

Achieving Illinois's Clean Energy Potential

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**[Union of
Concerned Scientists**

Union of Concerned Scientists (UCS): Our Analytic Approach

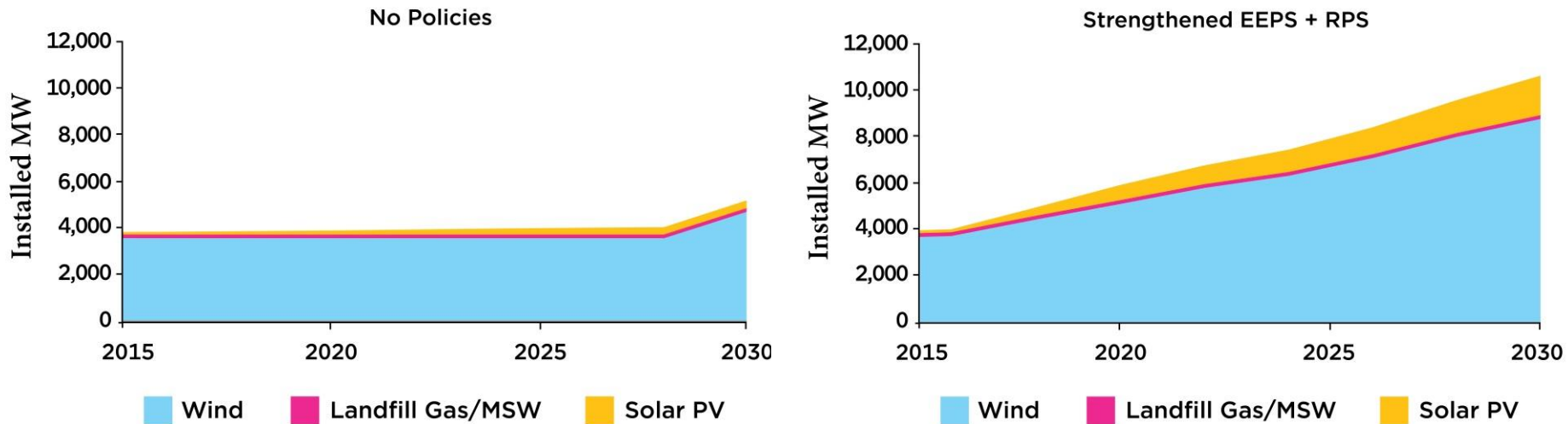
- UCS used the Department of Energy *Regional Energy Deployment System* model (*ReEDS*)
- Energy Efficiency and Renewable Energy Scenarios Analyzed:
 - No Policies: no clean energy investments occur beyond 2014
 - Existing Energy Efficiency Resource Standard (EERS) + Fixed Renewable Portfolio Standard (RPS): current 25% by 2025 RPS is fixed and existing EERS continues under current cost caps that constrain energy savings
 - Strengthened EERS + RPS: RPS is strengthened to 35% by 2030 and the EERS is enhanced to achieve a 20% reduction in energy demand by 2025
- Calculated demand reduction and investments in renewable energy and energy efficiency
- Analyzed impacts on Illinois's electricity capacity and generation, electricity prices, rates, bills and emissions
- See Technical Appendix for detailed methodology

Key Findings

Compared to the No Policies case (no additional clean energy investment through 2030), the Strengthened 35% RPS + 20% EEPS by 2030 would...

- Drive \$23 billion in clean energy investment in Illinois, with \$6.3 billion in renewable energy investment and \$16.7 billion in energy efficiency investment by 2030 (cumulative net present value 2013 dollars).
- Build more than 5,200 megawatts of new wind and solar power capacity in Illinois by 2030.
- Generate \$12.1 billion in consumer electricity savings between 2015 and 2030 (cumulative net present value 2013 dollars).
- Reduce the typical residential consumer electricity bill by 11 percent, or \$10 per month in 2020, with savings increasing to 23 percent, or \$22 per month, in 2030.
- Achieve all these benefits despite a 7.7 percent average rise in electricity rates between 2015 and 2030, because lower bills from energy efficiency savings will far outweigh higher electricity prices.
- Inject \$226 million annually into Illinois's economy, through renewable energy operating and maintenance expenditures and lease payments to landowners who host wind farms.

