Bill Savings in a Clean Energy Future

Clean Power Means Lower Bills for States

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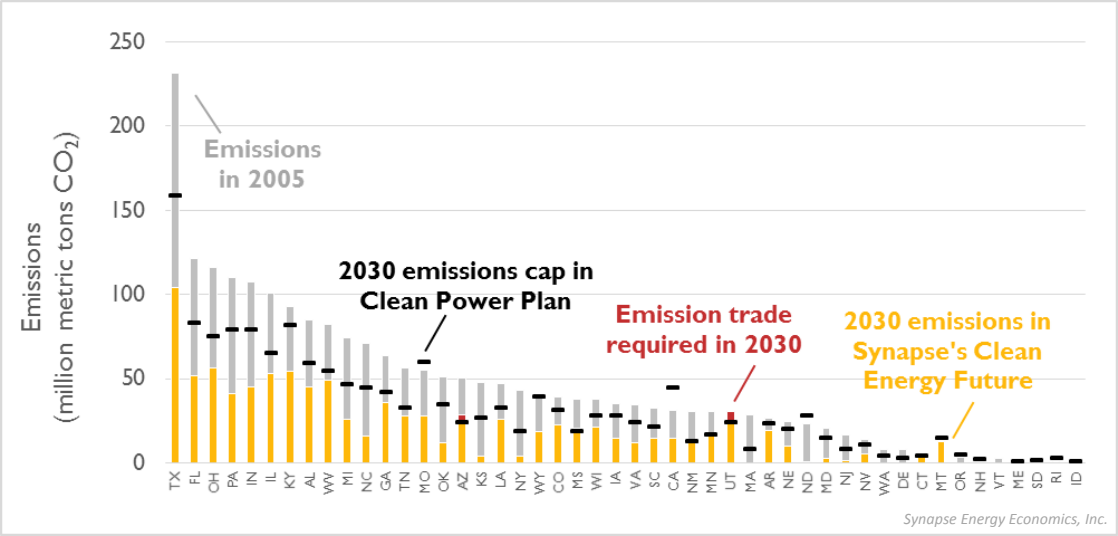
Webinar Logistics

- The webinar is being recorded and will be circulated to all attendees
- All attendees have been muted on entry and will remain muted throughout the webinar
- Please send any questions on the content of the webinar to webinar@synapse-energy.com
- During the Q&A session, the panelists will answer written questions that have been sent to webinar@synapse-energy.com
- Please use the chat feature only to notify the host if you are having a technical issue with the WebEx software

Synapse Energy Economics

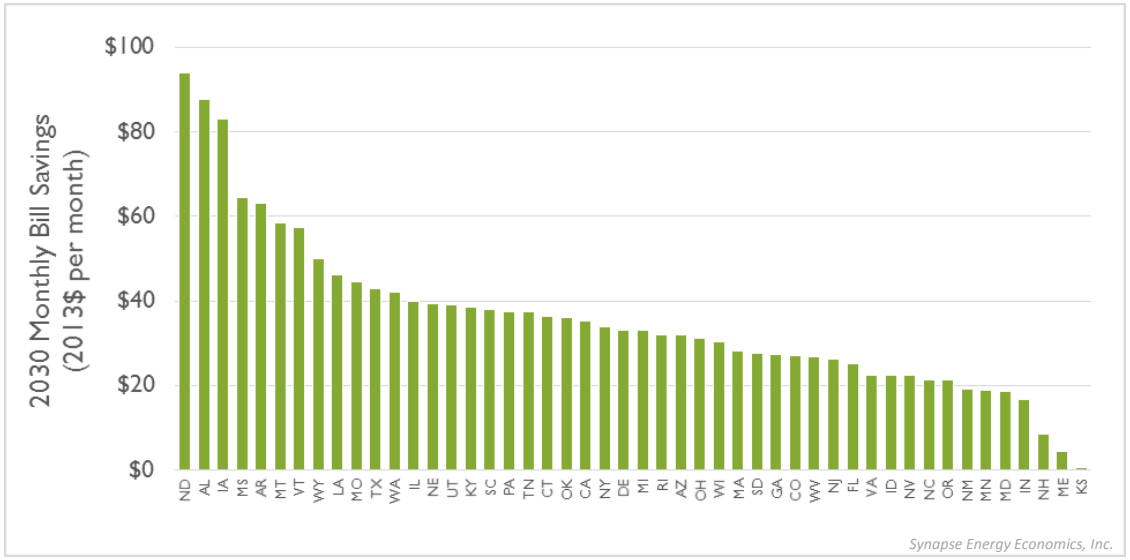
- Founded in 1996 by CEO Bruce Biewald
- Leader for public interest and government clients in providing rigorous analysis of the electric power sector
- Staff of 30 includes experts in energy and environmental economics and environmental compliance

Clean Energy Future



Lower Emissions

Bill Savings



Agenda

What is the Clean Energy Future?	Designing the scenarios
How do we model the Clean Energy Future?	Synapse's CPP Toolbox
What is the Clean Energy Future like?	Generation and emissions
Does the Clean Energy Future comply with the proposed Clean Power Plan?	State-by-state results
Does the Clean Energy Future lower electric bills?	Savings to state electric systems and savings on household bills

