The Implications of the Inflation Reduction Act (IRA) for the Energy Industry

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Association of Energy Engineers

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Alternative Energy Credits(2022-…)

Technology	Base Credit	5x Bonus Credit (2022)	Made in USA (2023)	Energy Community (2023)	Low Income (2023)	Range
Solar Technologies(2022)	6%	30%	2%/10%	2%/10%	10%/20%	6%-70%
Ground Source Heat Pump(2022?)	6%	30%	2%/10%	2%/10%	0%	6%-50%
Microrturbine	2%	10%	2%/10%	2%/10%	0%	2%-30%
CHP(2022?)	6%	30%	2%/10%	2%/10%	0%	6%-50%
Microgrid Controller(2023)	6%	30%	2%/10%	2%/10%	0%	6%-50%
Standalone Energy Storage Systems(2023)	6%	30%	2%/10%	2%/10%	0%	6%-50%
Thermal Energy Storage Systems(2023)	6%	30%	2%/10%	2%/10%	0%	6%-50%

Alternative Energy Credits-Bonus

- **5 Times Bonus (6% x 5 = 30%)**
  - Project with a Net Output of less than 1 MW (284 Tons?) or
  - Meets the Prevailing Wage and Apprenticeship (P+A) Requirements or
  - Projects that begin Construction prior to release of P+A guidance(+60 days)
- **Domestic Content Bonus (Qualified Facility)**
  - 40% of the cost of steel, iron or manufactured product is produced in USA
  - 2% Bonus (6% + 2% = 8%)
  - If project meets 5x Bonus requirements, 10% Bonus (30% + 10% = 40%)

Alternative Energy Credits-Bonus

- **Energy Community Bonus**
  - Energy Community
    - Brownfield Site or
    - Area with 0.17% direct employment related to Coal, Oil or NG and higher then avg unemployment or
    - Area with 25% tax revenue related to Coal, Oil or NG and higher then avg unemployment or
    - Census Tract or adjoining tract with a Coal Mine closed since 2000 or
    - Census Tract or adjoining tract with Coal Fired plant closed since 2010 or
  - 2% Bonus (6% + 2% = 8%)
  - If project meets 5x Bonus requirements, 10% Bonus (30% + 10% = 40% + 10% Domestic = 50%)
- **Low Income**
  - Low-Income Community or Indian Land 10% Bonus(2023 & 2024)
  - Qualified Low-Income(QLI) Residential Building or QLI Economic Benefit Project 20% Bonus(2023 & 2024)

Alternative Energy Credits(cont)

- **Tax credit from commercial clients can be Transferred to other Commercial Clients (Sec 6418)(2023-…)**
  - If Credit receiver does not have tax capacity, they can sell the credit to a taxpayer that does
  - Our reading is this does NOT allow Gov't Buildings/Not for Profits to sell the credit
- **Elective Payment of Applicable Credits (Sec. 6417)(2023-…)(Not sure how it works)**
  - Some Gov't and Not For Profit can benefit from the credit
    - "(i) any organization exempt from the tax imposed by subtitle A,
    - "(ii) any State or political subdivision thereof,
    - "(iii) the Tennessee Valley Authority,
    - "(iv) an Indian tribal government (as defined in section 30D(g)(9)),
    - "(v) any Alaska Native Corporation (as defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602(m)), or
    - "(vi) any corporation operating on a cooperative basis which is engaged in furnishing electric energy to persons in rural areas.

