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Tackling Climate Change with Tax Credits

How the Inflation Reduction Act Works in Practice

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I. Principal-agent challenge with climate change

A. The parties who contribute the most to climate change do not suffer the most from it. A coal company contributes tremendously to climate change but suffers little from it. A subsistence farmer living on the coast of a developing nation contributes little to climate change but suffers considerably from it. Therefore, the free market cannot be relied upon to address climate change.

II. Policy options to address climate change

A. “Feed-in tariffs” – It is the English translation of the German word – “einspeisevergütung” and probably not the best translation. Common in Western Europe. Guarantees clean energy projects and above market return to incentivize development.

1. The legislature needs to appropriate funds to pay the feed-in tariff.
2. What happens if the legislature changes its mind after the projects are built? Saw this in Italy and Spain.
3. A new bureaucracy must be created to administer the feed-in tariff. That leads to delays and costs that are not directly addressing climate change.
4. There is usually a cap on how much is appropriated for the feed-in tariff. It is difficult for developers to know how much of the cap remains.
5. Developers may put projects in queue to be sure they don’t miss the feed-in tariff, but the project may not be viable yet and not built.
6. The developers best at applying for feed-in tariffs may not be the same developers that are best at building efficient projects.

II. Policy options to address climate change

B. Cap and trade – the preferred choice of economists as the most efficient way to address climate change.

1. Economically efficient but perceived by the public as a tax because carbon producers pass through the cost of cap and trade to their customers as higher prices. Consumers can then adjust their behavior based on pricing that includes the cost of carbon.
2. Without special precautions, it is a regressive tax because a wealthy person and a poor person may use a similar amount of carbon, but the cap-and-trade cost passed through requires a much higher percentage of a poor person's income than a wealthy person's income. Economic studies suggest that addressing the regressivity by spending some of the revenue raised on helping low-income communities makes the program less efficient for the economy overall.
3. Complicated to administer.
4. Not politically viable in the United States.

II. Policy options to address climate change

C. Tax credits to incentivize clean energy

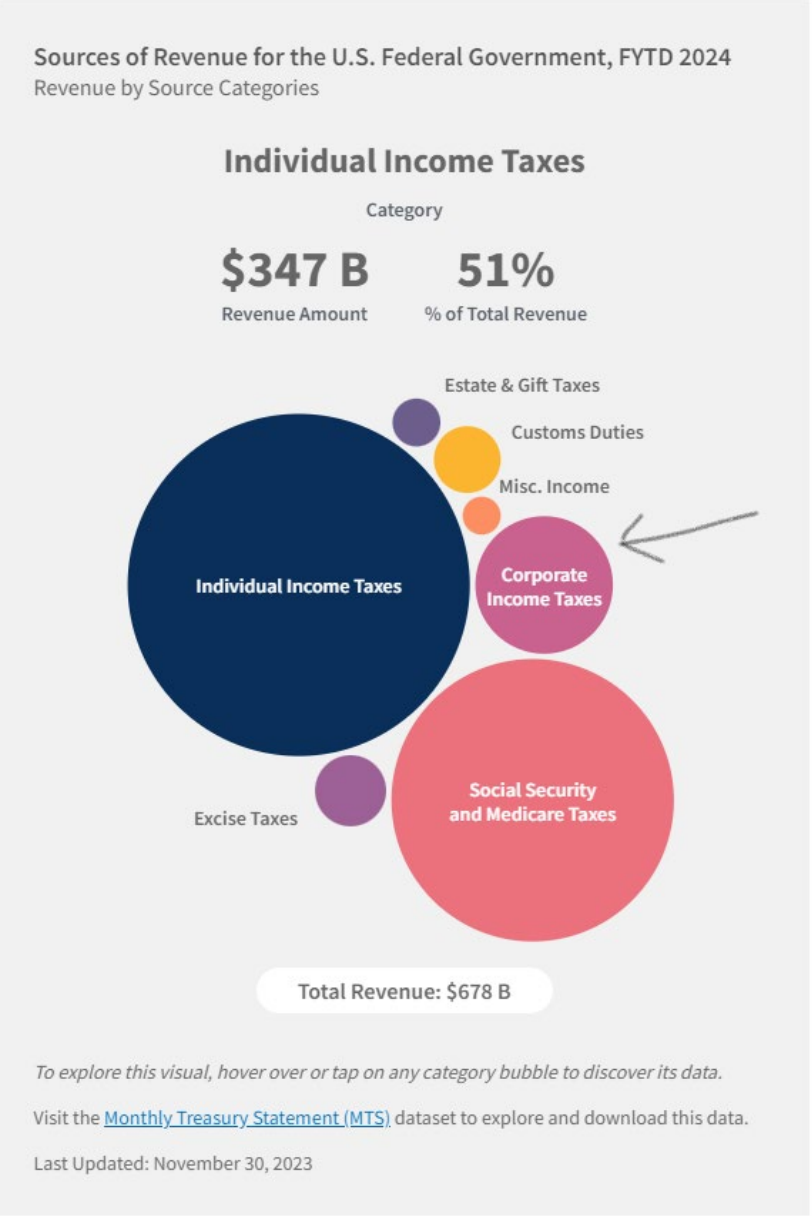
1. Advantages:
   a. No natural political opposition.
   b. Supported by environmentalists and low tax advocates. The production tax credit for wind farms was first enacted in 1992 during George H.W. Bush's administration.
   c. The IRS already exists and has a system to audit and enforce tax rules, so there is no need to create a bureaucracy to implement it.
   d. Typically (but not always), tax incentives do not have a ceiling on how much can be claimed, so there is not an issue of developers being concerned the program will run out.
   e. Spreads the cost out over the whole nation, rather than just certain areas baring the brunt of the cost.

