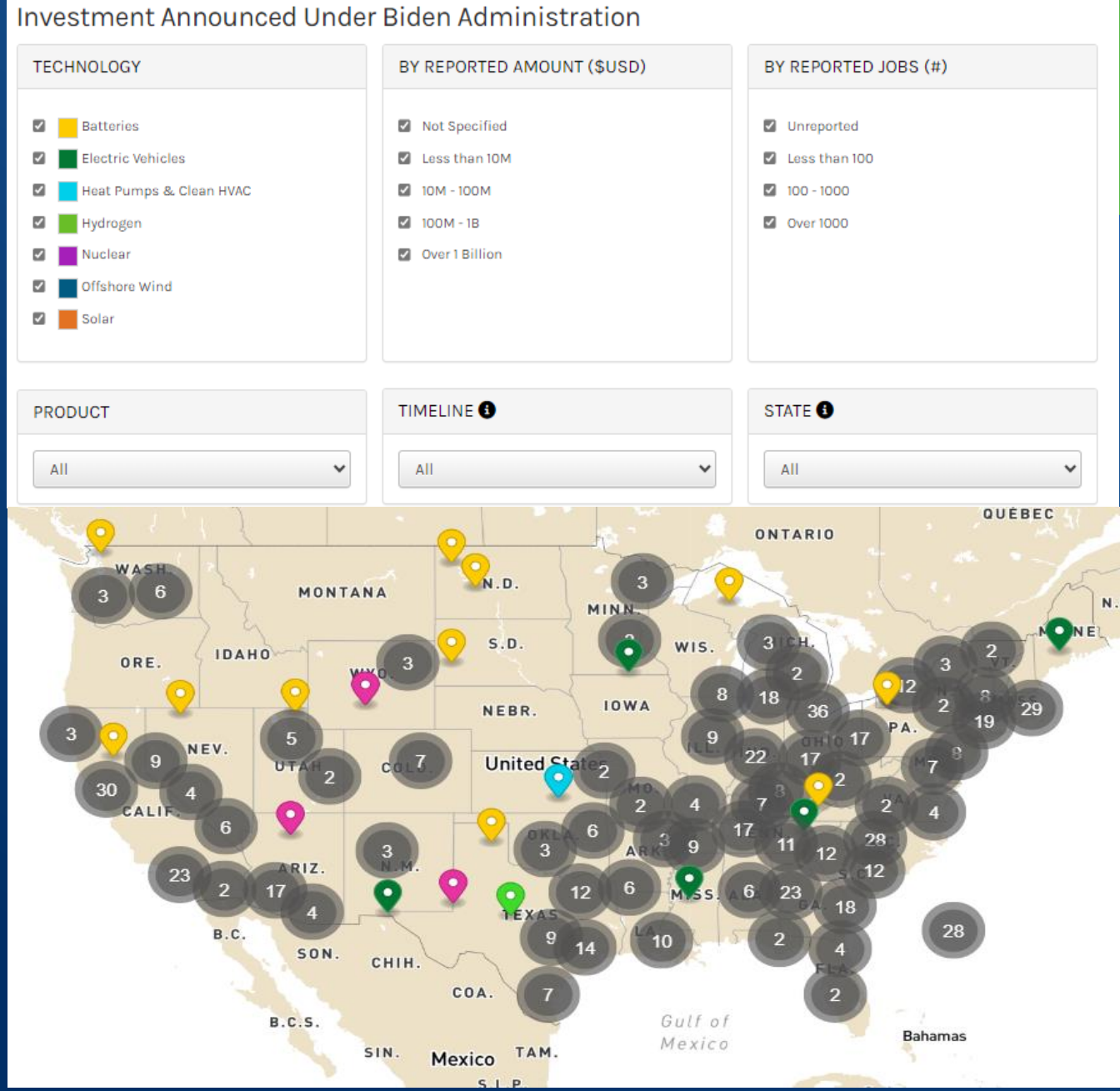
NREL analysis shows significantly higher post-IRA storage growth than pre-IRA: >200 GW by 2040

For comparison:

- 2023 additions = 6.5 GW; 2024 plans = 14.7 GW
- Utility IRPs (which cover ~45% of US load) already show plans for 86 GW of storage
- Interconnection queues at end of 2023 contain ~1000 GW of storage in development

IRA & BIL already leading to unprecedented growth in clean energy manufacturing

- Since Jan 2021, companies have announced plans for domestic manufacturing investments in new or expanded facilities totaling **$190+ billion** across 40+ states in:
  - Batteries; EVs; Solar; Offshore Wind; Nuclear; Hydrogen; Heat Pumps & Clean HVAC
- **$120+ billion** is for batteries and related materials, most for EVs but also for power applications
- Explore DOE's interactive map at Energy.gov/invest!



The road ahead: Focusing on deployment and supply chains while setting ambitious goals for the longer term

DOE "Pathway to Liftoff" report indicates possible need for 225 – 460 GW of long-duration (>10 hr) storage by 2050 in net-zero scenario

Thank You! Questions?

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