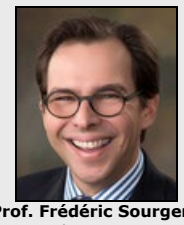
OGEL Energy Law Journal
www.ogel.org

ISSN : 1875-418X
Issue : Vol. 22 - issue 4
Published : December 2024

Part of the OGEL 4 (2024) Special Issue on the *"International Energy and Investment Law Implications of the US Inflation Reduction Act"*. Co-editors:


Dr. Tade Oyewunmi
Energy Law Scholar and Advisor
View profile


Prof. Frédéric Sourgens
Tulane Center for Energy Law
View profile


Scot Anderson
Womble Bond Dickinson
View profile


Almira Moronne
Davis Graham & Stubbs
View profile

The Inflation Reduction Act and Impact on the Mining Industry

by M. Connors, P.C. de Bernier, G.A. Anderson, W.S. Payne, and B.A. Cohen

About OGEL

The **OGEL** Energy Law Journal focuses on recent developments in the area of energy law, policies, regulation, treaties, judicial and arbitral cases, voluntary guidelines, tax and contracting, including energy geopolitics.

For full Terms & Conditions and subscription rates, please visit our website at www.ogel.org.

Open to all to read and to contribute

OGEL has become the hub of a global professional and academic network. Therefore we invite all those with an interest in energy law, policies and regulation to contribute. We are looking mainly for short comments on recent developments of broad interest. We would like where possible for such comments to be backed-up by provision of in-depth notes and articles (which we will be published in our 'knowledge bank') and primary legal and regulatory materials.

Please contact us at info@ogel.org if you would like to participate in this global network: we are ready to publish relevant and quality contributions with name, photo, and brief biographical description - but we will also accept anonymous ones where there is a good reason. We do not expect contributors to produce long academic articles (though we publish a select number of academic studies either as an advance version or an OGEL-focused republication), but rather concise comments from the author's professional 'workshop'.

OGEL is linked to **OGELFORUM**, a place for discussion, sharing of insights and intelligence, of relevant issues related in a significant way to energy issues: Policy, Legislation, Contracting, Security Strategy, Energy Transition, and Climate Change related to energy.

The Inflation Reduction Act and Impact on the Mining Industry

by Meaghan Connors, Paul de Bernier, Grant Anderson, Warren Payne, Brian Cohen

Abstract

For energy lawyers, the passage of the Inflation Reduction Act by the Biden Administration in August 2022 (the "IRA"), introduced a complex array of regulations that offer significant tax benefits, grants, and loan guarantees for energy market participants, including critical mineral producers. Over the past two and a half years, stakeholders have been working diligently to comprehend the various requirements necessary to qualify for these financial incentives. With the global focus on achieving net-zero emissions and accelerating green energy projects, the IRA's passage occurred at an opportune time. There is no doubt that the IRA has been a catalyst for driving investments domestically and globally. However, with a transition to a second Trump administration in January 2025, many are awaiting clarity on how the IRA will evolve and what guidance the incoming administration will provide to shape the qualifications further. This paper will provide a general overview of the IRA, including reactions to its implementation, and its application to critical mineral producers and the mining industry, highlighting areas of significant activity. We will discuss traditional mining finance options, the alternative financing opportunities presented by the IRA, and the influence of the IRA on mergers and acquisitions within the critical minerals sector. Finally, we will analyze the potential future of the IRA under the Trump Administration.

I. Overview of the Inflation Reduction Act

On August 16, 2022, the IRA was signed into law by the Biden Administration to assist the United States in achieving its climate goals, prioritize clean energy initiatives, strengthen domestic energy security, boost job creation, and alleviate healthcare expenses for American families.[1] The IRA was enacted to help the U.S. reduce its greenhouse gas emissions by 40% percent relative to 2005 levels over the subsequent 8 years.[2] The narrative surrounding the formulation of the IRA is particularly noteworthy. It emerged from a negotiation among Senate Democrats after the House passed the Build Back Better Act. When the Build Back Better Act was announced, it was touted by the Biden Administration as the most significant governmental endeavor to date to combat climate change and was intended to include financial incentives to help strengthen the U.S. supply chain in solar, wind, and other critical industries that were at the forefront of the energy transition.[3] The IRA garnered unanimous support from Senate Democrats, while failing to receive a single vote from Republican senators. It subsequently passed the House on a similar partisan basis before being signed into law by President Biden.

The IRA included production tax credits for manufacturing facilities engaged in the production of renewable energy technologies (such as wind turbines, solar panels, and EVs), as well as

---

[1] *FACT SHEET: One Year In, President Biden's Inflation Reduction Act is Driving Historic Climate Action and Investing in America to Create Good Paying Jobs and Reduce Costs* (Aug. 16, 2023), https://www.whitehouse.gov/briefing-room/statements-releases/2023/08/16/fact-sheet-one-year-in-president-bidens-inflation-reduction-act-is-driving-historic-climate-action-and-investing-in-america-to-create-good-paying-jobs-and-reduce-costs/.

[2] Bella Isaacs-Thomas, *What the Inflation Reduction Act does for Green Energy* https://www.pbs.org/newshour/science/what-the-inflation-reduction-act-does-for-green-energy (Aug. 17, 2022, 5:44 PM).