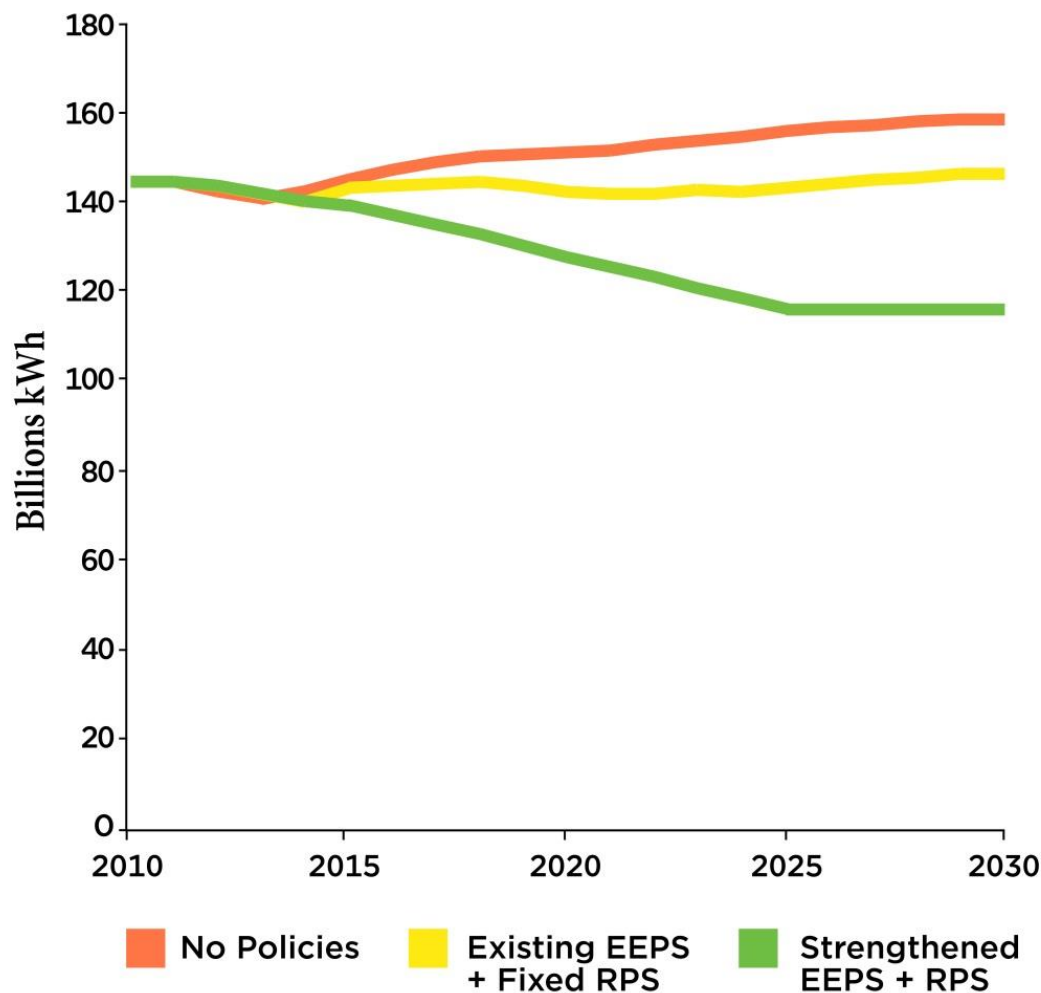
Strengthened 35% by 2030 RPS Boosts Renewable Energy Development in Illinois



- Under No Policies case, renewable energy development in Illinois remains stagnant until after 2025, when just 1,145 MW of new wind capacity is added.
- Strengthening Illinois's RPS to 35% by 2030, when implemented concurrently with the strengthened EEPS, would spur 5,200 MW of new renewable energy development (nearly 3,900 MW of new wind generation and more than 1,300 MW of new solar generation) compared with the No Policies case.

Strengthened 20% by 2025 EEPS Significantly Reduces Electricity Demand through 2030

Strengthening Illinois's EEPS would cut electricity consumption by more than 318 billion kilowatt-hours through 2030—more than twice the 153-billion kilowatt-hour reduction under the existing EEPS.



