The Inflation Reduction Act: Turning Green Energy Systems Into Cash

Introductions

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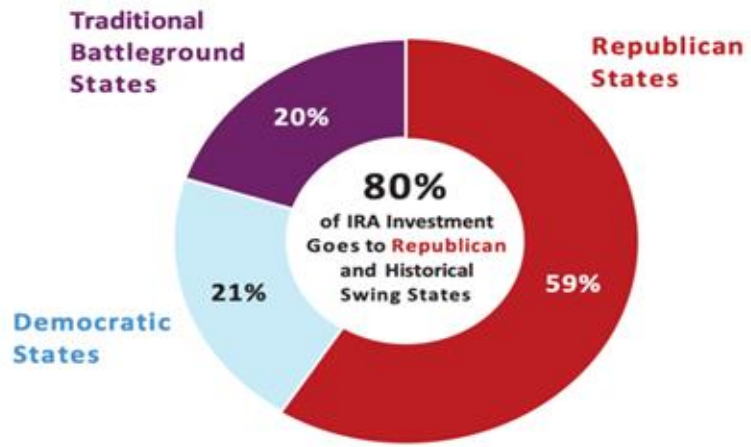
The Inflation Reduction Act: Turning Green Energy Systems Into Cash **Agenda**

- Current status and emerging themes for the IRA
- IRA background and process
- IRA Case Studies - Grayslake CHSD 127 and Woodridge #68

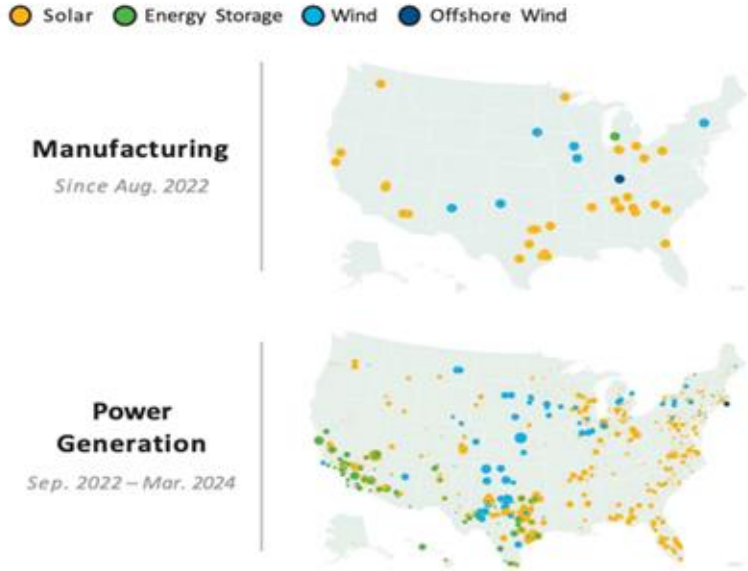
$439B in Actual Investment from Technologies Eligible for IRA Tax Credits