[3] *The Build Back Better Framework*, https://www.whitehouse.gov/build-back-better/ (last visited Nov. 19, 2024).

investment tax credits for new manufacturing facilities dedicated to the development of green technologies, grants to facilitate the transition of automobile manufacturers to electric or more environmentally friendly vehicles, and loans to construct new manufacturing facilities.[4] The IRA significantly disrupted the energy sector by enhancing the variety and amount of tax credits, and by permitting many of these credits to be generally available for up to ten years. As of early 2024, over $380 billion IRA investments had been allocated across a diverse array of clean energy technologies.[5] Initially, the IRA addressed (by either creating or revamping) over 20 different tax incentive programs and bolstered existing loan and guarantee programs designed to stimulate the production of green energy and manufactured goods that would assist the U.S. in achieving its climate goals and reducing the costs of energy projects.[6] The IRA also increased funding amounts under the Defense Production Act for the processing of critical minerals.[7]

As of August 2024, companies have declared a minimum of 334 significant new initiatives related to clean energy throughout the nation since the passage of IRA.[8] Forty states and two-thirds of congressional districts feature at least one such announcement.[9] The increase stemming from post-IRA initiatives is especially notable in districts and states led by Republican representatives in the U.S. South.[10] Almost 60 percent (60%) of the declared initiatives – encompassing 85 percent (85%) of the financial investments and 68 percent (68%) of the employment opportunities – are situated within Republican congressional districts. This is noteworthy, considering the absence of any Republican support for the legislation. Various sectors within the clean energy space are experiencing expansion. Over the preceding two years, automobile manufacturers and their suppliers have revealed 132 new or upgraded electric vehicle and battery production facilities, along with associated manufacturing plants in 23 states, inclusive of 39 clean vehicle production projects over the past year.[11] Manufacturers of solar panel equipment are establishing or enhancing 53 factories across 23 states, and renewable energy operators are building 24 new large-scale wind and solar power generation initiatives across 22 states, while at least 51 new battery/storage initiatives are currently in progress.[12] Overall, more than 90 percent (90%) of all initiatives announced since the IRA's passing pertain to the manufacturing sector, with clean vehicles constituting over a third of all initiatives declared within the last year.[13] Interestingly, international entities led or participated in approximately 160 projects declared since the enactment of the IRA – nearly matching the quantity of projects announced by U.S.-based firms.[14]

To the extent mining companies are benefitting from financial allocations under the IRA, such funds are being directed towards large global mining companies and projects directly linked to electric vehicles and battery storage. In October 2022, Albemarle secured a grant from the

---

[4] *The Build Back Better Framework*, https://www.whitehouse.gov/build-back-better/ (last visited Nov. 19, 2024).
[5] *Impact and Stories*, U.S. DEP'T OF THE TREASURY, https://home.treasury.gov/policy-issues/inflation-reduction-act/impact-and-stories (last visited Nov. 19, 2024).
[6] *Id.*
[7] *What are Critical Materials and Critical Minerals?*, https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals (last visited Nov. 19, 2024).
[8] *Clean Economy Works: Inflation Reduction Act Two Year Analysis*, E2 (Aug. 14, 2024) https://e2.org/wp-content/uploads/2024/08/E2-Clean-Economy-Works-IRA-Two-Year-Review_August-2024.pdf.
[9] *Id.*
[10] *Id.*
[11] *Id.*
[12] *Id.*
[13] *Id.*
[14] *Id.*

Department of Energy for nearly $150 million as part of President Biden's goal to "expand domestic manufacturing of batteries for electric vehicles (EVs) and the electrical grid."[15] Albemarle also recently received a tax credit of $9.4 million for its production of lithium carbonate at its Silver Peak Lithium Project facility in Nevada.[16] In September 2024, Lundin Mining Corporation was also awarded up to $145 million from the Department of Energy for its Rev Nickel project, which will produce nickel concentrate and other critical minerals using mine tailings and spent lithium-ion batteries.[17]

Although numerous IRA programs focus on electric vehicles and battery manufacturing and production, it is essential to acknowledge that the production of these electric vehicles and batteries is contingent upon the extraction of critical minerals through mining activities. Consequently, for purposes of this paper, we will focus on the IRA programs that are most relevant to critical mineral producers and are providing new means of financing for new projects or working capital maintenance for these critical mineral producers and their investors, specifically the ten percent (10%) tax credit under Section 45X (Advanced Manufacturing Production Credit), tax credits under Section 48C (Qualifying Advanced Energy Project Credit Program), the loan guaranty programs under the Title 17 Clean Energy Program, and vehicle tax credits under Section 30D, 25E and 45W. These credits and loan programs can be a more attractive alternative to traditional mining finance options (such as equity investments, debt facilities or royalty or streaming agreements), because these IRA incentives generally come without many strings attached. While the eligibility requirements and application processes for these programs can be strict and complicated, the tax credits can be received directly by the taxpayer, the loan programs have extended payment terms with low interest rates and generally do not require heavy collateral pledges or require any equity dilution. So at the end of the day, while a critical mineral producer or its investor may spend a significant amount of time qualifying for a select IRA program, there are significant economic benefits.

II. Section 45x (Advanced Manufacturing Production Credit)

Under Section 45X (Advanced Manufacturing Production Credit), tax credits are available to producers of energy components and products that are sold to unrelated persons, including eligible components produced in the U.S. involving critical minerals. These critical minerals include, graphite, cobalt, lithium, and nickel, which are essential minerals for the production of electric vehicles and cell phone batteries. The Section 45X tax credit is potentially available to the 50 minerals listed as an "applicable critical mineral" under Section 45X(c)(6). To be eligible, these critical minerals are also subject to a minimum purity threshold by mass. While the tax credit is contingent upon the production of the eligible component, it is also available to certain mineral producers and processors.[18] The tax credit provided under Section 45X can be up to ten percent (10%) of the costs associated with the production of the critical mineral.

