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The Inflation Reduction Act at One Year: Milestones Achieved with Miles to Go

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October 2023

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Overview of the Inflation Reduction Act

The Inflation Reduction Act (the “IRA”) primarily was aimed at providing incentives with respect to the renewable energy industry through tax credits, which are used to offset the U.S. federal income tax of the taxpayer. Tax benefits available to taxpayers under the IRA include:

- Expand existing Sec. 45 Credits (Production Tax Credits (“PTCs”) for the production of electricity with certain renewable energy sources such as wind, solar, hydropower, etc.)
- Expand existing Sec. 48 Credits (Investment Tax Credits (“ITCs”) for qualifying energy facilities such as solar, standalone batteries, biomass, etc.)
- Expand existing Sec. 45Q Credits (Carbon Capture Sequestration Tax Credits for the capture of qualified carbon oxide)
- Introduced new credits available under:
  - Section 45X (Advanced Manufacturing Production Credit for the production of certain renewable energy facility components and critical minerals)
  - Section 48C (Advanced Energy Production Credit for projects qualifying under the Department of Energy requirements for allocation of a $10B funds)
  - Section 45Z (Clean Fuel Production Tax Credit for the production of clean transportation fuel including sustainable aviation fuel)
  - Section 45V (Clean Hydrogen Production Credit for the production of clean hydrogen)
  - Section 45W (Qualified Commercial Clean Vehicles Credit for taxpayers purchasing EV for commercial fleets)
  - Section 45Y (Clean Energy Production Credit, a technology-neutral PTC for the production of clean energy, replacing existing PTCs for facilities placed in service after December 31, 2024)
  - Section 48E (Clean Electricity Investment Credit, a technology-neutral ITC for investment in facilities that generate clean energy that are placed in service after December 31, 2024)

Overview

Certain IRA tax incentives have applications which could be utilized by oil and gas industry participants based on their existing assets.

- Section 45Q Carbon Capture Sequestration Credits
- Section 45V Clean Hydrogen Production Tax Credits
- Section 45X Advanced Manufacturing Production Tax Credits
- Section 45Z Clean Fuel Production Credit
- Section 48 Investment Tax Credit with respect to Standalone Energy Storage Systems

Overview

Wage and Apprenticeship Requirements

- Under the IRA, a significant number of renewable energy credits are available under a two-tier system, where qualifying taxpayers are eligible for a base rate of credits, and subject to satisfying the wage and apprenticeship requirements ("W&A Requirements"), increased credits equal to 5 times the base credit (e.g., an ITC project will be eligible for 6% ITCs as a base rate and 30% if it satisfies the W&A Requirements)
- The W&A Requirements are composed of (a) the prevailing wage requirements and (b) apprenticeship requirements.
- Generally, the prevailing wage requirement is satisfied if laborers and mechanics employed in the construction, alteration, or repair of facilities are paid the appropriate prevailing wages (determined in accordance with the Davis-Bacon Act).
- The apprenticeship requirement is satisfied if the labor hour and apprenticeship participation requirements set forth in the Code are satisfied.
- The W&A Requirement does not apply to projects that began construction prior to 60 days following the IRS publication guidance on the matter (i.e., by January 28, 2023).
- The Section 45X credits do not have a W&A Requirement.

Section 45Q CCS Tax Credits

- The 45Q credit is available to taxpayers that own the carbon capture equipment or facility for the capture and disposal of the qualified carbon in secure geological storage, injection in a EOR project or otherwise utilization such carbon in a permitted commercial use (e.g., fixation of qualified carbon through photosynthesis or chemosynthesis or the chemical conversion of qualified carbon into a material or chemical compound) and that physically or contractually ensures the capture and disposal, injection or utilization of qualified carbon as described above (e.g., a taxpayer may transfer a portion of its 45Q credits to another taxpayer that is contractually bound to effect any of the foregoing).
- The 45Q credit is available with respect to projects that begin construction prior to January 1, 2033.
- The 45Q credit is based on qualifying carbon capture during the 12-year period following the date the carbon capture project is placed in service.
- 45Q Credit Amount (assuming satisfaction of W&A Requirements)

	Secure Geological Storage	Enhanced Oil Recovery	"Use" of Carbon
Industry / Power	$85/ton	$60/ton	$60/ton
Direct Air Capture	$180/ton	$130/ton	$130/ton

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Section 45Q CCS Tax Credits

- The IRA greatly expanded (by reducing applicable thresholds) the number of facilities that could qualify for these credits. Under the IRA, there are only three categories—electricity generating qualified facilities, direct air capture facilities, and other qualified facilities (e.g., manufacturing, chemical or photosynthesis facilities)—each with a decreased threshold as compared to that under prior law – creating more opportunities for facilities to qualify for the credits.

