Clean Energy and Public Entities

Ohio Association of Public Treasurers, 2023

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Disclaimers

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- **We can't help ourselves…**

- We are not giving you legal advice.
- Note that we will be using hypothetical fact patterns.

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The Inflation Reduction Act

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The Inflation Reduction Act

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Credits, Rebates, Direct Payments, Oh My!

$369 Billion Dollars allocated over the next 10 years

Tax Credits, Rebates, Grants, Direct Payments, Loans, Credit Transfers

Prevailing Wage and Apprenticeship Requirements (PWAR)

A way to turbo-charge IRA tax incentives

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Overview - Energy Subsidies for the Government

- The former conundrum: How do you take advantage of tax credits if you're an entity that doesn't pay taxes?
  - Don't bother
  - Sometimes complex Power Purchase Agreement with a private partner who can utilize the tax credits and pass back some savings
- Result: limited willingness for government to invest in clean or renewable energies.
- Now: Numerous opportunities for direct pay from the IRS in exchange for clean energy efforts.

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Overview - Opportunities

- Reduce energy load of government-owned facilities
  - Use solar, wind, or other renewables to offset energy costs of highest-users
- Upgrade or enhance existing energy-related technology within government facilities.
- Transition government-owned fleets (police, garbage, etc.)
- Install alternative fuel facilities (charging stations) and utilize alternative fuels (biodiesels and the like)
- Airport- and Port-specific incentives available

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Overview - Opportunities (cont'd)

- Geography-based incentives
  - Attract new private businesses to your community
  - Upgrades to the infrastructure supporting electric vehicle usage
- Help businesses in your community transition privately-owned commercial fleets to clean energy vehicles
- Clean Energy Component and Critical Mineral Manufacturers can benefit from resources in your communities

Inflation Reduction Act Tax Provisions

- Includes 24 specific tax provisions

- Production Tax Credit for Electricity from Renewables
- Investment Tax Credit for Energy Property
- Low-Income Communities Bonus Credit
- Zero-Emission Nuclear Power Production Credit
- Clean Electricity Production Tax Credit
- Clean Electricity Investment Tax Credit
- Advanced Energy Project Credit
- Advanced Manufacturing Production Credit
- Clean Vehicle Credit
- Credit for Previously-Owned Clean Vehicles
- Credit for Qualified Commercial Clean Vehicles
- Alternative Fuel Vehicle Refueling Property Credit
- Extension of Incentives for Biodiesel, Renewable Diesel, and Alternative Fuels
- Extension of Tax Credit for Alternative Fuels
- Extension of Second-Generation Biofuel Incentives
- Clean Fuel Production Credit
- Sustainable Aviation Fuel Credit
- Credit for Carbon Oxide Sequestration
- Clean Hydrogen Production Tax Credit
- Energy Efficiency Home Improvement Credit
- Residential Clean Energy Credit
- New Energy Efficient Homes Credit
- Energy Efficient Commercial Buildings Deduction
- Cost Recovery for Qualified Facilities, Qualified Property, and Energy Storage Technology

Prevailing Wage and Apprenticeship Requirements

- Proposed Regulations released by the IRS on August 30, 2023
- Prevailing Wage Requirements:
  - Must be in compliance with the terms of the Davis-Bacon Act
  - Applies to laborers and mechanics who work on the project, not clerical staff
    - Required during initial construction of project **PLUS** repairs and alterations during the credit period
- Apprenticeship Requirements:
  - Must Be in Compliance with:
    - Required Percentage of Labor Hours (12.5% in 2023; and 15% onward),
    - Ratio Requirements (as set by Department of Labor or a state agency), and
    - Participation Requirements (at least 1 apprentice for each subcontractor with 4 employees or more)

RECORD KEEPING IS EXTREMELY IMPORTANT TO ENSURE RECEIPT OF THE MAXIMUM AMOUNT OF CREDIT ELIGIBLE FOR A PROJECT

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Direct Payments

Tax-Exempt Entities – Local Governments, Non-Profit Associations, etc.