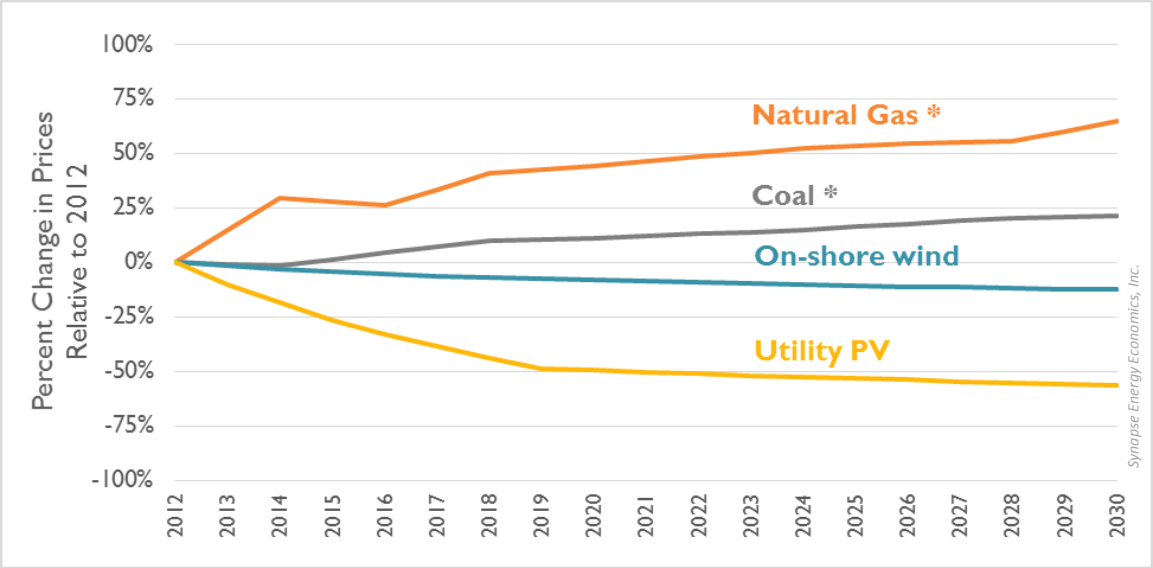
What is the Clean Energy Future?

Designing the Clean Energy Future Scenario

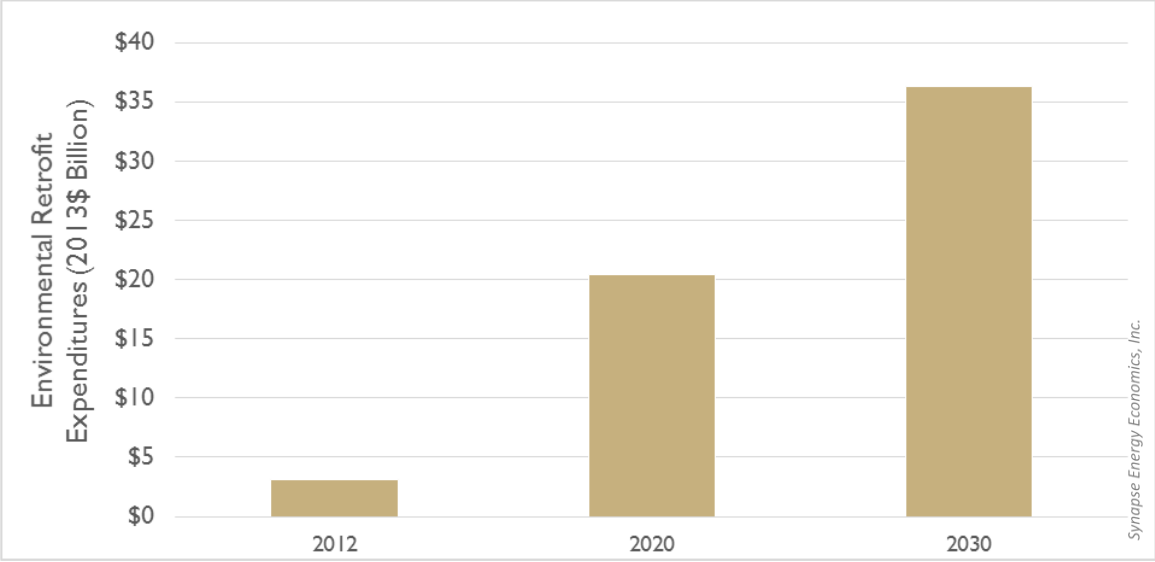
- A “no regrets” cost scenario: Costs are lower than the Reference scenario
- Choosing assumptions based on current-day examples and reputable studies

	Reference Scenario	Clean Energy Future Scenario
Energy Efficiency	Existing federal appliance and building standards, minimal state efficiency policies	Incremental efficiency savings of 2% each year by 2029
Renewables	Renewables comply with existing state laws	70% of generation from renewable resources by 2040
Gas	Net 24 GW new gas-fired capacity built by 2040	Net 78 GW gas-fired capacity retired by 2040
Coal	Coal plant retirements limited to announcements to date	All coal plants built before 2005 retired by 2040
Other	No electric vehicles integrated as electric-grid storage	25% of cars and trucks integrated as electric-grid storage by 2040
	Demand response reaches 10% maximum sales by 2040	Demand response reaches 15% maximum sales by 2040
	13 GW new storage resources by 2040	51 GW new storage resources by 2040
Hydro	10 GW new run-of-river and improved capture of hydro resources by 2040	18 GW new run-of-river and improved capture of hydro resources by 2040
Nuclear	All nuclear units operate for 60-year lifetimes	All nuclear units operate for 60-year lifetimes

What Will Make Future Electricity Cheaper?



**Price trends for natural gas and coal indicate fuel price trends only.*



Environmental retrofit costs apply to coal units only.