Type of Qualified Facility	Prior Law (metric tons per year)	Type of Qualified Facility	IRA (metric tons per year)
Electricity Generating Facility	500,000	Electricity Generating Facility	18,750 and at least 75% of baseline emissions
Direct Air Capture Facility	100,000	Direct Air Capture Facility	1,000
Small Industrial Facility	25,000	Other Facility	12,500
Other Facility	100,000		

45Q Credit Recapture

The 45Q credit is subject to recapture if the captured carbon oxide ceases to be disposed in secure geological storage (i.e., is released into the atmosphere) or use as a tertiary injectant for during the recapture period

- **Monitoring Requirements** – Taxpayers claiming the 45Q credit generally are required to monitor the storage of the carbon oxide in order to determine whether there has been a recapture event. Generally, the Treasury Regulations adopt EPA Greenhouse Gas Reporting Program requirements that set forth procedures for (i) reporting information on the carbon oxide injected, (ii) developing, receiving EPA approval for and maintaining a monitoring reporting and verification plan and (iii) reporting the amount of carbon oxide sequestered.
- **Recapture Period** – The recapture period begins on the date of first injection of the carbon oxide for disposal in secure geological storage or use as a tertiary injectant for which 45Q credits were claimed and ends on the earlier of (i) three years after the last taxable year in which the taxpayer claimed the 45Q credit and (ii) the date the monitoring ends under the requirements of the above-described procedures.

45Q Credit Recapture

- **Recapture Amount** – If a recapture event occurs, the amount of 45Q credits recaptured is equal to the product of the quantity of carbon oxide subject to recapture and the credit rate for the corresponding carbon capture activity. The result is that the taxpayer's tax liability for the year of recapture will be increased for the period in which the recapture event occurs (i.e., as opposed to filing an amended tax return for the period in which the carbon capture activities occurred). Recapture is determined on a last-in-first-out basis.
- **Exceptions** – There are limited exceptions for events causing the release of carbon oxide that do not result in recapture. In particular, if the event triggering the loss of containment of the carbon oxide results from actions not related to the selection, operation or maintenance of the storage facility, recapture is not required. The Treasury Regulations provide volcanic activity and terrorist attack as examples.
- **Credit Transfers** – In general, if a 45Q credit has been transferred, the transferee is the taxpayer that takes into account the recapture in determining its tax liability. Thus, in most instances, the transferee will require indemnity protection for such events.

CCS – Things You May Have Heard About

- **Denbury: November 4, 2021** - Denbury Carbon Solutions, LLC, and Houston-based Gulf Coast Midstream Partners, LLC announced agreement for the permanent sequestration of CO2 project southwest of Houston, Texas. The project is currently being developed by Gulf Coast, and the arrangement contemplates Denbury participating as an equity investor alongside Gulf Coast with up to 50% equity ownership in the project.
- **Oxy: August 25, 2022** — Occidental and its subsidiary 1PointFive announced they plan to begin detailed engineering and early site construction for their first large-scale Direct Air Capture (DAC) plant in Ector County, Texas, near Oxy's portfolio of acreage and infrastructure that are conducive to safe and secure storage of carbon dioxide.
- **Exxon: July 13, 2023** - Exxon Mobil Corporation announced it has entered into a definitive agreement to acquire Denbury, an experienced developer of carbon capture, utilization and storage (CCS) solutions and enhanced oil recovery. The acquisition is an allstock transaction valued at $4.9 billion

CCS – Things You May Have Heard About

- **Class II Injection Wells – Plenty in Texas**
  - Class II wells are used only to inject fluids associated with oil and natural gas production for purposes of either disposal, enhanced oil recovery (EOR), or hydrocarbon storage
- **Class VI Injection Wells – None in Texas**
- Developers seeking to create a permanent carbon sequestration project must obtain a permit to drill and operate a Class VI Well
  - Only 6 have ever been issued by the EPA
  - Only 2 still active
- Only two states have primacy (North Dakota and Wyoming)
  - 4 Issued; 1 Pending in North Dakota
  - 3 active applicants in Wyoming
- Texas and Louisiana have applied to the EPA for primacy
- Class VI permitting process has been known to take up to 6 years (but anticipated to get faster when Texas secures primacy)

