

# Cutting Electric Bills with the Clean Power Plan

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EPA's Greenhouse Gas Reduction Policy Lowers Household Bills

January 14, 2016

Pat Knight and Avi Allison

# Webinar Logistics

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# Synapse Energy Economics

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- Research and consulting firm specializing in energy, economic, and environmental topics
- Leader for public interest and government clients in providing rigorous analysis of the electric power sector
- Services include economic and technical analyses, regulatory support, research and report writing, policy analysis and development, representation in stakeholder committees, facilitation, trainings, and expert witness services
- Develops resources such as the Synapse Clean Power Plan Toolkit to promote transparent decision-making
- All non-confidential publications and open-source tools available for free at [www.synapse-energy.com](http://www.synapse-energy.com)



# Agenda

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1. Overview
2. Key Findings
3. Methodology
4. Energy Efficiency and the Clean Power Plan
5. State-Specific Results
6. Resources

# Overview

# Clean Power Plan Overview

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- Released by EPA in finalized form on October 23, 2015
- Aims to reduce CO<sub>2</sub> pollution from electric sector only
- Expected to reduce CO<sub>2</sub> emissions in 2030 to levels 32 percent below 2005
- Requires an integrated stakeholder process
- Allows states to make their own compliance plans; EPA has also designed an “off-the-shelf” model rule

# Synapse Clean Power Plan Cost Analysis

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- Synapse modeled Clean Power Plan compliance in the 48 contiguous states
- Three Scenarios Modeled:
  - “Not-CPP-Compliant” base case scenario
  - Clean Power Plan-compliant “Synapse-CPP” scenario featuring aggressive energy efficiency measures
  - Clean Power Plan-compliant “Low-EE-CPP” scenario, featuring minimal efficiency
- We examined the impacts of compliance on household electric bills in each state
- We paid special attention to the relationship between bill savings and:
  - Current state-level energy efficiency standards
  - State-specific emission reductions
  - Poverty rates

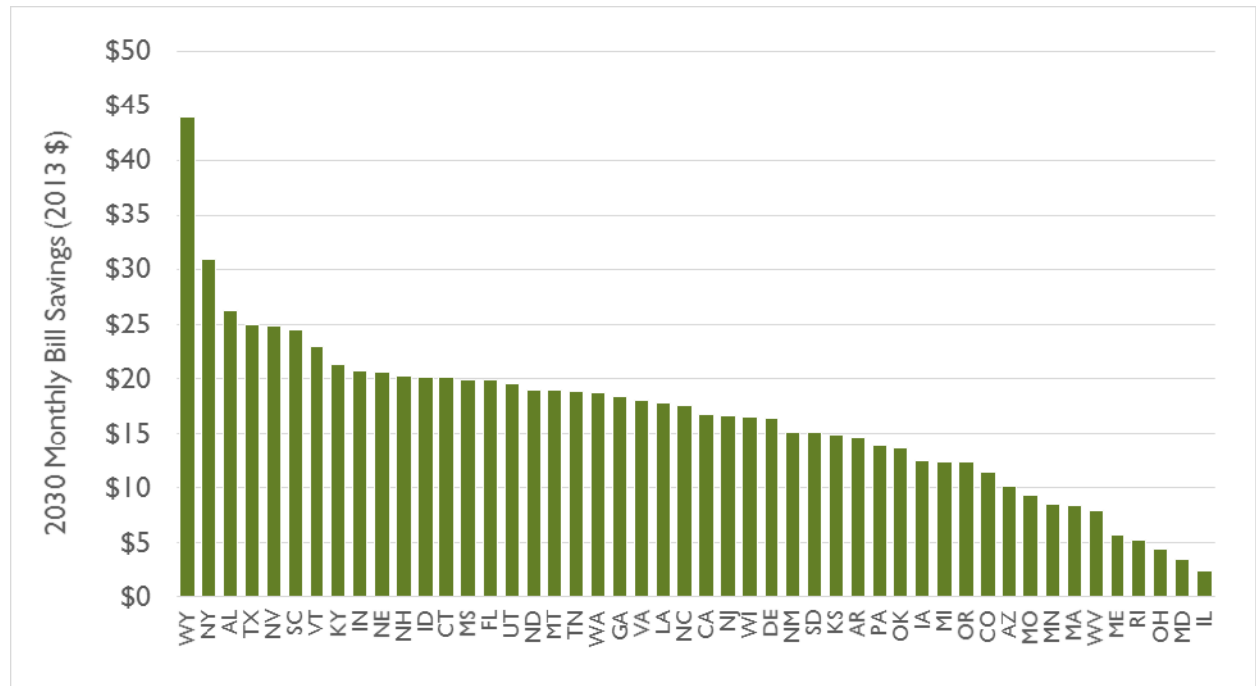
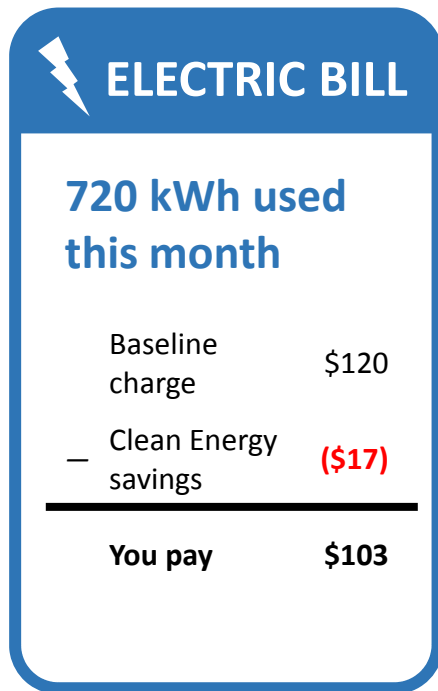
# Key Findings