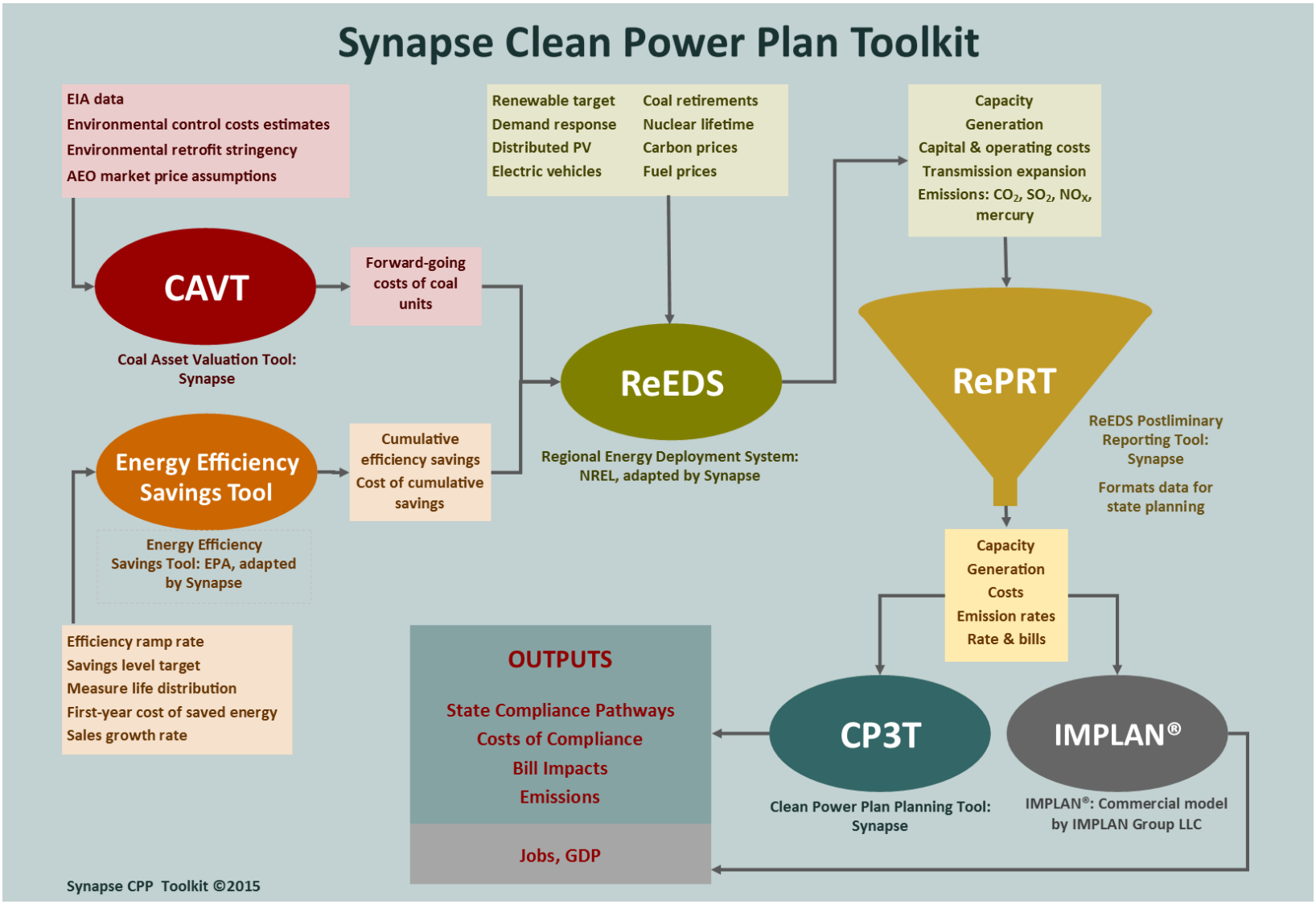
How do we model the Clean Energy Future?

Two Futures

- **Reference**
  - "Business as usual"
  - No new policies to meet EPA targets
- **Clean Energy Future**
  - Extensive investments in energy efficiency and renewables
  - Clean Power Plan requirements met for every state

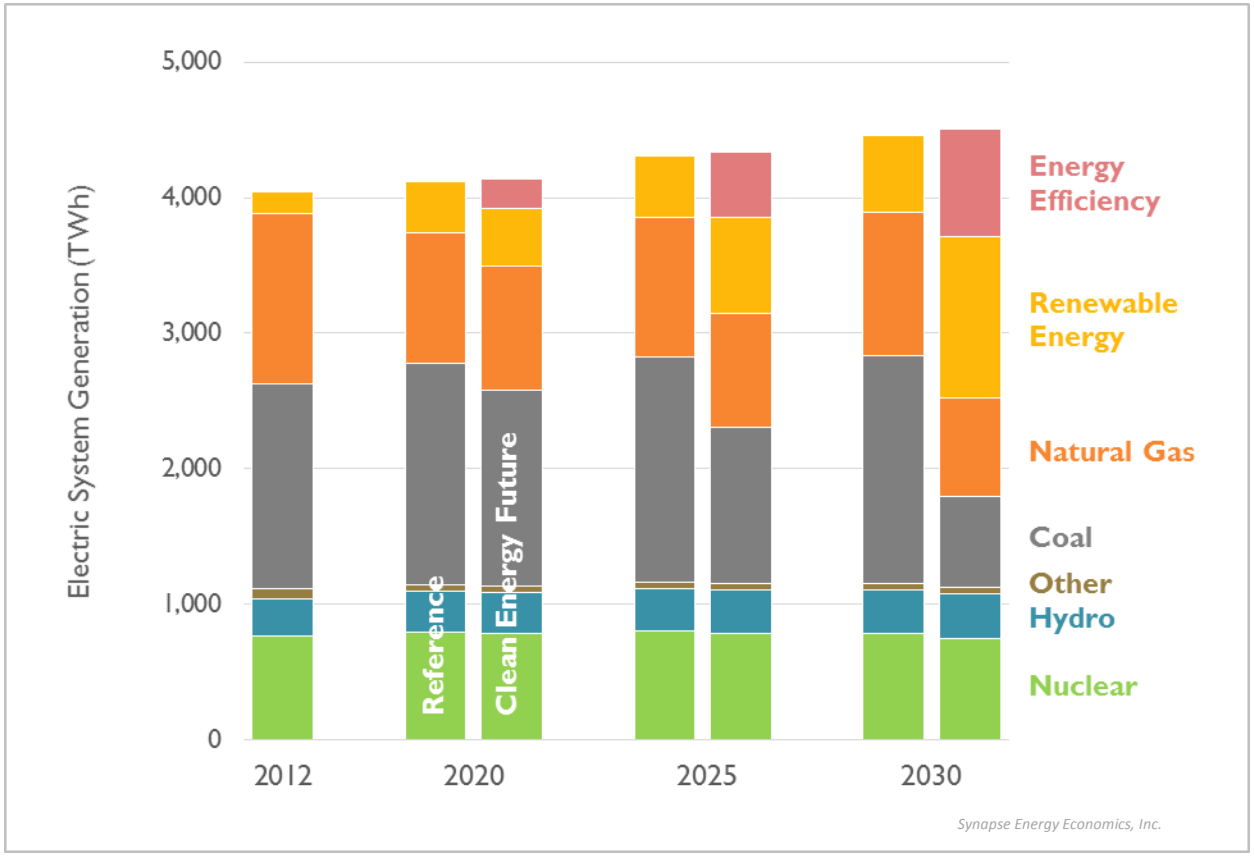
Savings are the difference between these two scenarios in electric costs or bills.

