

## IRA'S HIDDEN RECYCLING BENEFITS

THE INFLATION REDUCTION ACT OF 2022 MAKES AVAILABLE AN INVESTMENT TAX CREDIT OF 30% AND POTENTIALLY MORE FOR ELIGIBLE PROJECTS THAT RECYCLE CRITICAL MINERALS OR RENEWABLE EQUIPMENT, CREATING VALUE OPPORTUNITIES ACROSS THE RENEWABLE ENERGY INVESTMENT LIFE CYCLE AND BRINGING THE SECTOR CLOSER TO A CIRCULAR ECONOMY. BY **MARTHA KAMMOUN**, PARTNER, ENERGY AND INFRASTRUCTURE, AND **JONATHAN GOLDSTEIN**, PARTNER, TAX DEPARTMENT, **SIMPSON THACHER**.

In an effort to jump-start the US economy and create or save millions of jobs, Congress originally enacted Section 48C into the Internal Revenue Code (the Code) through the American Recovery and Reinvestment Act of 2009 to provide an allocated credit for qualified investments in qualifying advanced energy projects (Section 48C). The Inflation Reduction Act of 2022 (IRA) extended and expanded Section 48C, and allocated an additional US\$10bn to the programme – this time for the purpose of promoting the reduction of greenhouse gas emissions, securing supply chains for critical minerals, and expanding US manufacturing capacity.

Notably, the new law extends the potential availability of a tax credit of 30%, plus additional credits if certain other requirements are met, to qualifying investments in certain recycling projects in the US. Needless to say, Section 48C tax credits may provide meaningful economics in support of these projects.

To be considered a qualifying advanced energy project that is potentially eligible for the Section 48C tax credit, a recycling facility must either recycle certain critical materials<sup>1</sup> or certain specified advanced energy property, such as solar panels or wind turbines.

### A perfect storm

As more and more solar panels and wind turbines in existing projects in the US near end-of-life, investors and developers are facing new challenges, including costs associated with the disposal of expired equipment, which have been increasing due to the proliferation of waste mandates restricting landfill access<sup>2</sup> or requiring the use of special disposal measures. Project owners are increasingly seeking alternative waste management solutions for their expiring equipment, which include entering into arrangements with renewable equipment recycling facilities.

At the same time, while the recent expansion of federal and state incentives – as more fully described below – supports demand for renewable equipment and materials to be used in energy transition projects or vehicles, supply chain and other constraints continue to limit their availability – for example solar

panels are often produced in US tariff-prone jurisdictions or countries with which the US does not have a free trade agreement. Thus, domestically sourced equipment has become an increasingly attractive commodity. Since such equipment often relies on critical materials that are not always available to be mined or otherwise produced domestically, recycling critical materials in the US for use in such renewable equipment also potentially presents an increasingly attractive opportunity.

The combination of clean energy incentives on the one hand, and waste management mandates on the other, coupled with the Section 48C tax credit, create the potential for a perfect storm for targeted investments in renewable equipment or critical minerals recycling facilities.

Below and in Figure 1 are some examples of federal and state incentives and policies that may spur an increase in demand for renewable equipment and critical materials – and consequently, recycled versions of both, to the extent existing supply is insufficient.

### The incentives

- *Renewable projects and components* – The IRA makes available various incentives for projects relying on renewable equipment: The new law includes investment and production tax credits for wind and solar projects, as well as a production tax credit for certain equipment components thereof – eg solar photovoltaic cells or modules, or wind turbine blades, nacelles, and towers – all of which, when combined with state renewable generation mandates, are expected to spur generation activity and correlated demand for renewable equipment and its components. In addition, the repowering or retrofitting rules allow producers to benefit from certain tax credits in connection with the replacement of old equipment on existing projects, subject to a ratio of 80% of total project value.



