



The Illinois Electricity Market and On-Site Generation Opportunities for IAAP Members

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Overview of Presentation

1. Electricity Market Overview
2. Electricity Regulatory Overview (Federal and State)
3. The Opportunity For On-Site Solar
4. The Opportunity For On-Site Battery Storage

Electricity Market Overview

Electricity Costs Are Rising In IL

Illinois Electric Utility Retail Price (I:IEURP01)

0.1458 USD/kWh for Aug 2025

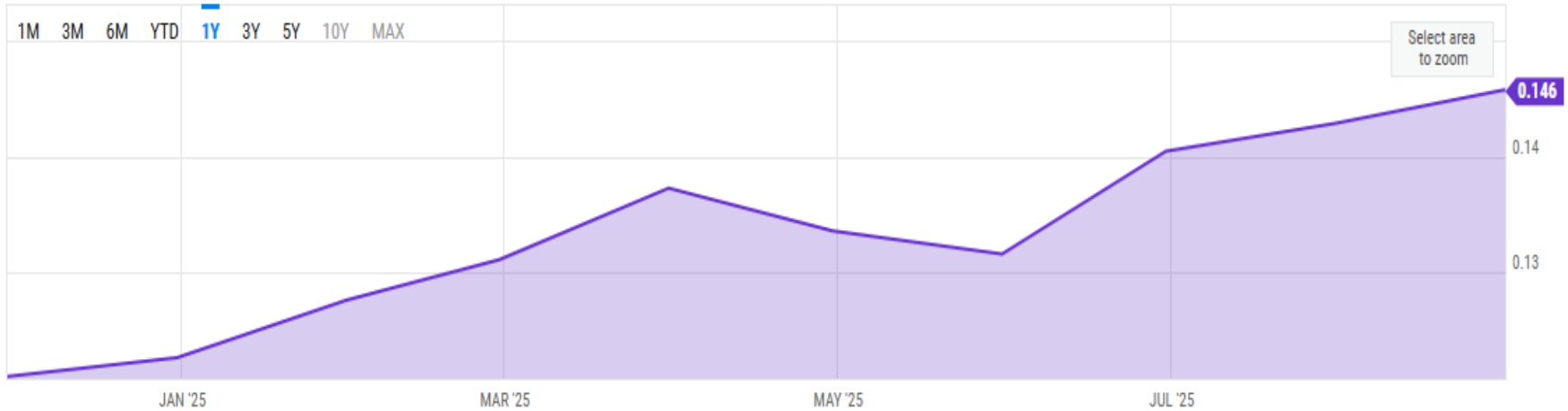
[Overview](#) [Interactive Chart](#)

Level Chart

[VIEW FULL CHART](#)

1M 3M 6M YTD 1Y 3Y 5Y 10Y MAX

Select area to zoom



Headlines: Electricity Costs Have Increased And Are Expected To Go Higher

The Energy Information Agency (EIA) forecasts a 7% rise in wholesale electricity prices nationwide in 2025

U.S. utilities are set to spend a record \$1.1 trillion on grid upgrades between this year and 2029

Illinois electric bills jumped 15% in 2025, congressional report finds

Headlines: PJM/ComEd

PJM capacity prices hit record highs, sending build signal to generators

PJM's capacity 'price collar' proposal sparks market confidence concerns

PJM board approves \$6.7B transmission expansion plan

The PJM grid region needs 16 gigawatts of energy storage by 2032 to ensure sufficient resources on the system, according to a new analysis

Rising electric cost sends ComEd customers' bills soaring

Headlines: Ameren/MISO

- **Ameren Illinois Faces Looming Energy Shortfalls, Expected to Translate to Increased Supply and Demand Costs**
- **PJM all over again? Changes at MISO signal potential for high prices at upcoming capacity auction**
- **MISO board approves \$22B regional transmission plan with 765-kV backbone**

Why Are Electricity Costs Rising?