# Key Findings

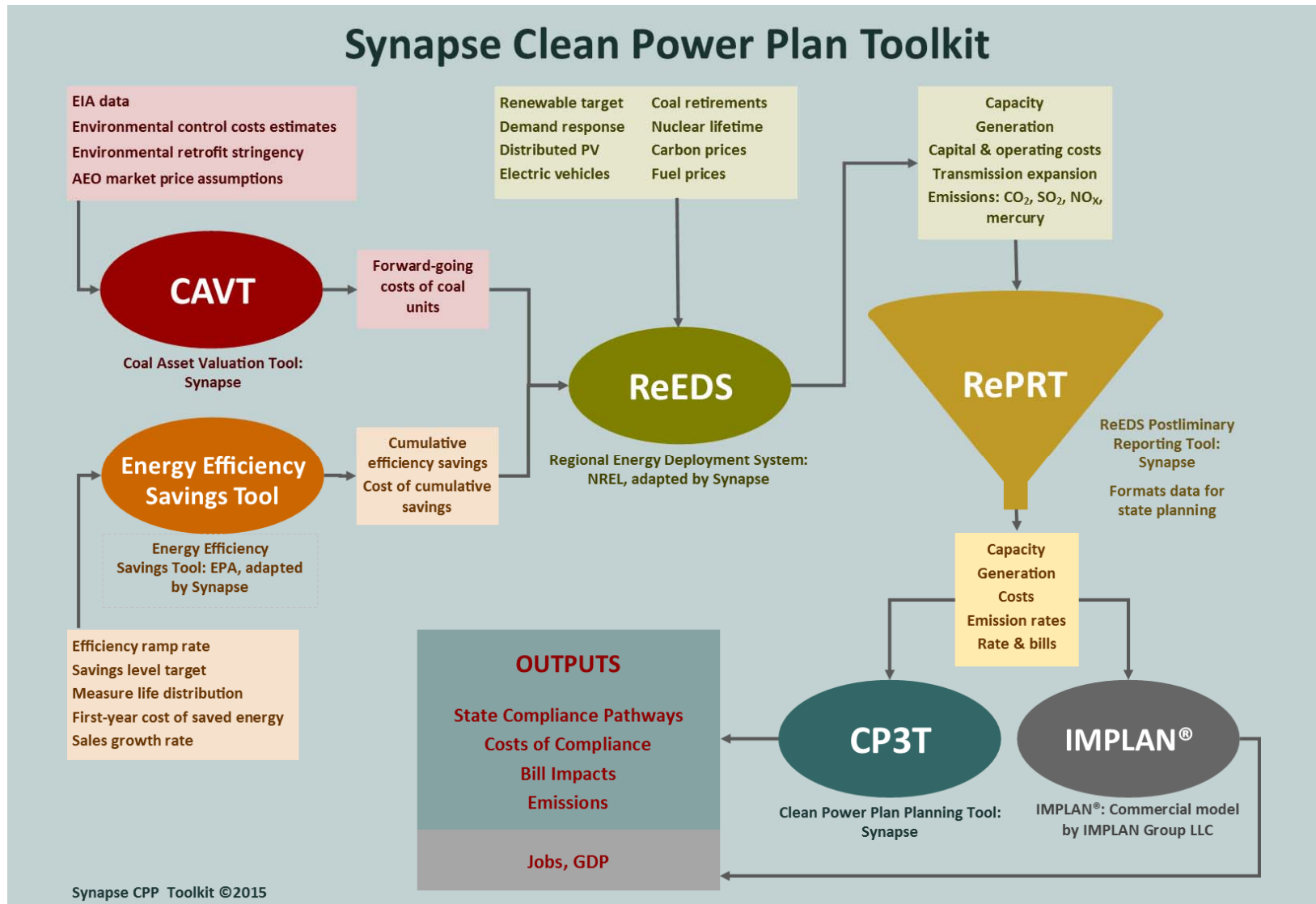
## Ratepayers can save money under the Clean Power Plan

If states comply with the Clean Power Plan through strategies that encourage cost-effective energy efficiency, households can expect to save an average of \$17 per month on their electric bills in 2030.