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- *Storage* – The proliferation of state storage mandates – both direct mandates or through financial incentives in the form of grants, loans, rebates, rate-making changes or tax savings – as well as the standalone storage investment tax credit, bi-directional charging station investment tax credit, and battery manufacturing production tax credit, each as set forth in the IRA, are expected to spur demand for batteries and their critical mineral components.
- *Electric vehicles* – A third example – directly related to recycling – is the amendment of the new clean vehicle credit under Section 30D of the Code (Section 30D) to, among other things, promote resilient supply chains and domestic manufacturing. This programme provides a credit of up to US\$7,500 per vehicle that meets certain requirements relating to critical minerals, the Critical Minerals Requirement, and battery components. The Critical Minerals Requirement may be satisfied if a certain percentage<sup>3</sup> of the value of the applicable critical minerals<sup>4</sup> contained in the vehicle battery was extracted or processed in the US or any country with which the US has a free trade agreement in effect, or recycled in North America.<sup>5</sup> As a result, automakers seeking to manufacture batteries for use in electric vehicles eligible for the consumer credit could be interested in exploring procurement arrangements with facilities that recycle critical minerals.
- *Domestic content* – Finally, if a project recycling critical minerals or renewable equipment in the US can produce output that would be considered as domestic content or US made<sup>6</sup>, purchasers of the recycled products might qualify for an additional 10% tax credit for using such products in their own projects – including in retrofitted projects (as described above)<sup>7</sup>.

#### The mandates

Stringent waste and recycling mandates are expected to increase compliance costs for project owners and thus result in greater quantities of obsolete equipment and minerals – potential recycling “feedstock” – being made available to recycling facilities. A recycling facility operator might consider collecting such feedstock against payment of a collection or tipping fee, thereby diversifying and increasing its revenue sources.

Several states have adopted new requirements for recycling renewable energy components – for example, as of July 1 2025 Washington State requires manufacturers to provide for the recycling of modules at no cost to their owners. In other states, such as California, certain photovoltaic modules are considered hazardous waste subject to hazardous waste disposal regulations, which could help make recycling an attractive means of efficient disposal.

Recycling requirements in other countries may also increase the market for recycled materials

(subject to their own local content rules). For example, European provisional rules mandate a certain percentage of recycled materials be used in the manufacturing of new batteries, starting at 16% for cobalt, 85% for lead, 6% for lithium, and 6% for nickel in 2030, and increasing to 26%, 12%, and 15% respectively in 2035.<sup>8</sup> While different from the tax credit incentive approach used in the US, the outcome in both instances is a potential increase in global demand that could make domestic recycled critical materials more attractive.

#### Challenges and grants

While recycling challenges persist, some companies have shown success in recycling more difficult-to-recycle renewable components. For example, Carbon Rivers is recycling fibre glass wind turbine blades. Apple has indicated it will use 100% recycled cobalt in batteries in 2025.

In addition, the IIJA has made available multiyear grants to eligible entities for research, development, and demonstration projects to increase the re-use and recycling of batteries, including by addressing the integration of increased quantities of recycled critical minerals.

#### Benefiting from Section 48C

In order to be considered for the Section 48C tax credit for a recycling facility, a taxpayer must submit a concept paper (by July 31 2023 for the first round of allocations) to the Department of Energy (DOE). Following submission of a concept paper, the DOE will encourage or discourage taxpayers from submitting a joint application for DOE recommendation and IRS certification.<sup>9</sup>

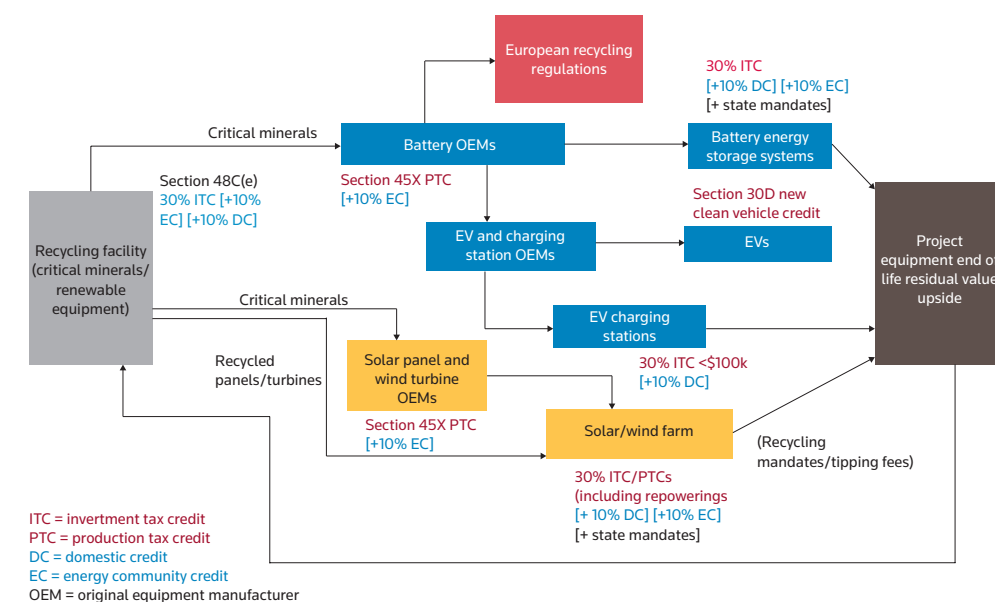
- *Prevailing wage and apprenticeship requirements, energy communities, domestic content* – One of the requirements for claiming the 30% credit on a qualified investment in an eligible qualifying advanced energy project is satisfaction of prevailing wage and apprenticeship requirements<sup>10</sup>. Projects that do not comply with these requirements would be eligible for only a fifth of the investment tax credit, or only 6%. Subsequent failure to comply may also result in the payment of penalties.