CCS – List of Active and Pending Class VI Wells

State	County	Applicant	Current Status
AL	Baldwin	Denbury Carbon Solutions, LLC	Pending
MS	Kemper	Mississippi Power	Pending
MS	Simpson and Copiah	Denbury Carbon Solutions, LLC	Pending
IL	Christian	Heartland Greenway Carbon Storage, LLC	Pending
IL	Ford	One Earth Sequestration, LLC	Pending
IL	Macon	Archer Daniels Midland Company (Decatur Campus)	Active
IL	Macon	Archer Daniels Midland Company (Maroa Campus)	Active
IL	McLean	Heartland Greenway Carbon Storage, LLC	Pending
IL	Putnam	Marquis Carbon Injection, LLC	Pending
IN	Randolph	One Carbon Partnership, LP	Pending
IN	Vigo	Wabash Carbon Services, LLC	Pending
OH	Lorain	Lorain Carbon Zero Solutions, LLC	Pending
AR	Union	Lapis Energy LP	Pending
LA	Allen**	Oxy Low Carbon Ventures, LLC	Pending
LA	Ascension** Assumption** Assumption**	River Parish Sequestration, LLC	Pending
LA	Calcasieu** Calcasieu** Cameron**	Gulf Coast Sequestration	Pending

CCS – List of Active and Pending Class VI Wells

State	County	Applicant	Current Status
LA	Caldwell**	Strategic Biofuels, LLC	Pending
LA	Cameron**	Hackberry Carbon Sequestration, LLC	Pending
LA	Pointe Coupee**	Capio Sequestration, LLC	Pending
LA	Rapides**	CapturePoint Solutions, LLC	Pending
LA	Sabine**	DT Midstream Holdings, LLC	Pending
LA	St. Helena**	Shell U.S. Gas and Power, LLC	Pending
LA	Vernon**	CapturePoint Solutions, LLC	Pending
NM	San Juan	Four Corners Carbon Storage, LLC	Pending
TX	Ector	Oxy Low Carbon Venture, LLC	Pending
TX	Gaines	Orchard Storage Company, LLC	Pending
CA	Fresno	Mendota Carbon Negative Energy Project ProjectCo LLC	Application Withdrawn
CA	Kern	Aera Energy, LLC	Pending
CA	Kern Kern	Carbon TerraVault 1, LLC	Pending
CA	Kern	San Joaquin Renewables LLC	Pending
CA	Sacramento	Carbon TerraVault Holdings, LLC	Pending
CA	San Joaquin San Joaquin	Carbon TerraVault Holdings LLC	Pending
CA	San Joaquin	Pelican Renewables, LLC	Pending

CCS – Relevant Legal Issues

Who owns pore space in Texas?

- Texas cases on subject fall into to two basic sets, *but it seems clear that surface owner owns pore space*
- Cases that support surface owner pore space ownership:
  - *Emeny v. United States*, 412 F.2d 1319 (Ct. Cl. 1969)
  - *Humble Oil & Ref. Co. v. West*, 508 S.W.2d 812, 815 (Tex. 1974)
  - *Springer Ranch, Ltd. v. Jones*, 421 S.W.3d 273, 283 (Tex. App. 2013)
  - *FPL Farming, Ltd. v. Tex. Natural Res. Conservation Comm'n*, No. 03-02-00477-CV, 2003 Tex. App. LEXIS 1074, at *10 (Tex. App. Feb. 6, 2003)
- Case that favors the mineral owner:
  - *Mapco, Inc. v. Carter*, 808 S.W.2d 262 (Tex. App.), rev'd on other grounds, 817 S.W.2d 686 (Tex. 1991)

CCS – Relevant Legal Issues

Who owns pore space in Texas?

- Texas Legislature addressing in 2023 – 2024 session:
- SB 2107 / HB 4484 – Did not pass (passed Senate / referred to Energy Committee in House) – Amending Chapter 5 of the Texas Property Code:
  - “Sec. 5.251. DEFINITION. In this chapter, "pore space" means the geologic structures beneath the surface of land, including voids and cavities, to be used for the storage of carbon dioxide.
  - Sec. 5.252. OWNERSHIP OF PORE SPACE UNDERLYING THE SURFACE.
  - (a) Unless expressly modified, reserved, or altered by a deed, conveyance, lease, or contract, the ownership of pore space is vested in the owner or owners of the surface estate of the land.
  - (b) *This section does not modify common law existing on the effective date of this section as it relates to the relationship between the mineral and surface estates.”*