- Encourages ownership by entities traditionally excluded from utilizing tax credits
- File a return as directed by the Secretary of Treasury to receive eligible amount of credit
  - Guidance and Temporary Regulations were **JUST** released by the IRS on June 14, 2023 (next slide)
- Direct Payment - receive full amount of eligible credit if:
  - domestic content requirement is met
  - maximum output of less than 1 MW
  - construction begins on or before December 31, 2023
- Direct payment for projects that do not meet 1 of those 3 criteria:
  - 90% of eligible credit if construction begins in 2024
  - 85% if construction begins in 2025
  - 0% if construction begins in 2026

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Direct Payments – Initial Guidance June 14, 2023

- Any amounts eligible for direct payment will first offset any outstanding tax liability of the claiming entity; any excess amounts will then be paid out to the entity
- IRS issued temporary regulations relating to the IRS's mandatory, electronic pre-filing registration process, with a proposed publish date of June 21, 2023
  - Pre-filing registration must be completed, and a registration number received, prior to making an elective payment election on one's tax return
  - The online pre-filing registration process will launch in late 2023
    - A registration number is only valid for the taxable year for which it is obtained. Registration numbers must be renewed each year as necessary
- For State and Local Governments, they will need to file a Form 990-T to receive a direct payment in accordance with their established annual accounting period
  - IMPORTANT: A direct pay election can ONLY be made on an original, timely filed return. This includes timely permissible extensions
  - Payments will occur after a tax return is processed and deemed satisfactory
    - NO taxpayer is entitled to receive an elective payment until the due date of the that year's tax return, even if the taxpayer files the return before its due date

All information was sourced from guidance located at IRS.gov

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Steps to Make a Successful Elective Payment Election

Please note that, per the IRS, these steps do NOT need to occur in the order displayed below:

1. Identify and pursue the credits eligible as a result of a qualifying project or activity
2. Determine your tax year - this determines the due date for your tax return
   - The tax return is due a certain period of time after the end of one's tax year; HOWEVER, entities without an annual filing requirement, like state and local governments, receive an automatic 6-month extension
3. Complete pre-filing registration with the IRS. This requirement is designed to expedite the processing of returns and prevent improper payments. Includes, at a minimum:
   1. Providing identifying information about the entity
   2. A statement of which credits one intends to earn, and
   3. A statement of each eligible project/property that will contribute to the applicable credit
   - Upon completion, the IRS will provide a registration number for each applicable credit property, which MUST be provided on your tax return as part of making the elective pay election
4. Satisfy all eligibility requirements for the tax credit and any applicable bonus credits, if applicable, for a given tax year, like placing the project into service and documentation that substantiates that one met all requirements
5. File the required annual tax return by the due date (or extended due date) and make a valid elective payment election
   - This includes properly completed and attached source credit forms, Form 3800 (including registration numbers) and required return attachments

All information was sourced from guidance located at IRS.gov

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Inflation Reduction Act Credits Available Via Direct Payment

- Qualifying Advanced Energy Project Credit - §48C
- Zero-Emission Nuclear Power Production Credit – §45U
- **Advanced Manufacturing Production Credit - §45X**
- **Alternative Fuel Refueling Property Credit - §30C**
- Clean Fuel Production Credit - §45Z
- Credit for Carbon Oxide Sequestration - §45Q
- Credit for Production of Clean Hydrogen - §45V
- **Qualified Commercial Clean Vehicles Credit – §45W**
- **Investment Tax Credit - §48**
  - **Clean Electricity Investment Tax Credit - §48E**
- **Production Tax Credit - §45**
  - **Clean Electricity Production Tax Credit - §45Y**

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Investment Tax Credit (ITC)

- Eligible Asset which produces or stores clean energy
- Based on the upfront costs of a project
  - Reimbursable or Transferable
- Base Rate
  - 6% of costs
  - 5x increase to 30% if PWAR are met
  - Additional incentives can increase amount up to **70%** of a project's costs
  - Vests over a 5 year period
  - Reduction in amount of eligible credit if project is financed with tax-exempt bonds

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Production Tax Credit (PTC)

- Eligible Asset which produces clean energy that is sold to un-related third parties
- 10-year credit based on the amount of energy produced each year
  - Reimbursable or Transferable
- Base Rate:
  - $0.005/kWh
  - 5x increase to $0.026/kWh if PWAR are met
  - Incentives are available to increase base rate by up to 20%
  - Reduction in amount of eligible credit if project is financed with tax-exempt bonds

The current ITC and the PTC are available for projects that begin construction by December 31, 2024

