The Outlook for Electric Vehicle Sales Under the IRA: Implications for Auto Financing

FIFTH BIENNIAL CONFERENCE ON AUTO LENDING
12 JULY 2023

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TRENDS

2021:
The “Hockey Stick Moment” for Electric Vehicles in U.S.

Pre-IRA Forecast

President Biden’s IRA goal = 50%

EPA’s goal = 67%

Battery Electric, Plug-in Hybrid, & Fuel Cell, Share of U.S. Sales

Source: Wards Informa
Forecast Increase in Number of EV/PHEV/FCEV Models Produced in North America

Source: Federal Reserve Bank of Chicago analysis of S&P Global Mobility global light vehicle production forecast, December 2022
GM & Tesla had already reached the program cap (200K vehicles) in 2018 & 2019

70% of 2020 30D tax credits went to filers with $100K+ AGI

Source: IRS Statistics of Income, All Returns Tax Credits by AGI
* Categories combined due to data disclosure
GM & Tesla had already reached the program cap (200K vehicles) in 2018 & 2019
The IRA has many aspects

- Climate Change
- Clean Energy Manufacturing
- Prescription Drug Prices
- Corporate Taxes & Tax Enforcement
- Clean Vehicle Incentives*

* BEV, PHEV, FCEV
IRA incentives are an alphabet soup of IRS tax code sections & government programs

30D
New Retail Clean Vehicle Tax Credits

45W
Commercial Clean Vehicle Tax Credits

25E
Used Retail Clean Vehicle Tax Credits

45X
Manufacturing Tax Credits

48C
Advanced Energy Project Credit

ATVM
Advanced Vehicle Technology Program

DMCG*
Domestic Manufacturing Conversion Grants
* I don’t think anyone uses this acronym
## INFLATION REDUCTION ACT

Comparing 30D, 45W, & 25E

<table>
<thead>
<tr>
<th>Requirement</th>
<th>30D New Clean Vehicle Credit (up to $7,500)*</th>
<th>45W Commercial Clean Vehicle Credit (&lt;14K) (up to $7,500*,**)</th>
<th>25E Used Clean Vehicle Credit (up to $4,000 or 30% price)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualified manufacturer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Clean Air Act compliant vehicle</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>GVW &lt; 14K pounds</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Battery &gt;= 7 kWh</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Purchaser must have tax liability</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Vehicle must be sold by a dealer</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Not for resale</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Original use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assembled in North America</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Price caps (30D: MSRP $55K cars, $80K others; 25E: Transaction price $25K)</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Modified Adjusted Gross Income Caps (30D: $300K Married/$225K Head of Household/$150K Single; 25E: half of 30D $150K/$112.5K/$75K)</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>$3,750 if meet critical mineral content targets</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>$3,750 if meet battery component content targets</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>No critical mineral or battery components source from a foreign entity of concern</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Must be for business use</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least 2 years old</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>First resale after 16 August 2022</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>

*30D & 45W can be used for leased vehicles. **45W: leased vehicles count; law also contains tax credits up to $40K for vehicles with GVW > 14K pounds. ***45W tax credit can be carried forward to a year in which the entity has a tax liability. Image Source: Microsoft.

INFLATION REDUCTION ACT 30D

“Critical Minerals” & Others

(i) extracted or processed in the United States, or in any country with which the United States has a free trade agreement in effect, or
(ii) recycled in North America
### Critical minerals content requirements

<table>
<thead>
<tr>
<th>Critical Minerals</th>
<th>&lt;2024</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
<th>2031</th>
<th>2032</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Sourced from U.S. or free trade agreement countries)</td>
<td>40%</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80%</td>
</tr>
</tbody>
</table>

Starting 1 January 2025, no critical minerals can be extracted, processed, or recycled by a foreign entity of concern.
So, what are battery components?

- Electrode active materials
  - Cathode
  - Anode & anode foils
  - Solid metal electrode
  - Separator
  - Electrochemically active materials including solvents, additives, and electrolyte salts that contribute to the electrochemical processes necessary for energy storage

- Battery cells that can store at least 12 Wh of energy

- Battery modules
  - 2 or more battery cells configured electrically in series or parallel to create voltage or current, or
  - No cells but with aggregate capacity of not less than 7 kWh (or in a FCEV, not less than 1 kWh)
## Battery components content requirements

<table>
<thead>
<tr>
<th></th>
<th>&lt;2024</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
<th>2031</th>
<th>2032</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Components</td>
<td>50%</td>
<td>60%</td>
<td>70%</td>
<td>80%</td>
<td>90%</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Non-North American assembled)

Starting 1 January 2024, no battery components can be manufactured or assembled by a foreign entity of concern.
Countries of Particular Concern

The most recent Countries of Particular Concern designations were made by the Secretary of State on November 30, 2022:

Burma, People’s Republic of China, Cuba, Eritrea, Iran, the Democratic People’s Republic of Korea, Nicaragua, Pakistan, Russia, Saudi Arabia, Tajikistan, and Turkmenistan.

**Foreign Entity of Concern Definition:** Section 40207(a)(5) of the Infrastructure Investment and Jobs Act, “owned by, controlled by, or subject to the jurisdiction or direction of a government of a foreign country that is a “covered nation” (defined in 10 U.S.C. 2533c(d)(2))

“These rules will be addressed in future guidance.”
# Review of Major Manufacturing Incentive Provisions

## 45X Manufacturing Tax Credits
- Production credits for solar, wind, batteries, minerals etc.
- Electrode active materials
- Battery cells ($35/kWh)
- Battery modules ($10-45/kWh)
- Applicable critical minerals (10% costs incurred)

## 48C Advanced Energy Project Credit
- $10B in tax credits for qualifying projects
- Establish, expand, or re-equip facilities to produce a wide variety of clean energy products:
  - BEV/PHEV/FCEVs
  - Energy storage
  - Fuel cell equipment

## ATVM Advanced Vehicle Technology Program
- +$3B to an existing direct loan program
- No longer capped at $25B
- Establish or expand facilities to produce:
  - Advanced technology vehicles
  - Components with low or zero emissions

## DMCG Domestic Manufacturing Conversion Grants
- Grants for re-equipping, expanding, or establishing a manufacturing facility in the U.S. to produce:
  - HEV
  - PHEV
  - BEV
  - FCEV
Many passes through the “eye of the needle” to qualify for the consumer credit
One Weird Trick

Get $7,500 off the purchase of any electric vehicle with this one weird trick.
The easiest way to get a $7,500 tax credit for an electric vehicle? Consider leasing.

May 30, 2023
Cost parity remains elusive—even with IRA producer & consumer credits