# Methodology

# Synapse Clean Power Plan Toolkit



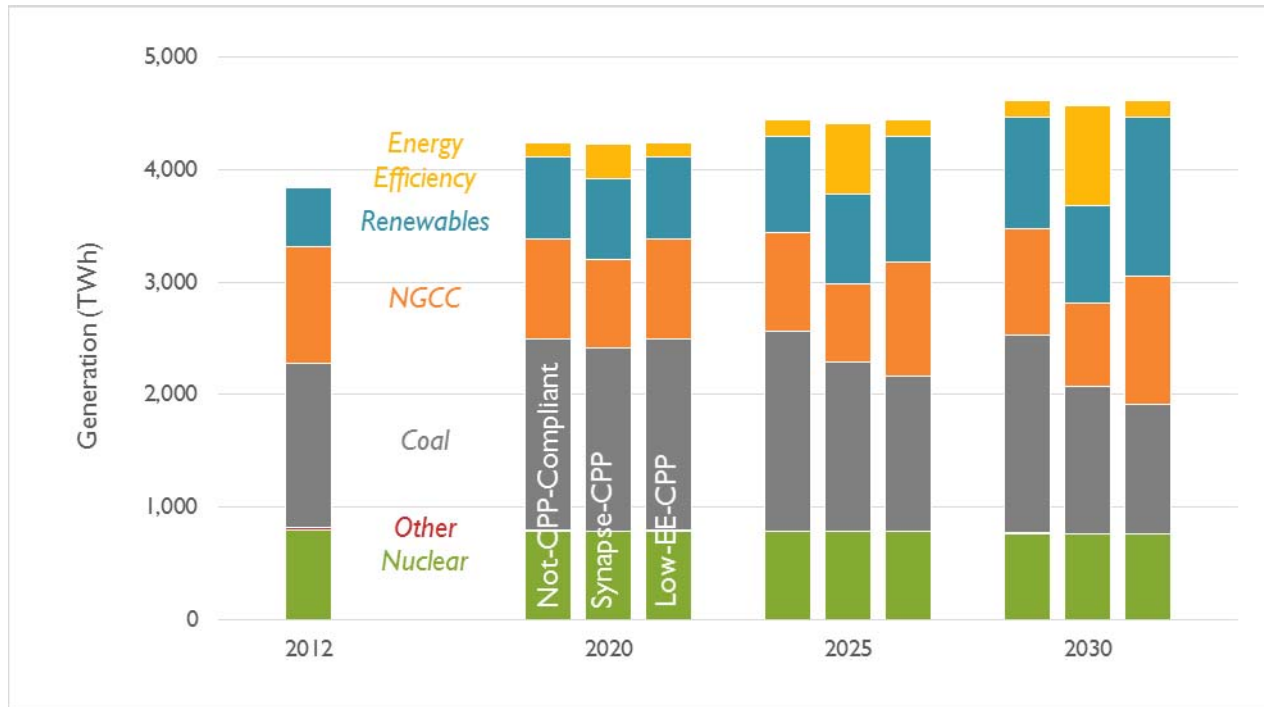
# Scenario Assumptions

“Not-CPP-Compliant” Scenario	“Synapse-CPP” Scenario	“Low-EE-CPP” Scenario
<ul style="list-style-type: none"><li>• Not CPP compliant</li><li>• Represents a business-as-usual reference case</li></ul>	<ul style="list-style-type: none"><li>• CPP compliant</li><li>• Assumes mass-based “existing+new” targets</li><li>• Complies with the CPP through strong investment in energy efficiency</li></ul>	<ul style="list-style-type: none"><li>• CPP compliant</li><li>• Assumes mass-based “existing+new” targets</li><li>• Complies with the CPP through adding new NGCCs and renewables</li></ul>

All scenarios assume the same growth in electricity demand, natural gas prices, “on-the-books” retirements and unit additions, state requirements for efficiency and renewables, and installation of future environmental retrofits needed regardless of the Clean Power Plan.

The two Clean Power Plan-compliant scenarios permit allowance trading in two separate regions: RGGI states and the rest of the United States.

# Scenario Generation



# Energy Efficiency and the Clean Power Plan

# Energy Efficiency and the Clean Power Plan

## Energy efficiency has a critical role in the Clean Power Plan

- Energy efficiency has been removed from Clean Power Plan target setting, but it can still be used for compliance.
- In rate-based approaches, energy efficiency measures are given “direct incentives” for each megawatt-hour saved.
- In mass-based approaches, energy efficiency can be used as follows:
  1. In any situation, **energy efficiency is a cost-effective way to reduce demand for electricity**, both reducing emissions and helping to avoid or defer other mass-based compliance actions.
  2. **States can take action to develop customized plans** to further encourage energy efficiency as a means for meeting mass-based compliance.

# Actions States Can Take to Encourage Efficiency Under the Clean Power Plan

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- In the Model Rule of the Clean Power Plan, allowances are given freely to polluters (with the exception of a small percent of allowances reserved for “set-asides”)
- States can develop their own, customized plans, in which allowances are allocated differently
  - **States can give allowances directly to those providing efficiency measures.** Providers could then sell allowances to polluters, generating revenue and offsetting the costs of installing new energy efficiency measures.
  - **States can auction allowances and give the revenues to efficiency providers.** States could choose to auction allowances to polluters. The revenue raised in these auctions could be used to fund energy efficiency programs.