CCS – Relevant Legal Issues

Carbon Storage Agreements - Leasing pore space for long term carbon storage

- Similar to a typical oil and gas lease:
  - a bonus paid upon execution,
  - a “development term”; “construction term” and an “operations term” - (compare the primary term and subsequent term of an oil and gas lease)
  - a royalty based on tons of CO2 injected
  - Annual payments during the development term (comparable to a minimum royalty payment?)
- The development term may be up to 10 years, which affords the developer sufficient time for the developer to obtain Class VI well permit
- Other typical terms:
  - The royalty rate may escalate based on number of tons injected
  - Rates are pegged to increases in the 45Q credit, which is indexed to inflation
  - Pooling-like provisions
  - Surface use provisions
  - Other boilerplate from an oil and gas lease (insurance, indemnity provisions, and consent to assign restrictions)

CCS – Relevant Legal Issues

Carbon Transportation and Sequestration Agreements (see Denbury's press releases for examples of terms):

- These agreements are like a hydrocarbon or water dedication agreement – project operator is granted the exclusive right to transport and sequester CO2 for a period (often 12 years) with optional extensions
- The producer receives the benefit of the tax credit
- the project operator receives a cash payment (something less than the full amount of the credit) but sufficient to receive an acceptable return on capital expenditures for the project

Section 45V Clean Hydrogen Production Tax Credits

- The 45V credit is available for qualified clean hydrogen produced during tax years beginning after December 31, 2022 and is available for facilities that began construction before January 1, 2033. The credit applies with respect to hydrogen produced and sold to an unrelated party during the 10-year period following the project's placed-in-service date.
- The amount of 45V Credit a taxpayer can claim is determined by multiplying the amount of kilograms of qualified clean hydrogen produced by the taxpayer during a taxable year by the "applicable amount." The applicable amount is determined based on a sliding scale of 20% to 100% based on the lifecycle greenhouse gas emissions rate of the process that is used to produce the qualified clean hydrogen (the "applicable percentage") multiplied by $0.60 (as further adjusted by the inflation adjustment factor for the year). The applicable percentages for the lifecycle greenhouse gas emissions rates are as follows:

Range of KG of CO2e/KG of Hydrogen	Applicable Percentage
2.5 – 4 KG of CO2e/KG of Hydrogen	20%
1.5 – 2.5 KG of CO2e/KG of Hydrogen	25%
0.45 – 1.5 KG of CO2e/KG of Hydrogen	33.4%
< 0.45 KG of CO2e/KG of Hydrogen	100%

Section 45V Clean Hydrogen Production Tax Credits

- For purposes of determining the “lifecycle greenhouse gas emissions rate,” the statute refers to the same term in Section 211(o)(1) of the Clean Air Act (42 U.S.C. 7545(o)(1)) and only such emissions through the point of production (well-to-gate) as determined by the “GREET model” developed by the Argonne National Laboratory are used.
- As with the 45Q credit, the amount of the 45V credit uses a two tier-formula that applies a “bonus rate” to projects that satisfy the above-described W&A Requirements. Thus, for projects satisfy the W&A Requirement, the applicable credit amount is five times the otherwise determined credit amount described above.
- The 45Q and 45V credits are mutually exclusive (i.e., a taxpayer cannot claim the 45Q credit with respect to hydrogen produced at a facility that includes CCS equipment that generated 45Q credits).

Clean Hydrogen – Things You May Have Heard About

- **December 8, 2022** - “Governor Greg Abbott today celebrated the announcement of Air Products and The AES Corporation's (AES) new mega-scale green hydrogen facility in Wilbarger County. Air Products and AES plan to invest approximately $4 billion to build, own, and operate this green hydrogen production facility in Wilbarger County. The power to operate this hydrogen project will entail over 1 gigawatt of renewable energy and electrolyzer capacity capable of producing more than 200 metric tons per day (MT/D) of green hydrogen.”

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Clean Hydrogen – Things You May Have Heard About

Type of Hydrogen	How Created
Green	Created through electrolysis, the process of using electricity to split water (H2O) into hydrogen and oxygen, with renewable energy providing the power for the chemical reaction. No carbon is emitted during the creation of the green hydrogen.
Blue	A process called steam reforming combines natural gas and steam to create hydrogen and carbon dioxide as a by-product. Carbon capture and storage (CCS) then traps and stores the carbon, creating hydrogen through a carbon-neutral process.
Grey	Created using steam methane reformation but without capturing the greenhouse gases produced during the process.
Pink	Generated through electrolysis powered by nuclear energy.
Turquoise	Produced from methane pyrolysis, in which methane (CH4) is split into hydrogen and solid carbon using heat in reactors or blast furnaces.