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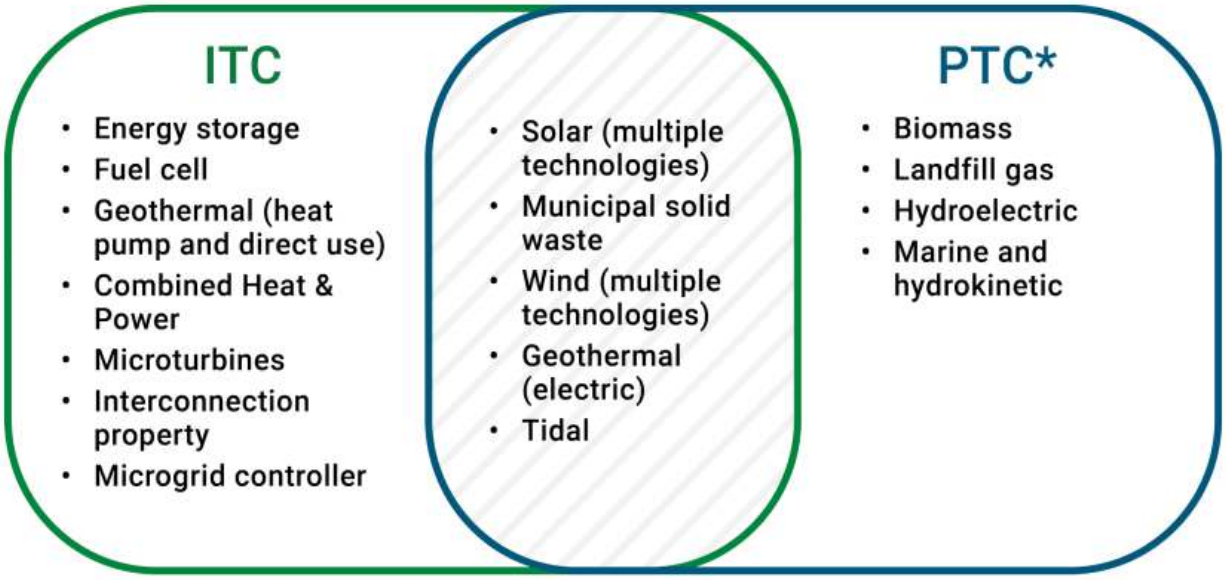

* Sourced from https://www.energy.gov/femp/overview-inflation-reduction-act-incentives-federal-decarbonization; accessed on April 25, 2023

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Technology Neutral ITC and PTC

- The current ITC and the PTC are available for projects that begin construction by December 31, 2024
- In 2025, the scope of both types of credits increases to encompass all "net zero" emissions, clean electricity producing technologies
- All incentives and bonuses carry through to these expanded versions of the current ITC and PTC, including direct payment capability

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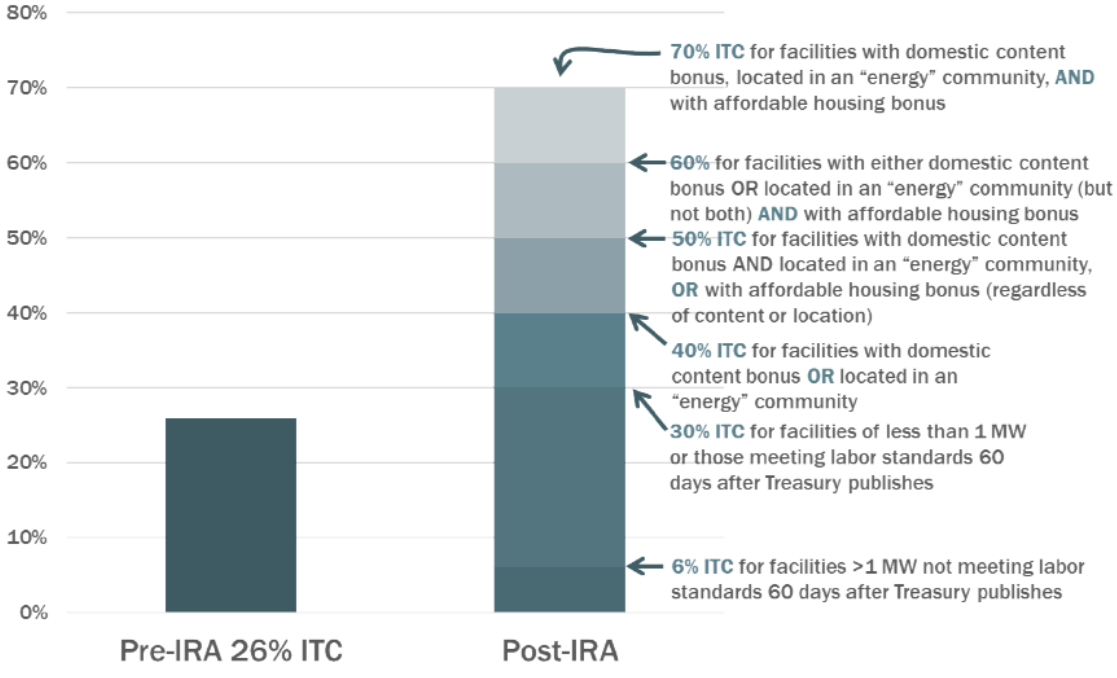