---

[15] *Albemarle Secures DOE Grant for U.S.-Based Lithium Facility to Support Domestic EV Supply Chain*, ALBEMARLE (Oct. 19, 2022), https://www.albemarle.com/global/en/news/albemarle-secures-doe-grant-us-based-lithium-facility-support-domestic-ev-supply-chain.

[16] *Albemarle, Cummins Receive Tax Credits Under Biden's Clean Energy Drive*, REUTERS (Apr. 19, 2024), https://www.reuters.com/sustainability/sustainable-finance-reporting/albemarle-cummins-receive-tax-credits-under-bidens-clean-energy-drive-2024-04-19/.

[17] *Nickel Project Will Add Jobs, Life to Eagle Mine*, THE MINING J. (Sept. 21, 2024), https://www.miningjournal.net/news/front-page-news/2024/09/nickel-project-will-add-jobs-life-to-eagle-mine/.

[18] Meaghan Connors et al., *Strengthening the US Supply Chain for Critical Minerals and the Inflation Reduction Act – Opportunities and Challenges*, MAYER BROWN (Sept. 29, 2022), https://www.mayerbrown.com/en/insights/publications/2022/09/strengthening-the-us-supply-chain-for-critical-minerals-and-the-inflation-reduction-act-opportunities-and-challenges.

Until very recently, the actual costs of "extraction" of raw materials could not be included in this ten percent (10%). The mining industry and EV producers strongly contested the initial interpretation, contending that the exclusion of these production expenses contradicted the intent of the IRA as these critical minerals are necessary to achieve net-zero goals and advance the clean energy transition. It was perplexing how the U.S. Department of Treasury ("Treasury") and the Internal Revenue Service ("IRS") could have neglected this critical inclusion. Earlier this year, mining companies and the electric vehicle industry joined together to "warn" Treasury that "its interpretation of the Inflation Reduction Act could undermine the Biden Administration's goal of bolstering EV adoption and building up mineral supply chains."[19] The IRS sought comments on the approach and market participants were encouraged to respond. Subsequently, on October 24, 2024, the Treasury and the IRS issued final regulations (the "Final Regulations")[20] for Section 45X, modifying the treatment of "production costs" and permitting extraction costs for critical minerals. Given the recent favorable developments for the mining industry, it is expected that commencing with the upcoming taxable year, there will be an increase in the number of mining companies applying for these credits for their 2025 tax filings.

There is however one qualification to the Section 45X tax credits that necessitates further progress. To leverage these tax credits as a critical mineral producer, a producer must satisfy that the critical minerals have been "produced by the taxpayer".[21] Under the proposed regulations, "produced by the taxpayer" means a process conducted by the taxpayer that substantially transforms constituent elements, materials, or subcomponents into a complete and distinct eligible component that is functionally different from that which would result from minor assembly or superficial modification of the elements, materials, or subcomponents, and includes both primary and secondary production. Specifically, for critical minerals, production by the taxpayer includes processing, converting, refining, or purifying source materials.[22] However, mere extraction does not qualify as production, since it does not yield a distinct component. The Final Regulation favors mining companies that have their own processing and refining facilities that are able to produce these "eligible components."[23] For example, the Final Regulation would make several proposed nickel mines ineligible for the Section 45X tax credit because there is no nickel smelter in the US, and these critical mineral producers would not be able to produce the "eligible components" necessary to qualify for the tax credit.[24] While many major mining companies refine or process the minerals they have extracted, the Trump administration, in an effort to further support smaller mining companies and the industry, should consider eliminating this requirement.

The Section 45X tax credit is also very attractive to critical mineral producers as it can be "stacked" with other tax credits (note that the Section 45X credit cannot be used for eligible components made at a factory that has received Section 48C tax credits).[25] Critical mineral producers benefitting from Section 45X tax credits are also eligible for a direct cash payment for up to five (5) years for taxpayers with limited tax capacity. This allows a business or a

---

[19] Meaghan Connors, *The Inflation Reduction Act as Mining Finance Alternative*, MAYER BROWN (Mar. 5, 2024), https://www.mayerbrown.com/en/insights/publications/2024/03/the-inflation-reduction-act-as-a-mining-finance-alternative#Three.

[20] All "Section" references are to the Internal Revenue Code of 1986, as amended (Code) or the Income Tax Regulations (26 CFR part 1).

[21] I.R.C. § 1.45X-1(c).

[22] I.R.C. § 1.45X-1(c)(2)(i).

[23] *Id.*

[24] *Id.*

[25] I.R.C. § 1.45X (c)(1)(B).

company to receive a cash payment from the IRS equivalent to the amount of the 45X credit. The 45X tax credit can also be transferred to an unrelated taxpayer (excluding tax exempt entities) in exchange for cash on a one-time basis.[26] Finally, the most important benefit of the Section 45X tax credits for qualifying mineral producers is that, regarding eligible components that are deemed critical minerals by the IRA, it is a permanent tax credit, not subject to phase-out, in contrast to the credit for other eligible components.[27]

Prior to this regulation, there was reluctance among critical mineral producers to apply for the 45X tax credit. However, this clarification is significant for U.S. critical mineral producers and should incentivize mining companies and further spur investment in domestic critical mineral production. It is anticipated that mining companies and other market participants will challenge the regulation, arguing that extraction of the critical minerals alone should suffice for eligibility of the tax credit, as the extraction process itself is arguably the most important step in the critical mineral production process, and this extraction phase is essential for the United States to achieve its net-zero emission targets. Nevertheless, advancements have been realized, and there is hope that the ability of the mining industry to leverage these credits, including in light of the recent election results, will continue to progress positively.