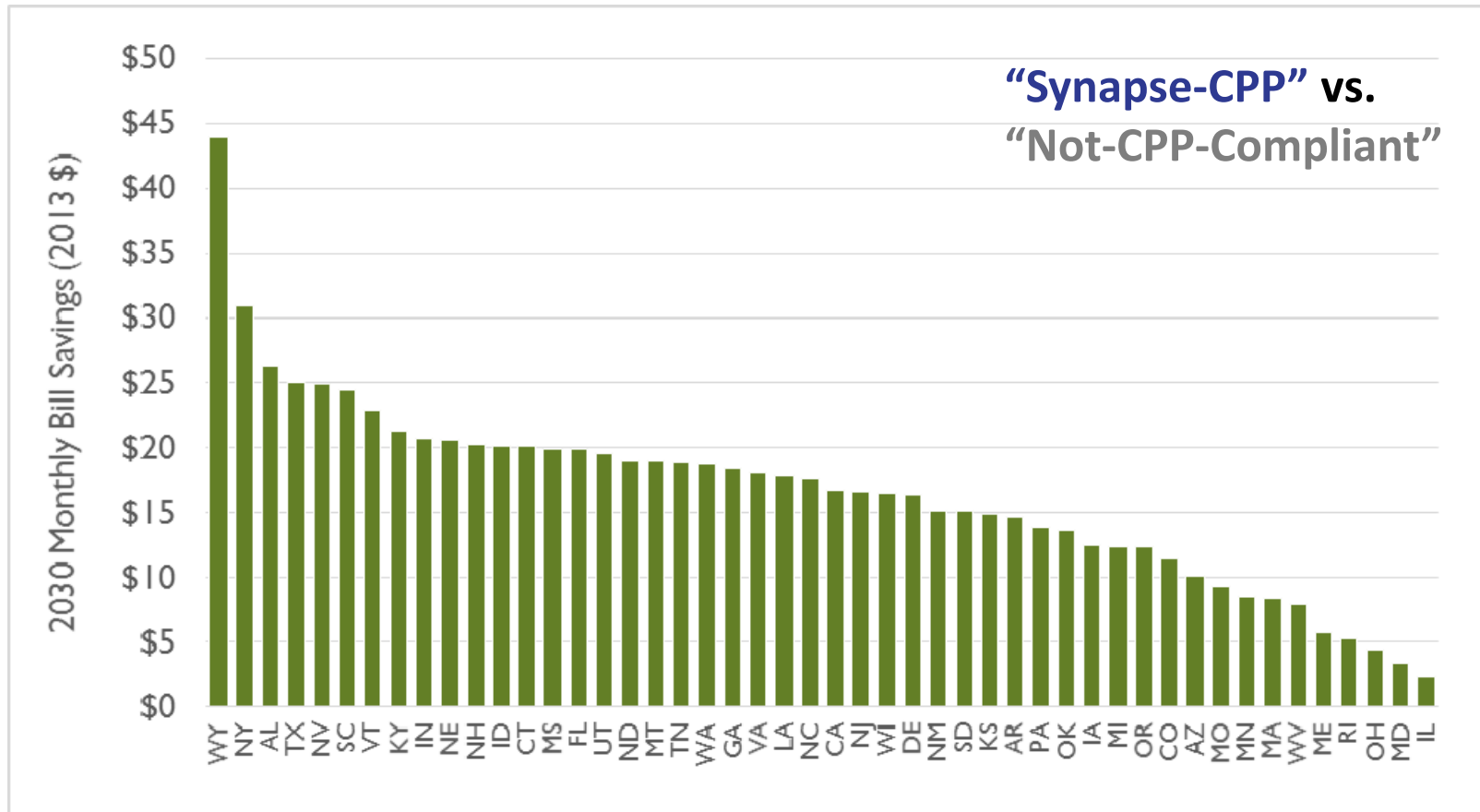


# State-Specific Results

# Scenario Assumptions

“Not-CPP-Compliant” Scenario	VS.	“Synapse-CPP” Scenario	“Low-EE-CPP” Scenario
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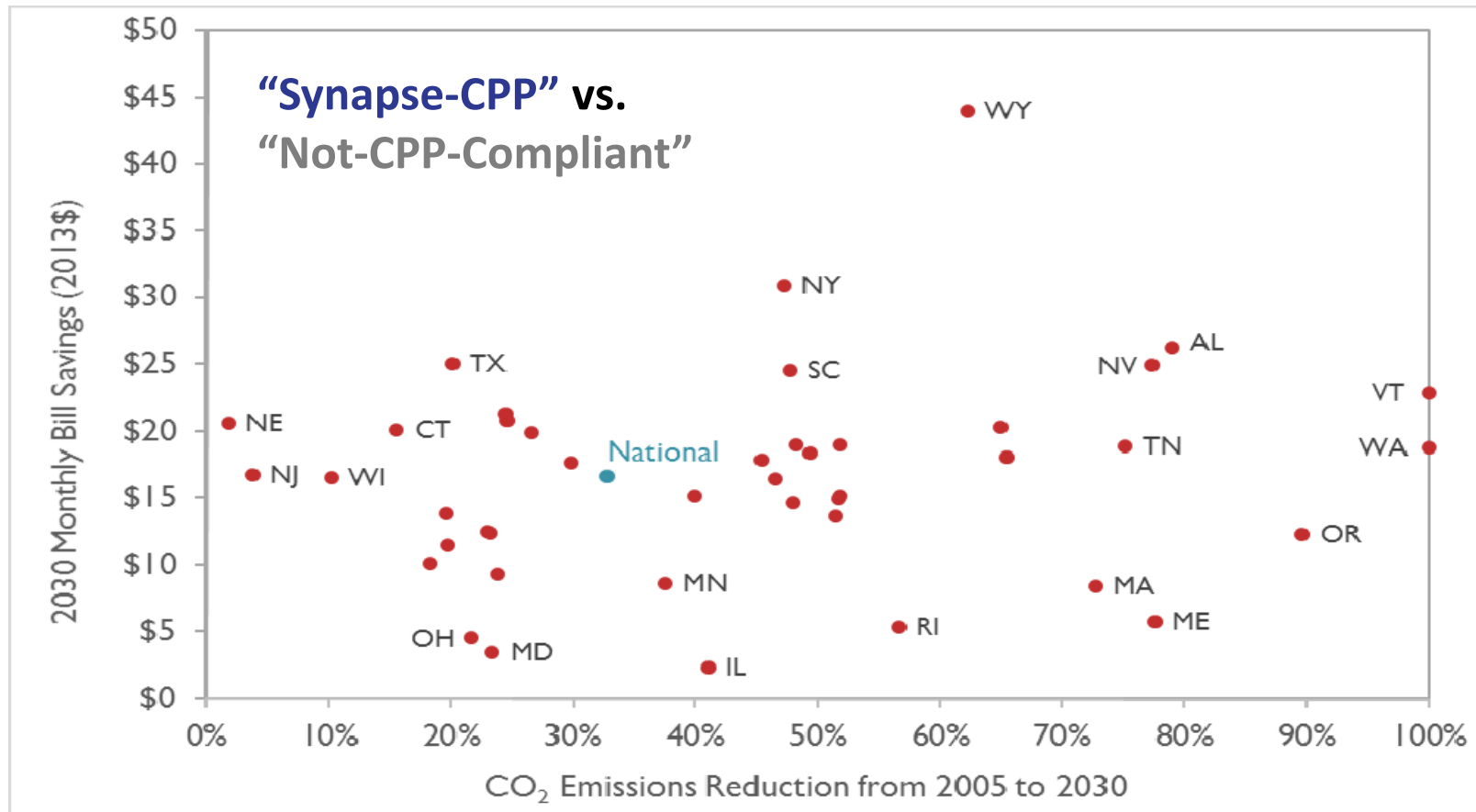
# #1. Strong Investments in Energy Efficiency Save Ratepayers \$17 per Month



In 2030, average monthly bill savings range from a high of \$44 per month in Wyoming to a minimum of \$2 per month in Illinois.

