



WHAT'S NEXT?
OVERCOMING
BARRIERS
TO THE CLEAN
ENERGY TRANSITION

April 17th at 2PM ET

Introduction

Kristen Soares



State Climate Policy
Network Manager

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State Climate Policy Network (SCPN)

- Network of 15,000+ policymakers, advocates, business leaders and experts pushing for effective and equitable climate policies in their states
- Host monthly national calls and webinars
- Share updates, research, and analysis on various climate policy topics

How can we help you?

We specialize in state climate policy tracking, analysis, and expert connections. Reach out to kristen@climate-xchange.org with your questions on:

- **Example states** for a given policy
- **Gap analysis** of your state's climate policy landscape
- **Connections** to other actors working on similar issues

Or, check out our **State Climate Policy Dashboard**, which tracks state-level climate policy and resources across all 50 states.

We need your feedback!

www.surveymonkey.com/r/SCPNfeedback

- 10-15 minute survey
- What value do we provide to you?
What offerings would be most helpful?
- Automatically entered into a raffle to win one of 15 **\$50 Visa e-gift cards**



Overcoming Barriers to the Clean Energy Transition



Hannah Hess
Associate Director
Climate Impact Lab &
Rhodium Group



Charles Harper
*Power Sector Senior
Policy Lead*
Evergreen Action



Daniela Schulman
*Clean Power
Policy Consultant*
Evergreen Action



David Sarkisian
Principal Analyst,
Energy Policy and Markets
North Carolina Clean Energy
Technology Center

1. BIL/IRA Clean Energy Deployment to Date
2. State Siting and Permitting
3. Grid Modernization
4. Q&A

Speaker

Hannah Hess



Associate Director
Climate Impact Lab &
Rhodium Group

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Clean Investment in 2023

Assessing Progress in Electricity and
Transport

Energy & Climate

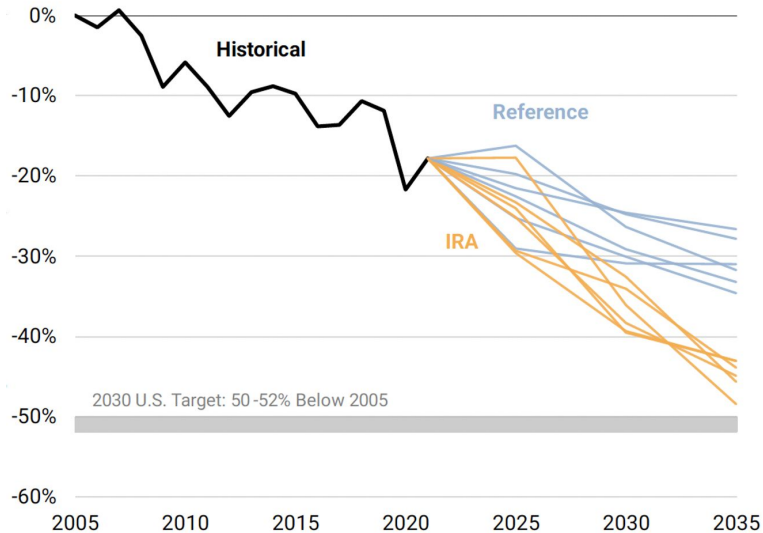
April 17, 2024



Federal legislation sets stage for US clean energy deployment & climate tech scale-up

Cross-model comparison of projected US emissions reductions under Inflation Reduction Act (IRA)

Economy-wide emissions (% below 2005 levels)



Source: Bistline et al., 2023

CIM tracks actual investment spurred by new laws

- Climate & clean energy provisions are single largest component of IRA
 - Infrastructure Investment and Jobs Act (IIJA) further incentivized decarbonization & clean manufacturing
- Clean Investment Monitor** launched in September 2023 to track public & private investment in technologies covered by these bills
 - Timely** quarterly updates
 - Comprehensive** catalog of investments across a range of emissions-reduction technologies
 - Robust, methodologically-consistent, **publicly available** source of information