Hydrogen – Relevant Legal Issues

- Since qualifying for Green Hydrogen (and thus the maximum tax benefit) requires electricity generated without GHG emissions, Green Hydrogen necessarily requires ready access to a renewable energy source.
- Developers of Green Hydrogen often plan to create a renewable energy electric project along with the Green Hydrogen project.
- That means...
  - Solar and Wind Energy Ground Lease and Easement Agreements
    - Typical terms include:
      - Diligence periods of various lengths
      - Initial and Subsequent Terms
      - Easement for ingress and egress and restrictive covenants preventing surface access
      - Rentals on a per acre basis, with escalation clauses (for Solar leases)
      - Minimum royalty based on nameplate capacity (for Wind leases)

Section 45X Advanced Manufacturing Tax Credits

- As noted, the 45X credit applies to the manufacture or production of a number of specified renewable energy, battery and “critical minerals” that are sold to unrelated parties.
- Among the enumerated activities that qualify for the 45X credit are (i) the conversion of lithium into lithium carbonate and (ii) the purification of lithium to a minimum purity of 99.9 percent by mass.
- The amount of the 45X credit in this case is equal to 10% of the cost of the production of the of the qualifying mineral.
- Further IRS guidance will be required to definitively identify the costs of goods sold (COGS) for the lithium that is actually sold to unrelated parties that are incorporated into the 10% calculation for purposes of the credit.
- Unlike the 45Q and 45V credits, the 45X credit does not reflect a two-tiered credit structure based on satisfaction of the W&A Requirement. Therefore, there are no applicable W&A Requirements.

Section 45X – Things You May Have Heard About

- **Standard Lithium - March 28, 2023** – Announces that in the East Texas Smackover region (Cass County, Texas), it has sampled the highest confirmed lithium grade brine in North America, with a grade of 634 mg/L lithium.
- **Tesla – May 8, 2023** – Announces that it is breaking ground on $1B+ lithium refinery located in the Corpus Christi area
- **Exxon / Saltwerx – June 2023** – Exxon acquires acreage position from Galvanic Energy and announces deal with Tetra Technologies to develop lithium in Arkansas.

Section 45X – Relevant Legal Issues

- Assuming Tax Credits, plus existing technology make it feasible to extract lithium from **produced water** – who gets paid? who reaps the benefit?
  - The Mineral Estate? Lithium is probably a mineral (based on the cases); ***BUT***
  - In Texas – the Surface Owner owns groundwater and caselaw seems to suggest that the constituent parts of groundwater are owned by the Surface Owner as well; ***BUT***
  - Chapter 122 of the Texas Natural Resources Code –
    - Fluid Oil and Gas Waste – "means waste containing salt or other mineralized substances, brine, hydraulic fracturing fluid, flowback water, produced water, or other fluid that arises out of or is incidental to the drilling for or production of oil or gas.
    - Section 122.002 – Fluid Oil and Gas Waste is the property of the person who takes possession of it, for a subsequent beneficial use.
    - The safe bet for operators? Get a cheap brine lease with the Surface Owner.
    - The *safest* bet for operators? Get cheap brine leases from the Mineral Owner and the Surface Owner.

Section 45Z Clean Fuel Production Credit

- Taxpayers who are registered producers of clean fuel may claim Section 45Z credit for the production of transportation fuel with an emissions rate of no greater than 50 kg of CO_2e per mmBTU at a qualified facility in the US that is sold to an unrelated person for use in the production of a fuel mix, use in a trade or business, or for resale.
- Assuming the W&A Requirements are satisfied, the amount of credit is calculated as the product of $1 ($1.75 for sustainable aviation fuel) x gallons produced x "Emissions Factor."
- The Emissions Factor is the quotient of (50kg of CO_2e per mmBTU *minus* the emissions rate of such fuel) *divided* by 50kg of CO_2e per mmBTU. The emissions rate is determined by reference to a table published by Treasury based on the types and categories of transportation fuels and their respective lifecycle greenhouse gas emissions.
- The fuel cannot be derived from coprocessing monoglycerides, diglycerides, and triglycerides, free fatty acids, or fatty acid esters.
- The credit cannot be claimed in conjunction with a facility claiming 45V (clean hydrogen), 45Q (CCS), 47 (rehabilitation), 48 (ITCs), 48A (advanced coal project), 48B (gasification project), 48C (advanced energy project) or 48D (advanced manufacturing investment) credits

