Environmental Defense Fund

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# FACTS about U.S. electric vehicles:

## Putting the Pedal to the Metal

The U.S. Environmental Protection Agency is expected to soon issue updated pollution limits for new passenger cars and trucks, and new urban delivery and freight trucks and buses produced in model years 2027 through 2032. These vital protections will slash billions of tons of climate pollution along with reducing particle and smog-forming pollution that causes thousands of premature deaths annually. The transportation sector is one of the largest U.S. sources of climate and air pollution. EPA's standards don't require electric vehicles, but automakers will likely meet the standards relying in part on increased EV sales. Indeed, EVs are quickly becoming one of the most cost-effective options for manufacturers and consumers alike. Here are some important facts about the standards and recent market trends.

### Fact 1: EPA standards are pollution standards – they do not require manufacturers to use any particular technology

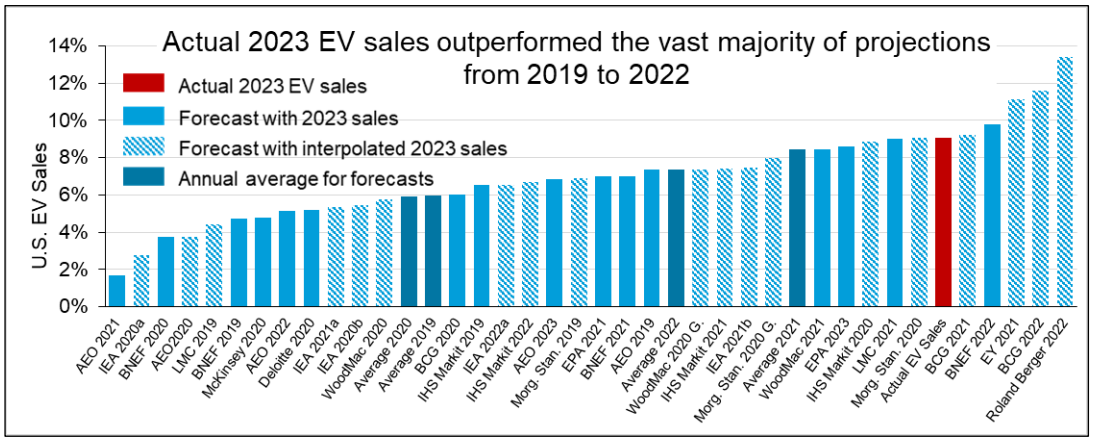
- EPA's proposals are performance-based and technology neutral, consistent with the Agency's decades-long approach to setting standards across Democratic and Republican administrations alike. That means manufacturers can choose to comply with any combination of design changes to gasoline-fueled vehicles, hybrids, plug-in hybrids, fuel cell vehicles, and battery electric vehicles (BEVs) that lower vehicle emissions.
- Recent EDF analysis concludes that EPA's standards are technologically feasible and cost beneficial even where automakers choose to meet them without selling any additional battery electric vehicles.
- There are numerous pathways to compliance with EPA's proposed standards and no technology is required in whole or in part to meet the standards. Even so, many manufacturers have committed to increasing EV sales and doing so gives consumers more choices that will save them money, support domestic manufacturing, strengthen national security, and substantially reduce pollution.

### Fact 2: Purchasing an EV is more affordable than ever for U.S. families, with many currently available EVs providing thousands of dollars in savings

- Purchase Price. Average EV costs have declined rapidly, accelerated by up to $7,500 in point-of-sale EV rebates provided by the Inflation Reduction Act (IRA). EDF finds that consumers looking to buy a new car can currently choose from up to 18 EV models available for less than $35,000 and up to 49 models available for less than $48,000 – the average price of a new vehicle last year. This includes both battery electric and plug-in hybrid models in a wide range of vehicle types.
- Total Savings. EV owners spend less on fuel and maintenance. EDF finds that many currently popular or widely anticipated EV models can provide owners with up to $27,000 in savings over the first 10 years of ownership compared to a similar gasoline vehicle.