Scenarios included in this assessment

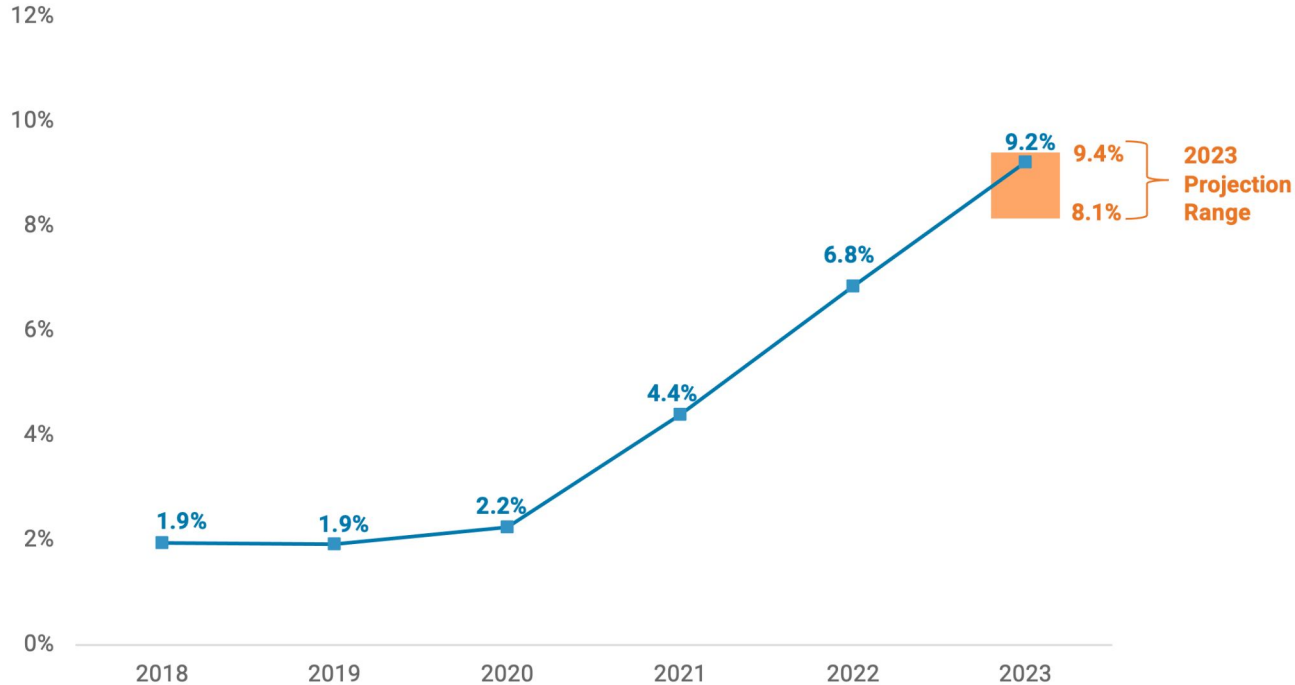
Modeling broadly aligns with IRA author's stated objective of achieving a 40% reduction in GHG emissions by 2030 relative to 2005 levels

Organization	Report	Scenario	Net GHG 2030 vs 2005
Energy Innovation	<u>Updated Inflation Reduction Act Modeling Using the Energy Policy Simulator</u>	Low	-37%
		High	-42%
REPEAT Project	<u>Climate Progress and the 117th Congress: The Impacts of the Inflation Reduction Act and Infrastructure Investment and Jobs Act</u>	Conservative	-37%
		Optimistic	-41%
Rhodium Group*	<u>Taking Stock 2023: US Emissions Projections after the Inflation Reduction Act</u>	Mid emissions	-37%
		Low emissions	-42%

* Rhodium Group also modeled a "high emissions" scenario in which faster economic growth, cheap fossil fuels and expensive clean energy technology only results in a 29% reduction below 2005 levels by 2030, which is not included in this analysis.