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Bonus Incentives for ITC and PTC

Domestic Content (2 or 10%)

- All iron and steel used for project
- Percentage of costs of manufactured materials for projects
  - 2022-2024 = 40%;
  - 2025 = 45%;
  - 2026 = 50%;
  - 2027 = 55%
  - Exceptions available

Low-Income Community (up to 10-20%)

- 1.8 GW cap/year
  - 4 categories of projects
- Solar and Wind
  - Max output 5 MW
- ITC only
- ***Only bonus incentive with prior application requirements***

Energy Community (2 or 10%)

- A brownfield site
- area affected by **unemployment greater than the national average** and has had significant employment related to coal, oil, or natural gas
- (i) a census tract containing a coal mine that has closed since December 31, 1999, (ii) a census tract containing a coal-fired electric generating unit that was retired after December 31, 2009, or (iii) **a census tract that is adjacent to a tract described in (i) or (ii)**

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Ohio Energy Community Maps

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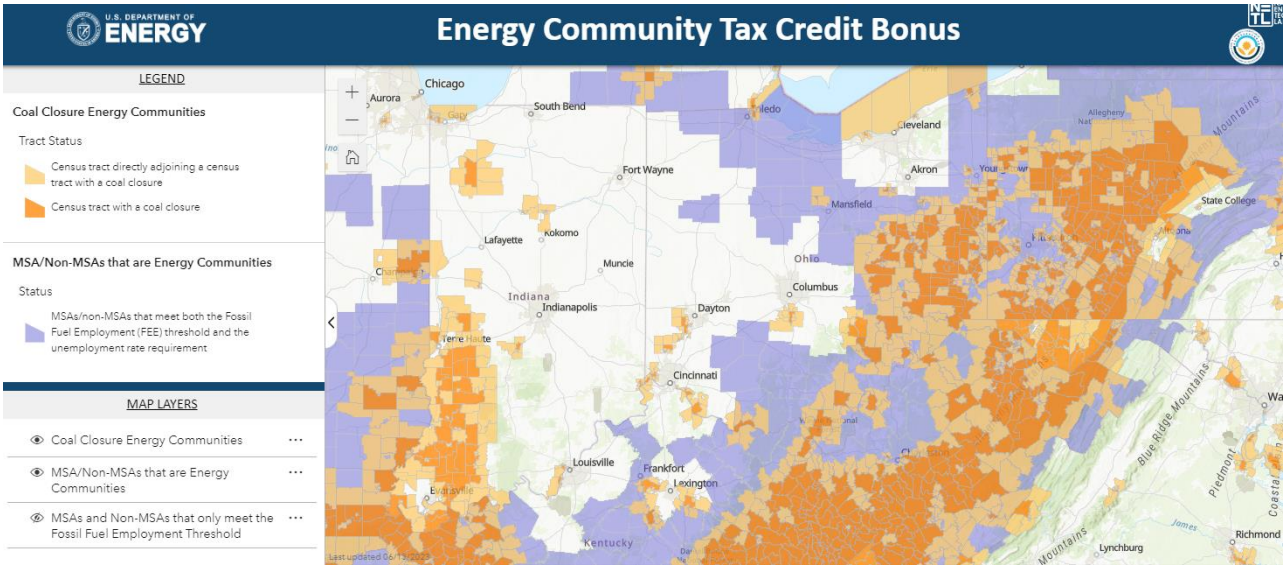

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Projects Funding: A Case Study Using Tax-Exempt Bonds

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Example: $100,000 Solar Farm seeking an ITC

No Tax-Exempt Bond Financing Used:

- No credit reduction
- Does not meet PWAR: **$6,000 credit**
- Meets PWAR: **$30,000 credit**

Completely Financed by Tax-Exempt Bonds:

- Maximum 15% Deduction
- Does not meet PWAR: **$5,100 credit**
- Meets PWAR: **$25,500 credit**