II. Policy options to address climate change

2. Disadvantages of tax credits:
   a. Only some companies pay enough tax to make it worth it for them to pursue tax credits. Who is going to use all these tax credits?
   b. Clean energy developers often do not pay much tax due to losses from failed projects, accelerated depreciation, and tax credits they were unable to monetize, so most developers must find some other way to get upfront value for tax credits they have little need for.
   c. Results in a delegation of energy policy to tax officials who rarely have a background in energy.
   d. Engineers and others who are expert in project development are rarely fluent in tax credit planning that must be mastered to maximize the economics of projects.
   e. Tax law is inherently complicated.
   f. Risk of fraudulent claims for tax credits.

II. Policy options to address climate change

3. Tax credit incentives: Tension between tax and energy policy
   a. Individuals pay most of the federal income tax, but U.S. tax law makes it generally only efficient for c-corporations to use tax credits. That means only the third largest circle is available to monetize tax credits.
   b. Treasury could have interpreted the IRA rules to allow certain individuals that are active in the renewable energy business to use tax credits, but Treasury opted to avoid opening the door much to allow that.



II. Policy options to address climate change

c. But the history of individuals and tax credits is pretty…

i. In the early 1980s, you could buy tax shelters at the mall. It did not go well. There were shysters selling fraudulent schemes.

ii. There were also individuals who made investment that required little cash or effort and produced large tax savings that the IRS believed were too good to be true.

iii. Both the individuals who were victims of fraud and the IRS complained to Congress. Congress enacted the passive activity loss rules and the at-risk rules to make it very difficult for individuals to use tax credits or accelerated depreciation.

II. Policy options to address climate change

d. Cash for tax credits: during the Obama administration, Congress tried a program called the Treasury 1603 cash grant. Treasury would give taxpayers cash in exchange for energy investment tax credits (ITC). There was no haircut: Treasury paid 100 cents on the dollar.

   i. The problem is that Treasury found out that some taxpayers were hyping their grant requests with inflated numbers. That made Treasury extremely cynical about all grant requests. Treasury started routinely paying less than was requested out of concern that there must be some excess in most applications. This led to delays and many projects receiving smaller grants than they forecasted.

   ii. Fourteen years later the litigation about the grant reductions is still ongoing.