- Increasing demand driven primarily by data centers
- Coal plants are retiring
- New baseload generation slow to come online
 - Three to five year waiting list for gas turbines
 - Nukes cost 10 times as much as natural gas plants

How Does This Impact My Electric Invoice?

Supply/Generation (Utility or Retail Supplier)

60-85% of bill

- Generation (energy) charges
- Capacity charges
- Transmission charges
- Other energy related charges (ancillaries, RPS/RECs, risk, margin, taxes, other)

Delivery/Distribution (Utility)

15-30% of bill

- Distribution charges (demand and energy)

Let's See It on a Real Invoice (Example 1)

RETAIL ALL-IN FIXED PRICE

DETAILED CHARGES

	Quantity	Rate	Amount
Contract Charges			
Energy-Fixed Price	513,520.84 kWh	\$0.0720500/kWh	\$36,999.18
Subtotal Contract Charges		Includes Energy, Capacity, Transmission and other charges	\$36,999.18
Market Charges			
Renewable Portfolio Standards	513,520.80 kWh	\$0.0000000/kWh	\$0.00
Subtotal Market Charges			\$0.00
UDC Charges			
Subtotal UDC Charges			\$30,240.56
Total New Charges			\$67,239.74

Let's See It on a Real Invoice (Example 2)

RETAIL HOURLY RATE WITH CAPACITY AND TRANSMISSION PASSED

DETAILED CHARGES (Con't)

■ Market Charges

Ancillary Services	421,779.60 kWh	\$0.0021660/kWh	\$913.58
Auction Revenue Rights Credit	683.50 KW	-\$0.1795396/KW	-\$122.71
Balancing Congestion Charge	421,779.58 kWh	\$0.0006099/kWh	\$257.24
Capacity Charge	606.98 KW	\$1.1397800/KW	\$691.83
Market Energy - Day Ahead	421,779.58 kWh	\$0.0277200/kWh	\$11,690.58
FERC Order 745	421,779.60 kWh	\$0.0000090/kWh	\$3.78
Other Costs	421,779.58 kWh	\$0.0002100/kWh	\$88.57
Reliability Must Run	683.50 KW	\$0.0000000/KW	\$0.00
Renewable Portfolio Standards	421,779.60 kWh	\$0.0000000/kWh	\$0.00
Transmission Loss Credit	421,779.60 kWh	-\$0.0003804/kWh	-\$160.43
Transmission Service	683.49 KW	\$3.4722170/KW	\$2,373.24
Transmission Enhancement Reallocation	683.49 KW	-\$0.0557783/KW	-\$38.12
Subtotal Market Charges			\$15,697.56