The difference in bill savings among states depends on many factors, including energy efficiency requirements and the resources used to generate power now and in the future.

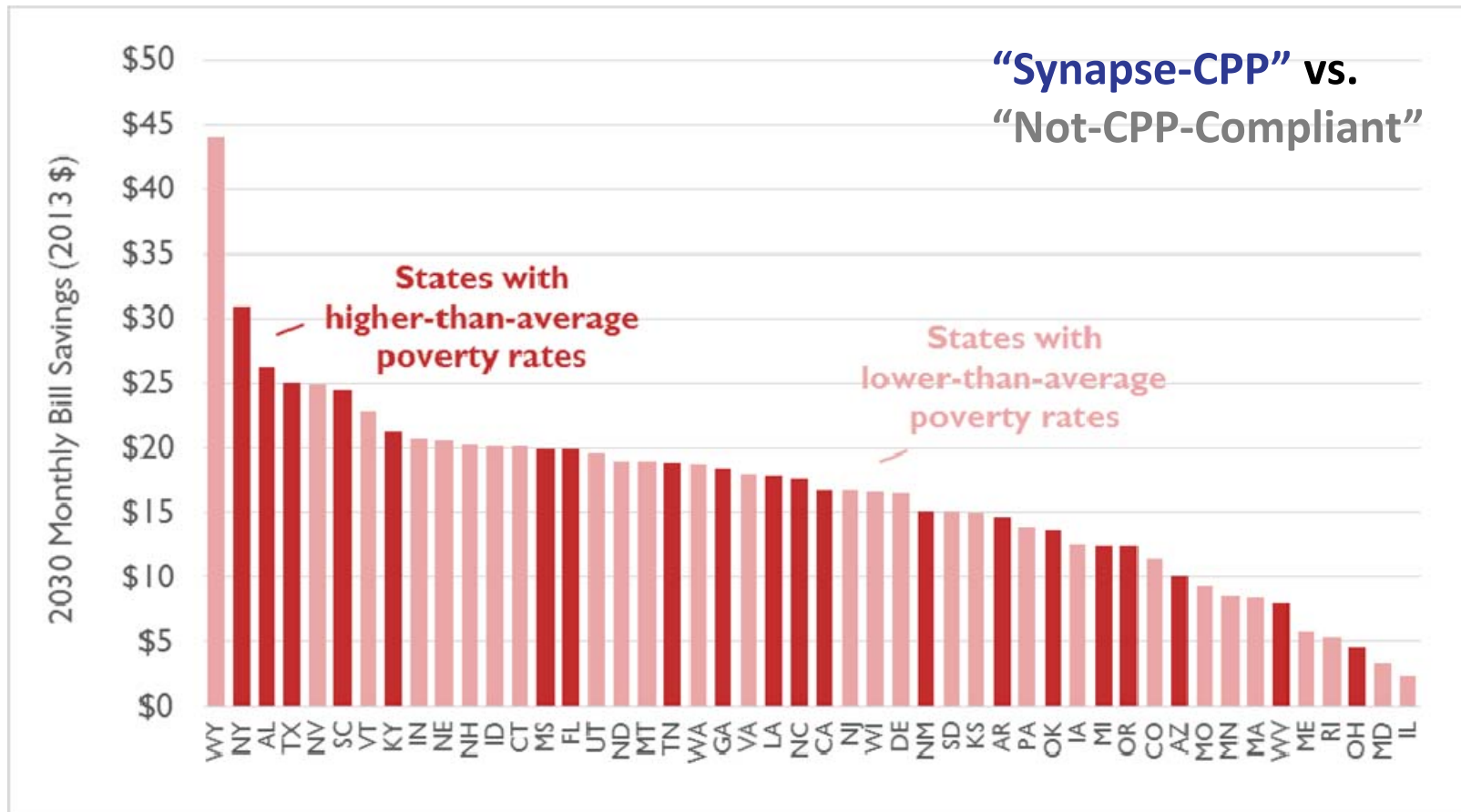
## #2. Large Emission Reductions Do Not Prevent Bill Savings



Note: Four states have their emissions increase under the Synapse-CPP scenario. These states have monthly bill savings of between \$8 and \$20.