II. Policy options to address climate change

i. Direct pay to transferability: Biden's original climate bill was called Build Back Better and included a "direct payment" mechanism. Under the proposed mechanism, taxpayers could convert their energy tax credits to cash by making a filing with the IRS.

ii. The industry thought the IRS would do a better job than Treasury did because the IRS is used to processing tax returns in a relatively efficient manner and then auditing to find problems. The proposed mechanism included the upfront investment tax credit, the production tax credit which is earned over 10 years and applied to taxpayers, nonprofits (e.g., Harvard) and state and municipal governments.

iii. To get Sen. Manchin's (a centrist Democrat from West Virginia) support Build Back Better was re-named the Inflation Reduction Act of 2022 (IRA).

iv. Sen. Manchin felt that direct pay was too much government involvement, and the program would work better in the private sector. He shifted it to transferability.

v. The IRA as enacted allows energy tax credits to be sold for cash using a simple bill of sale under rules known as "transferability." As a general matter, profitable c-corporations are the only efficient buyers; c-corporations are, generally, public companies and "blocker" corporations in private equity and hedge fund structures. Is there enough corporate tax appetite for all these energy tax credits?

II. Policy options to address climate change

f. “Direct Pay” (i.e., exchanging tax credits for a cash payment from the IRS for 100 cents on the dollar): generally, only available to non-profits, governments that own projects.

   i. Exception for tax credits under sections 45Q (carbon capture), 45V (hydrogen) and 45X (advanced manufacturing production tax credit) qualify for direct pay, even in the hands of taxable entities.

      a) Few such taxable entities have applied for direct pay because a tax credit buyer will pay them more quickly than the IRS, and their cost of funds is high enough that they would rather get a smaller payment sooner than 100 cents on the dollar later. Does this prove Sen. Manchin right that the program is better off in the hands of the private sector?

III. Transferability Market

A. Tax credits are currently trading between $.81 and $.97[1]. That means a tax credit that costs the fisc $1.00 is at best providing only $.97 of funding to clean energy developers.

B. The most important factor in determining at what price tax credits will trade at is the quality of the indemnitor and the scope of the indemnity.

1. The IRA was supposed to democratize the tax equity market, but it hasn't yet. The large well-capitalized developers with strong credit ratings have a material advantage over smaller and newer developers.

   a. Weaker developers can compensate for their inability to provide a strong indemnity by purchasing tax credit insurance. The premiums are 1.5% to 3.5% of the maximum insured amount, which means a meaningful portion of the proceeds from the tax credit sale ends up in the insurance market, rather than supporting more clean energy projects.