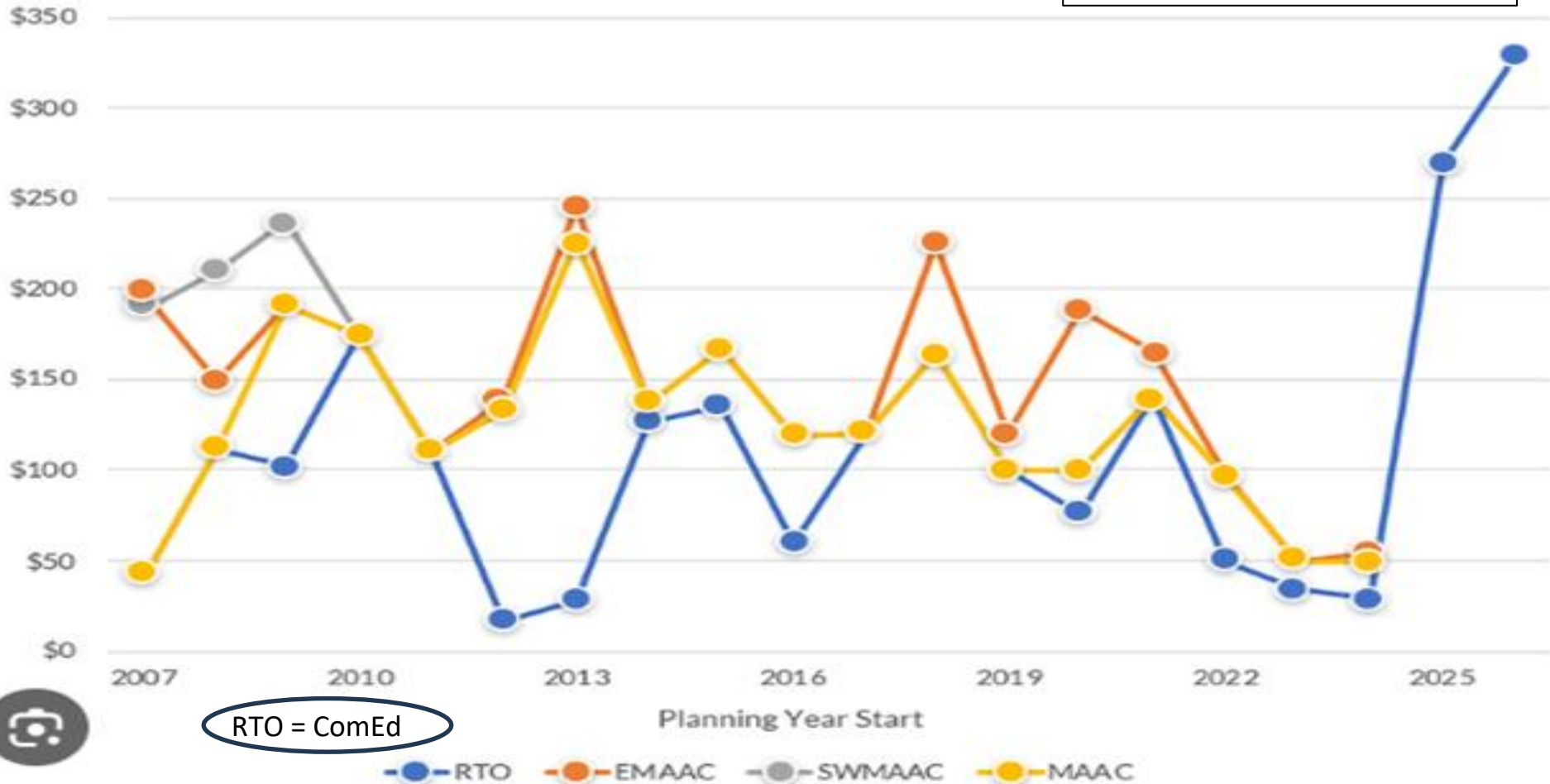
■ UDC Charges

Subtotal UDC Charges			\$20,757.48
Total New Charges			\$39,123.69

Why Exactly is My Invoice Going Up? Let's Look at PJM/ComEd Capacity History

BRA Clearing Prices
(\$/MW-day)