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Ground Source Heat Pump (6% Base Credit)

- **Typical Qualified Equipment(Upstream of Heat Pump)**
  - Bore Field
  - Heat Pump
- **At least 75% energy used by equipment must be from ground source (Tax Interpretation (§1.48-9(c)(10)(iv))**
  - If not, equipment does not qualify as Ground Source Heat Pump Property
  - This may include downstream (after heat pump) items:
    - Pipes
    - Ductwork
    - Heat Exchangers
    - Diffusers
  - Items that do not use ground source energy do not qualify
- **Construction must begin before <u>1/1/35</u>**

Thermal Energy Storage(6% Base Credit)

- **Property comprising a system**
  - **Directly connected to a heating, ventilation, or air conditioning system**
    - This may indicate it is property separate from the HVAC system (maybe only the tanks?)
  - **Removes heat from, or adds heat to, a storage medium for subsequent use**
    - This may indicate chillers feeding a Thermal Storage Tank are eligible (maybe chillers and the tanks?)
  - **Provides energy for the heating or cooling of the interior of a residential or commercial building**
    - NOT for Heating/Cooling things other then a building
  - **Excludes:**
    - Swimming Pools
    - CHP
    - Buildings or its Structural Components
  - **Construction must begin before 1/1/25**

CHP(6% Base Credit)

- **CHP**
  - Uses the same energy source for the simultaneous or sequential generation of electrical power, mechanical shaft power, or both, in combination with the generation of steam or other forms of useful thermal energy (including heating and cooling applications)
  - At least 20 percent of its total useful energy in the form of thermal energy which is not used to produce electrical or mechanical power (or combination thereof)
  - At least 20 percent of its total useful energy in the form of electrical or mechanical power (or combination thereof)
  - Energy efficiency percentage of which exceeds 60 percent
  - Construction must begin before 1/1/25
  - Reduced Credits for projects larger then 15MW or 20Khp or Combo
    - Multiplier to reduce credit 15MW/(Project Capacity)
  - No Credit for projects larger then 50MW or 67Khp or Combo
  - Does not include property used to transport the energy source to the facility or to distribute energy produced by the facility

Microturbine(2% Base Credit)

- **Stationary Microturbine Power Plant**
  - A nameplate capacity of less than 2,000 kilowatts
  - An electricity-only generation efficiency of not less than 26 percent at ISO conditions'
  - Credit shall not exceed an amount equal to $200 for each kilowatt of capacity
  - Construction must begin before 1/1/25
  - An integrated system comprised of a gas turbine engine, a combustor, a recuperator or regenerator, a generator or alternator, and associated balance of plant components which converts a fuel into electricity and thermal energy. Such term also includes all secondary components located between the existing infrastructure for fuel delivery and the existing infrastructure for power distribution, including equipment and controls for meeting relevant power standards, such as voltage, frequency, and power factors.

Microgrid Controller(6% Base Credit)

- **Microgrid Controller**
  - Includes equipment which is capable of generating not less than 4 kilowatts and not greater than 20 megawatts of electricity
  - is capable of operating—
    - In connection with the electrical grid and as a single controllable entity with respect to such grid, and
    - Independently (and disconnected) from such grid, and
    - Is **not** part of a bulk-power system
      - Bulk Power Systems
        - facilities and control systems necessary for operating an interconnected electric energy transmission network (or any portion thereof); and
        - electric energy from generation facilities needed to maintain transmission system reliability.

5Yrs MACRS & 100% Bonus Depreciation

- Energy Property is 5 yr MACRS (§168(e)(3)(B)(vi)(I))
  - Only reduce basis by 50% of the tax credit
- 100% Bonus Depreciation
  - Placed in service September 27, 2017 to December 31, 2022
    - Phases down to 80% in 2023, 60% in 2024, 40% in 2025, 20% in 2026 and 0% after
  - Tax Depreciation Schedules less than 20yrs
    - Examples
      - Energy property(Geothermal, Solar, Wind, etc.) §48
      - Outdoor Lighting not affixed to the building
      - Qualified improvement property
        - Nonstructural interior improvements to nonresidential real property pursuant to a lease.
        - Building must be at least 3 years old
        - Original use must commence with taxpayer
        - Interior Lighting Replacements

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Time Value of Money ($39,000, 35% tax rate)