ZEV share of total light-duty vehicle sales

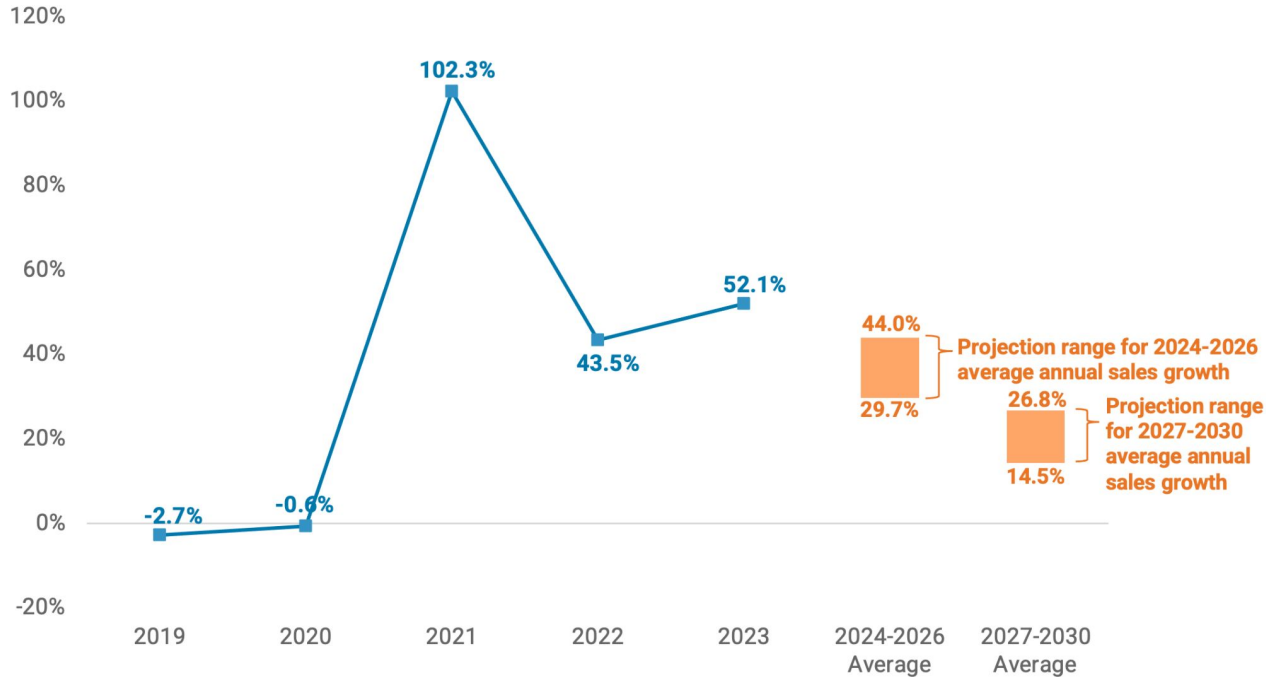
Actual sales (based on registrations) vs. 2023 projection range



Source: Rhodium Group / MIT-CEEPR Clean Investment Monitor, Energy Innovation, REPEAT Project

Annual growth rate in ZEV sales

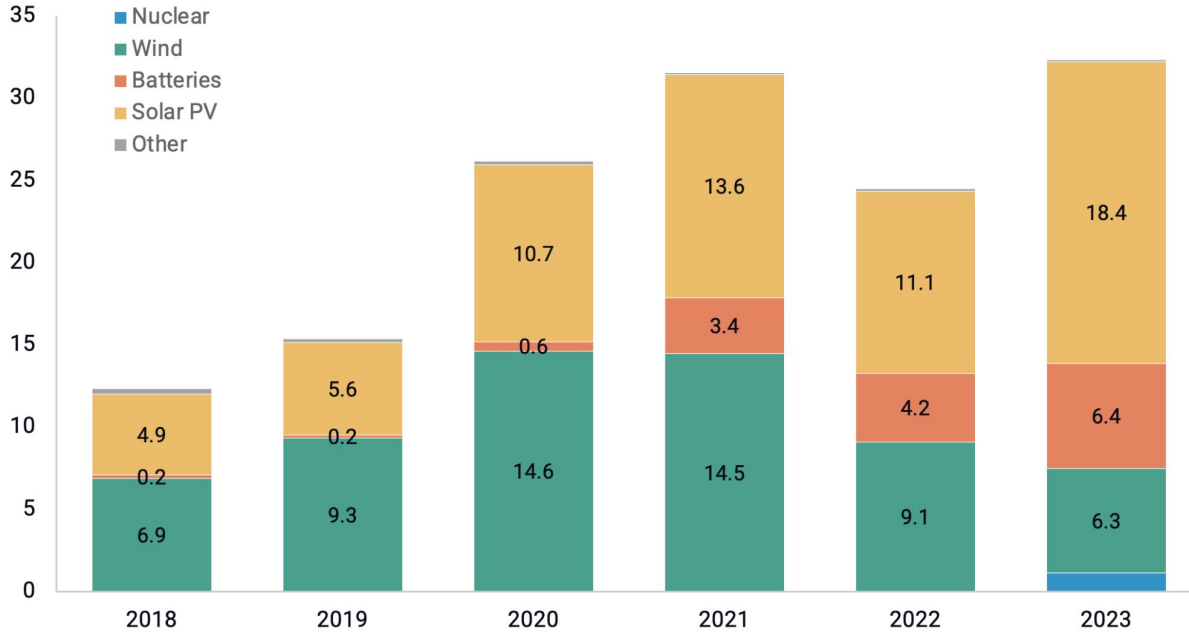
Actual sales (based on registrations) vs. 2024-2030 projection range