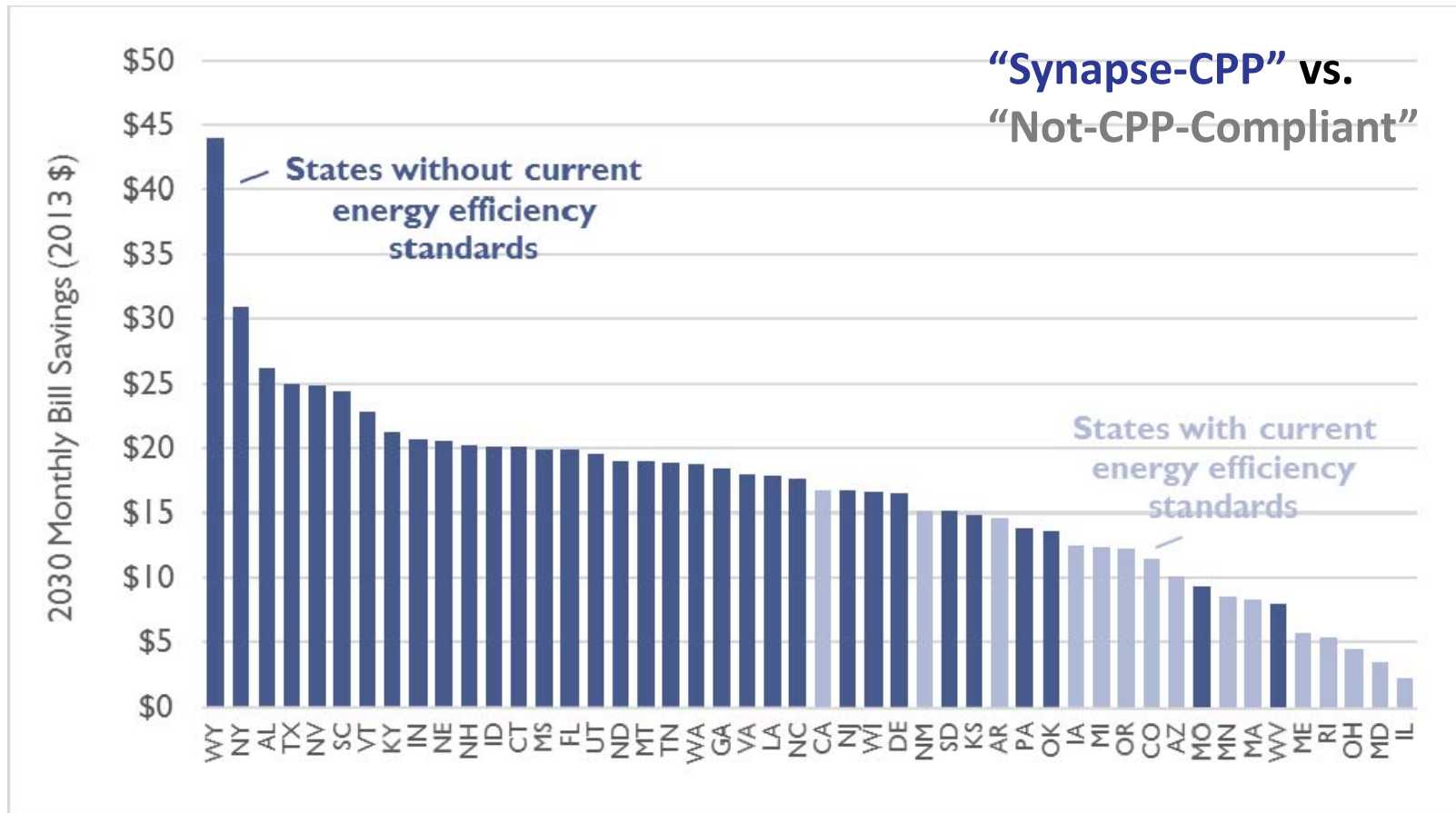
Of the seven states with the highest bill savings between the Synapse-CPP case and the Not-CPP-Compliant case, six reduce their CO<sub>2</sub> emissions by more than 45% between 2005 and 2030 in the Synapse-CPP scenario. One of these states eliminates its emissions entirely.

### #3. Large Bill Savings Found in States With High Poverty Rates



Of the eight states with the highest monthly bill savings between the Synapse-CPP case and the Not-CPP-Compliant case, five have poverty rates in excess of the national rate. These five include Alabama and Kentucky, two of the five states with the highest poverty rates in the nation.