	Year										
	1	2	3	4	5	6	…	36	37	38	39
39yr Depreciation (Deduction)	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000		$1,000	$1,000	$1,000	$1,000
39yr After Tax (35%)	$350	$350	$350	$350	$350	$350		$350	$350	$350	$350
39yr NPV (4% discount rate)	**$6,854**										
39yr NPV (8% discount rate)	**$4,158**										
5yr Depreciation (Deduction)	$7,800	$12,480	$7,488	$4,493	$4,493	$2,246					
5yr After Tax (35%)	$2,730	$4,368	$2,621	$1,573	$1,573	$786					
5yr NPV (4% discount rate)	**$12,252**										
Immediate Deduction	$39,000										
Immediate After Tax (35%)	**$13,650**										

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EPAct 179D Deduction for Commercial Building Owners

- Accelerated depreciation of equipment costs
  - Typically, equipment costs must be depreciated over 39-year period
  - EPAct 179D allows for immediate tax deduction (write-off in year 1)
  - *Time-value of money concept ($1 today worth more than $1 in 39-years
- Commercial building owners can take EPAct 179D for building projects completed since 1/1/2006
- EPAct 179D combined with utility rebates and other tax incentives can potentially bring project payback to within 1-3 years
  - Often the case with building renovations

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Completed Project Map: U.S.



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Important IRS Notice Rev. Proc. 2011-14 (For Commercial Building Projects)

- IRS Form 3115 process allows catch-up on all prior year EPAct 179D deductions that were unclaimed
  - Normally: taxpayers need to amend prior year tax returns and have a 3-year window to amend tax returns
  - IRS 2011-14: allows taxpayer to claim EPAct 179D deduction on upcoming return for any project since 1/1/2006, and no amending needed
  - Not available for designers of Tax Exempt projects:
    - Designers must amend prior year returns and can only go back 3 yrs

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EPAct 179D Updates (Inflation Reduction Act of 2022)

- **Changes go into effect on 1/1/2023**
- **Includes buildings owned by not-for-profits, instrumentalities, and Indian Tribal Governments**
  - Deduction can be taken by designers of these buildings
- **New Deduction Levels to Replace Current Levels**
  - $2.50-$5.00 per square foot for projects meeting prevailing wage and apprenticeship labor requirements
  - $0.50-$1.00 per square foot if prevailing wage requirements not met
  - Overall building energy efficiency must be 25%-50% more efficient than standard to get the above levels (sliding scale)
  - No more individual system deductions (lighting/HVAC/envelope) → entire building must qualify
- **Two Methods for Taking EPAct 179D Deduction**
  - Energy model the entire building (building energy usage compared to ASHRAE 90.1)
  - Energy use intensity reduction (building energy usage compared to prior state of building)
- **Deduction Reset**
  - Commercial buildings – every 3 years
  - Tax Exempt buildings – every 4 years

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Increased 179D Deduction Levels Effective 1/1/2023

Building Square Footage	Minimum Deduction Level ($2.50 Per Square Foot)	Maximum Deduction Level ($5.00 Per Square Foot)
50,000	$ 125,000	$ 250,000
100,000	$ 250,000	$ 500,000
250,000	$ 625,000	$ 1,250,000
500,000	$ 1,250,000	$ 2,500,000
1,000,000	$ 2,500,000	$ 5,000,000

*For projects meeting prevailing wage and apprenticeship standards

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EPAct 179D Deduction for Designers of Tax-Exempt Entities

- Gov't Buildings:
  - Federal
    - Offices, military bases, courthouses, post office, labs
  - State
    - Offices, transportation facilities, state universities, courthouses
  - County, city, town, village etc.
    - Offices, K-12 public schools, town halls, police, fire, libraries, municipal parking garages
- Not For Profits
  - Hospitals, Churches, Private Universities etc.
- Tribal Gov't
  - Shopping Plazas, Hotels, Offices, Casinos etc.