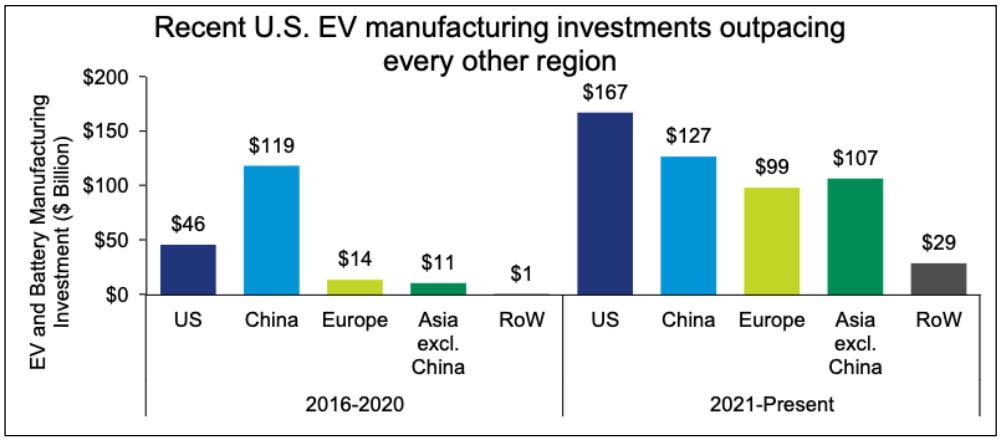
## Fact 3: EV sales are strong and growing faster than most expected.

- **EV sales are strong.** More than 1.4 million EVs were sold in 2023 in the U.S., 9.1% of all passenger vehicles.
- **Sales growth has been significant, outpaced projections, and is expected to continue.**
  - EV sales grew over 50% last year, up from 930,000 sales in 2022. EV sales have grown much faster than expected. New EDF analysis shows actual EV sales in 2023 exceeded over 85% of expert projections made in 2019 to 2022, shown in the figure below.
  - BNEF projects that "EV sales [will] continue to surge in the next few years," estimating that EVs will make up nearly 28% of passenger vehicle sales by 2026.



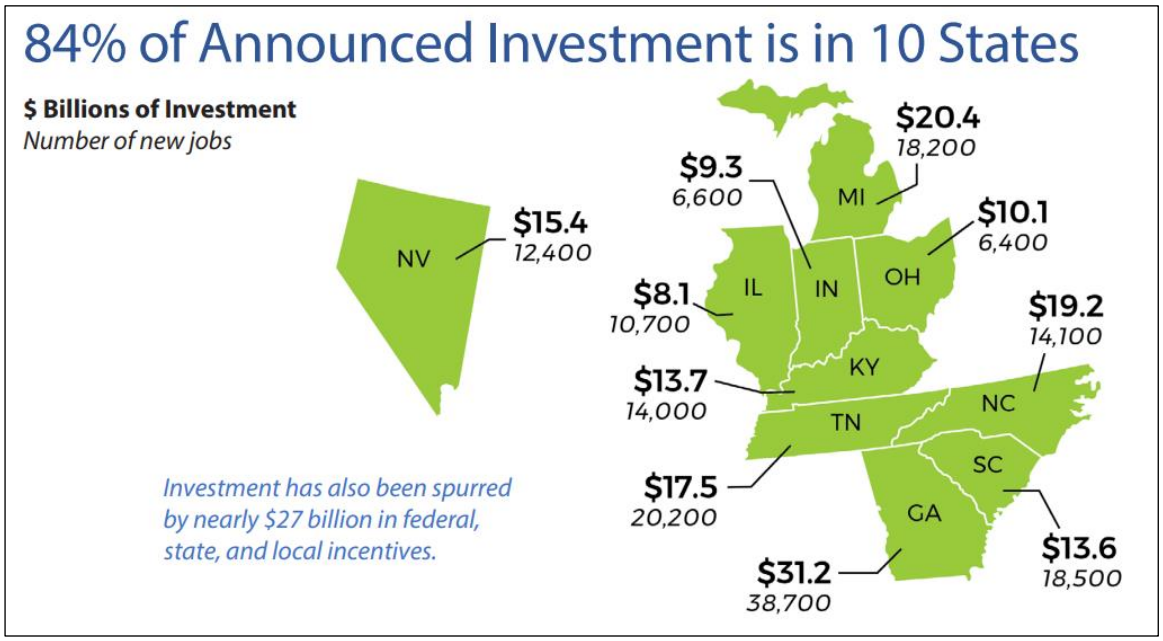

## Fact 4: Recent EV manufacturing investments in the U.S. have surged ahead of every other region

- A new analysis by EDF, based on data from Atlas Public Policy, shows that announced investments in the U.S. EV ecosystem have surged ahead of investments in China in the past three years, underscoring that U.S. clean car policies help position domestic manufacturing for success in a globally competitive market. (See figure below).
- Private investments in the U.S. since 2021 are higher than every other region of the world and are more than three times higher than U.S. investments from 2016 to 2020. Over the same time, historic U.S. policies like the Inflation Reduction Act have been adopted, supporting EV manufacturing and jobs, with substantial production tax credits for manufacturers and domestic content requirements for consumer-side EV incentives.