## #4. Largest Bill Savings Found in States With No Current Efficiency Requirements

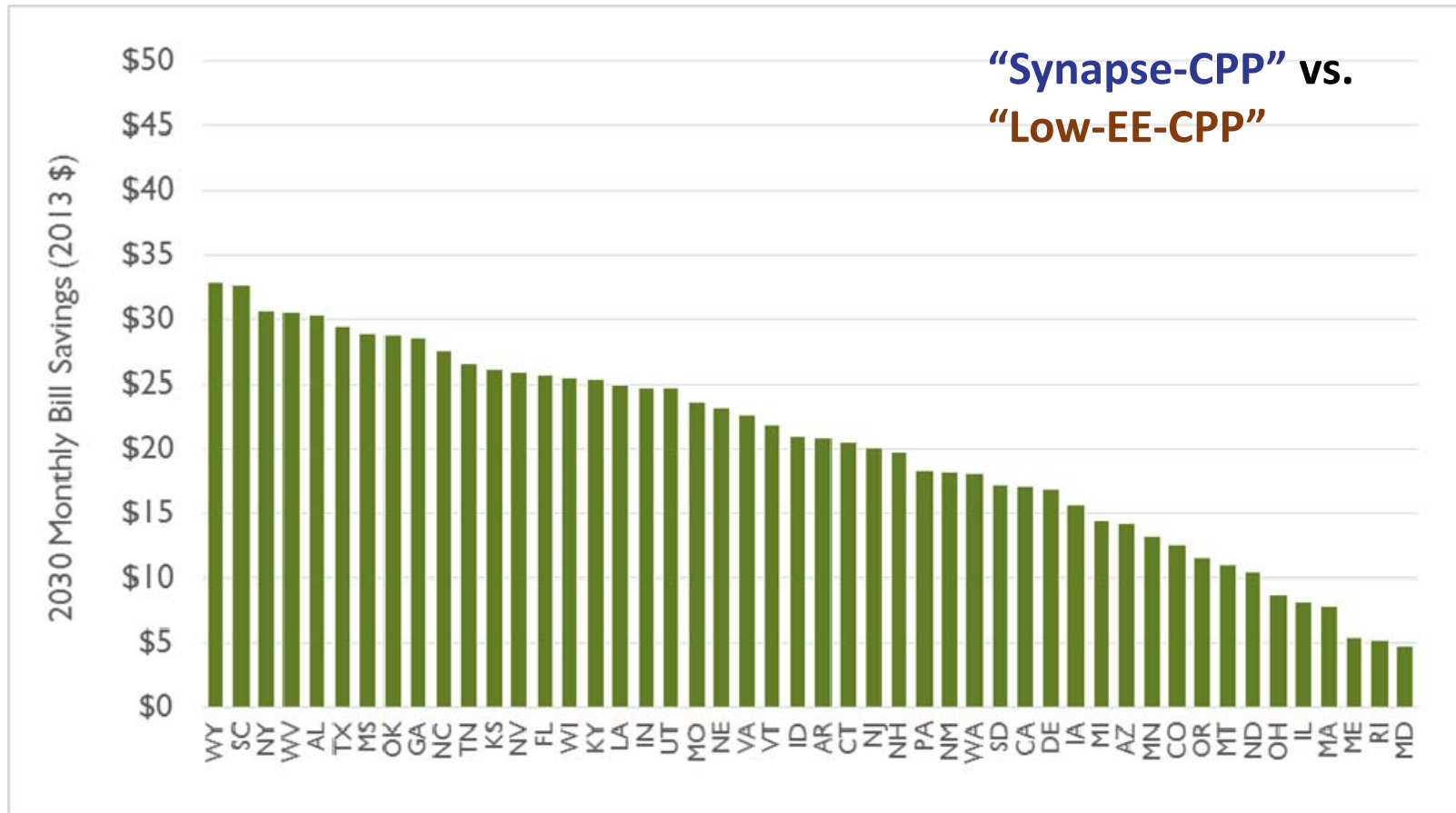


Of the 24 states with the highest monthly bill savings, none have existing policies requiring future energy efficiency savings. Regardless of their strategy for Clean Power Plan compliance, states without energy efficiency standards in place are leaving money on the table that could lower bills for residential consumers.

# Scenario Assumptions

“Not-CPP-Compliant” Scenario	“Synapse-CPP” Scenario	VS.	“Low-EE-CPP” Scenario
<ul style="list-style-type: none"><li>• Not CPP compliant</li><li>• Represents a business-as-usual reference case</li></ul>	<ul style="list-style-type: none"><li>• CPP compliant</li><li>• Assumes mass-based “existing+new” targets</li><li>• Complies with the CPP through strong investment in energy efficiency</li></ul>		<ul style="list-style-type: none"><li>• CPP compliant</li><li>• Assumes mass-based “existing+new” targets</li><li>• Complies with the CPP through adding new NGCCs and renewables</li></ul>

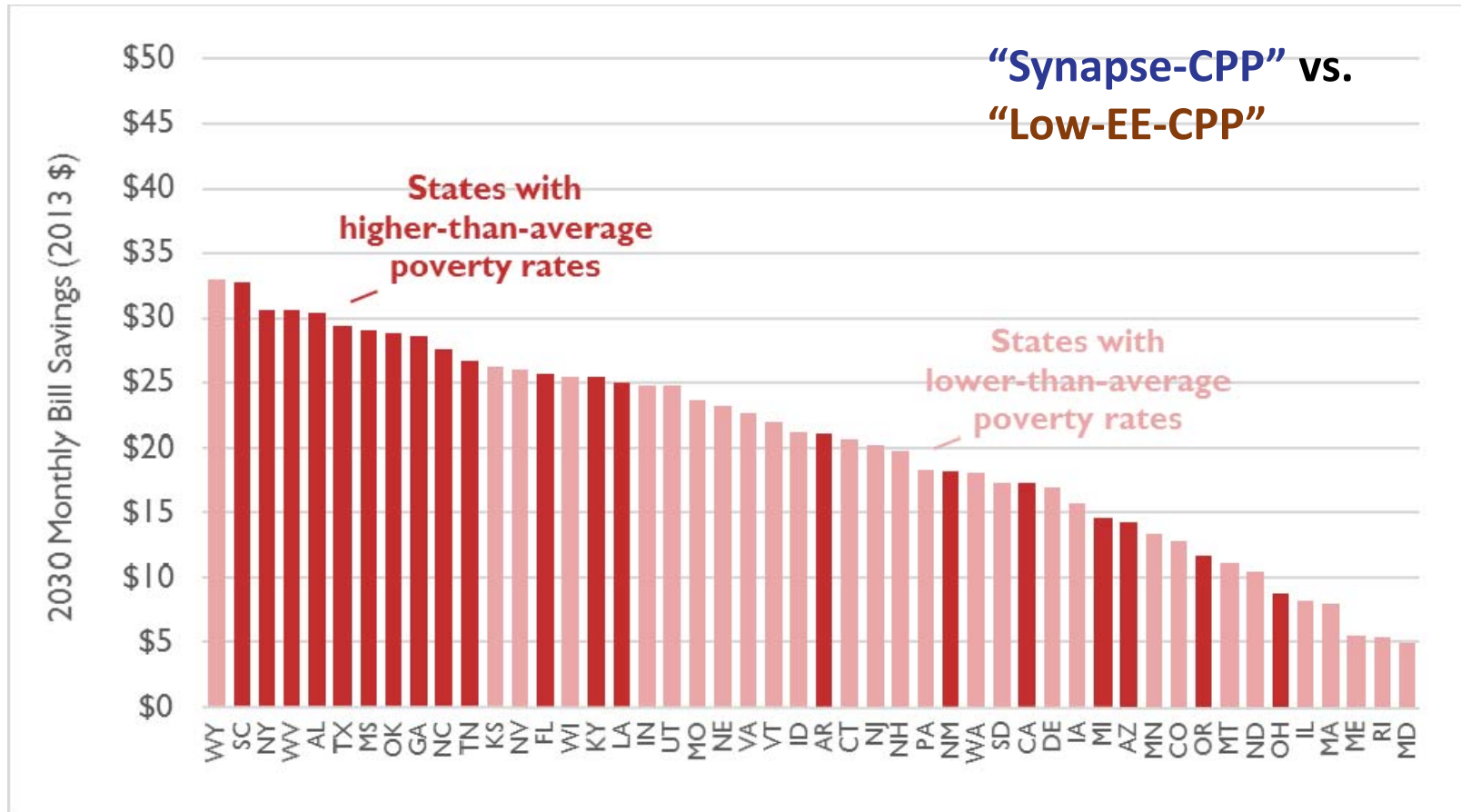
## #5. Energy Efficiency Is the Cheapest Way to Reduce CO<sub>2</sub> Emissions



Total system costs are 17 percent higher in the Low-EE-CPP case than in the Synapse-CPP case, resulting in average household bills \$21 higher each month than if emission reductions were achieved with more energy efficiency. Average savings by state range from \$33 to \$5 per month.