New Investment in Renewable Energy and Energy Efficiency in Illinois through 2030

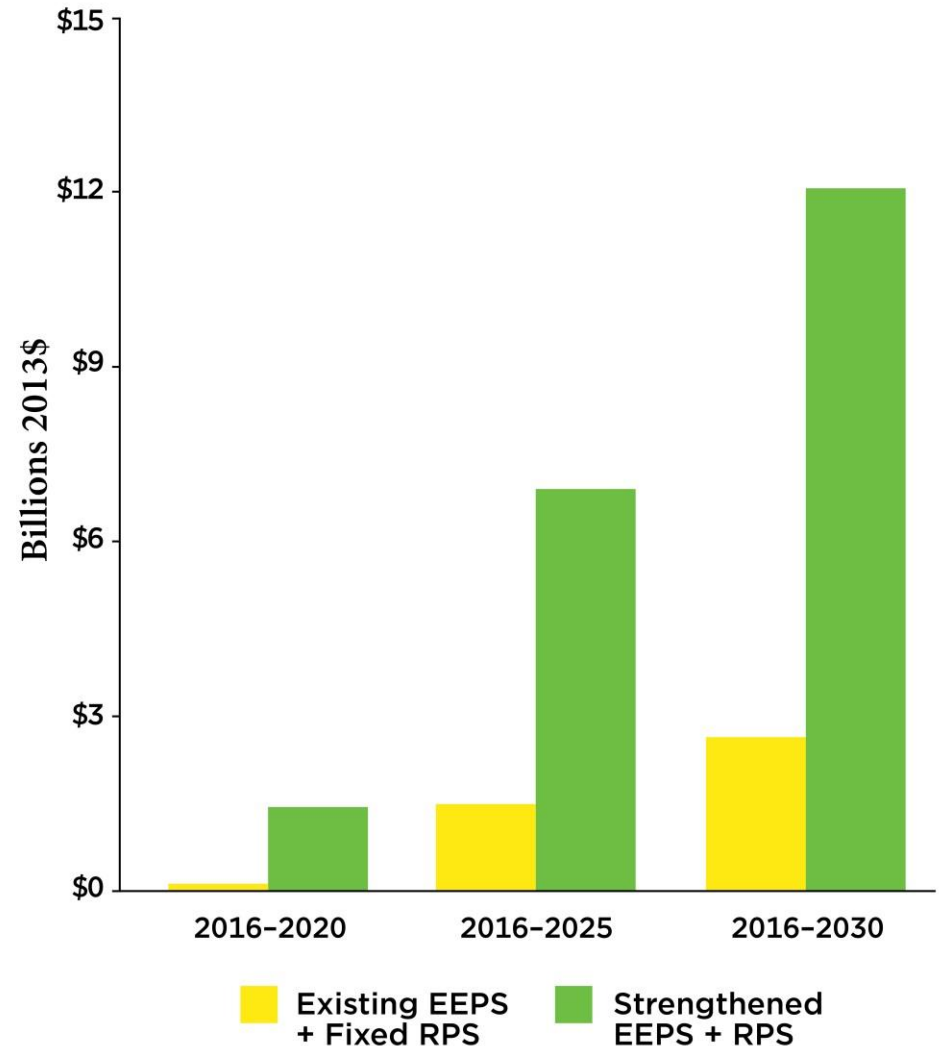
	Additional Renewables: Existing EEPS + Fixed RPS Case (megawatts)	Additional Renewables: Strengthened EEPS + RPS Case (megawatts)	Total Additional Renewables vs. No Policies Case (megawatts)	Total Investment (billions)*
Wind	3,142	752	3,894	\$4.7
Solar	978	356	1,334	+ \$1.6
RPS Totals	4,120	1,108	5,228	= \$6.3
20% EEPS Investment				+ \$16.7[^]
Total Clean Energy Investment through 2030				= \$23.0
*All dollars are discounted to 2013 \$ using a 6.24% discount rate.				
[^] Includes both utility and participant costs, encompassing \$5.3 billion in investments to meet the existing EEPS plus \$11.4 billion in additional investments to meet the strengthened EEPS.				

Implementing the Strengthened EEPS + RPS would drive \$23 billion in new clean energy investment in Illinois, including \$6.3 billion in renewable energy investment and \$16.7 billion in energy efficiency investment through 2030 (in cumulative net present value 2013 dollars).

Illinois Consumers Save \$12 Billion in Avoided Electricity Spending through 2030

The Strengthened EEPS + RPS case would deliver \$12.1 billion in cumulative net savings to consumers (through avoided electricity expenditures) compared to the No Policies case, \$9.4 billion in additional savings compared to the \$2.7 billion savings under the Existing EEPS + Fixed RPS case.