## Fact 5: Buying an EV helps the U.S. economy and contributes to domestic manufacturing and job creation in states across the country.

- As of March 2024, manufacturers have announced facility-specific investments of nearly $190 billion toward EV manufacturing in the U.S., with 61% of these investments occurring in the last 18 months since passage of the Inflation Reduction Act.
- **EV investments support and create jobs.**
  - Manufacturers have announced 195,000 direct jobs associated with these investments, which will support more than 876,000 jobs in the broader economy.
  - 10 states account for 84% of investments. States with the greatest levels of investment and announced jobs include Georgia, Michigan, North Carolina and Tennessee.
- **U.S. is on track to meet EV and battery manufacturing capacity demand.**
  - By 2027, based solely on concrete announcements already made, U.S. manufacturing facilities will be able to make about 5.5 million new EV passenger vehicles annually, which represents 35% of all new vehicles sold last year.
  - Already announced U.S. battery manufacturing facilities will be **capable of supplying *all* the batteries that could be needed** to meet EPA clean car and truck standards through 2030, enough batteries for more than 10 million passenger EVs every year.
  - Currently, the top 3 vehicles with the greatest domestic content are EVs and the onshoring of manufacturing EV models like the VW ID.4 has contributed to an increase in some auto companies' average domestic content.



## Fact 6: The EV charging network is growing rapidly and EVs can get drivers where they need to go.

- The average range for U.S. EVs is almost 300 miles on a single charge. Yet according to AAA, Americans drive an average of only 30 miles per day.
- There are over 190,000 public EV charging ports in the U.S. today with 900 chargers being installed every week.
- Recent analysis from WSP examined existing and announced charging infrastructure in the U.S. and found rapid new investments since passage of the IRA that will deliver 800,000 new charger ports by 2030. **Over 100% of EPA's projected 2030 needs will be met when considering both concrete and soft announcements.** And existing and already announced concrete DCFC deployments as of June 2023 will provide over 170% of the DCFC ports needed in the U.S. by 2030. Similar results were found by ICCT.
- A study by ICCT projects significant job opportunities will be created by the expansion of EV charging infrastructure in the United States: about 160,000 new jobs could be created by 2032.

## Fact 7: Driving an EV helps fight climate change and improve air quality.

- **EVs help fight climate change.**
  - BEVs reduce climate pollution by 65% compared to conventional gasoline vehicles, according to a study by the University of Michigan. Other analyses from EPA, MIT, UCS, Yale, and BNEF have found the same result that EVs reduce total greenhouse gas emissions. The U.S. transportation sector is the largest source of climate pollution in the nation and one of the largest in the world.
- **EVs improve air quality and save lives.**
  - The transportation sector is also one of the biggest sources of harmful pollutants, generating more than half of the nation's total nitrogen oxides (NOx) emissions, which contribute to smog and dangerous particle pollution. EVs greatly reduce this health-harming pollution. EPA's proposed standards are expected to reduce fine particulates by approximately 246,000 tons and nitrogen oxides (NOx) by more than 1 million tons cumulatively by 2055.
  - EDF quantified the health benefits from the proposed EPA standards and estimates that the clean car rule could prevent more than 32,000 premature deaths, avoid nearly 45,000 hospital and ER visits, prevent more than 16 million asthma attacks and avoid an estimated 6 million lost work and school days cumulatively by 2055.

## RESOURCES

Here are some links to some of EDF's original research on many of the subjects listed above

- U.S. Electric Vehicle Manufacturing Investments and Jobs (March 2024)
- Global EV Manufacturing Investments (March 2024)
- EV sales are going further, faster than expected (March 2024)
- EPA vehicle standards will reduce harmful pollution and save thousands of lives (Feb 2024)
- Alternative compliance pathways to meet EPA proposed HD Phase 3 standards (Feb 2024)
- Many current EV models provide thousands of dollars of savings to consumer (Jan 2024)
- Alternative compliance pathways to meet EPA proposed LD vehicle standards (Dec 2023)
- U.S. EV battery manufacturing on track to meet demand (Dec 2023)
- U.S. Public Charging Infrastructure Deployment (July 2023)