III. Transferability Market

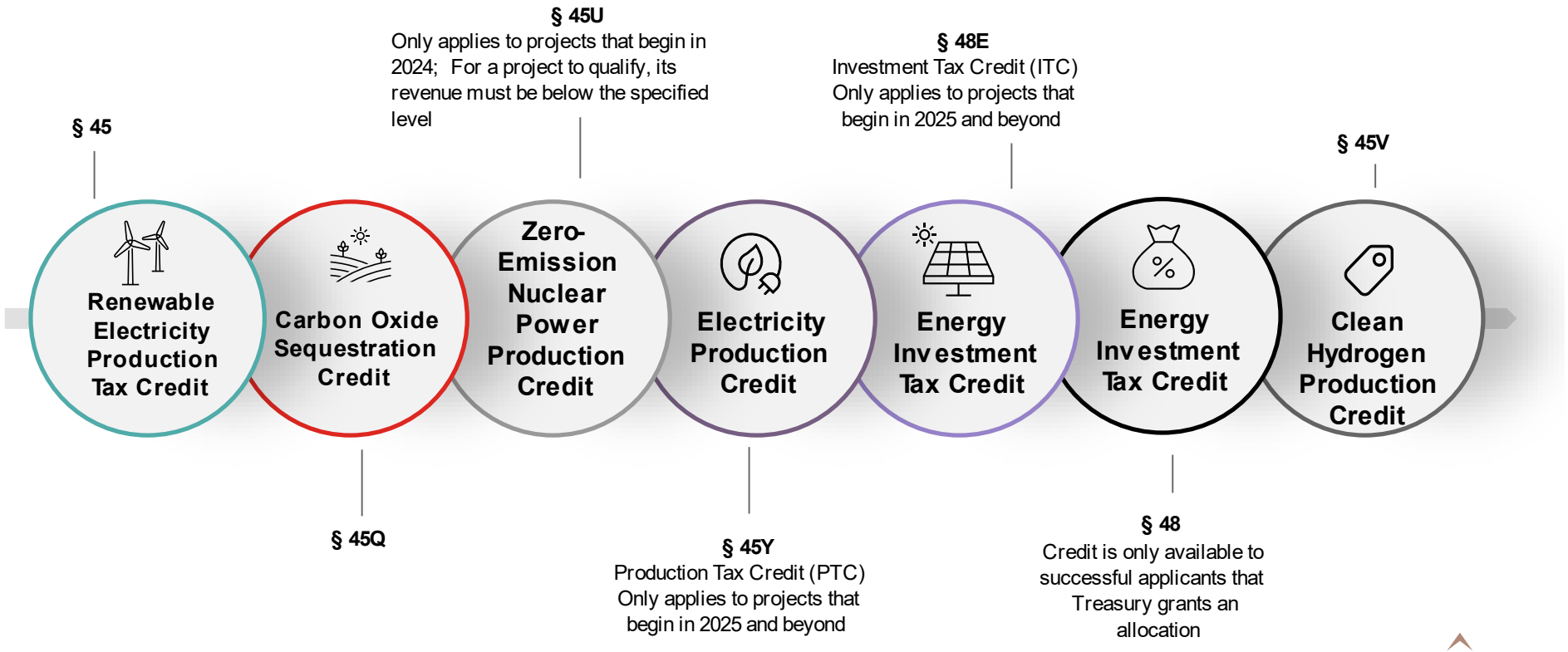
C. We are seeing public companies that were not interested in complicated tax equity investments that involve lease and partnership structures enter the transferability market.

1. The financial statement accounting is simple. Satisfy $100 of tax liability by buying $95 of tax credits and the $5 goes to the bottom line as profit, which is much simpler than partnership accounting.
2. Companies don't have to hire a platoon of project finance experts because purchasing tax credits does not involve taking operating or cash flow risk. The credits can be purchased after they have already been generated by the project.
3. Credits can be purchased after companies know their tax liability for the year, so long as they are bought before either buyer or seller files its tax return for the year. Therefore, companies do not have invest before the tax year is over and take the risk that an extraordinary event changes their ultimate tax liability for the year.
    a. Currently, vintage 2023 credits are selling at a higher price than vintage 2024 credits. Vintage 2023 credits can continue to sell until either buyer or seller has filed its 2023 tax return, which with extensions can be as late as October 15, 2024, for a corporation that has a calendar tax year.

III. Transferability Market

D. Tax credits available to be purchased

Main Fed. Energy Tax Credits Available For Purchase



All of the above credits are transferrable via third party sale.