Section 48 Investment Tax Credits for Energy Storage

- Before the IRA, energy storage facilities were eligible for ITCs only as part of a solar energy project claiming ITCs. With the enactment of the IRA, ITCs are now available to standalone energy storage facilities.
- Taxpayers may claim ITCs equal to 30% of the depreciable cost basis of the standalone energy storage facility (assuming W&A Requirements are satisfied).
- Now that an energy storage facility does not need to be affiliated with a solar energy facility, there is greater flexibility on project location. An energy storage facility will offer revenue from the energy storage agreement and ITCs while serving as resource with respect to grid congestion, reliability and stability.
- With the increased investment into renewable energy sources, energy storage is expected to be a crucial component of increasing grid reliability as part of the new paradigm.
- Investors will need to consider any constraints to the energy storage supply chain as part of their analysis and planning, as the competition for energy storage resources has increased with the IRA incentives for both EVs and energy storage.
- Enhanced benefits available under the “domestic content” and “energy community” bonus credits.

Section 45W Commercial Clean Vehicle Credit

- Businesses and tax-exempt organizations that purchase a qualified commercial clean vehicle may qualify for a clean vehicle tax credit of up to $40,000 under section 45W.
- The credit equals the lesser of:
  - 15% of the basis in the vehicle / 30% if the vehicle is not exclusively powered by gas or diesel (not a hybrid)
  - The incremental cost of the vehicle (cost of EV in excess of the price for a comparable non-EV vehicle)
- The maximum credit is $7,500 for qualified vehicles with gross vehicle weight ratings (GVWRs) of under 14,000 pounds and $40,000 for all other vehicles.
- **Qualifying Vehicles must be:**
  - made by a qualified manufacturer
  - acquired for use or lease and not for resale
  - primarily used in the United States
  - not already claimed section 30D and 45W credits
  - either a motor vehicle or mobile machinery
  - a plug-in EV with a battery capacity of at least 7KW Hrs if the GVWR is under 14,000 pounds or 15KW Hrs if the GVWR is 14,000 pounds or more, or a qualifying fuel cell motor vehicle that uses hydrogen fuel.

Utilization and Monetization of Tax Credits

Overview - Monetization

Prior to the enactment of the IRA, tax credits such as those discussed above could either be utilized by the taxpayer (which required the taxpayer to have sufficient tax liability against which the credit could be used to offset) or to obtain tax equity investment from an investor with sufficient tax capacity to use the credits. The IRA introduced significant monetization alternatives that are now available to taxpayers claiming the 45Q, 45V or 45X credits.

- **Credit Utilization** – As noted, taxpayers with sufficient tax capacity are able to simply utilize the applicable tax credits to offset federal income tax liability.
- **Tax Equity** – As discussed further below, developers that do not have tax capacity to utilize tax credits have historically been able to monetize tax credits through tax equity investment. Tax equity has traditionally invested primarily in the solar and wind credit sector; however, there is significant interest from tax equity investors in utilizing these structures to monetize additional IRA credits. There has already been limited tax equity investment in 45Q credit projects.

Overview - Monetization

- **Direct Pay** – Tax credits such as the 45Q, 45V and 45X credit previously could only be used to offset tax liability in a given year and then be carried forward into subsequent years (or carried back, if applicable). The IRA introduced a mechanic commonly known as “direct pay” - essentially treating the credit as tax paid to the Treasury and therefore eligible for a refund to the extent such deemed payment is in excess of tax liability. In general, only certain categories of tax-exempt entities are eligible for “direct pay.” However, in the case of the above credits, essentially any taxpayer may make an election to be eligible for direct pay. However, the election only applies for a 5-year period and cannot be made for subsequent periods. Further, the election must be made with respect to the taxable year the taxpayer places the facility in service for 45Q or 45V projects, whereas the election may be made in any year in which the taxpayer produces eligible components for the 45X credits. Nonetheless, the availability of direct pay provides industry participants with the means to monetize tax credits during this period without tax equity investment or credit transfers.
- **Credit Transfers** – In addition to the direct pay mechanic, the IRA now permits taxpayers to transfer (i.e., sell) applicable credits (including those described above) to unrelated parties for cash. This represents a significant departure from prior law, as the mechanic enables to developers without sufficient tax liability to simply sell tax credits for cash consideration. A market is rapidly developing for the purchase of tax credits.

Overview - Monetization

- **Depreciation Considerations** – Although the availability of direct pay and credit transfers represents a unique opportunity to monetize tax credits without the time and cost associated with tax equity investment, many projects generate tax losses during the initial years of operation due to accelerated depreciation deductions. These tax losses can only be effectively monetized through tax equity investment (which would generally be uneconomical absent the relevant tax credits).