Source: Rhodium Group / MIT-CEEPR Clean Investment Monitor, Energy Innovation, REPEAT Project

Annual clean electricity capacity additions

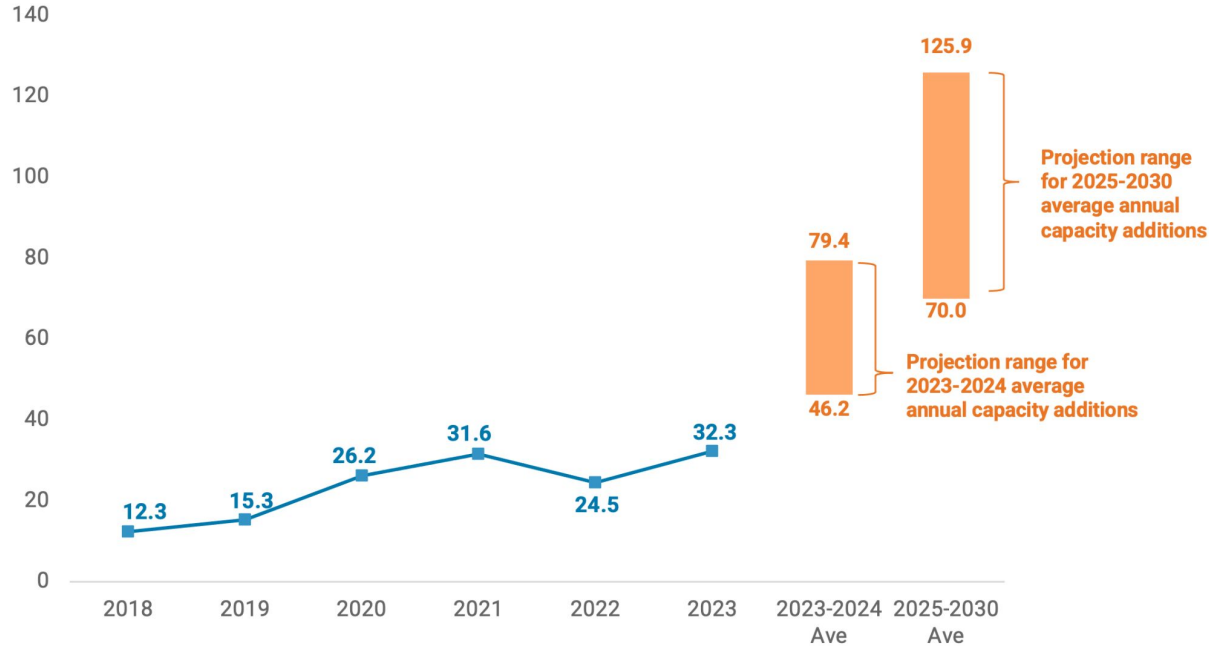
GW net summer capacity



Source: Rhodium Group / MIT-CEEPR Clean Investment Monitor

Annual clean electricity capacity additions vs projections

GW net summer capacity vs. projection range



Source: Rhodium Group / MIT-CEEPR Clean Investment Monitor, Energy Innovation, REPEAT Project