An additional 10% credit is available if the project is located in an energy community<sup>11</sup>. Finally, in addition to potentially producing domestic content (as described above), the recycling facility may itself be eligible for a 10% credit if it uses US-made steel, iron, or perhaps manufactured products components<sup>12</sup>, subject to certain requirements.



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FIGURE 1 - FEDERAL AND STATE INCENTIVES AND POLICIES



Section references are to the US internal revenue code of 1986, as amended

• *Commercial considerations, transferability, and anti-stacking* – The profusion of legislative incentives could result in a shift in commercial considerations. For example, the parties to a feedstock, equipment supply or offtake agreement may factor tax credits into their pricing arrangements. Manufacturers of renewable energy equipment may ask for a premium for the delivery of products that comply with Domestic Content Requirements; project developers in turn require such manufacturers to make certain representations and indemnify them for any penalties or liabilities related to any certifications such developers have to make to the IRS regarding compliance with Domestic Content Requirements. In the recycling context, a seller of an aging solar plant may be able to improve its upside, as its buyer may be more willing to pay a premium for equipment that could be recycled.

It is in this context that the IRA's new features may come into play: in addition to refundable credits, the IRA includes alternative routes to monetise tax credits beyond historic tax equity markets – allowing certain tax-exempt entities to elect to receive a “direct payment” from the federal government, and for certain other taxpayers that are ineligible for this direct pay election, to transfer credits to another taxpayer.<sup>13</sup>

Further guidance remains necessary from the IRS as to how these rules will specifically be applied, including by partnerships that have both eligible and ineligible taxpayers, as well as rules relating to recapture provisions.

However, prudent use of the transferability and direct pay features in the new law may be a useful tool for creative transaction structuring to maximise value and unlock upside across the value chain – particularly for purposes of navigating the IRA's anti-stacking and related party rules.<sup>14</sup>

## Conclusion

As shown in Figure 1, recycling critical minerals or renewable equipment sourced from projects that either have reached end-of-life or are in the process of repowering may be an increasingly attractive opportunity in the US. This is true not just because of the availability of the Section 48C credit, but also because such recycled products potentially support various sectors ranging from manufacturing and project development to transportation vehicles and infrastructure – many of which also benefit from federal and state incentives. ■

## Footnotes

1 - Defined by reference to section 7002(a) of the Energy Act of 2020 (30 USC 1606(a), similarly to the definition used in the Infrastructure Investment and Jobs Act (IIJA). Section 7002(a) requires the executive branch to designate a list of critical minerals and update that list every three years and that the US Geological Survey (USGS) conduct domestic resource assessments of critical minerals and make that information publicly available. The currently effective final list of critical minerals as determined by the US Geological Survey is available here: <https://www.federalregister.gov/documents/2022/02/24/2022-04027/2022-final-list-of-critical-minerals> and referenced in more detail below..

2 - For example, certain solid waste landfills charge a fee to accept solar panels, subject to increase if the material is deemed hazardous waste (assuming the applicable landfills are even licensed to accept such waste).

3 - The applicable percentage varies based on when the vehicle is placed in service and increases from 40% for vehicles placed in service prior to January 1 2024, to up to 80% for vehicles placed in service after December 31 2026.

4 - As defined in Section 45X(c)(6) of the Code. These include aluminium, antimony, arsenic, barite, beryllium, bismuth, cerium, cesium, chromium, cobalt, dysprosium, erbium, europium, fluorspar,

gadolinium, gallium, germanium, graphite, hafnium, holmium, indium, iridium, lanthanum, lithium, lutetium, magnesium, manganese, neodymium, nickel, niobium, palladium, platinum, praseodymium, rhodium, rubidium, ruthenium, samarium, scandium, tantalum, tellurium, terbium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium.