July 2022 – June 2024



Source: Cipher | Rhodium Group and MIT CEEPR

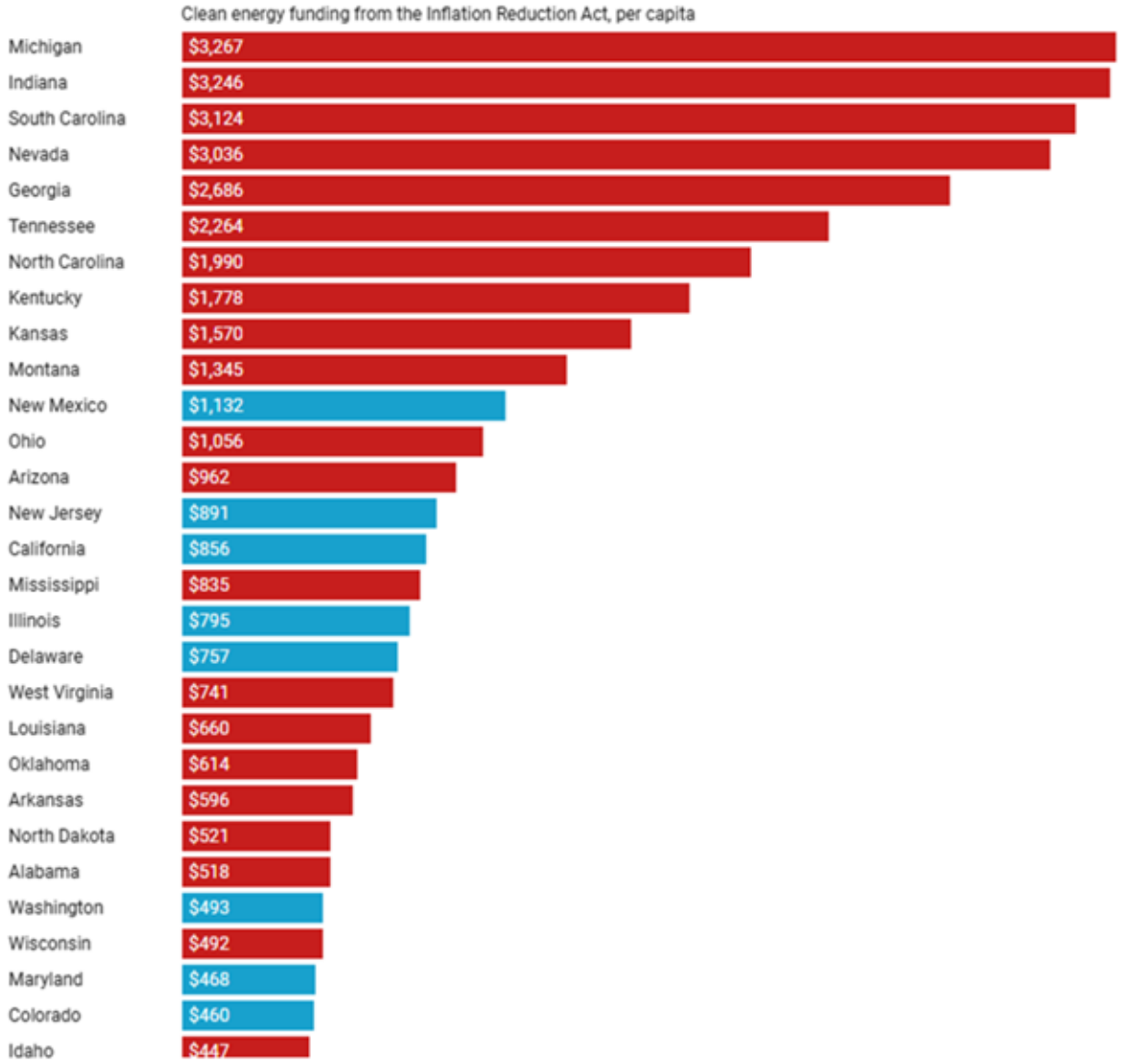
42 Manufacturing Facilities and 55 GW of New Utility-Scale Power Generation Online



Source: American Clean Power Association

States that voted for Trump have benefited most from clean energy investment

Note: This chart reflects energy projects funded through the Department of Energy only.



Energy tax provision summary

Renewable/Clean energy:

- Sec. 45 Production tax credits wind, solar, geothermal, hydropower, etc.
- Sec. 48 Investment tax credits for solar, storage, biogas, fuel cells, etc.
- Sec. 45U Zero-emission nuclear power production credit
- Sec. 45Y and 48E Technology-neutral clean electricity production and investment credits

Manufacturing:

- Sec. 48C Credit for manufacturing energy property, including EV components, fuel cells, electric grids, etc.
- Sec. 45X Manufacturing credit for solar and wind components, batteries and critical minerals

Carbon capture/Hydrogen production:

- Sec. 45Q Credit for carbon oxide sequestration (increased rates and lower thresholds)
- Sec. 45V Clean hydrogen production credit

Alternative fuels:

- Sec. 40 Second-generation biofuel credit
- Sec. 40A and 6426 Biodiesel and renewable diesel; biodiesel mixture credit; alternative fuel credit
- Sec. 40B Sustainable aviation fuel
- Sec. 45Z Clean fuel production credit