Two-year capacity cost increase equates to approx. 2 cents/kWh



RTO = ComEd

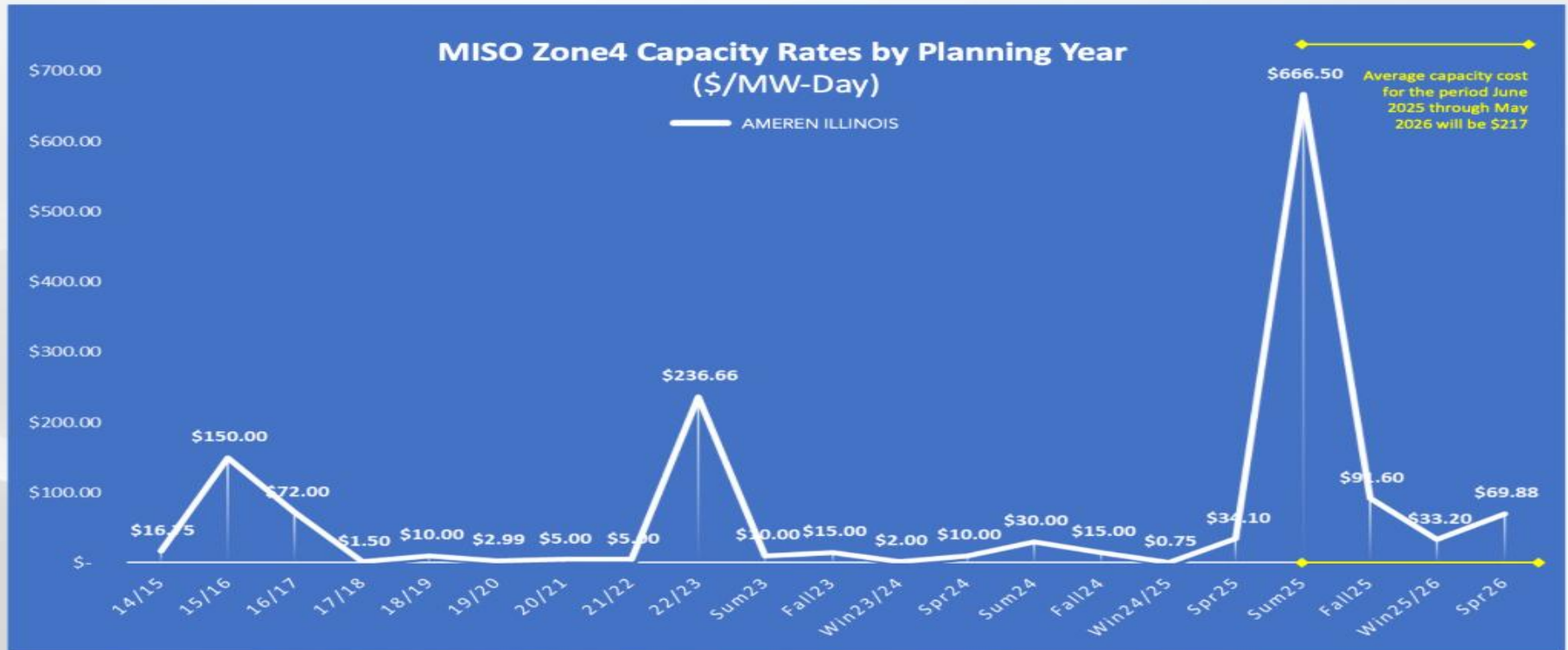


Similar Story for Ameren! MISO/Ameren Capacity History

One-year capacity cost increase equates to approx. 1.3 cents/kWh

MISO – Historical Capacity Rates

MISO is the electric grid operator for the central United States, ensuring power flows reliably and affordably across 15 states and the Canadian province of Manitoba, **including for Illinois' Ameren Illinois electric territory.**



And Here's the Most Recent Driver...

Equates to \$217/MW-D for 2025/2026
up from \$30/MW-D in 2024/2025

2025 PRA Results

MISO Resource Adequacy Zones



	Price/MW-Day			
	Summer	Fall	Winter	Spring
1	↑ \$666.50 ↓	↑ \$91.60 ↓	↑ \$33.20 ↓	↑ \$69.88 ↓
2				
3				
4				
5				
6				
7				
8	↑ \$74.09 ↓	↑ \$33.20 ↓	↑ \$69.88 ↓	
9				
10				

Electricity Regulatory Overview

The Federal Picture: The One Big Beautiful Bill

Cuts and front-loads clean-power subsidies

Wind & solar tax credits end/scale back earlier

Narrows who can claim remaining incentives

Stricter “foreign entity of concern” rules and tougher domestic-content requirements

Pulls back electrification support

EV, rooftop solar, and home efficiency credits reduced or ended earlier than under the IRA