Synapse Clean Power Plan Toolkit

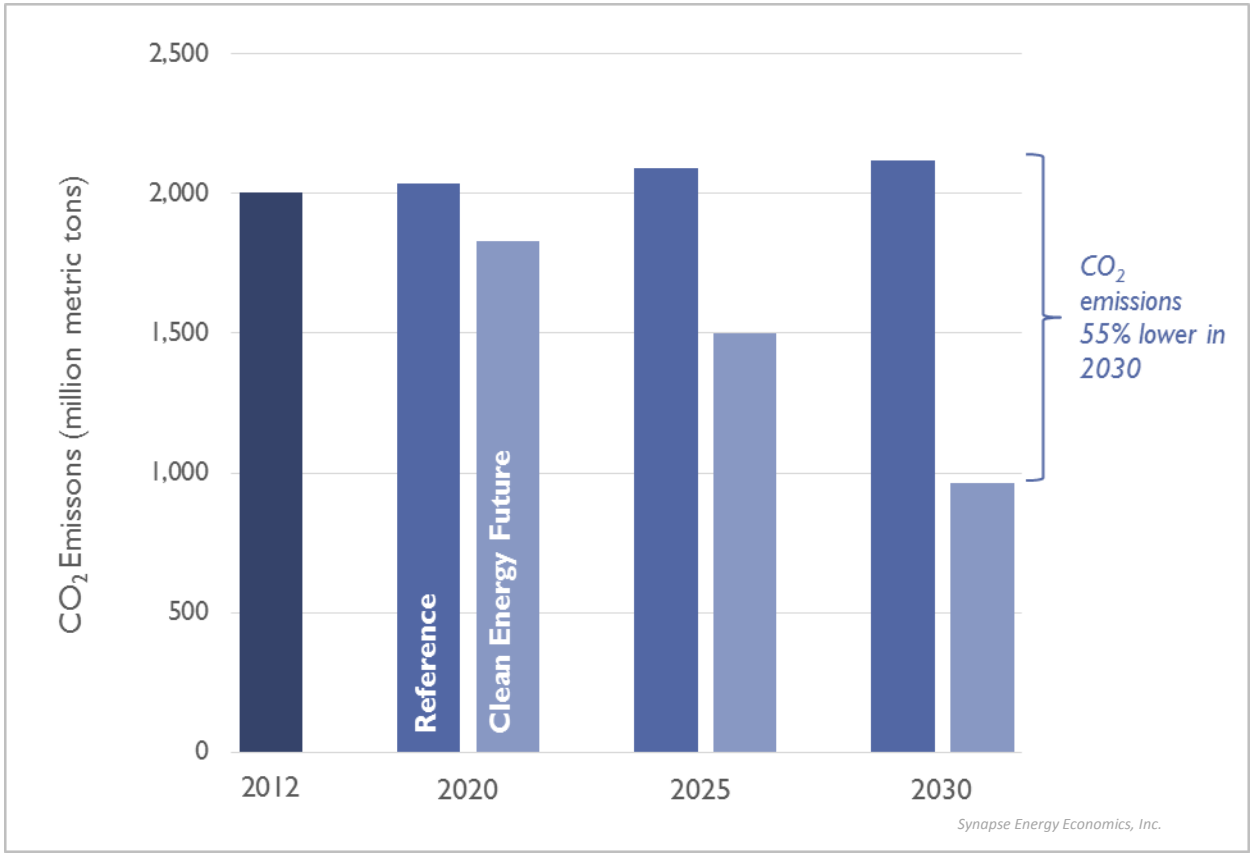


What is the Clean Energy Future like?