Energy efficiency:

- Sec. 25C & 25D Individual credit for energy-efficient homes
- Sec. 45L New energy-efficient home credit
- Sec. 179D Energy-efficient commercial buildings deduction

Transportation:

- Sec. 30D Electric vehicles
- Sec. 30C Charging and alternative fuel refueling stations
- Sec. 25E Used electric vehicles
- Sec. 45W Qualified commercial clean vehicles

Direct pay tax credits

"Base credit" + "Bonus criteria" is the overriding theme of the new credit regime

- Not all credits apply to all projects

Base credit - e.g. 6% - for qualifying energy projects

* Base credit w/ prevailing wage and apprenticeship (5x multiplier) — 30% — Or if you meet "Begun Construction" within 60 days of publication of applicable compliance guidance

\+ Domestic content — 10% — There is a 10% reduction in the tax credit beginning in year 2024, 15% in 2025, and 100% in 2026 for direct pay projects not meeting DC requirements

\+ Energy community — 10%

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

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

Eligible project examples

- Combined heat and power property
- Solar and wind
- Energy storage technology
- Waste energy recovery property
- Geothermal energy
- Biogas property

IRA project process - summary

Planning and Identifying eligible IRA projects

- What are the proposed projects?
- Which projects are IRA eligible?
- What project costs are IRA tax credit eligible?

Estimate tax credit percentage and dollar amount

- Run eligible project costs through the credit calculation of the legislation.
- Construction or financing considerations and the effect those items have on the tax credit amount.
- Evaluate tax credit project alternatives.

Construction begins

- Include IRA tax credit provisions in bidding documents or alternates.
- Organize IRA documentation during construction in case IRS audit.

Construction complete - file for the tax credit

- Finalize IRA project file and documentation in case of IRS audit.
- Submit forms to the federal government.
- Receive tax credit reimbursement.

1. Planning	2. Construction	3. Filing and Receipt

IRA project consultant:

Tax questions, IRA review of bid documents, maximizing credit options, prevailing wage, apprenticeship, domestic content documentation, tax credit application and filing forms.

Could be 1, 2, or 3-year process depending on design, construction, and timing of tax credit filing.

CELEBRATING 75 YEARS

Project Overview

Grayslake North Ground-Mount System Overview

- System Size: 1,410 kW-DC / 1,300 kW-AC
- Trina Solar Panels – Qty. 4,612
- Fronius Inverters – Qty. 54

Figure 1: Grayslake North Ground-Mount

Grayslake North Roof-Mount System Overview

- System Size: 775 kW-DC / 648 kW-AC
- Hanwha Solar Panels – Qty. 1,391
- Trina Solar Panels – Qty. 1,014
- Fronius Inverters – Qty. 27

Figure 2: Grayslake North Roof-Mount

Grayslake Central Roof-Mount System Overview

- System Size: 500 kW-DC / 408 kW-AC
- Mission Solar Panels – Qty. 1,410
- Fronius Inverters – Qty. 17

Figure 3: Grayslake Central Roof-Mount

SOLAR PROJECT - SUMMARY

Solar PV Project Site: Grayslake North High School - Ground-Mount Solar

Solar PV System Summary

Solar PV kWdc System Size:	2,486.8	kWdc
Solar PV kWac System Size:	2,000.0	kWac
PV System Type:	Ground	
PV System Annual Generation:	3,199,314	kWh
Bldg Annual Elec Usage:	3,190,204	kWh
Bldg Elec kWh Offset by Solar:	100.3%	

#iasboAC25

SOLAR PROJECT - PRELIMINARY CASH FLOW

Solar PV Project Site: Grayslake North High School - Ground-Mount Solar

Project Financial Summary	
Turnkey Installation Budget:	$ 7,555,382
ComEd Rebate:	$ 621,690
REC Incentive (Yrs 1-7):	$ 2,412,817
IRA Incentive:	$ 2,266,615
20 Year Gross Savings:	$ 10,171,002
30 Year Gross Savings:	$ 13,941,711