Shifts advantage toward fossil & firm resources

Relatively better treatment for gas with CCS, nuclear, geothermal, and storage vs. new wind/solar

Net effect: higher costs & slower clean energy buildout

Slower clean-energy deployment, more fossil generation, and modestly higher customer energy bills

Illinois Responds by Accelerating Renewables and Batteries

- First, in mid-October, the ICC doubled capacity under the primary state-based renewable incentive program
- Second, in late-October, the legislature passed the Clean and Reliable Grid Act (CRGA)



What Exactly Will CRGA Do?

- Requires 3,000 MWs of new direct-to-grid battery projects by 2030
- Calls for competitive solicitations and long-term contracts for those projects
- Expands programs for behind-the-meter projects (no specific target)
- Puts more stringent planning requirements on utilities



The Opportunity: On-Site Industrial Solar

What Can I Do To Lower Electricity Costs?

Industrials Across Illinois Are Turning To On-Site Solar

- Generate immediate savings
 - Lower energy supply rate
 - Reduce capacity and transmission charges
 - Reduce distribution charges
- Serve as a long-term hedge
- Sustainability/environmental goals



The On-Site Solar Opportunity Is Propelled By State And Federal Incentives

State

- **Illinois Shines Program**
 - Created in 2017
 - Requires utilities to pay projects for production of clean energy (“RECs”)
 - Effectively an additional project revenue stream
 - For industrial projects, this covers roughly 20-30% of all-in costs
- **DG Rebate**
 - Utilities pay once project is operational
 - \$250/kWdc (10-15% of all-in costs)

Federal

- **Investment tax credit:** 30-50% of project construction cost can be shielded from taxes (15-25% of all-in costs)

Incentive stacking massively reduces costs resulting in strong savings

Two Options For Pursuit Of A Solar Project...

	Own It Yourself	Power Purchase Agreement (PPA)
Upfront Cost	Self-funded (cash or finance)	No capital expense (third-party)
Savings & Economics	Keep all incentives directly towards a payback	Pay per kWh allowing for immediate savings
Risk & Operations	You take performance, O&M, and equipment risk	Developer takes performance and O&M risk; you just buy energy
Strategic Fit	Maximize return, willing to take on the risk, has a tax appetite	No cost, outsourced risk, budget certainty

Here Are Typical Power Purchase Agreement (PPA) Terms

- **Term Length:** 15 to 30 years
- **Cost:** Cents/kWh or \$/MWh
- **Annual escalation:** 0% to 2% (lower initial price with escalator)
- **Early Buyout Option**
- **End-of-contract options:**
 - Renegotiate a new PPA rate
 - Buy the system at Fair Market Value
 - Have the system removed at no cost

The Opportunity: On-Site Battery Energy Storage

Given The Strong Economic Potential And New Incentives, Expect To See Rapid Growth In Industrial On-Site Batteries!

- **Overview:** A battery can generate savings and revenue by charging and discharging at key times

Value Stream	Rough value
Rebate (IL)	\$250,000/MWH at operation
Tax credit (Federal)	30-50% of capital expense
Cap and trans savings	\$100,000 - \$200,000/MW/year
Frequency regulation	\$100,000 - \$150,000/MW/year
CRGA/VPP revenue	Details to be worked out

- **Value proposition:** In ComEd, payback for battery is already faster than solar; likely to be there in Ameren once the coming incentives land

Other Considerations For Investigating Batteries

- Reliability/backup power supply
- The new incentives under CRGA will take effect next Summer
- In ComEd in particular, there is no need to wait
- As with a solar PPA, there are pay for service models that allow you to avoid capital expense and operational risk
- Battery and solar can be paired together for even greater savings



What Makes For An ideal Candidate?