III. Transferability Market

D. Tax credits available to be purchased

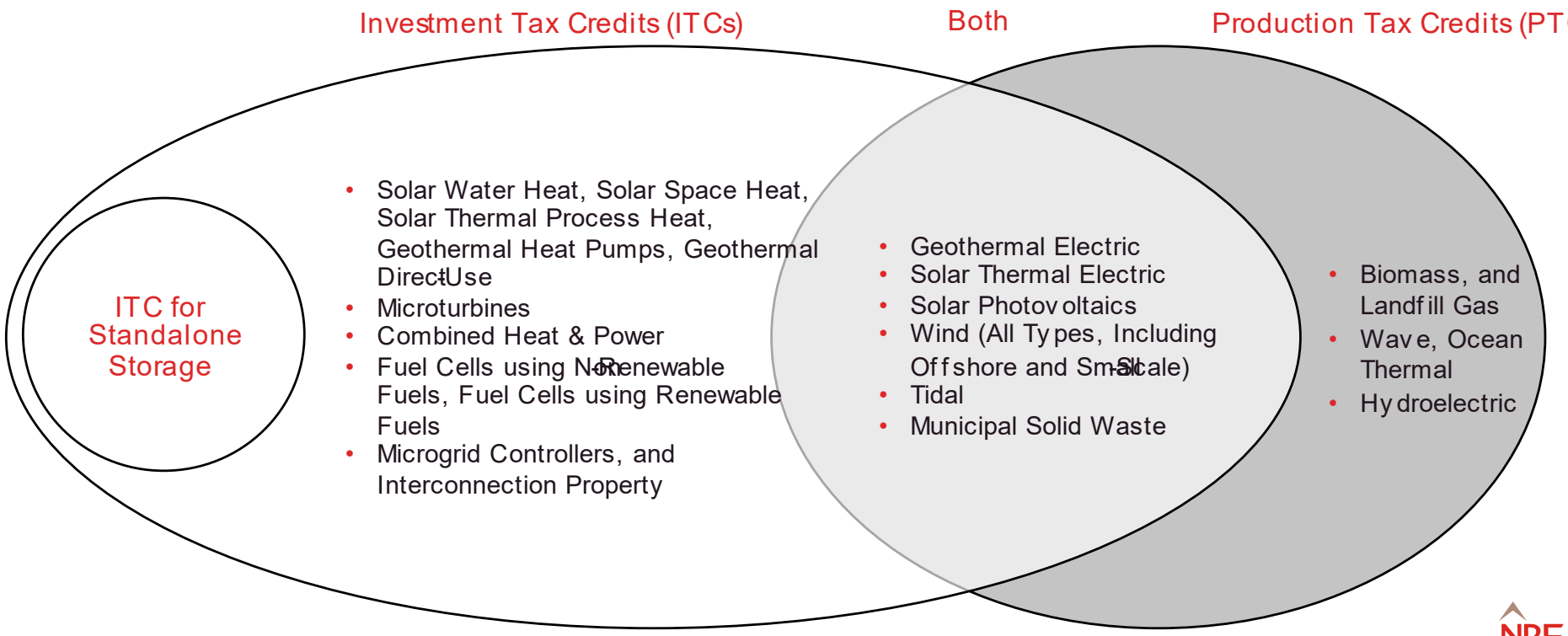
Other Fed. Energy Tax Credits Available For Purchase

Alternative Fuel Vehicle Refueling Property Credit	Advanced Manufacturing Production Credit	Clean Fuel Production Credit	Qualifying Advanced Energy Project Credit
§ 45	§ 45X	§ 45Z	§ 48C

III. Transferability Market

- Here are the technologies that qualify for various types of tax credits:

Categories Of Federal Energy Tax Credits



IV. Challenges of transferability

A. The deprecation problem: accelerated depreciation is an important tax benefit for clean energy projects, and accelerated depreciation tax benefits cannot be sold. Accelerated depreciation is a benefit for the owner of the project but can be allocated among the partners of the partnership that owns the project.

B. The upfront investment tax credit (ITC), which is more commonly opted for over the production tax credit (PTC) that is generated over 10 years.

1. The ITC is typically (but not always) 30% of the cost basis.

a. Let's say the project cost $80 to build, so the ITC would be $24. However, let's say the project has a fair market value of $100 and only makes sense if the ITC is $30. How do you get the tax basis from $80 to $100?

i. A tax credit buyer is just buying the tax credit, so its involvement does not increase the tax basis.

ii. You could form a partnership and sell the project to the partnership for $100 and have the partnership sell the $30 ITC, but that's complicated and now you need a partner and a tax credit buyer.

iii. You could do a sale-leaseback and have the lessor buy the project for $100. Then the lessor could either keep the $30 tax credit for itself or sell it. However, that is complicated too.

iv. Treasury could have helped with this issue by allowing for lease pass-throughs, which results in an ITC for the "lessee" calculated on the notional FMV, to be combined with transferability, but Treasury opted not to you. An example of the tension between tax policy and energy policy.