In the forthcoming Congress, potential changes to the scope or eligibility criteria for the 45X credit will likely be hotly debated. Legislation to amend the eligibility criteria has already been introduced in 2024 and consideration of that legislation and other potential proposals can be expected as part of the broader tax debate in 2025.

III. Section 48C Qualifying Advanced Energy Project Credit Program

Although the 48C Qualifying Advanced Energy Project Credit Program was established in 2009, it has remained largely dormant, as Congress did not appropriate further funds to the program following the initial disbursements. However, the IRA significantly expanded the scope and amount available for the 48C program, permitting a maximum of $10 billion in tax credits for qualifying projects.[28] Furthermore, $4 billion of this total $10 billion was earmarked for projects within certain energy communities. These energy communities are defined as regions where a coal mine ceased operations after December 31, 1999 or where a coal-fired electric generating unit was retired after this date. [29] The 48C program also includes project priority areas that vary each funding round, which may influence the allocation of the tax credits. The priority areas identified in the second funding round included, among others: clean hydrogen, electric grid enhancements, electric heat pump technology, electric vehicles, and nuclear energy initiatives.[30]

The tax credit provided under Section 48C can be up to thirty percent (30%) of qualified investment costs for a selected project if the project satisfies the prevailing wage and

---

[26] I.R.C. § 1.45X-3(f)(3).
[27] *Id.*
[28] *Advanced Energy Project Credit – 26 U.S. Code § 48C*, INTERAGENCY WORKING GROUP ON COAL & POWER PLANT COMMUNITIES & ECONOMIC REVITALIZATION, https://energycommunities.gov/funding-opportunity/advanced-energy-project-credit-26-u-s-code-%C2%A4-48c/ (last visited Nov. 20, 2024).
[29] *Qualifying Advanced Energy Project Credit (48C) Program*, https://www.energy.gov/infrastructure/qualifying-advanced-energy-project-credit-48c-program#:~:text=Section%2048C(e)%20Energy%20Communities%20Census%20Tracts%20are%20census%20tracts,any%20of%20these%20census%20tracts (last visited Nov. 20, 2024).
[30] *Notice 2024-36, Appendix A and B*, https://www.irs.gov/pub/irs-drop/n-24-36-appendix-a-b.pdf (last visited Nov. 20, 2024).

apprenticeship requirements. The prevailing wage rate is based on similar work in the locality where the project is located regarding laborers and mechanics employed in the construction, alteration, or repair of a qualified advanced energy project and is determined by the Secretary of Labor in accordance with the Davis-Bacon Act. [31] The apprenticeship requirements are designed to promote workforce development and training and mandate that a certain percentage of the total labor hours for the construction, alteration, or repair work on the project must be performed by qualified apprentices and that employers make a good faith effort to comply with such requirements.[32] If the prevailing wage and apprenticeship standards are not met, the allowable credit is reduced to six percent (6%).

This Section 48C tax credit is available to projects that: (i) re-equip, expand, or establish an industrial or a manufacturing facility aimed at producing or recycling specified advanced energy properties; (ii) install technology within an industrial or manufacturing facility that achieves a minimum of twenty (20%) reduction in greenhouse gas emissions, particularly in energy intensive sectors or (iii) re-equip, expand or establish an industrial facility that processes, refines or recycles critical minerals.[33] The application process for obtaining a Section 48C credit is extensive, encompassing multiple deliverables and components, with stringent adherence to project timelines and schedules being imperative. Even post-allocation, non-compliance with the established construction and operational timelines will result in the forfeiture of the tax credit. Projects are evaluated on a variety of criteria including (a) commercial viability, (b) greenhouse gas emissions impacts, (c) strengthening U.S. supply chains and domestic manufacturing for a net-zero economy, and (d) workforce and community engagement. [34]

While mining companies can propose projects that align with either the clean energy manufacturing and recycling program or the industrial GHG emissions reduction category, the category that has attracted the majority of applications from mining firms is the critical minerals processing, refining, and recycling program. For this latter category, projects that process or refine the IRA's 50 critical minerals discussed above qualify for the 48C tax credit, as do critical materials listed by the DOE in its 2023 Final Critical Materials List[35], such as copper.

Also noteworthy to mention in this discussion about the IRA critical mineral list and the DOE's critical material list, is that the House of Representatives just last month passed the Critical Minerals Consistency Act (the "Act"), which expands the U.S. Geological Survey's critical minerals list to include copper, reflecting its growing importance in renewable energy technologies and clean energy infrastructure. By aligning the USGS list with the Department of Energy's critical materials designations, the act aims to streamline permitting processes (including the allowance of copper projects to the FAST-41 permitting process) and incentivize domestic investment in copper and other critical minerals. However, for the Act to become law, it must still pass in the Senate and receive Presidential approval. If enacted, it could accelerate

[31] 26 U.S.C. § 48C(e)(5)(A).
[32] 26 U.S.C. § 48C(e)(6).
[33] *Qualifying Advanced Energy Project Credit (48C) Program*, https://www.energy.gov/infrastructure/qualifying-advanced-energy-project-credit-48c-program (last visited Nov. 20, 2024).
[34] *Id.*
[35] *What are Critical Materials and Critical Minerals?*, https://www.energy.gov/cmm/what-are-critical-materials-and-critical-minerals (last visited Nov. 19, 2024).

mining developments, reduce reliance on imports, and bolster the U.S. supply chain, but prompt implementation and bipartisan support will be important. [36]

The IRS and Treasury have suggested that the processing of raw ore brines, mine tailings, and other source materials into critical materials could qualify for the 48C tax credit under the critical minerals processing, refining and recycling category. They have also clarified that the chemical transformation of critical minerals into derivative products, including metals manufacturing and chemical manufacturing, does not qualify in this category, but may be eligible for an alternative category. For applications submitted for critical minerals processing, refining and recycling, the applicant must demonstrate compelling evidence that the resultant critical materials will be used in the manufacturing of clean energy technologies essential for achieving a net-zero economy.