Changes in Electric Generation

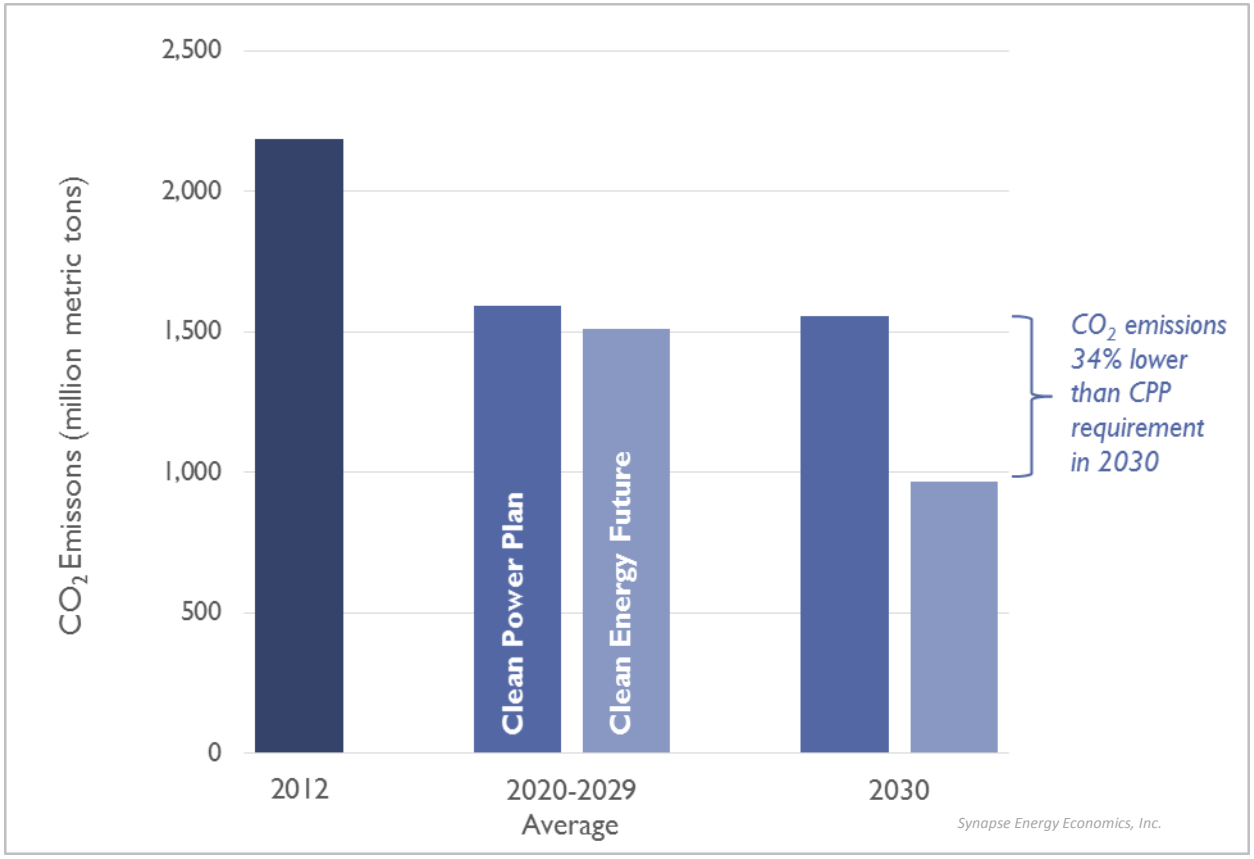


Changes in CO_2 Emissions

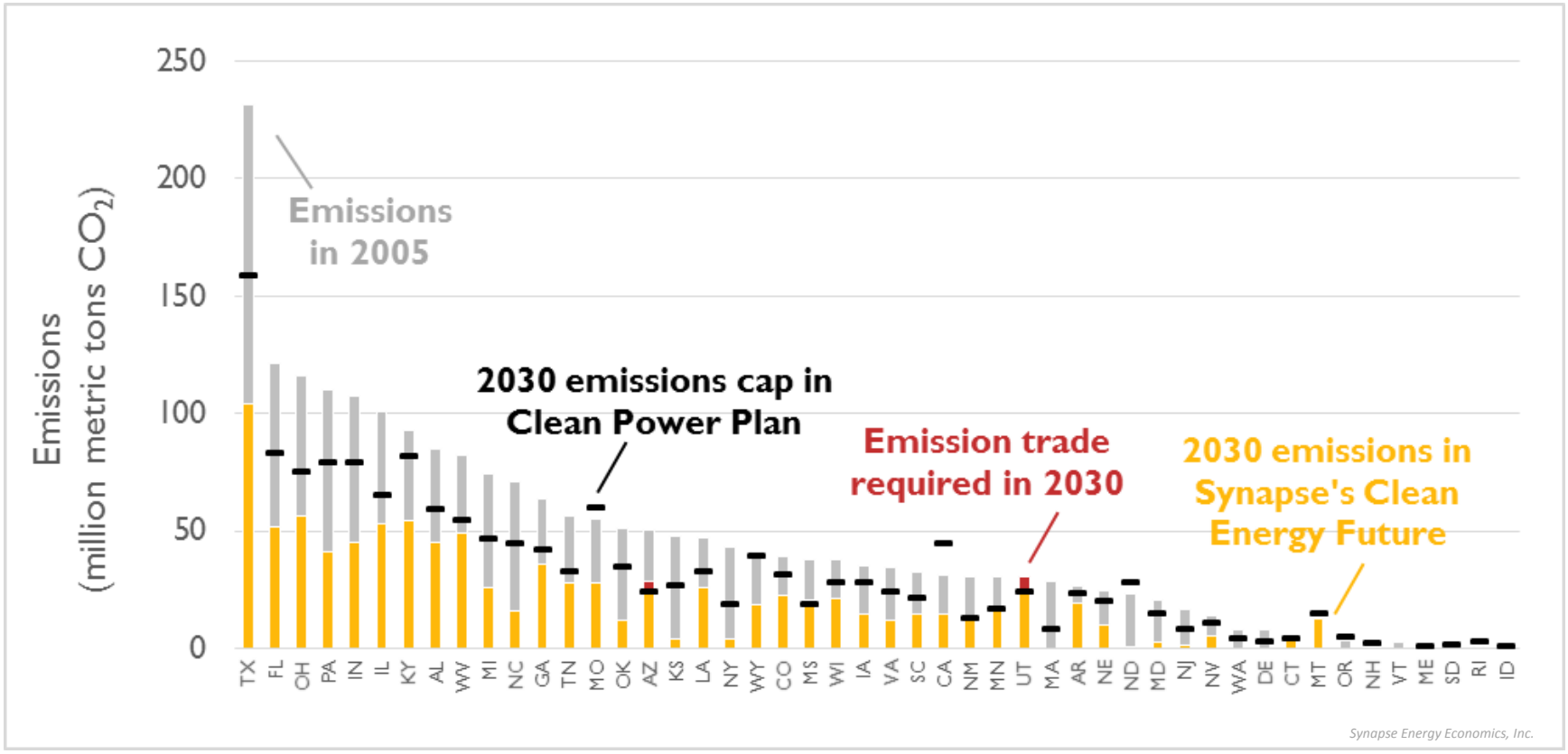


Does the Clean Energy Future comply with the proposed Clean Power Plan?