Conclusions

Progress is mixed in two key areas of clean energy and transportation deployment

Transportation

ZEV deployment can remain on track with IRA's 40% emissions reduction initiative, even if annual sales growth slows in 2024

Electricity

Investment in utility-scale clean electricity generation and storage capacity at risk of falling behind post-IRA projections, even as renewables are cost-competitive with coal and natural gas

Barriers

Non-cost in nature: siting and permitting delays, backlogged grid interconnection queues, supply chain challenges

Clean Investment in 2023

Speaker

Charles Harper



**Power Sector
Senior Policy Lead**
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Daniela Schulman



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State Siting and Permitting Opportunities

April 17, 2024

Overview

- To hit our climate targets, we need to build new transmission and renewable energy at a **pace and scale our country has scarcely seen before**.
- Our country urgently needs more efficient and effective permitting and siting processes for clean energy and transmission—**without waiting on Congress nor paving the way for fossil fuel projects**.
- The **Biden administration** and **FERC** must **use existing authority now** to address multiple sources of delay in **clean energy permitting** and **transmission buildout**.
- We need **state laws** that speed up siting and permitting processes for transmission and clean energy while strengthening community engagement and benefits.

Acquire the land for a **project site** from the BLM (Bureau of Land Management) and/or private landowners

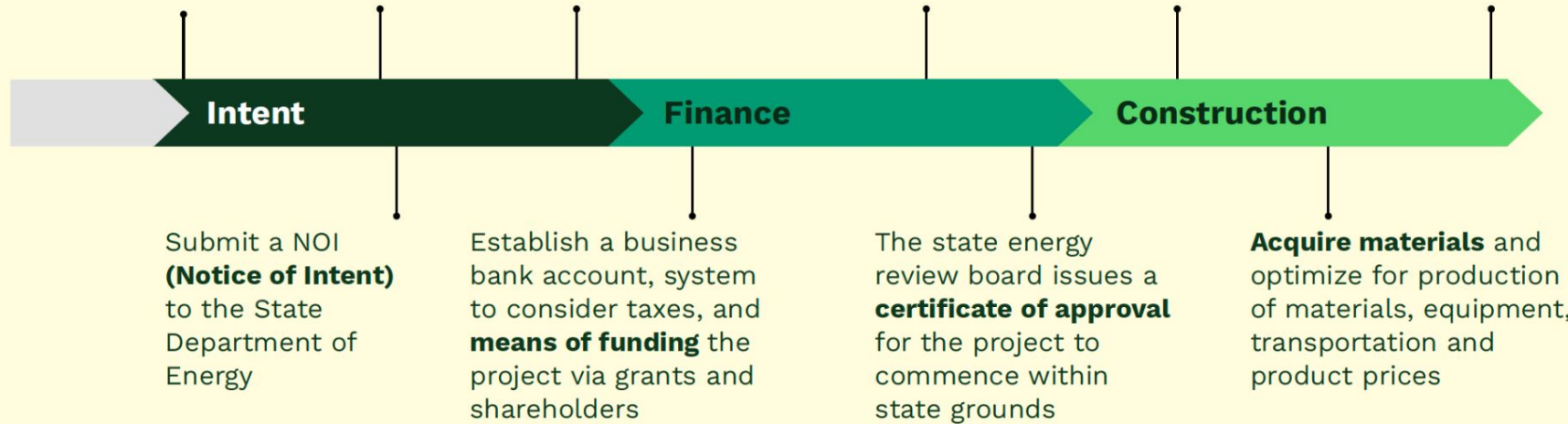
Determine and notify appropriate Tribes and Tribal governing bodies to engage in meaningful consultation

Publish public notices and proceed with **public and adjudicatory hearings**

A state energy review board conducts an **internal investigation** including site visits, cultural preservation, and archaeological reviews

Obtain **permits and licenses** to construct facilities, connect to existing power lines, and operate on designated land

Construct the project



Adapted from [Susskind et al. 2022](#) and [Bozuwa & Mulvaney 2023](#)