Energy Efficient Commercial Vehicles

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- Qualified Commercial Clean Vehicles – §45W
  - $7,500 cap for vehicles **UNDER** 14,000 lbs
  - $40,000 cap for vehicles **OVER** 14,000 lbs
    - Credit equals lesser of:
      - 15% of purchase price of hybrid vehicles or 30% of full alternative fueled vehicles
      - Increase in cost compared to a similar combustion vehicle (i.e. "incremental cost")
      - Ex: $300,000 electric school bus; $225,000 diesel school bus; 30% of cost = $90,000; incremental cost = $75,000; **Credit = $40,000**
- $1 billion dollars to replace Class 6 and 7 Heavy-Duty Commercial Vehicles
  - Competitive grants and rebates can help cover the:
    - Incremental cost of replacement vehicles
    - Costs for planning activities, along with the
    - Costs for purchasing and operating any necessary infrastructure
    - Workforce development

Mapping of Modeled Vehicle to Broader Represented Classes of Vehicles

Representative Vehicle Modeled	Representative of Vehicle Class	Gross Vehicle Weight Rating of Representative Vehicle Classes
Compact Car	Minicompact, Subcompact and Compact Cars	<14,000 lbs.
Midsize Car	Midsize and Large Car, All Station Wagons	<14,000 lbs.
Midsize SUV	Standard SUV, Small SUVs, Minivans	<14,000 lbs.
Pickup Truck	Pickup Trucks, including Classes 2/3	<14,000 lbs.
Class 4-6 Box	Classes 4 - 6	14,001 – 26,000 lbs.
Class 7 Daycab	Class 7	26,001 – 33,000 lbs.
Class 8 Longhaul	Class 8	>33,000 lbs.

Modeled Representative Vehicle Cost, 2022

Representative Vehicle Modeled	Conv	BEV	PHEV	FCEV
Compact Car	$24,500	$32,000	$31,500	$35,500
Midsize Car	$28,500	$37,000	$36,500	$43,500
Midsize SUV	$33,500	$47,500	$43,000	$52,500
Pickup Truck	$36,000	$55,500	$50,000	$71,500
Class 4-6 Box	$72,500	$107,000	$100,500	$113,500
Class 7 Daycab	$117,500	$211,000	$183,500	$198,000
Class 8 Longhaul	$160,000	$457,500	$324,000	$265,500

Resulting Incremental Cost, Representative Vehicle Classes, 2022

Representative Vehicle Modeled	BEV	PHEV	FCEV
Compact Car	$7,500	$7,000	$11,000
Midsize Car	$8,500	$8,000	$15,000
Midsize SUV	$14,000	$9,500	$19,000
Pickup Truck	$19,500	$14,000	$35,500
Class 4-6 Box	$34,500	$28,000	$41,000
Class 7 Daycab	$93,500	$66,000	$80,500
Class 8 Longhaul	$297,500	$164,000	$105,500

Information sourced from U.S. Department of Energy - https://www.energy.gov/sites/default/files/2022-12/2022.12.23%202022%20Incremental%20Purchase%20Cost%20Methodology%20and%20Results%20for%20Clean%20Vehicles.pdf

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Electric Vehicles Infrastructure

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Alternative Fuel Vehicle Refueling Property Credit - §30C

- Expanded to include bi-directional charging equipment and charging equipment for 2-wheeled and 3-wheeled electric vehicles
- Base Rate = 6% of cost of charging station
  - 30% of cost if PWAR are met
  - Max: $100,000 per station
- **Must be in low-income or rural area**
- Available to be received as an elective direct payment

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Energy Efficient Commercial Buildings Deduction – §179D

- Tax **deduction** for energy efficient improvements that reduce the overall energy consumption
  - Improvement types – lighting, heating/cooling and ventilation systems, hot water systems, and building envelopes (roof, windows, exterior)
    - Many of these improvements might be **PACE eligible**
  - Pass ability to take the deduction to the engineer or contractor designing and constructing the energy efficient commercial building through agreement
- Available for new construction and building renovations
  - Minimum energy consumption decrease of 25% required
- Base rate: $0.50/sqft; increases 5x to $2.50/sqft if PWAR is met
  - For every additional % decrease (from 25% to 50%), the credit rises by $0.02/sqft (or $0.10/sqft)
  - Cap: $1/sqft or $5/sqft

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Advanced Technology Vehicle Manufacturing Loan Program

- $3 billion to Department of Energy
- Loans to incentivize and increase the domestic manufacturing of clean vehicles and vehicle components