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How to Monetize the Benefit

Two things need to occur for a company to monetize an EPAct 179D benefit

1. Building project in an eligible year (2006 - present) related to lighting, HVAC, and/or envelope, such as:
   - Lighting installation
   - HVAC installation
   - Roof installation
   - Window installation
   - Lighting or HVAC controls installation

2. The building needs to meet the energy efficiency targets
   - ASHRAE 2001 standard for 2006-2015 completed projects
   - ASHRAE 2007 standard for 2016-2022(?) completed projects
   - ASHRAE 2016/2019(?) for most projects completed 2023+
   - For RETROFITS Only 25-50% EUI reduction

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What Tends to Qualify on the HVAC side?

1. **Geothermal (Ground Source Heat Pumps)**
2. High Efficiency Water Source Heat Pumps
3. **Thermal Storage**
4. High Efficiency VRF units in Rental Apartments/Dorms/Hotels
5. Centralized HVAC in Rental Apartments/Dorms/Hotels
6. Energy Recovery Ventilation
7. Demand Control Ventilation
8. VFD's on all major Motors and Compressors
9. Chillers in buildings < 150,000 sq ft
10. Direct fired heaters in non AC Industrial Spaces
1. Industrial Space >75,000sq ft with Constant Volume Package unit
11. VAV (variable air volume devices) in buildings <75,000 sq ft
12. Chilled Beam
13. McQuay Magnetic Bearing Chillers
14. Smardt Chillers
15. Arctic Cool Chillers
16. Gas fired chillers combined with electric chillers to peak shave
17. Coolorado in dry climates
18. **Combined Heat and Power**

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Where 179D Works

- **Designers of Tax-Exempt Buildings**
- **Commercial New Construction**
- **Retrofits where they have a Roof/Envelope project sitting on tax depreciation schedule in their past 2006-Present**

Data to Review for EPAct 179D Eligibility

- Ideal submission:
  - updated architectural, mechanical, electrical, and plumbing plans
  - ComCheck (Lighting, Envelope, HVAC, Hot Water)
  - Lighting and HVAC spec sheets
- If plans unavailable:
  - Lighting survey
  - Project square footage
  - HVAC unit schedule
  - Mechanical plans may be needed depending on building type

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What does an 179D Service Provider do?

1. Complimentary review of project data
2. Required 179D calculations/energy modeling
3. 179D study containing IRS required items
4. Interface with client tax department/preparer
5. Audit assistance (if necessary)

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EPAct 179D Updates Comparison

Pre-2023	2023+
• Maximum $1.88/square foot	•Maximum $5.00/square foot
• Individual systems can qualify	•Whole building must qualify
• Designers eligible – government	•Designers eligible: now includes non-profits and Tribal government
• Maximum deduction available once over building life	•Deduction reset every 3 years (commercial) or 4 years (tax exempt)
•Must beat ASHRAE 90.1-2007	•Multiple options for standard: ➢ Updated ASHRAE 90.1, or ➢ Prior state of building (retrofits)

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Apprenticeship Requirement

Projects Started:	Apprentices make up:
Before 1/1/2023	10% of Total Labor Hours
In 2023	12.5% of Total Labor Hours
After 12/31/2023	15% of Total Labor Hours

- If a project has 4 or more workers, at least 1 is required to be an Apprentice
- Apprentice must be part of a registered apprenticeship program (3131(e)(3)(B))

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IRS Comments

- Comments Due November 4
  - 179D n-22-48
  - Alt Energy n-22-49
  - 6417 & 6418 n-22-50
  - Prevailing Wage & Apprenticeship n-22-51

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About Energy Tax Savers?

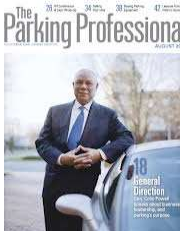
- First EPAct 179D service provider (founded 2005)
- Completed more EPAct projects than any other firm (15,000+)
- Diverse background of firm professionals
  - Attorney, CPA, MBA, LEED AP, Enrolled Agent, Big4 Accounting Experience
- Advisors to DOE, NEMA and NRDC for EPAct 179D extension and standards
- Over 150 published articles in various publications
  - *Corporate Business Taxation Monthly, Building Operating Management, IMARK Magazine, Retrofit Magazine, Parking Professional*











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