Standard Tax Equity Investment Mechanic: The Flip Structure

Structuring

- The most common structure used in the case of tax equity investment is the pre-tax/after-tax partnership structure (the “flip structure”)
- Non-U.S. investors typically invest in project companies through an entity treated as a corporation for U.S. tax purposes (i.e., a “blocker entity”)
- Institutional tax equity investors (e.g., financial institutions, insurance companies, technology companies, utilities through unregulated subsidiaries)
- **Multi-faceted return**
  - Tax Credits
  - Depreciation deductions
  - Project revenues
- **Sponsors (including developers and financial development companies)**
  - Return derived from upfront development fee and project revenues

Flip Structure

- **Investment Vehicle: limited liability company**
- Limited liability company agreement involves special allocation of tax items and distributions of cash
- Transaction structured to target a predetermined internal rate of return to the tax equity investor (the “Flip Point”). In a typical transaction:
  - Income is typically allocated 99% to the tax equity investor and 1% to the developer until the Flip Point, and 5% to the tax equity investor and 95% to the developer thereafter (the maximum and minimum tax equity allocations are taken from guidance published by the IRS in the context of wind and CCS credit structures and which are likely to apply to 45V and 45X tax equity structures)
  - Cash allocations are negotiated in a manner designed to cause the tax equity investor to achieve the Flip Point at the target date and cash allocations to the tax equity investor may be stepped-up if the Flip Point does not occur by such target date

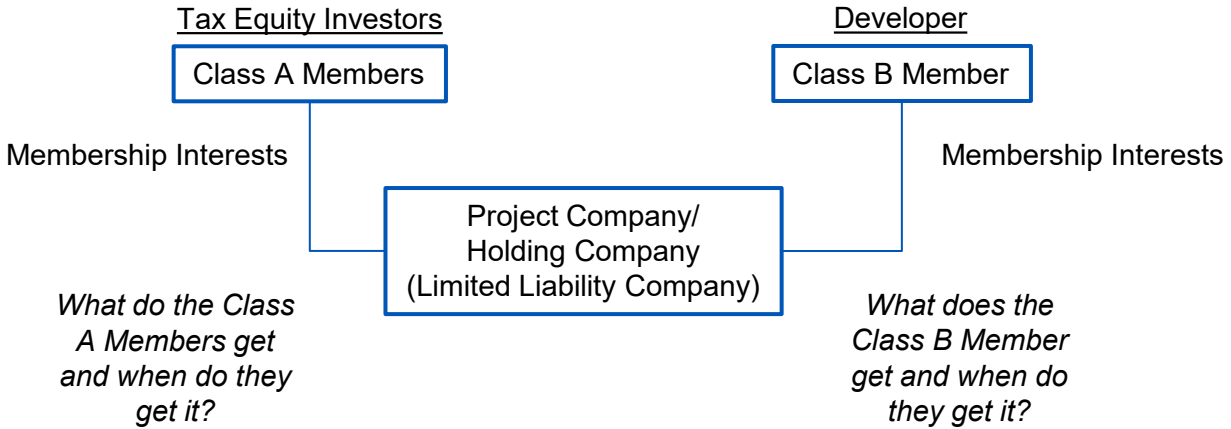
Flip Structure (cont.)

- **Typically financed with 100% equity (i.e., no term debt)**
  - Construction financing “taken-out” at the time of formalization of the partnership
  - While less common, structures with term debt have been successfully closed with higher rates of return for the tax equity investor
  - Sponsor back-leveraging cash distributions with third party lenders is common
- **Management**
  - The developer serves as the managing member of the partnership, running the day-to-day operations
  - Tax-equity investors have voting rights on major decisions (e.g., termination of principal project documents, disposition of partnership assets, tax elections, ownership of partnership property, liquidation)

Flip Structure (cont.)

- **Purchase Option**
  - The developer has a call option (or the tax equity has a put option) to purchase/sell the tax equity investor's interest at certain points in time (e.g., the Flip Point).
    - Traditionally, in solar and wind structures the developer has a call option to purchase the tax equity investor's interest at FMV (based on an IRS safe harbor); however, the IRS's 45Q flip structure safe harbor prohibits developer call options but permits tax equity investor put options.
- **Revenue Procedures 2007-65 and 2020-12**
  - The IRS has issued guidance establishing safe harbors concerning flip structures in the context of 45Q credits and 45 wind production tax credits.
  - Although the two revenue procedures are largely similar, there are notable differences – in particular, in respect of the allowable amount of contingent contributions by the tax equity investor and, as noted above, the allowance of a developer call versus tax equity put option.
  - The policy reasons behind these distinctions are not entirely clear; thus, it remains to be seen which safe harbor requirements the market will apply in the context of 45V or 45X credits; however, the two safe harbors are broadly similar. Given that the IRS published the 45Q credit flip safe harbor after the 2018 expansion of the 45Q credit, the IRS may issue a similar safe harbor with respect to other IRA credits as well.