Domestic Manufacturing Conversion Grants

- $2 billion to Department of Energy
- Grants to fund the retooling of production lines to spur creation of more clean vehicles

Advanced Manufacturing Production Credit

- Meant to increase the domestic production and sale of components for clean energy projects
- Provides an amount of credit for each component or critical mineral that is produced
- Allows 5 years of direct payment to generally non-eligible entities if an election to receive the payments is properly made

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Air Pollution at Ports

- $3 billion dollars
  - Rebates and Competitive Grants
  - Port Authorities, Governments with jurisdiction over a Port, Air Pollution Control Agencies, and Limited Private Entities
- Available until September 30, 2027
  - Development of action plans to address air pollution at ports
  - Purchase and installation of zero-emission equipment and technology for use at or to directly service one or more ports
  - Covers costs of conducting relevant planning and permitting in connection with the purchase, installation, AND the development related to certain climate action plans

National Green Bank

- $27 Billion available in competitive grants
- Intended to mobilize financing and leverage private capital for clean energy and climate projects that reduce pollution
  - $14 Billion National Clean Investment Fund- competition based fund 2-3 national nonprofits that will partner with private capital providers
  - $6 Billion Clean Communities Investment Accelerator- Competition based fund 2-7 hub nonprofits to rapidly build clean financing capacity of public, quasi-public and non-profit community lenders (credit unions, green banks, housing finance agencies) to directly support disadvantaged communities
  - $7 Billion Solar For All Fund- up to 60 grants to states, municipalities and nonprofits to expand disadvantaged communities access to solar energy

https://www.epa.gov/system/files/documents/2023-02/Greenhouse%20Gas%20Reduction%20Fund%20Factsheet.pdf

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Electricity Issues & Opportunities

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Overview of Topics

- Deregulation in Ohio
- Recent trends and developments in electric industry
- Concerns regarding cost increase; environmental concerns
- Onsite generation opportunities for public entities

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US Power Grid - "Largest Machine in the World"

How does Ohio fit in?

- Ohio is among the top 10 states in total energy consumption
- Ohio has deregulated electricity market
- Four large investor-owned regulated electric utilities (FirstEnergy, AES Ohio, AEP Ohio, and Duke)
- Ohio is part of PJM, the largest transmission organization in the country

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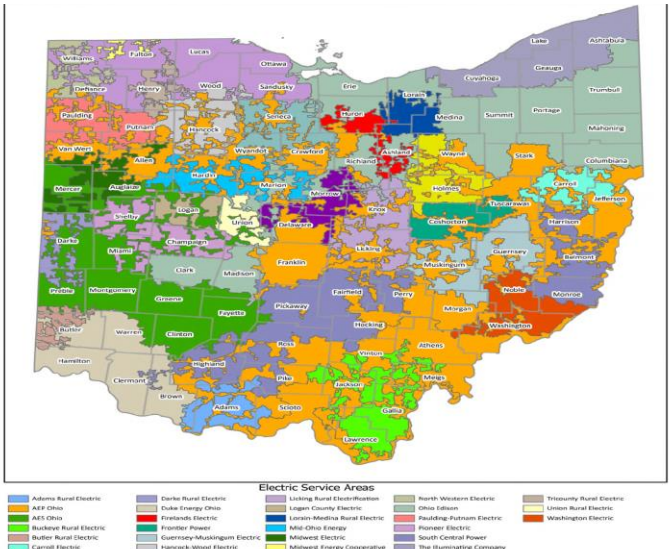
Investor-owed utilities and cooperatives

- Investor-owned utilities (IOU) are "public utilities" regulated by the PUCO
- Four IOUs in Ohio
- Electric cooperatives are not regulated by PUCO; approximately 25 in Ohio
- Cooperatives are owned by members
- IOUs and coops have "certified territories"
- Exclusive right to serve in territories



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Ohio Municipal Electric Utilities

Municipal power throughout state

- Municipal utilities are not subject to the "Certified Territories Act"
- Right under Ohio Constitution to serve customers within municipal boundaries
- Approximately 80 Ohio municipal electric utilities (OMEA data)

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Investor-owned utilities	Cooperatives	Municipal Utilities
• PUCO-regulated (RC 4905.02(A); RC 4905.03(C))	• Not regulated by the PUCO (RC 4905.02(A)(1))	• Not regulated by the PUCO (RC 4905.02(A)(3))
• Exclusive right to serve in territory unless municipal utility (RC 4933.83(A))	• Exclusive right to serve in territory unless municipal utility (RC 4933.83(A))	• Not subject to the Certified Territories Act (Article XVIII, Section 6 of the Ohio Const.; RC 4933.83(A))
• Customers have right to self-generate, but cant resell	• Customers do not have right to self-generate	• Municipality can generate or purchase electricity for itself and its customers