5 - A critical mineral would be treated as recycled in North America if 50% or more of the value added to it by recycling is derived from recycling that occurred in North America.

6 - Under the IRA, manufactured products would be considered US-made if at least 40%, increasing to 55% for certain projects starting construction in or after 2027, of the total costs of all the manufactured products used in the applicable project are attributable to manufactured products mined, produced or manufactured in the US, Domestic Content Requirements.

7 - While the IRS does not mention recycling in its latest guidance on domestic content issued on May 12 2023 (IRS DC Guidance), it defines the manufacturing process as “the application of processes to alter the form or function of materials or of elements of a product in a manner adding value and transforming those materials or elements so that they represent a new item functionally different from that which would result from mere assembly of the elements or materials” – which on its face may encompass recycling activities. A definition of such activities is provided in IRS Notice of Proposed Rulemaking for Section 30D as “the series of activities during which recyclable materials containing applicable critical minerals are transformed into specification-grade commodities and consumed in lieu of virgin materials to create new constituent materials”. Importantly, the IRS DC Guidance provides that a “Manufactured Product Component is considered to be of US origin if it is manufactured in the United States, regardless of the origin of its subcomponents”.

8 - <https://www.europarl.europa.eu/news/en/press-room/20221205IPR60614/batteries-deal-on-new-eu-rules-for-design-production-and-waste-treatment>

9 - For purposes of this first round of submissions, the currently effective final list of critical minerals as determined by the US Geological Survey is available here: <https://www.federalregister.gov/documents/2022/02/24/2022-04027/2022-final-list-of-critical-minerals> and includes: aluminium, antimony, arsenic, barite, beryllium, bismuth, cerium, cesium, chromium, cobalt, dysprosium, erbium, europium, fluorspar, gadolinium, gallium, germanium, graphite, hafnium, holmium, indium, iridium, lanthanum, lithium, lutetium, magnesium, manganese, neodymium, nickel, niobium, palladium, platinum, praseodymium, rhodium, rubidium, ruthenium, samarium, scandium, tantalum, tellurium, terbium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium.

10 - Compliance with prevailing wage and apprenticeship requirements requires ensuring that (i) any labourers and mechanics employed by the taxpayer or any contractor or subcontractor – in this case, in the re-equipping, expansion or establishment

of its renewable equipment or critical minerals recycling project – are paid wages at rates not less than the prevailing rates for construction, alteration or repair of a similar character in the locality in which such project is located as most recently determined by the Secretary of Labor, and (ii) no less than 12.5%, and up to 15% for projects that begin construction after 2024, of the total labour hours for the construction, alteration or repair work must be performed by qualified apprentices – subject to the apprentice-to-journey worker ratios of the Department of Labor or applicable state apprenticeship agency, and the requirement that each taxpayer, contractor, or subcontractor who employs four or more individuals to perform construction, alteration or repair work must employ one or more qualified apprentice to perform the work. Please note that the requirements in IRS Notice 2023-18 do not specifically identify recycling facilities, but they could be subsumed by the reference to manufacturing facilities in this context.

11 - An “energy community” means:

A brownfield site, ie real property, the expansion, redevelopment, or re-use of which may be complicated by the presence or potential presence of a hazardous substance, pollutant or contaminant, or certain mine-scarred land);

A metropolitan statistical area (determined by the Office of Management and Budget) or non-metropolitan statistical area defined by the Bureau of Labor Statistics which has (or had since 2009) 0.17% or greater direct employment or 25% or greater local tax revenues related to the extraction, processing, transport or storage of coal, oil or natural gas, and has an unemployment rate at or above the national average unemployment rate for the previous year; or A census tract or adjoining tract in which a coal mine has closed after December 31 1999 or in which a coal-fired electric generating unit has been retired after December 31 2009.

12 - The IRS DC Guidance safe harbour provisions for what constitutes a manufactured product component were limited to offshore and onshore wind, solar facilities and battery energy storage technology; the determination of what constitutes a manufactured product component in the context of a recycling facility for purposes of the determining compliance with the Domestic Content Requirements would thus have to be made on a case-by-case basis.

13 - It should be noted that other tax benefits associated with projects, such as depreciation, could not be monetised in this way.

14 - The anti-stacking rules prevent one party from benefiting from multiple credits in connection with one or a series of related investments. For example, Section 48C credits cannot be combined with certain other credits (eg Section 45Q for carbon capture or Section 45V for hydrogen).



Recycling critical minerals or renewable equipment sourced from projects may be an increasingly attractive opportunity in the US