IV. Challenges of transferability

C. The ITC “recapture” problem for transfers:

1. The policy for recapture no longer makes much sense when you can sell tax credits.
   a. In the 1960s, when there was an ITC for all new equipment, Congress was concerned that taxpayers would buy a new item of equipment claim the ITC and sell the equipment. Therefore, there is a rule that a sliding portion of the ITC must be repaid if the project is sold in the first five years.
   b. This rule creates significant operational problems. For instance, a developer builds a project, sells the ITC and then decides it wants to sell the project in year three. That sale of the project triggers recapture for the tax credit buyer from three years ago!
   c. The tax credit buyer also suffers recapture if the project is hit by a hurricane and destroyed or if it does not work and the owner decides to remove it from service and mothball it.

IV. Challenges of transferability

D. The recapture problem with debt: If the developer puts a mortgage on the project to finance and defaults on the mortgage and the lender forecloses, that foreclosure is a sale that triggers recapture for the ***buyer*** of the ITC. None of this makes much sense, when the buyer of the tax credit has no operational involvement in the project and no equity invested in the project.

   a. The industry asked Treasury to impose recapture on the tax credit seller (not the buyer). Treasury declined that request with the one exception of a tax credit seller that is a partnership and then an interest in the partnership is sold. In that scenario, the partner that sold its interest in the tax credit seller suffers recapture of the ITC (i.e., not the ITC buyer).

   b. This recapture dynamic can create a premium for PTCs which are based on the production levels over ten years (rather than the ITC which is based on "basis" (i.e., the cost to build or buy the project)), because PTCs are not subject to recapture. However, if the seller has a strong balance sheet and gives a fulsome indemnity, we are seeing the PTC premium eliminated.

IV. Challenges of transferability

E. Tax audits: if the IRS challenges the amount of the tax credit, it is going to audit the buyer. But the buyer knows little about the project.

1. The buyer will typically have the benefit of a tax indemnity from the seller.
   a. There is a tension that the seller will want to control the IRS audit because it will have to pay an indemnity for a bad outcome.
   b. However, the buyer is likely a large corporation that has a complicated relationship with the IRS; further, the audit is likely wider in scope than just the tax credit purchase under audit; therefore, the buyer may not want the seller in the middle of its audit with the IRS.

V. Climate policy + tax policy + labor policy + trade policy + environmental policy + social policy

- The IRA's main but not only goal is to address climate change through the tax code. Renewable energy developers were already accustomed to having to be tax experts, but now the must be labor, trade, social policy, and environmental policy experts. This is a great deal to burden our clean energy industry with, when we are relying on that industry to mitigate climate change that threatens the planet.

V. Climate policy + tax policy + labor policy + trade policy + environmental policy + social policy

How It Works: Base Credit Plus "Adders" For ITCs

General Approach: "Base credit" + "Bonus criteria":

Base credit 6% property types

- Biogas property
- Combined heat and power
- Energy storage technology
- Fiber-optic solar property
- Fuel cell property
- Geothermal property
- Microgrid controllers
- Small wind property
- Solar energy property
- Waste energy recovery property

Base Credit – e.g., 6% – Energy Property Credit

* Or base credit with prevailing wage & apprentice (PWA) (5x multiplier) — 30%

*Or if you meet "begun construction" **Before January 29, 2023**

\+ Domestic content 2% base up to — 10%

\+ Energy community 2% base up to — 10%

\+ Environmental justice (for solar and wind < 5 MW) — 10% or 20%

*Requires IRS Granting an Allocation, no PTC

\- Use of tax-exempt funding for project – tax credit — 15%

PTC has similar rules; the base rate is currently $.55 & each adder is worth $.055
Note: Not all credits apply to all projects