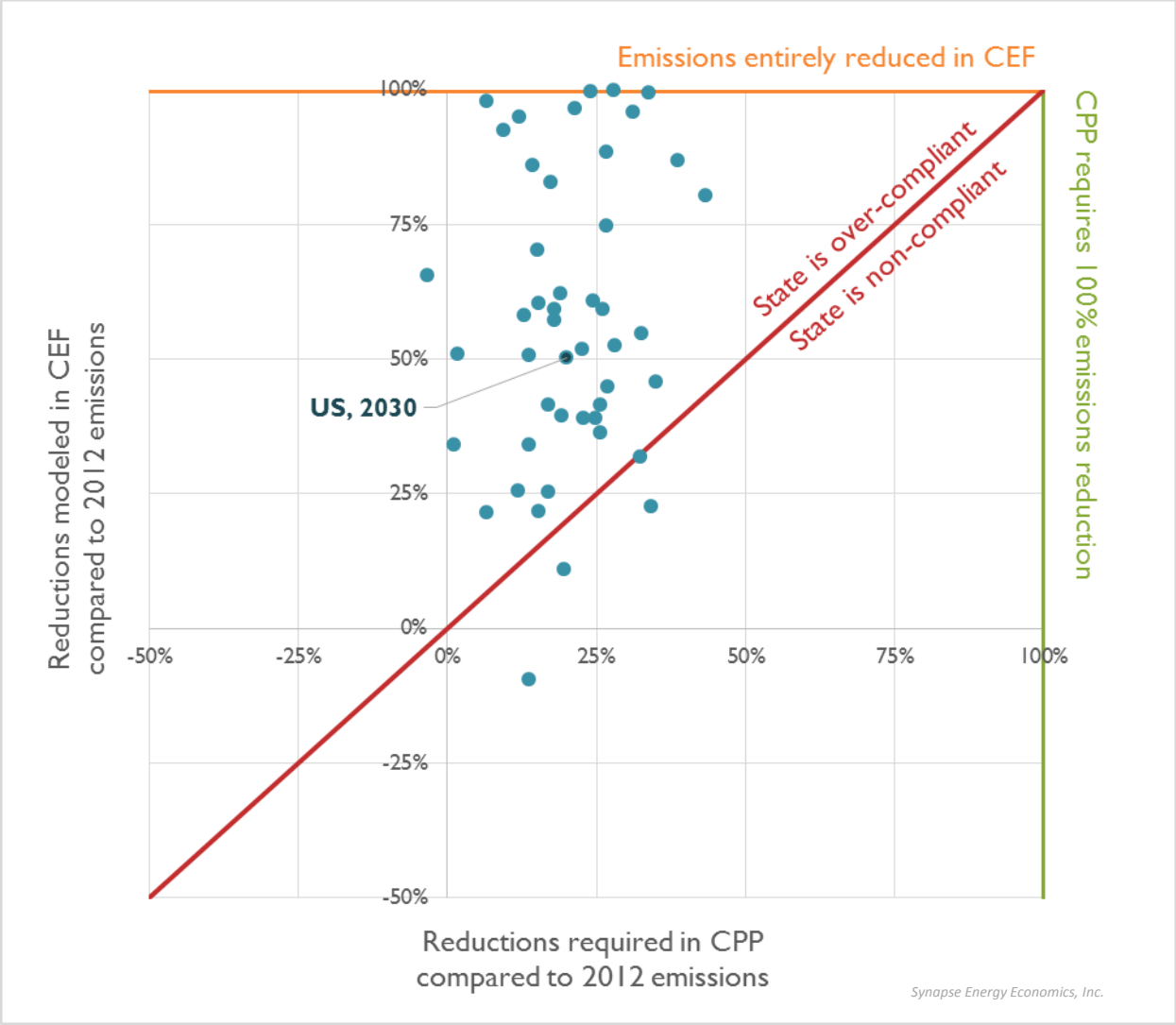
Clean Power Plan Results

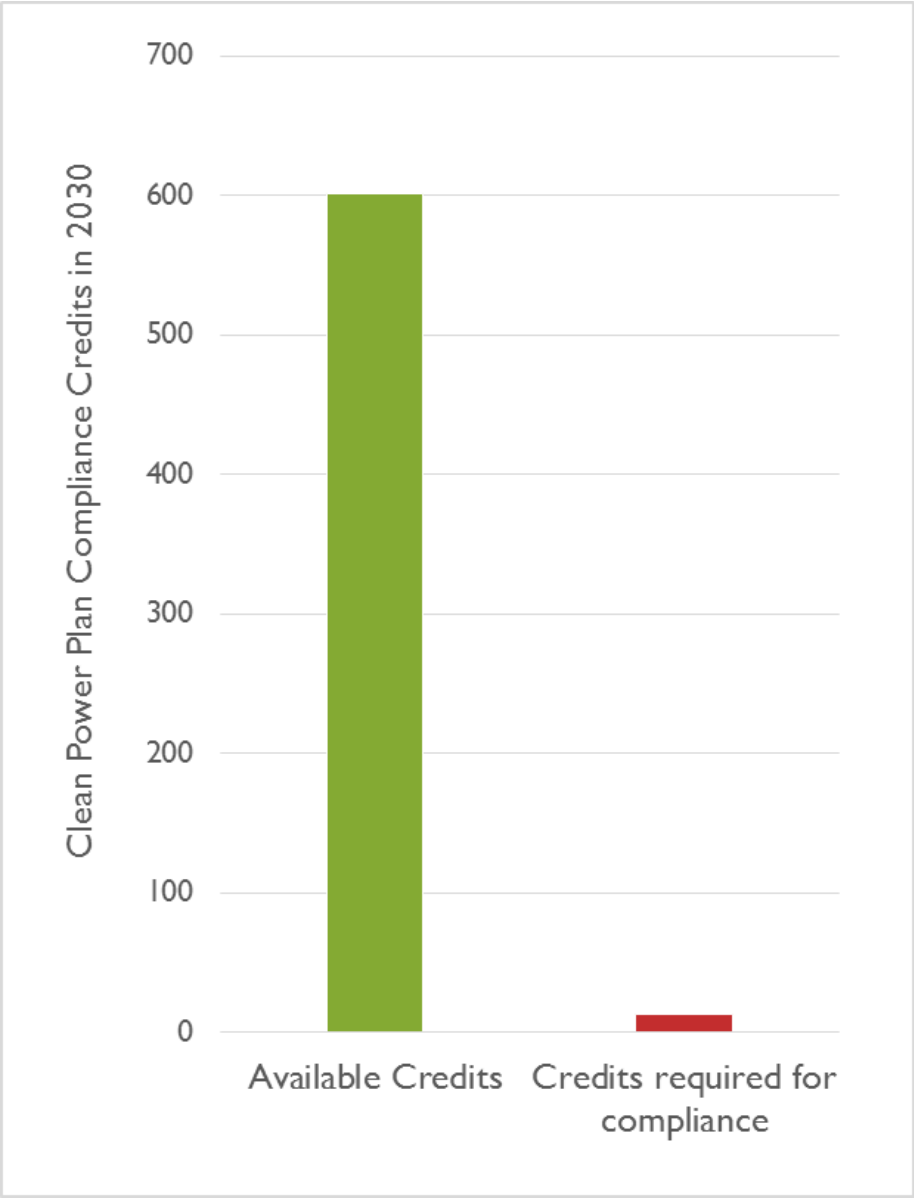


Clean Power Plan Results: State-Specific



Emission Reductions: Who Trades to Comply?