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Benefits of competition

- Deregulation in Ohio started in 1999, but took a decade to truly take effect
- Between 2011 and 2016, deregulation saved electric consumers an average of $3 billion per year
- Deregulated states (Ohio, Pennsylvania and Illinois) have, over time, outperformed their regulated midwestern neighbors (Michigan, Indiana and Wisconsin) in terms of constraining electricity cost increases for their consumers

- **Source**: "Thomas, Andrew R.; Bowen, William M.; Hill, Edward W.; Kanter, Adam; and Lim, Taekyoung, "Electricity Customer Choice in Ohio: How Competition Has Outperformed Traditional Monopoly Regulation" (2016), Cleveland State University, All Maxine Goodman Levin School of Urban Affairs Publications

Increases in utility rates

- Non-bypassable "transition" charges
  - From 2000 to 2016, Ohio's electric utilities collected $14.67 billion in above-market non-bypassable charges; these were approved by the PUCO
- More distribution rate cases
  - Duke (2008, 2012, 2017, 2021); AEP-Ohio (2011, 2020); AES Ohio (2015, 2020); FirstEnergy (2007, case expected 2024)
  - Distribution riders
- Increases in transmission costs
  - Aging infrastructure; increased demand and generation
  - Utilities shift investment from competitive generation to transmission

Recent increase generation prices

- In nominal terms, the average monthly electricity bill for residential customers in the United States increased 13% from 2021 to 2022 (EIA, May 1, 2023)
- Causes for increases?
  - Natural gas prices increases
  - Higher demand
  - War in Ukraine
- Lack of blending for standard service offer (SSO) auctions
- Significant price increase for SSO customers as of June 1, 2023

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How to combat increases?

- Advocacy at the PUCO; General Assembly
- Individual customers
- Association advocacy

- Energy conservation; energy efficiency
- End of IOU EE programs
- PACE/IRA opportunities

- Shopping for generation
- Group purchasing
- Gov. Aggregation

- Many onsite generation options, but solar most common
- Significant drop in solar cost
- IRA opportunities

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Recent Trends in Electric Industry

Drivers for customers pushing towards onsite generation

- Advances in distributed energy technology
  - Solar; storage; electric vehicles
- Increase in transmission projects
- IOU "wires" charges increasing
  - PUCO approves many riders for IOU; more rate cases
- Focus on grid reliability
  - Blackouts; winter outages
- Grid Security

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Solar Generation

Why significant increase in solar over past 10 years?

- Decrease in solar panel costs
- Increased interest in onsite generation and storage for reliability
- Increased concerns regarding energy prices
- Increased interest in renewable energy resources

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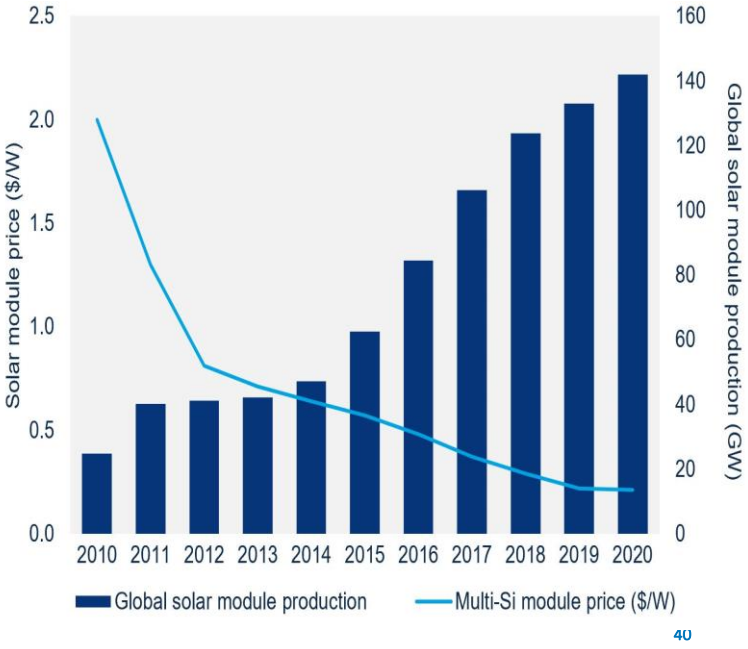
Price per solar module significantly decreased since 2010 while production increased