V. Climate policy + tax policy + labor policy + trade policy + environmental policy + social policy

A. Labor policy: President Biden promised that green jobs will be good jobs.

1. For projects with over 1 MWac of capacity, the construction workers must be paid prevailing wages and 15% of the work done by apprentices or else the tax credit is 1/5th (e.g., 30% goes to 6%).
   a. This means paying wages that the Department of Labor has determined are consistent with the union wages in a region, but you don't have to literally hire union workers.
   b. It can be challenging to know how to classify workers to determine what their appropriate wage is. For instance, is someone who carries a solar module, places it on a rack and connects it to a wire, an "electrician" or a "laborer." The difference in wage is significant and adds up over thousands of hours.
   c. It is difficult to find apprentices. Reportedly, only projects in Texas and California can find apprentices. Projects can qualify for an exception if apprentices are not available, but that means hiring more journey-workers who are more expensive.
   d. One construction company has started its own designated apprentice program.

V. Climate policy + tax policy + labor policy + trade policy + environmental policy + social policy

B. Trade policy: Domestic Content. The tax credit is 10% greater if "domestic content" is used. To qualify, all steel and iron must be domestic. Further, for solar, storage and onshore wind 40% of the manufactured components must be domestic in 2024, and that ratchets up to 55% by 2027.

1. Treasury has opted to determine the 40% ratio by using the manufacturer's direct costs (i.e., labor and materials). That effectively means the manufacturer must disclose its profit margin to its customers. Many manufacturers are unwilling to do that. There is a debate between the Executive Office of the President (EOP) and Office of Management and Budget (OMB) about changing this rule. EOP is favoring climate change concerns while OMB is favoring labor concerns. Since Jon Podesta was promoted to take John Kerry's role, there seems to be a leadership vacuum to resolve this issue.
2. Manufacturers are trying to implement systems in which they disclose their costs to an accounting firm, and the accounting firm writes the customer a report about domestic cost eligibility without disclosing the actual costs to the customer.

C. Environmental policy: energy communities:

1. 10% increase in tax credits if the project is cited in a census tract (or an adjoining census tract) in which a coal mine closed since 1999 or a coal fired power plant closed since 2009.
   a. The Bureau of Mines determines which census tracts have closed coal mines and the Energy Information Agency (EIA) determines which have closed coal fired power plants
   b. For coal fired power plants, there is an issue about coal fired plants that were converted to natural gas. The EIA reports that as a repowering, rather than a closure. However, a natural gas fired plant needs far fewer workers as natural gas is delivered by pipeline, while coal is delivered by truck or rail.

V. Climate policy + tax policy + labor policy + trade policy + environmental policy + social policy

2. Labor statistics: 10% increase in the tax credits if the project is in a statistical area that (I) had at least .17% fossil fuel employment in any year since 2009 and (II) greater unemployment than the national average in the year that construction began.
3. Brownfields: If a project site qualifies as a brownfield site under the "Super Fund" definition, it qualifies for a 10% increase in tax credits. To qualify, the rules appear to be that there has to be a listed contaminant that would make it "more complicated" to redevelop the site.

D. Social policy: low-income communities

1. Solar and wind projects with a capacity of 5 MWac or less that opt for the ITC, that are sited in low-income communities can apply to the Department of Energy (DOE) and the IRS for a 10% additional ITC (e.g., 30% goes to 40%).
   a. Such projects that provide an "economic benefit" to low-income households can apply for a 20% additional ITC.
2. National cap of 1.8 gigawatts of projects a year that can qualify for this adder. Applicant projects apply to DOE, which, DOE makes recommendations to the IRS. The IRS makes the actual award of allocations.
   a. The first round of awards were made in February.
   b. The program is over-subscribed.

VI. How is the IRA working?

A. Tax credit market must grow: Credit Suisse projected that the energy tax credit market in 2031 will need to be $83 billion[2].
   1. That's up from estimates of $20 to $23 billion of traditional tax equity investments in 2023[3] and $4[4] to $9 billion[5] of tax credit transfers in 2023 (i.e., an energy tax credit market of $24 to $32 billion in 2023).
   2. The only way the expected level of demand can be met is through the transferability market.
   3. A tax credit broker thinks the transferability market in 2024 will be $15 to $18 billion, with traditional tax equity maybe that gets us to a market of $40 billion in 2024, which then needs more than double by 2031 to meet Credit Suisse's projections.