Assumptions	
Annual Solar Degradation:	0.50%
Consumption Rate ($/kWh):	$ 0.046
Demand Rate ($/kW):	$ 8.620
Annual Rate Escalation:	3.50%
REC Sale Price:	$ 52.06
Solar Capacity % at PLC:	8.0%

Year	Solar kWh Generation	Utility Cost - Before Project	Utility Cost - After Project	Utility Cost Savings	ComEd Rebate	IRA - 30% ITC	REC Income	Annual Gross Savings	Cumulative Gross Savings
1	3,199,314	$ (243,362)	$ (73,768)	$ 169,594	$ 621,690	$ 2,266,615	$ 618,272	$ 3,676,171	$ 3,676,171
2	3,183,317	$ (251,880)	$ (65,030)	$ 186,849	$ -	$ -	$ 341,817	$ 528,666	$ 4,204,837
3	3,167,401	$ (260,695)	$ (68,212)	$ 192,483	$ -	$ -	$ 341,817	$ 534,300	$ 4,739,137
4	3,151,564	$ (269,820)	$ (71,533)	$ 198,287	$ -	$ -	$ 341,817	$ 540,104	$ 5,279,241
5	3,135,806	$ (279,263)	$ (74,997)	$ 204,266	$ -	$ -	$ 341,817	$ 546,083	$ 5,825,324
6	3,120,127	$ (289,038)	$ (78,612)	$ 210,426	$ -	$ -	$ 341,817	$ 552,243	$ 6,377,567
7	3,104,526	$ (299,154)	$ (82,382)	$ 216,772	$ -	$ -	$ 85,460	$ 302,232	$ 6,679,799
8	3,089,004	$ (309,624)	$ (86,315)	$ 223,309	$ -	$ -	$ -	$ 223,309	$ 6,903,108
9	3,073,559	$ (320,461)	$ (90,417)	$ 230,044	$ -	$ -	$ -	$ 230,044	$ 7,133,152
10	3,058,191	$ (331,677)	$ (94,695)	$ 236,983	$ -	$ -	$ -	$ 236,983	$ 7,370,135
11	3,042,900	$ (343,286)	$ (99,155)	$ 244,131	$ -	$ -	$ -	$ 244,131	$ 7,614,265

Solar Array Development and Program Options

- Cost to Install (roof-mounted vs. ground mounted)
- Other related improvements and repairs to consider
- Estimated useful life of solar array (20-30 years)
- Estimated generation output and degradation assumptions
- Estimated energy generated and cost savings realized
- Payback Period calculations (with and without incentives)
- Pay up front vs. enter into Power Purchase Agreement

Incentives – Local/Private

- ComEd/Ameren Energy Efficiency Grants
- One-time payment per site
- Calculated based on energy savings to be generated
- Application filed with support of GESC
- Covered just under $400K of $3M cost

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An Exelon Company

Ameren

Incentives – State

- Authorized by the Illinois Clean Energy Act
- State Renewable Energy Credits (SREC's)
- The IL Shines Program administered by the IPA
- Pays SREC's over 6.25 to 12.5 years
- Based on quarterly generation versus estimates
- Invoiced through IL Shines and payable by ComEd
- Filed with help from your GESC
- Provided about $1.1M in rebates/credits

IPA
ILLINOIS POWER AGENCY

ILLINOIS SHINES
Supporting Solar Development in Illinois

Incentives – Federal

- Inflation Reduction Act
- Federal Tax Credit/Rebate Filing for year completed
- Hire Accountant to assist with filing
- Can provide up to 40%, or more, in funding
- Receive cash instead of tax credits
- Current status in limbo…
- Received just over $1M in the form of a check

Summary Considerations

- Cost of related improvements, repairs and upkeep ($2.5M)
- Cost of solar array installation ($3M)
- Total upfront cost outlay (or Power Purchase Agreement)
- Projected annual generation/utility cost savings
- Total estimated rebates and timing of receipts
- Net payback period and positive cash flow
- Selection of GESC and ongoing support
- Overall positives of “going green”
- Curricular opportunities for students

Questions and Answers

We thank you for your time!

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