The initial round of Section 48C tax credit closed in December 2023, during which the DOE received applications totaling over $42 billion, ten times the amount allocated. The IRS allocated approximately $4 billion of the 48C credits across more than 100 projects in over 35 states. [37] The deadline for the second round of applications was October 18, 2024, with round two decision letters to be sent no later than January 15, 2025. It remains uncertain whether a third round of the 48C program will be initiated; however, in Notice 2024-36, the IRS and Treasury announced that they will assess any unallocated credits at the conclusion of round two and determine whether a third round is needed. The Biden Administration may have a strong incentive to fully award all remaining allocations before the change in the Presidency. If any allocations remain in 2025, the incoming Trump administration would have the opportunity to make award decisions and potentially modify the award criteria. Finally, as mentioned earlier, companies that have received the Section 48C tax credit cannot also claim the Section 45X tax credit for property produced at the same facility benefitting from the Section 45X tax credit.

IV. Financing for Clean Energy Manufacturing and Critical Minerals under the Title 17 Clean Energy Financing Program

Title 17 was created by the Energy Policy Act of 2005 (the "Act") and is a loan program by which the Department of Energy guarantees loans for innovative energy projects. The Act was further amended by the Infrastructure and Jobs Act in 2021 and more recently by the IRA.[38] The amendments under the IRA expanded the scope of Title 17 to include projects that reinvested in legacy energy infrastructure, as well as certain state-supported projects. The Title 17 program is generally for loans over $100 million and provides a direct loan from the U.S. Treasury Federal Financing Bank. Presently, Title 17 has four financing programs for large energy projects in the US: (i) innovative energy projects (projects that employ new or significantly improved technology); (ii) innovative supply chain projects (projects that include a new or significantly improved technology in the manufacturing process for clean energy technology); (iii) state energy financing institution projects (projects that use qualifying clean energy technology that receive support from a state agency); and (iv) energy infrastructure reinvestment (financing for projects that retool, repower, repurpose or replace energy

[36] *NEMA Applauds House Passage of the Critical Mineral Consistency Act of 2024*, NEMA (Nov. 15, 2024), https://www.nema.org/news-trends/view/nema-applauds-house-passage-of-the-critical-mineral-consistency-act-of-2024.
[37] *Id.*
[38] *Title 17 Clean Energy Financing*, https://www.energy.gov/lpo/title-17-clean-energy-financing (last visited Nov. 20, 2024).

infrastructure that has ceased operating or upgraded operating infrastructure to avoid, reduce or utilize greenhouse gas emissions). While Title 17 program eligibility can be challenging, and an unprecedented number of companies are competing for selection by the DOE, a loan guarantee thereunder may cover up to eighty percent (80%) of the project's eligible costs with very flexible repayment terms (not to exceed thirty (30) years from loan closing), thereby facilitating project financing. Title 17 projects must meet the following criteria: (a) be in the United States, (b) constitute an energy related project, (c) demonstrate significant greenhouse gas emissions reductions, (d) include viable technology, (e) have a community benefits plan, and (f) satisfy additional category specific criteria.[39] Projects under the first and second categories of the Title 17 program can include new technologies focused on the production, consumption, storage, or transportation of energy, including critical minerals, or projects that entail improvements in the productivity or value of existing processes.[40] Mining companies that possess novel technologies that improve the processing, manufacturing of, or recycling of critical minerals may qualify for an innovative supply chain loan under this program. Under the energy infrastructure reinvestment program, critical mineral producers may qualify if they upgrade existing energy infrastructure to make it more efficient, replace retired infrastructure, or build new green energy infrastructure. Energy Infrastructure is defined as a facility and its equipment "used for (1) the generation or transmission of electric energy; or (2) the production, processing and delivery of fossil fuels, fuels derived from petroleum or petrochemical feedstocks".[41] Energy infrastructure includes non-operational power plants, as well as oil and gas facilities and pipelines. The energy infrastructure reinvestment program is specifically concerned with the potential benefits that the newly initiated or upgraded project may confer upon the local community, including with respect to the local workforce.

A Title 17 application requires comprehensive detail with respect to the organization of the applicant and the project, including technical information such as engineering plans. Proposed Title 17 projects are also required to undergo a formal NEPA review as part of the evaluation process. The NEPA review must commence prior to any construction activities associated with the project and must be completed before the loan's closing.[42] Finally, note that a Title 17 loan cannot be subordinate in payment or lien priority to any of the applicant's other debt, which may present a challenge for a critical mineral producer that has previously secured loans for project financing or which has other ongoing loans.