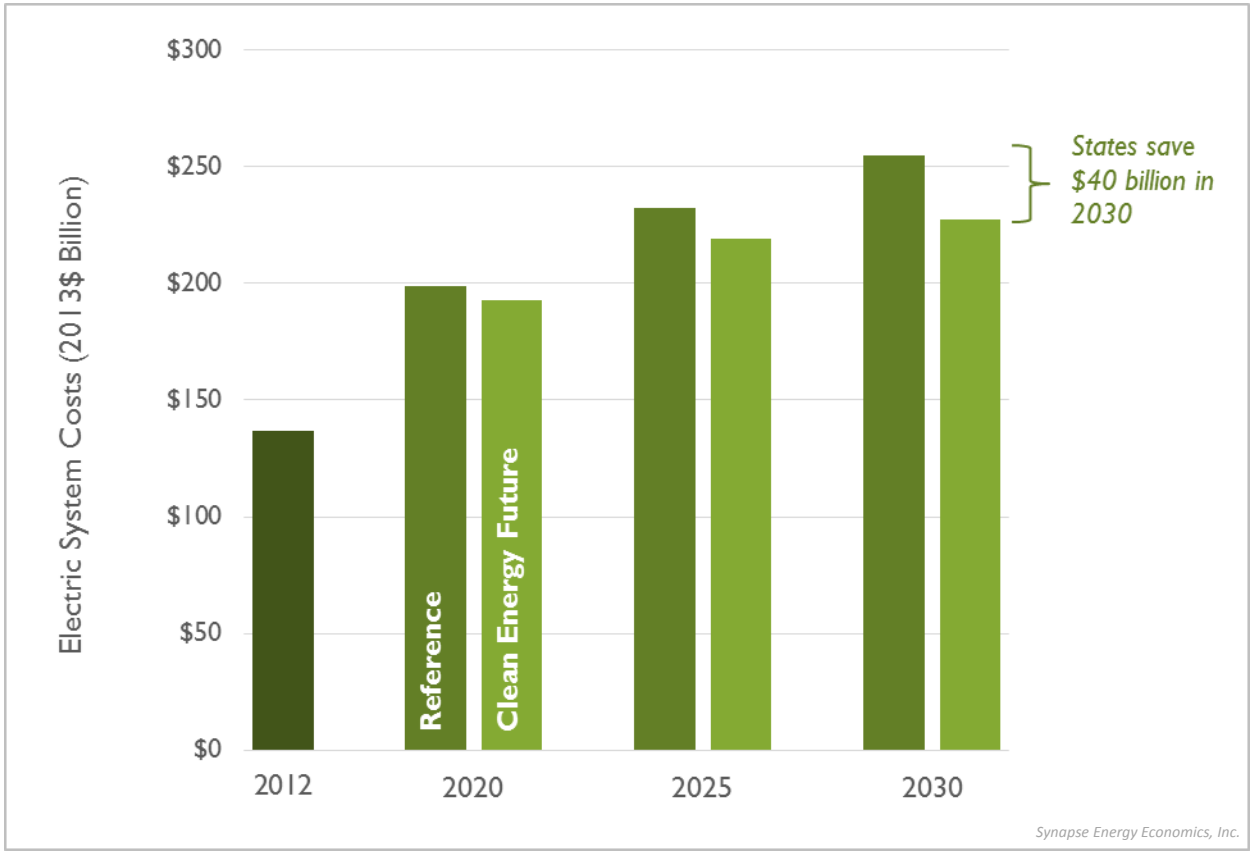


How Trading Works

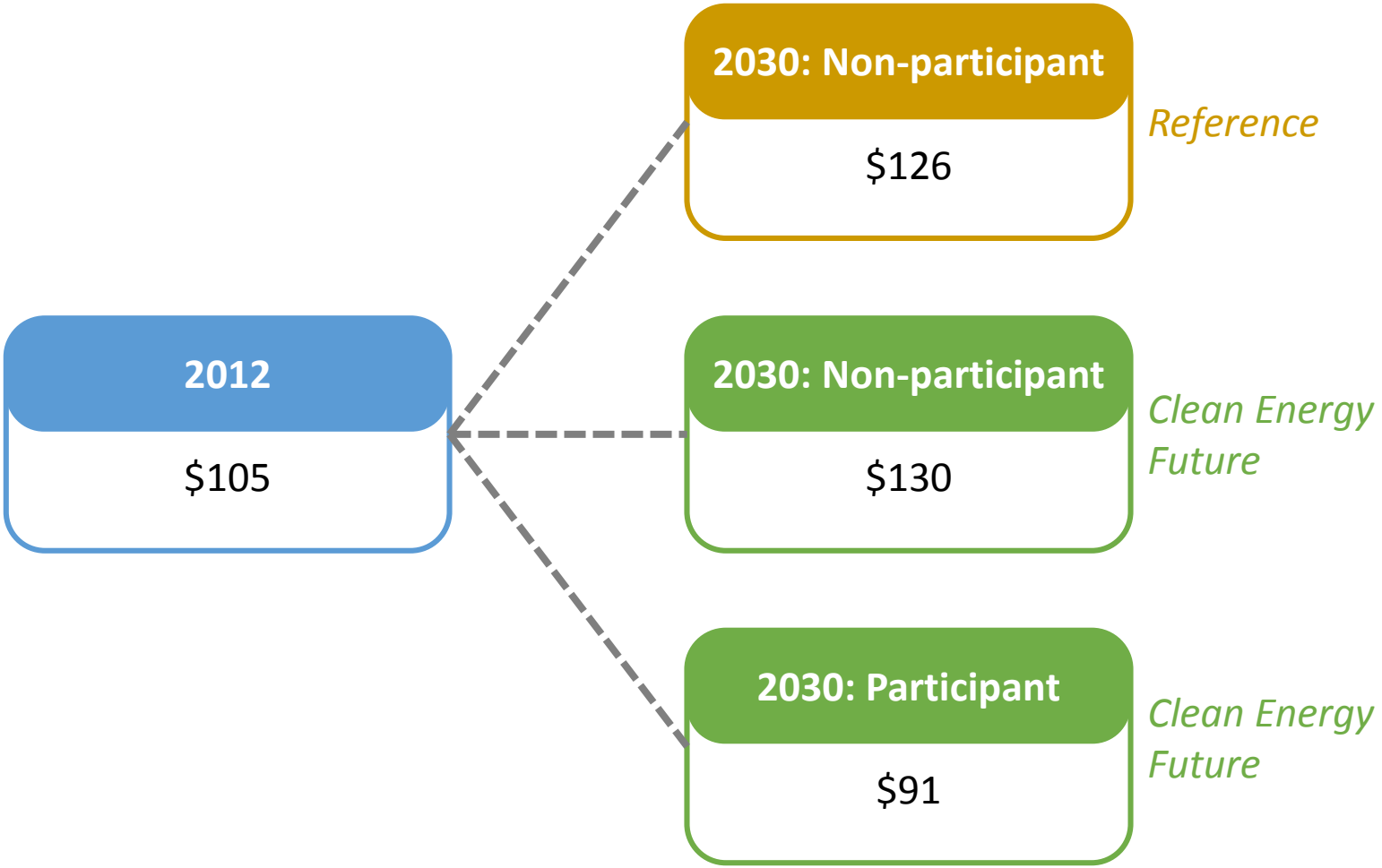
- 43 states over-comply
- Just 4 need trading to comply
- In 2030, the number of available credits exceed the demand by a factor of 47 to 1
- With the supply of credits greatly outweighing the demand, we expect a very low price per credit