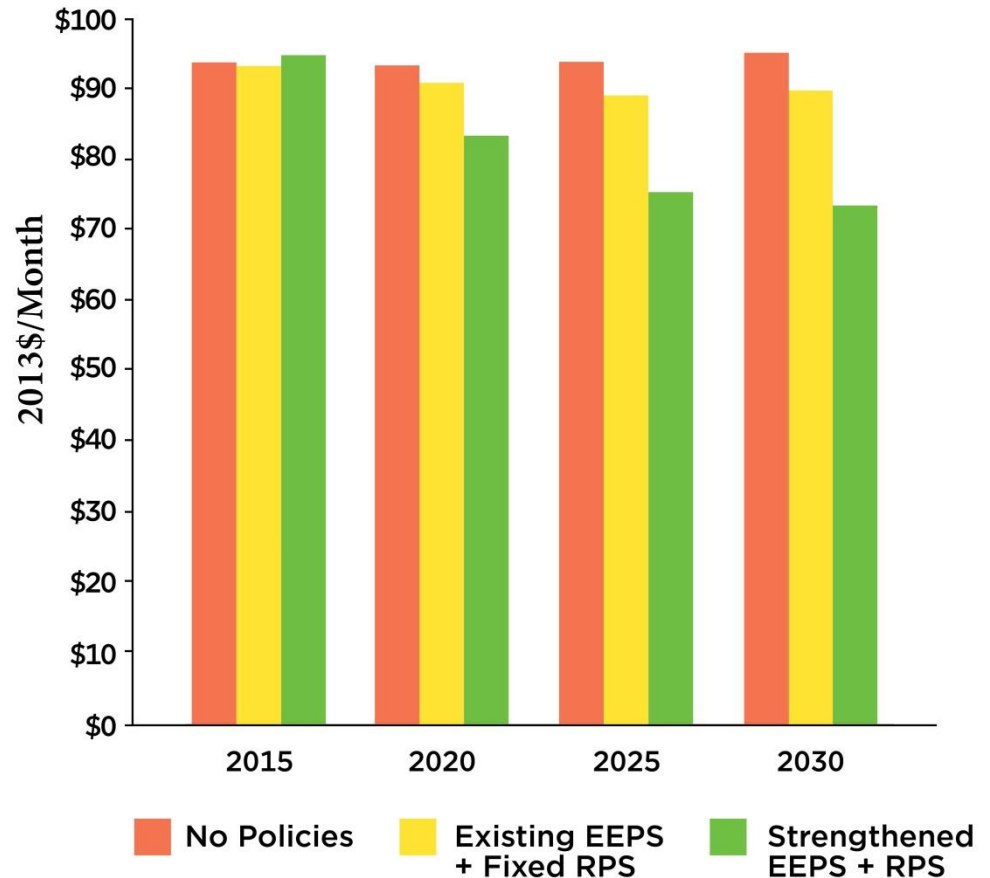
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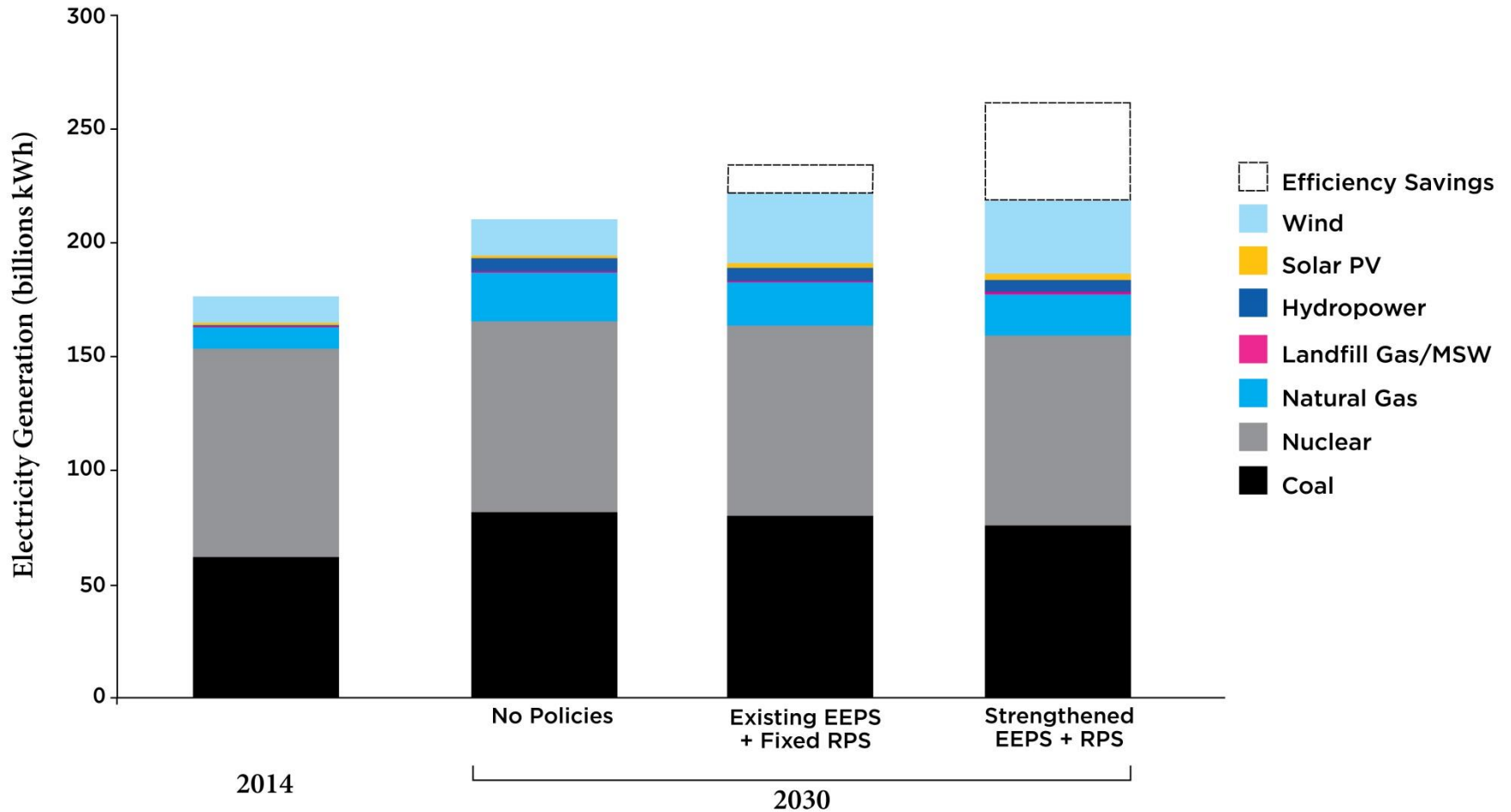
Clean Energy Investments Reduce Electricity Use, Lower Monthly Residential Bills