B. Bankers believe the IRA is working as intended by Congress.[6]

C. It has yet to level the playing field for small developers.[7]

D. Since the IRA was passed, there has been roughly a 200 bp increase in the cost of tax equity.[8] Possible explanations, higher interest rates due to inflation, more types of tax credits competing for investors, and increased complexity of transactions due to the desire to combine transferability with a maximized ITC and mitigate recapture.

VI. How is the IRA working?

E. Hydrogen industry is challenged by Treasury's proposed regulations. To qualify for tax credits, green electricity used to make hydrogen must:

1. be matched with renewable energy from the same region,
2. from recently constructed projects, and
3. starting in 2028 generated in the same hour. If these rules are retained, it will mean few hydrogen projects are developed.

Remains to be seen if Treasury sticks to its position. Sen. Manchin says Treasury's position is not consistent with the intent of the IRA.

1. Some environmentalists believe that hydrogen should only be used in activities that cannot be electrified and draw electricity from the grid (e.g., shipping vessels), so they favor the strict rules proposed by the Treasury.
   a. The rebut is that hydrogen is like a natural battery; if the electrons can be used in real time, then use them; if there is not real-time demand, then convert them to hydrogen to store long-term without needing cobalt or lithium.

VI. How is the IRA working?

F. Renewable natural gas (RNG)

1. Significant increase in RNG projects that make landfill gas, manure, or food waste into natural gas. The idea is that there is no increase in emissions because the landfill gas, manure, or food waste would have released CO2 in any event, so might as well make it into natural gas and generate energy from it.

VI. How is the IRA working?

G. This year existing nuclear power plants qualify for PTCs under section 45U.

1. The credits phase out as nuclear plants have higher revenues, so it is not clear how many of these nuclear PTCs will be generated. Due to this variability, nuclear plants could generate a couple hundred million a year or a couple of billion year.
2. Will buyers require a discount for nuclear PTCs v wind/solar?
3. Will nuclear PTCs be a blip in the market or depress the price of other credits?

Footers and sources

Footer	Source
1	https://www.projectfinance.law/tax-equity-news/infocast-solar-plus-wind-finance-investment-summit-2024-soundbites#a1
2	https://www.credit-suisse.com/treeprintusinflationreductionact
3	https://www.projectfinance.law/publications/2024/february/cost-of-capital-2024-outlook/
4	*Id*
5	https://www.cruxclimate.com/insights/transferable-tax-credit-market-report
6	https://www.projectfinance.law/tax-equity-news/infocast-solar-plus-wind-finance-investment-summit-2024-soundbites#a1
7	*Id*
8	*Id*

- Sources for Additional Information
  - TaxEquityNews
  - The White House – IRA Guidebook
  - NC Clean Tech
- Tax Credit Brokers' Websites
  - Atheva
  - Crux Climate
  - Reunion Infra

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Currents Podcast

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Project Finance Blog

The Project Finance blog reports on new developments affecting the power sector, gas pipelines, LNG terminals, energy storage facilities, energy efficiency, biofuels, gasification, water, toll roads, bridges, ports, stadiums, and other infrastructure.

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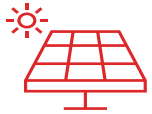

Tax Equity News

Our Tax Equity News blog reports on issues where renewable energy meets tax policy in the United States.

Energy Storage

Our Energy Storage updater covers market trends and new developments, alongside some of the regulatory considerations we believe energy companies, developers, investors, and financiers should consider in assessing energy storage projects.

Earth, Wind and Solar

Our Earth, Wind and Solar podcast features conversations on renewable energy and infrastructure in emerging markets.

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David Burton advises clients on a wide range of US tax matters, with an emphasis on project finance and energy transactions. He has extensive experience structuring tax-efficient transactions for wind and other renewables with expertise with respect to flip partnerships and sale-leasebacks. David also advises clients on the tax aspects of the formation and structuring of private equity funds with expertise regarding renewable energy investment funds. Please refer to our website to view David's full CV.

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