Partnership Flip Structure



Tax Items

1. Typically 99% before Flip Point
2. Typically 5% after Flip Point

Cash

1. A negotiated amount until deal hits a hard outside date and then stepped-up prior to Flip Point
2. Typically 5% after Flip Point

Tax Items

1. Typically 1% before Flip Point
2. Typically 95% after Flip Point

Cash

1. A negotiated amount until deal hits hard outside date
2. Typically reduced thereafter until Flip Point
3. Typically 95% after Flip Point

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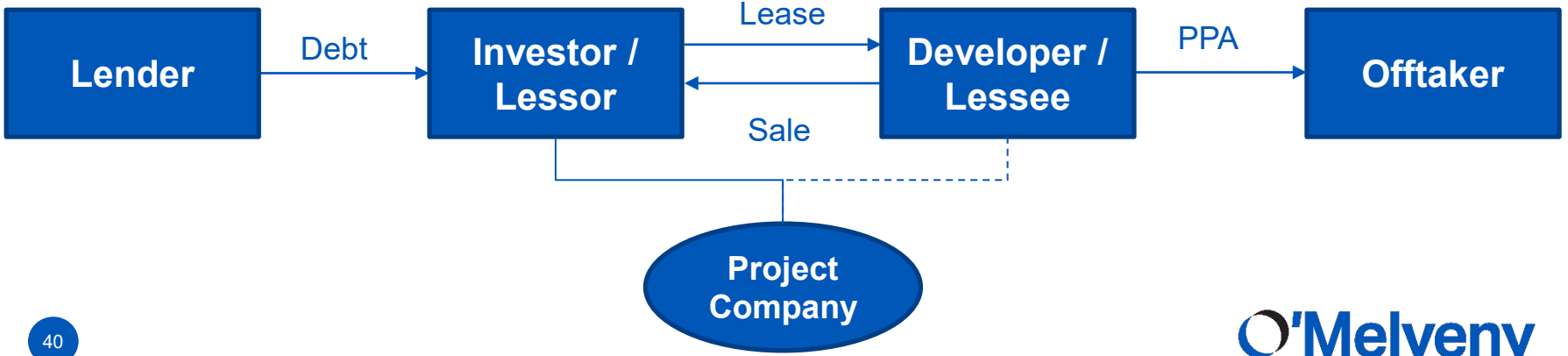
Pay-As-You-Go (PAYGO)

- **Variant of the flip structure, where the tax equity investor purchases its interest in the limited liability company with three pieces of consideration:**
  - An upfront cash investment
  - Contingent capital contributions
- In order to qualify for the above-described revenue procedure safe harbors, the amount of contingent contributions must not exceed 25% of the total contributions (50% for 45Q transactions).
- Payments due under the contingent portion are calculated based on actual production of the project and the related allocation of credits to the equity investor.
- Typically, the parent of the tax equity investor must guarantee contingent payments.

Sale-Leaseback Structures

- **Simplified structuring alternative commonly used in solar energy financing**
  - The developer will sell the project to an investor and lease the project back.
  - Investor will benefit from all of the tax benefits (e.g., depreciation and tax credits).
  - Developers will recognize a gain on the sale of the project to the investor.
- Consideration must be given to the amount of leverage investor will require to finance the purchase price and any repurchase options at the end of the lease.



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Other Aspects of the IRA to Keep an Eye On

Methane Emissions Reduction Program

- Provides up to $1.55 billion in funding, to be distributed by the EPA, to provide incentives, grants, loans, contracts and rebates to facilitate methane emission reduction.
- Program specifically **focuses on funding to plug marginal wells.**
- See for example:
  - July 21, 2023 – the DOE issued a "Notice of Intent to issue Administrative and Legal Requirements Document Announcement (ALRD), titled "IRA: Mitigating Emissions from Marginal Conventional Wells"
    - $350,000,000 in funding for State Governments
    - DOE is partnering with EPA to make funds available to States for the purpose of working with operators to voluntarily and permanently plug marginal conventional wells on non-Federal lands, supporting environmental restoration of the well pad, and enhancing industry's and States' capacities to monitor methane and other air pollutants from wells. If released, this ALRD is expected to make available up to $350 million for financial assistance in the form of grants to States via a formula
    - ALRD to be final in August 2023 with an application availability period of 30 days.

Questions?

Thank You!

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