	Solar	Battery
Available land	10+ acres	½ an acre or less
Meaningful electrical load	Greater than 1 MW or 3 million kWhs/year	
Peaky load	Bonus points but not critical	
Located in Ameren or ComEd	Probably required	

Here's An Example Look At Bill Savings

ComEd Customer (2.0 MW)

Estimated Energy Cost Reductions

Retail Supplier Energy Cost (wo Capacity and Transmission): \$60/MWh

Utility Energy Charges Avoided: \$20/MWh

Total Energy Charges: \$80/MWh

\$80/MWh - \$55.00/MWh PPA price = \$25.00/MWh energy cost reduction

\$25/MWh x 3,750 MWh/yr solar output = \$94k/yr energy cost reduction

Here's An Example Look At Bill Savings

ComEd Customer (2.0 MW)

Estimated Demand Cost Reductions

Monthly Utility Demand Charge:	\$ 4/MWh
PJM Capacity Charge (latest auction price):	\$26/MWh
PJM Transmission Charge:	<u>\$ 7/MWh</u>
Total Demand Charges:	\$37/MWh

\$37/MWh x 3,750 MWh/yr solar output = **\$139k demand cost reductions**

Total Potential Energy Cost Reductions = \$94k energy + \$139k demand = \$233k/yr

Cost reductions shown are high level preliminary estimates based on current rates and average solar demand reductions

Assumes all power is consumed at the site

Individual circumstances must be considered in analysis

Questions?

Thank you!

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Addendum - SolAmerica Energy Overview



Synergen Landfill, Fort Washington, MD - 6.6 MW

- Founded in 2009, SolAmerica develops, constructs and finances solar energy and solar + battery storage projects (turn-key) as an Independent Power Producer (IPP)
- Headquartered in Atlanta, GA with remote presence in DC, OH, FL, NJ, NY, WI, CO, TX
- Over 250 megawatts deployed (100 projects) with 1,200 MW under development
- Project types include direct-to-grid (including community solar) and behind-the-meter
- Focus on 1 to 20 MW ground-mount design
- Offer long term, fixed or escalating Power Purchase Agreements (PPAs)
- Clients include utilities, C&I facilities and long-term solar asset owners
- Acquired by AB CarVal (\$16 billion in assets under management) in 2023

Addendum – Solar Misinformation

Solar Misinformation

- Toxic metals such as lead and cadmium leach out and pose health risks
 - ❖ Cadmium when combined with tellurium has 1/100th the toxicity of free cadmium in thin film panels
 - ❖ The most common type of solar panels are manufactured with crystalline-silicon, a non-toxic element, and currently make up 95% of the solar market
 - ❖ Materials inside solar panel are encased in glass
 - ❖ Almost all solar PV panels are made of tempered glass, pass rigorous hail tests, and are regularly installed in Arctic and Antarctic conditions

Addendum – Solar Misinformation

Solar Misinformation

- Solar projects will reduce agricultural production, hurting farmers and rural communities
 - ❖ DOE's highest solar land use scenario by 2050: 1,050 – 1,570 GW, 10.3 M acres
 - ☐ 10.3 M acres would occupy 1.15% of 895 M acres of US farmland
 - ❖ Residential, commercial and industrial facilities could also take up farmland if farmers decide to sell
 - ☐ Community preference vs property owner's rights
 - ❖ Agrivoltaics becoming popular (crops and livestock on solar farms)

Addendum – Solar Misinformation

Solar Misinformation

- Solar farms destroy the value of nearby homes
 - Homes located within 0.5 miles of solar farms were found to experience price reductions of 1.5% in the short term compared to properties 2–4 miles away
 - Homes located more than 1 mile from a solar farm were found to experience no statistically significant effect on its price

Addendum – Solar Misinformation

Solar Misinformation

- Solar panels cause risk from electric and magnetic fields
 - There are no confirmed health impacts from solar panels at levels encountered by the public
 - Solar panels produce a lower electromagnetic field exposure than most household appliances, such as televisions and refrigerators