V. Clean Vehicle Credits Under Section 30D, 25D and 45W

When examining the IRA's impact on the critical minerals sector, Section 30D, Section 25D and Section 45W tax credits (the "Clean Vehicle Credits") merit significant attention; however, from the perspective of a natural resources lawyer, it is imperative to prioritize the analysis of Section 45X and the aforementioned programs before addressing the Clean Vehicle Credits. This prioritization does not imply that the Clean Vehicle Credits hold lesser significance; indeed, they have likely attracted the most substantial scrutiny within the marketplace and have engendered a markedly greater investment influx into the U.S. critical minerals sector, yet it is important to note that these credits are only accessible at a later stage within the critical

[39] *Id.*
[40] *Id.*
[41] *Energy Infrastructure Reinvestment*, https://www.energy.gov/lpo/energy-infrastructure-reinvestment (last visited Nov. 20, 2024).
[42] *Preparing a Strong Energy Infrastructure Reinvestment Project Application for Efficient Loan Processing* (June 10, 2024), https://www.energy.gov/lpo/articles/preparing-strong-energy-infrastructure-reinvestment-project-application-efficient-loan.

minerals value chain. Furthermore, an analysis of the Clean Vehicle Credits also necessitates a discussion on the controversial topic of "foreign entity of concern" ("FEOCs") and the credits' emphasis on U.S. free trade agreements.

The pre-existing clean vehicle tax credit under Section 30D was significantly modified by the IRA, which introduced new tax credits for used clean vehicles under Section 25E and commercial vehicles under Section 45W. Under Section 30D, new "clean motor vehicles" that fulfill a critical minerals requirement are eligible for a $3,750 tax credit, while vehicles that comply with a battery components requirement can similarly receive a $3,750 tax credit (culminating in a total available credit of $7,500).[43] As can be anticipated, this $7500 tax credit can rapidly accumulate for automotive original equipment manufacturers (OEMs) when considering the mass production of vehicle fleets.

The critical minerals requirement mandates that a certain percentage of the critical mineral components constituting the electric vehicle battery must be either (i) extracted or processed in the United States or in a country with which the United States has a qualifying free trade agreement in effect, or (ii) recycled in North America.[44] To satisfy the battery components requirement, a certain percentage of the value of components contained in the battery must be manufactured in North America.[45] Further, these requirements include prohibitions on sourcing or refining these minerals by FEOCs. These sourcing mandates were intended to bolster the investment in the U.S. critical minerals market and strengthen the U.S. critical minerals supply chain by requiring the onshoring of these components.

The calculations pertaining to the critical mineral and battery component requirements are multi-layered. First, to calculate the critical minerals requirement, the taxpayer must initially document the supply chain (or procurement chain) for each individual critical mineral. In the assessment of the proportion of the value of the critical mineral under consideration, it will be determined that the entire value satisfies the stipulated criterion if fifty percent (50%) or more of the value generated through mining, extraction, or processing occurs within the United States or in an FTA partner county. Conversely, the entire value of the critical mineral will be considered to have met that criterion if fifty percent (50%) or more of the value added to the critical mineral via processing takes place in the United States or in an FTA partner country. To qualify for the battery component subsidy, the battery must contain a certain percentage of "qualifying critical mineral content". The required share was established at fifty percent (50%) in 2023 and increases ten (10) percentage points each year until it reaches eighty percent (80%) in 2026. Furthermore, commencing in 2025, an EV battery may not contain any critical mineral that was extracted, processed or recycled by a FEOC.

The following are the 20 partner countries that have FTAs with the United States: Australia, Bahrain, Canada, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Israel, Jordan, Korea, Mexico, Morocco, Nicaragua, Oman, Panama, Peru, and Singapore. Additionally, Japan is now recognized as an FTA partner country due to the critical

---

[43] *See* Daniel T. Kiely, *Tax Credits for Electric Vehicles: What's Changed with the US IRA?*, MAYER Brown (September 9, 2023), https://www.mayerbrown.com/en/insights/publications/2022/09/tax-credits-for-electric-vehicles-whats-changed-with-the-us-ira.

[44] *Id*.

[45] *See* Meaghan Connors et al., *US Treasury Issues Proposed Regulations on Section 30D Clean Vehicle Credit and Critical Mineral Components*, MAYER BROWN (April 3, 2023), https://www.mayerbrown.com/en/insights/publications/2023/04/us-treasury-issues-proposed-regulations-on-section-30d-clean-vehicle-credit-and-critical-mineral-components.

minerals agreement signed between the U.S. and Japan on March 28, 2023.[46] The U.S. and the EU have also been working towards an EU-US Critical Minerals Agreement however those negotiations have largely stalled out. Congress has raised some objections to the negotiation of critical minerals agreements ("CMAs") by the Biden Administration as a work around from the FTA requirement. A traditional FTA requires Congressional approval while the Biden Administration negotiated the critical minerals agreement with Japan in a manner that did not require Congressional approval and thus largely left Congress out of the negotiating process. Also, interesting to note, is that Trump has recently stated that his administration will raise tariffs on all goods imported into the U.S. by two FTA countries, two of the United States' closest allies, Canada and Mexico, to twenty-five percent (25%). This move seems counterintuitive to the purposes of having an FTA with an ally country. If true, this raised tariff would likely significantly hinder Canadian and Mexican related critical mineral investments. Also important to note is the recent block by China on sales to the U.S. of materials crucial for the production of semi-conductors and electric vehicle batteries, such as gallium, germanium, antimony and other super hard materials. [47] The block came in response to the Biden administration implementing restrictions on the sales of these semi-conductors and restrictions on the Chinese from accessing U.S. technology.[48] This recent activity only further confirms why it is important for the U.S. to strengthen its own domestic supply chains and have these relationships with FTA countries that can help supply these critical minerals and materials.