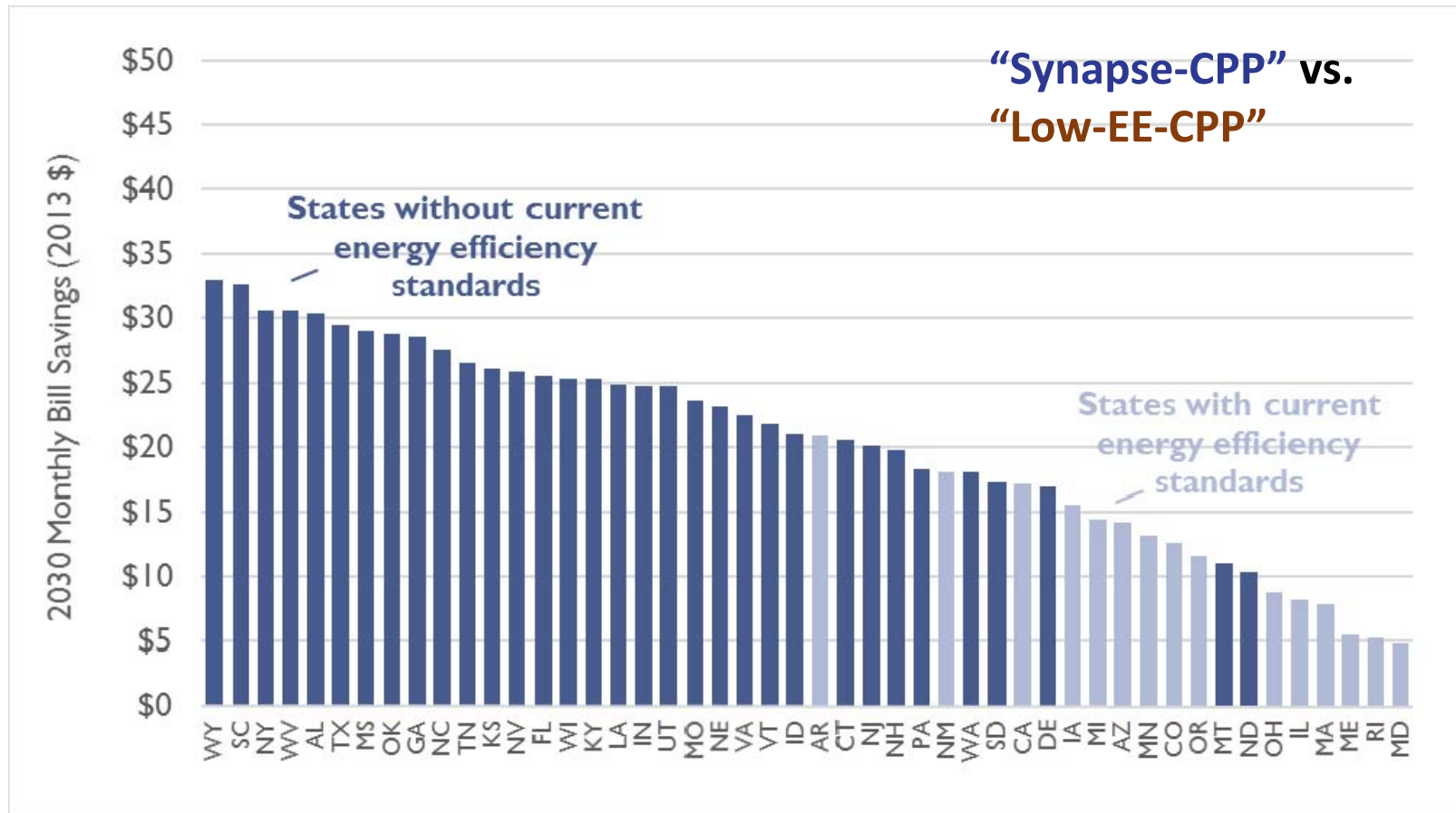


## #6. Energy Efficiency Is an Especially Cheap Compliance Strategy in High-Poverty States



Of the 10 states with the highest monthly bill savings between the Synapse-CPP case and the Low-EE-CPP case, nine have poverty rates in excess of the national rate. These nine include five of the 10 states with the highest poverty rates in the nation.

# #7. Efficiency is an Especially Cheap Compliance Strategy in States Without Efficiency Standards



Of the 24 states with the highest monthly bill savings between the Synapse-CPP case and the Low-EE-CPP case, none have existing policies requiring future energy efficiency savings.

# Resources

## Related Resources

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**Synapse Clean Power Plan Toolkit:** <http://synapse-energy.com/CleanPowerPlan>

**Past Clean Power Plan Webinars:** <http://synapse-energy.com/synapse-projects-and-webinars-related-clean-power-plan>

**Consumer Costs of Low-Emissions Futures Factsheets and Reports:**  
<http://synapse-energy.com/project/consumer-costs-low-emissions-futures>

**Clean Power Plan Handbook for National Association of State Utility  
Consumer Advocates:** <http://synapse-energy.com/sites/default/files/Clean-Power-Plan-Handbook.pdf>

**Synapse Blog Posts on Clean Power Plan:** <http://synapse-energy.com/tags/clean-power-plan>

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