Strengthened EEPS + RPS would reduce typical residential customers' monthly electricity bills by:

- 11% or more than \$10 in 2020, and 23% or nearly \$22, in 2030 compared to No Policies case.
- 8.4% in 2020 and 18% in 2030 compared to the Existing EEPS + RPS.



Illinois's Electricity Generation in 2030: Stronger EEPS + RPS Diversifies Energy Mix, Boost Exports



While energy savings under the strengthened EEPS would lower in-state electricity demand, Illinois increases its electricity exports to meet growing regional power needs, as the state's power plants boost their output and new renewable generation is developed.

Pollution Reductions from Greater Clean Energy Investment

Pollutant	Existing EEPS + Fixed RPS Case	Strengthened EEPS + RPS Case
Carbon Dioxide	-2.5%	-9.3%
Sulfur Dioxide	-2.7%	-12.6%
Nitrogen Oxides	-2.4%	-9.1%
*Compared to the No Policies Case		

The Strengthened EEPS + RPS case achieves greater reductions in carbon dioxide, sulfur dioxide, and nitrogen oxides through 2030 compared with the Existing EEPS + Fixed RPS case.

About the ReEDS Model

UCS used the Regional Energy Deployment System (ReEDS) model developed by the Department of Energy to study Illinois's energy future under various policy pathways. ReEDS is long-term capacity-expansion model for the deployment of electric power generation technologies in the United States. ReEDS analyzes the impacts of state and federal energy policies, such as clean energy and renewable energy standards or policies for reducing carbon emissions, in the U.S. electricity sector. ReEDS provides a detailed representation of electricity generation and transmission systems and specifically addresses issues related to renewable energy technologies, such as transmission constraints, regional resource quality, variability, and reliability.