The Department of Energy, IRS and Treasury took almost a full two years to clarify the FEOC guidelines under the Clean Vehicle Credits, culminating in the issuance of the final regulations in May 2024, which mandated a two-step approach for determining whether an entity is an FEOC. Under the regulations, an FEOC is an entity that is (1) a foreign entity, and (2) either subject to the jurisdiction of a covered nation, or owned, controlled, or subject to the direction of a government or covered nation. The Department of Energy further clarified that "Covered Nations" encompasses the People's Republic of China, the Russian Federation, the Democratic People's Republic of North Korea, and the Islamic Republic of Iran. [49] The Department of Energy also clarified that a foreign entity includes (i) a foreign government or foreign political party, (ii) a foreign individual who is not a U.S. citizen or lawful permanent resident or (iii) a company or organization established under foreign laws or with a principal place of business in a foreign country. [50] Among the salient insights derived from this guidance is that a U.S. entity could be considered "foreign" for FEOC purposes, if it is owned or controlled by another entity that falls into one of the categories in (i) through (iii) above. Further, the term "government of a foreign country" is used to distinguish whether the subject entity is "owned by, controlled by, or subject to the jurisdiction of a government of a foreign country". Subnational governments along with local state-owned enterprises ("SOEs") as government instrumentalities are also encompassed in this definition.[51] Additionally the employment of a

---

[46] Meaghan Connors et al, *US and Japan Enter into Critical Minerals Trade Deal*, MAYER BROWN (Mar. 29, 2023), https://www.mayerbrown.com/en/insights/publications/2023/03/working-together-us-and-japan-enter-into-critical-minerals-trade-deal.

[47] Juliana Liu & Sean Lyngaas, *China Hits Out at Latest US Effort to Block Beijing's Access to Chip Technology*, CNN (Dec. 3, 2024), https://www.cnn.com/2024/12/02/tech/china-us-chips-new-restrictions-intl-hnk/index.html.

[48] *Id*.

[49] 10 U.S.C. 4872(d)(2).

[50] Michelle M. Jewett, *Final Guidance Issued on "Foreign Entity of Concern" Criteria*, MAYER BROWN (May 28, 24), https://www.mayerbrown.com/en/insights/publications/2024/05/final-guidance-issued-on-foreign-entity-of-concern-criteria#Five.

[51] *Id.*

"former senior official" or the immediate family member of a senior official could lead to the determination that the entity is subject to the control of a FEOC.

A foreign entity is deemed "subject to the jurisdiction" of the government of a covered nation if it is (i) incorporated or domiciled in, or has a principal place of business in a covered nation, or (ii) with respect to critical minerals, components, or materials, it engages in the extraction, processing or recycling of such critical minerals or the manufacturing or assembly of such components, or the processing of such components in a covered nation.[52] Finally, the Department of Energy's guidance also specified that "control" by a jurisdiction can be triggered by (i) holding twenty-five (25%) or more of an entity's board seats, voting rights, or equity interest, or (ii) a license or a contract that confers rights resulting in control.

VI. Mergers and Acquisition Activity in the Mining Space

The mining industry has seen a rise in mergers and acquisition (M&A) activity, driven in part by the financial incentives and strategic imperatives under the IRA. With a global push to secure critical minerals essential for green energy technologies, such as lithium, cobalt, and rare earth elements, M&A transactions have become a favored strategy for growth, diversification, and vertical integration. By August 2024, mining companies had announced more than $48 billion in spending and completed deals.[53]

The lengthy permitting processes in the U.S. have amplified the attractiveness of acquisitions and joint ventures as a faster route to production readiness. For instance, this past summer, BHP and Lundin Mining Corporation formed a 50/50 joint venture by acquiring Filo Corp., which included the Josemaria copper project in Argentina. Lundin received $690 million cash consideration from BHP for contributing the asset, exemplifying how strategic partnerships are enabling companies to share development risks while leveraging their collective expertise.[54]

Another notable transaction was the all-stock merger of Arch Resources and Consol Energy to create Core Natural Resources, signaling a consolidation trend even among coal miners seeking operational efficiencies and expanded resource portfolios in an era of heightened scrutiny on carbon-intensive industries.[55] Despite the focus on clean energy, coal assets are still attracting interest, particularly for metallurgical applications critical in steelmaking.

Lithium is critical to battery technologies and has been at the forefront of high-profile deals. The joint venture between Lithium Americas and General Motors, which closed in July 2024, highlights how automotive manufacturers are directly investing upstream to secure supply chains. GM's $625 million investment into the Thacker Pass lithium mining operation

---

[52] *Id.*

[53] Rhiannon Hoyle, *How Miners Regained Their Appetite for Deals – Analysis*, MORNINGSTAR (Sept. 5, 2024), https://www.morningstar.com/news/dow-jones/2024090511922/how-miners-regained-their-appetite-for-deals-analysis.

[54] https://lundinmining.com/news/lundin-mining-and-bhp-to-acquire-filo-and-form-a-5-123162/

[55] Dean Seal and Julie Steinberg, *Arch, Consol to Combine Into $5.2 Billion Coal Giant*, WSJ (Aug. 21, 2024), https://www.wsj.com/business/energy-oil/coal-miners-arch-consol-agree-to-merger-of-equals-5f9ea0e9.

underscores a broader trend of cross-sector collaboration, driven by the rapid electrification of the transportation sector.[56]

In October, Rio Tinto announced its acquisition of Arcadium Lithium for $6.7 billion. If realized, this deal positions the combined entity to become the third-largest lithium miner globally by 2030, according to Benchmark's Lithium Forecast.[57], [58] The transaction reflects the increasing competition among mining giants to dominate the lithium supply chain as demand outpaces supply projections.

M&A Drivers

Several factors have driven M&A activity. Important among them are the IRA's financial incentives intended to boost domestic critical mineral production. Tax credits for sourcing domestically mined or recycled materials have created an economic motivation to secure U.S.-based assets, particularly as worldwide supply chains face logistical and other uncertainties. This has led companies to favor M&A activity that aligns with "friendly" jurisdiction sourcing requirements to qualify for IRA benefits.

