

Rāpopoto - Summary

- The Biden Administration's climate agenda has had another boost with the signing of the Inflation Reduction Act, containing US\$369 billion in federal funding towards clean energy and climate funding.
- The Act's provisions alone are projected to help the US to meet a 40% reduction on 2005 emissions by 2030, significantly closer to Biden's goal of 50% by 2030.
- It is expected to significantly increase the production, development and uptake of hydrogen fuels, carbon capture and sequestration, wind and solar products, green agriculture, enhanced energy efficiency in homes and businesses, electric vehicles, as well as support the development of clean energy industries, technology and supply chains.
- The tax credit provisions relating to EVs contingent on content requirements for critical mineral, batteries, and place of final assembly have been questioned by trading partners for their compliance with WTO rules.

Pūrongo - Report

US President Joe Biden last month signed into law the Inflation Reduction Act which contains the largest climate policy investments in US history. The Act includes US\$369 billion of programmes, tax credits, and fees to transform and incentivise the US economy towards wide-scale decarbonisation across power generation and use, industrial processes, transportation, and agriculture. Research think tank [Rhodium Group has projected](#) that the impacts of these provisions will likely reduce US carbon emissions by approximately 40% on 2005 levels by 2030, moving the US significantly closer to President Biden's goal of reducing emissions to 50% below 2005 levels by 2030.

Many of the Act's policies are designed to be socially progressive. It awards higher incentives to projects implemented by workers paid increased wages. Most of the tax credits available provide for a base tax credit, which has the potential to be multiplied where the taxpayer complies with additional wage and apprenticeship requirements.

Incentivising locally-made EVs

The transportation sector is the highest-emitting sector in the US since surpassing power sector emissions in 2016. One of the key provisions of the Inflation Reduction Act is a new tax credits of US\$4,000 for the sale of used light duty electric vehicles (EVs) and an expanded tax credit of US\$7,500 for purchasers of certain new EVs. These changes are projected to increase the share that EVs comprise of all light duty vehicles sales to between 19-57% by 2030, up from 12-43% without it.

However, built into these provisions are restrictions on how the credits can be applied. The first requires that final assembly must take place in North America. "Final assembly" in the bill is defined as "the process by which a manufacturer produces a new clean vehicle at, or through the use of, a plant, factory, or other place from which the vehicle is delivered to a dealer or importer with all component parts necessary for the mechanical operation of the vehicle included with the vehicle, whether or not the component parts are permanently installed in or on the vehicle".

Secondly, to be eligible for the first US\$3,750 of tax credits related to new EVs, a percentage of the value of applicable critical minerals contained in a vehicle's batteries must be extracted or processed in the US or in a country with which the US has a free trade agreement or must have been recycled in North America. Applicable percentages increase from 40 percent prior to 2024, to 80 percent after 2026. Qualifying critical minerals include aluminium, cobalt, lithium (a market dominated by China), nickel, and graphite, amongst others.

Thirdly, to qualify for the second US\$3,750 of tax credits, a certain percentage of the value of the battery components in an EV must be manufactured or assembled in North America. Applicable percentages increase from 50 percent prior to 2024 to 100 percent after 2028.

Tax credits will not be eligible for EVs if they contain components in their batteries, or contain critical minerals extracted, processed, or recycled by a foreign entity of concern. "Foreign entity of concern" is defined in the Infrastructure Investment and Jobs Act of 2021..

Several countries including South Korea, Japan, and the European Union, have raised concerns about the WTO compliance of these EV tax credit limitations. EU Commission spokesperson Miriam Garcia Ferrer has stated "The European Union is deeply concerned by this new, potential, trans-Atlantic trade barrier... We think that it's discriminatory, that it's discriminating against foreign producers in relation to US producers." [In response to this](#), USTR spokesperson Adam Hodge simply noted the act will boost EV "manufacturing, infrastructure and innovation" in the US as well as "reduce dependence on China". USTR Tai similarly defended the Act noting it would "create good paying jobs and further advance US leadership in the development of cutting edge clean tech".

Clean energy generation

The Inflation Reduction Act aims to develop new clean energy capacity through production and investment tax credits, retaining existing clean capacity (particularly zero-emitting nuclear generation), and retiring fossil fuel generation capacity.

For example, provisions provide US\$30 billion in production tax credits to accelerate US manufacturing of solar panels, wind turbines, batteries and critical minerals processing, alongside US\$10 billion in investment tax credits to build clean tech manufacturing facilities that will assist the development wind turbines and solar panels.

It also looks to increase green hydrogen (produced by renewable energy) and blue hydrogen (produced from natural gas) production significantly. The Act provides for a base credit of US\$0.60/kg of hydrogen produced, so long as the carbon intensity is within the range of 0-0.45kg of CO2 equivalent per kilogramme of hydrogen. Where taxpayers comply with wages and apprenticeship requirements, they are also eligible for a tax credit of US\$3/kg of hydrogen. This has the potential to have a major impact on the current between \$3.39-\$4.92/kg cost to product green hydrogen in the US with solar energy.

Under the IRA, clean generation as a share of total electric generation is tipped to rise from 40% in 2021 to between 60–81% in 2030. By 2030, electric power CO2 emissions are projected to be 69-80% below 2005 levels, compared to 54-66% below 2005 levels that would occur under current policy. This puts the US in a strong position to meet President Biden's goal of 100% clean generation by 2035.

Agriculture emissions

The Inflation Reduction Act also contains around US\$40 billion of provisions aimed at greening the agricultural sector. Half of this will go to US Department of Agriculture (USDA) programmes that incentivize green farming practices and limit greenhouse gas emissions. This includes the voluntary, Environmental Quality Incentives Program, to help farmers to plant cover crops to prevent soil erosion, be more strategic in their fertiliser use, boost forest growth, improve irrigation and water management systems, and limit methane emissions from livestock through new feed additives like seaweed and other diet methods.

These programmes would regularly receive the bulk of their funding through the Farm Bill process. The 2023 Farm Bill will be written and passed by the next Congress (following the November mid-terms). Given conservation and climate smart agriculture funding would likely be vulnerable to a Farm Bill process controlled by a Republican majority, securing funding now through legislation allows USDA more certainty and the ability to roll out funding.

The Act also contains a US\$14 billion boost for rural development, including US\$9.7 billion investment in rural electric cooperatives to help rural communities transition away from fossil fuels. Rural cooperatives have traditionally not had access to the tax credits available to larger energy corporations.

Carbon capture

The Inflation Reduction Act will see US government subsidies for capturing CO2 from polluting sources increase from \$50 to \$85 per metric ton. Previous tax incentives only paid enough to convince investors to fund the easiest carbon capture projects such as pipelines that capture carbon from ethanol processing facilities. But this is expected to spark investment in projects that capture carbon from industrial facilities with lower CO2 concentration like natural gas processing facilities, and cement plants. This comes on top of provisions in last year's Infrastructure Investment and Jobs Act which directed significant US government support for the sector, including US\$3 billion towards constructing four carbon capture hub facilities.

The projected 35–40% increase in carbon capture is expected to help drive down industrial sector emissions. Without the Act industrial emissions were projected to decrease between 0-14% relative to 2005 levels. Now industrial emissions are projected to decrease between 3% and 16% relative to 2005 levels.

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