- Original driver was environmental goals
- Economic value becoming more of the driver



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Options for solar

3 main options

- Install onsite and own
- Install onsite and enter into third-party ownership arrangement with developer
- Enter virtual PPA; facility not located onsite

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Options for Solar – Direct Ownership

- Customer pays for and owns all the solar equipment
- Power from facility delivered to customer's facility
- Customer owns any environmental attributes/credits related to the project; responsible for monetizing attributes/credits
- Potential to take advantage of tax credits
- Full responsibility for maintenance of the equipment
- Power generated from facility results in reduction of electricity spend

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Options for solar – PPA or Solar lease

- Developer finances construction of solar facility onsite and owns all the equipment
  - PPA has option to purchase facilities during contract term; solar lease does not
- Power delivered to customer's facility
- Developer retains any environmental attributes/credits and tax credits
- Developer has responsibility for maintenance of the equipment
- Customer pays for power generated from facility; results in lower electricity spend because solar price is lower than utility price

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Options for solar - VPPA

- Developer finances construction of solar facility
- Solar facility is not onsite
- Power is not delivered to customer's facility
- A financial arrangement that allows the customer to finance solar project in exchange for market price of solar
- Complex arrangements; some large corporate purchasers have entered into these over past few years
- Not as common as onsite projects

Purchase Power Agreement

- Defines terms of the construction and maintenance of the system
- Defines payment terms
- Describes process for potential purchase of facility

Solar Easement

- Defines the land rights for real estate underlying the facility
- Describes the 3rd party's right to access the facility for operating and maintaining the facility

Interconnection Agreement

- Agreement between owner of facility and the electric utility
- Defines the obligation of party connecting to the utility system
- Intended to protect utility system and other customers

Locations for installation

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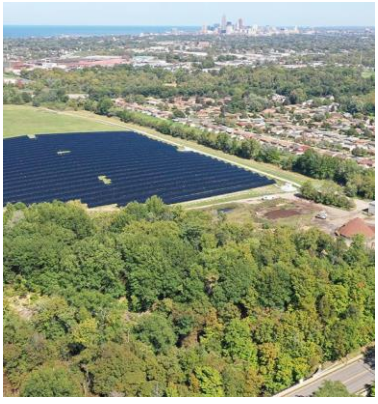
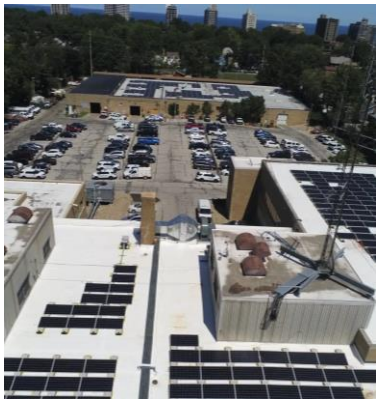
Wastewater treatment facilities, landfills, public buildings are common sites





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Onsite Generation

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Top 10 issues to consider

1. Utility territory
2. Assessment of energy usage/needs
3. How PPA works/alternatives
4. Selecting provider
5. Selecting location
6. Interconnection/net-metering
7. Easement/land rights
8. Common contract issues
9. Operation and maintenance
10. Buy-out/purchase of array

Inflation Reduction Act

- Approximately $370 billion dollars in funding over the next 10 years
- Projected to reduce U.S. carbon emissions by roughly 40% reduction in greenhouse gas emissions below 2005 levels by 2030
- Additional benefits for projects located in “energy communities”
- “Direct pay”-
  - receive direct cash payments for tax credits; available for Investment Tax Credits (ITC) and Production Tax Credits (PTC)
- Public entities/non-profits now eligible for tax credits
  - Previously, only entities with federal tax liability could directly benefit from ITC or PTC
  - Public entities can now take advantage of these “credits” through direct pay

Direct Pay – Increase in direct ownership?

- The direct pay benefit for public entities should increase consideration of direct ownership
  - May reduce use of PPA model, but public entity will need to finance directly
- Ability to use of tax-exempt bond financing to fund project, but the amount of the direct payments can be reduced by up to 15%.
- Depending of the ability for a project to stack the various “adders” on top of the base tax credit rates (e.g., energy community, prevailing wage requirements, domestic content), direct financing/ownership may be more enticing than PPA

Thank You

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