Technology advancements are also impacting the M&A landscape. In the case of batteries, the demand for specific grades of lithium or other critical minerals has increased, resulting in M&A activity to secure assets with high-grade deposits or advanced processing capabilities. Companies are acquiring mineral-rich properties and also focusing on businesses with extraction or refining technologies that can enhance efficiency and environmental compliance.

Additionally, the move towards net-zero emissions means there is more competition for critical minerals. China's dominance in rare earth and lithium processing is leading Western companies to consolidate and expand their capabilities. The IRA's incentives have encouraged joint ventures with domestic players, including partnerships between mining firms and automakers, utilities, and technology companies.

Environmental, Social, and Governance (ESG) considerations have also influenced M&A activity. Companies with established ESG credentials tend to attract investment from environmentally conscious funds and stakeholders. Joint ventures and mergers often include clauses that ensure adherence to high ESG standards, reflecting market and regulatory pressures. Other factors also come into play of course. For example, companies with robust ESG credentials not only attract investment from environmentally conscious funds and stakeholders, but may also better position themselves as preferred partners in joint ventures and mergers. Buyers and investors are increasingly scrutinizing ESG metrics and risk profile during due diligence, recognizing that ESG performance – and associated compliance risks - can be relevant to long-term operational stability and reputation. Moreover, ESG considerations extend into supply chain management, with acquirers often seeking to ensure that suppliers and partners comply with appropriate environmental and labor standards to mitigate risks and enhance the overall value proposition. As a result, valuation of some mining companies is

---

[56] Michael Wayland, *GM to Invest $625 Million in Joint Venture to Mine EV Battery Raw Materials in U.S.*, CNBC (Oct. 16, 2024), https://www.cnbc.com/2024/10/16/gm-lithium-americas-joint-venture.html.

[57] *Rio Tinto Commits to Buy Arcadium Lithium for $6.7 Billion*, BENCHMARK SOURCE (Oct. 9, 2024), https://source.benchmarkminerals.com/article/rio-tinto-commits-to-buy-arcadium-lithium-for-6-7-billion.

[58] *Id*. Cameron Perks, product direct for lithium at Benchmark, said, "This shows confidence in long-term lithium demand, suggesting that Rio sees the current market conditions as an opportunity rather than a risk." *Id.*

increasingly tied to their ability to demonstrate strong ESG performance, including emissions reduction strategies, responsible sourcing practices, and community engagement initiatives. M&A agreements now frequently include ESG-related covenants and post-closing commitments, underscoring the critical role these factors play in shaping deal terms and outcomes. Beyond ESG, macroeconomic and industry-specific factors can also affect deal flow and financing strategies, such as fluctuating interest rates, the availability of capital, and broader capital market conditions. Geopolitical developments involving resource-nationalism, trade restrictions, and regional conflicts can also affect investment decisions and the viability of cross-border transactions. Finally, technological advancements, including automation and resource extraction innovations, and shifts in global demand for critical minerals driven by clean energy transitions, can also affect strategic priorities in the sector.

Looking Ahead

While the IRA has been a catalyst for domestic M&A activity, the transition to the Trump administration in January 2025 introduces some uncertainty. Potential policy changes could either bolster or diminish the IRA's impact, influencing dealmaking dynamics in the coming years. Nonetheless, the fundamental drivers of demand for critical minerals—technological innovation, net-zero commitments, and geopolitical shifts—are expected to maintain the momentum in M&A. The mining sector's ability to adapt to policy shifts while seizing new opportunities will define the next wave of transactions.

VII. Conclusion

The IRA, enacted by the Biden Administration in August 2022, represents a significant legislative effort aimed at addressing the urgent need for climate action and advancing the United States' transition to a clean energy economy. This comprehensive legislation introduced a wide array of tax incentives, grants, and loan guarantees designed to stimulate investment in renewable energy technologies and enhance domestic energy security. Particularly noteworthy is the IRA's focus on critical minerals, which are essential to the production of electric vehicles and renewable energy technologies. As stakeholders, including market participants and energy lawyers, navigate the complexities of the IRA's provisions, the act has emerged as a catalyst for M&A and other investment in the domestic and global energy sectors. Further, while mining projects have traditionally been financed (and capital maintained by), a mix of equity from investors, debt facilities from financial institutions (generally via project financing), payments pursuant to royalty agreements or pre-payments via streaming agreements, the IRA tax credits and incentives are offering an alternative means of financing and capital maintenance for mining projects. These credits and incentives also accelerate consolidation and strategic partnerships within the sector, with companies leveraging the benefits to secure critical assets, diversify operations and reduce development risk through joint ventures.

However, the impending transition to a new administration in January 2025 raises questions about the future trajectory of the IRA and the regulatory landscape surrounding it. While potential policy changes may influence the pace and focus of dealmaking, the underlying drivers—technological advancements, net-zero commitments, and geopolitical shifts—are expected to sustain strong momentum in mining M&A. This paper has aimed to provide a thorough overview of the IRA's implications for critical mineral producers and the mining industry, while also exploring the potential impact of political changes on the act's framework and the broader energy market. As the landscape of energy policy continues to evolve, understanding the interplay between legislation and market dynamics will remain crucial for

stakeholders. For mining companies and investors alike, adapting to these changes, seeking ways to monetize these credits and incentives while leveraging M&A as a strategic tool will be key to thriving in this competitive and rapidly shifting environment.