Does the Clean Energy Future lower electric bills?

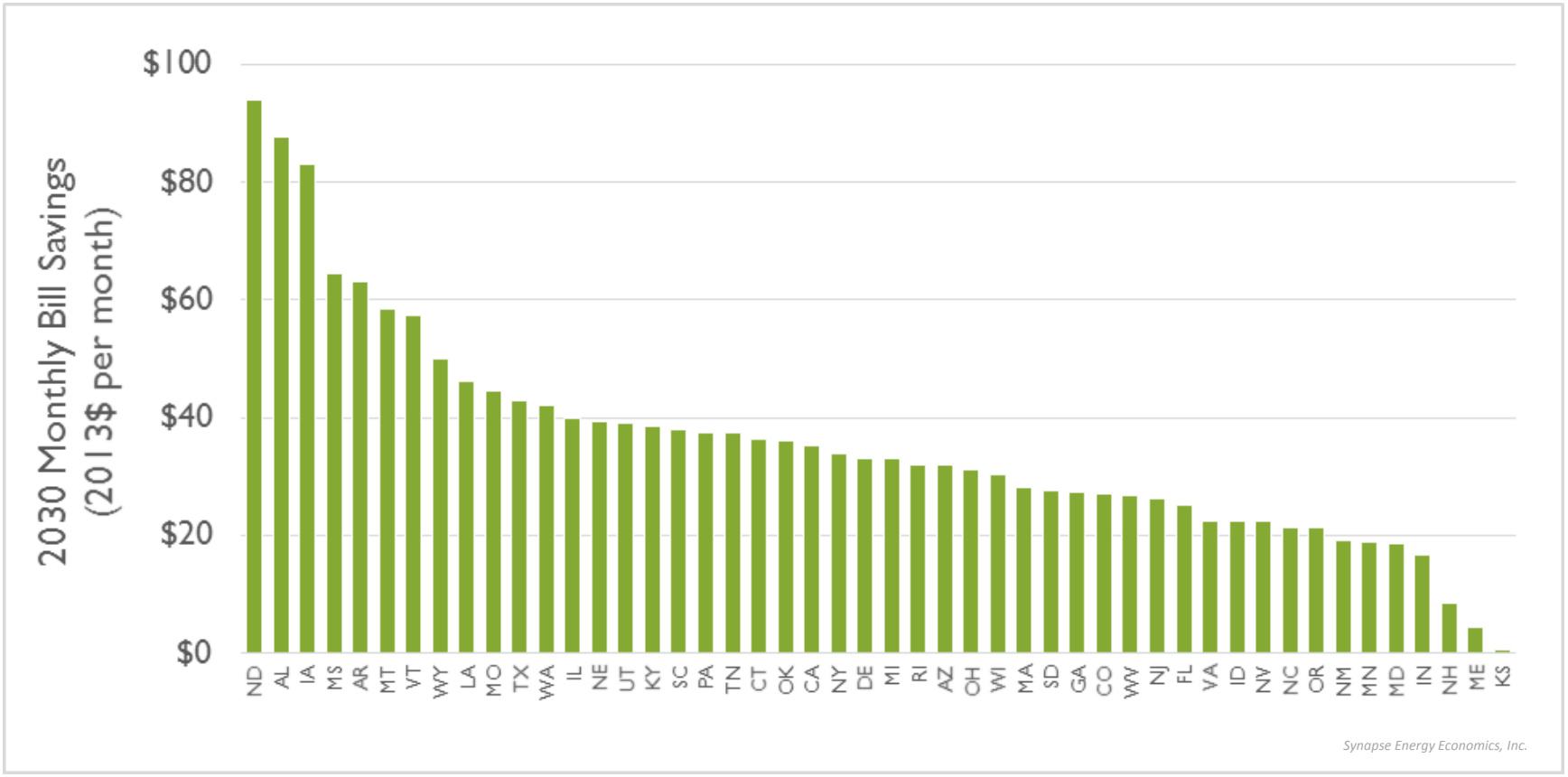
Cost Results



Monthly Bills in Different Years: U.S. Average



Monthly Bill Savings for Efficiency Participants



We assume participants are able to reduce monthly electric usage by 30 percent.

Important Links

Synapse Clean Power Plan Brief Series

Brief #1: Lower Costs Low Emissions: http://www.synapse-energy.com/Lower-Costs-Low-Emissions.pdf

Clean Energy Future Technical Review: http://synapse-energy.com/Clean-Energy-2040-Technical-Review

Brief #2: Clean Power Means Lower Bills for Consumers: http://synapse-energy.com/clean-power-plan-means-lower-bills-brief

Report: http://synapse-energy.com/clean-power-plan-means-lower-bills-report

Stay Tuned!

Synapse will be offering a series of webinars once the final Clean Power Plan is released.

Two days post-rule: "Final Clean Power Plan: First Cut"

Two weeks post-rule: "Final Clean Power Plan: In Detail"

Four weeks post-rule: "Updates to Synapse's CP3T"

Six weeks post-rule: "Brief #3: Modeling the Final Rule"

Thank you!

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