Siting, planning, and permitting is a multilayered process

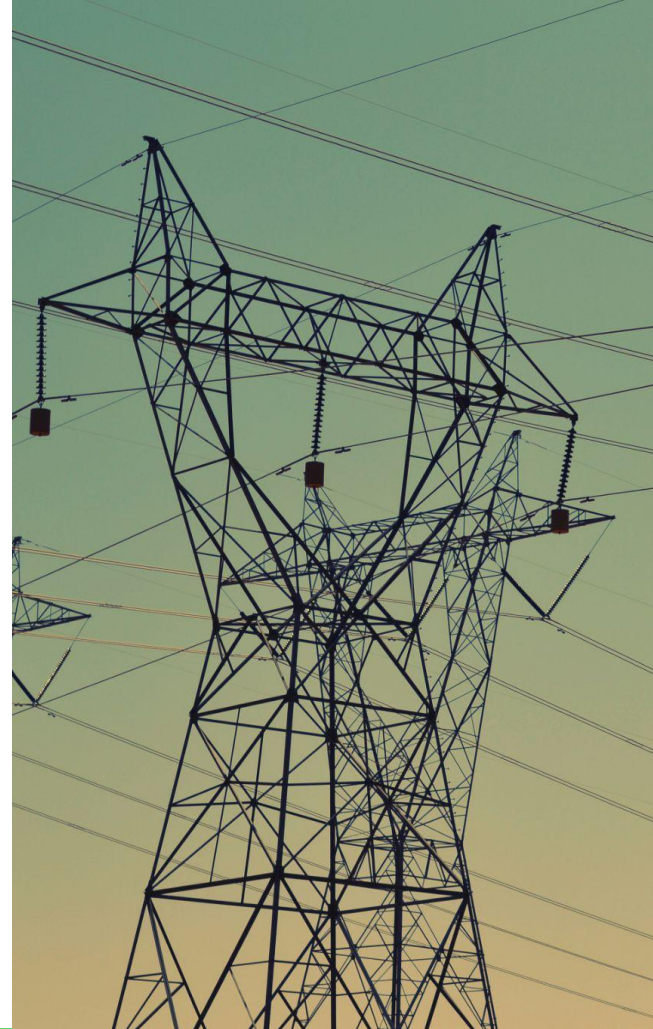
Teeing Up Transmission

- **FERC**

- Regional transmission planning and backstop siting rules
- New rules on interregional transmission/transfer capability and intervenor compensation

- **DOE**

- National Interest Electric Transmission Corridors (NIETCs)
- Serving as lead agency for transmission permitting
- “Anchor customer” authority
- Enforceable community benefits agreements



Better NEPA Reviews, Better Outcomes

- **White House CEQ**

- Phase II NEPA rulemaking
- Spending IRA funds to recruit, train, and retain permitting staff

- **Federal permitting agencies**

- Expanded Programmatic Environmental Impact Statements (PEISs)
- Mitigated Findings of No Significant Impact (Mitigated FONISs)
- Categorical Exclusions

State legislative opportunities

- **Unify renewable energy siting and permitting authority at the state level**
- Set reasonable timelines
- Guard against local obstruction
- Minimize adverse impacts with assessments and standards



State legislative opportunities

- Ensure direct and visible local benefits
- Respect Tribal sovereignty
- Require cumulative impact analysis
- Conduct early, meaningful engagement with affected communities



State case studies

California
AB 205

Illinois
HB 4412

Washington
HB 1812, HB 1216

Michigan
HB 5120/5121

State key considerations

Administering agency

Eligible project types

Unified authority and statewide standards

Avoid, mitigate adverse impacts

Proactive planning

Community engagement

Tribal consultation

Community benefits

Cumulative impact analysis

Siting and permitting timelines

3. State case studies

New York
A9508-B, S8830

RAPID Act:

- Safeguard the environment
- Preserve local input
- Accelerate transmission permitting





Speaker

David Sarkisian



**Principal Analyst,
Energy Policy and Markets**
North Carolina Clean Energy
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Grid Modernization Policies and Barriers to Clean Energy

David Sarkisian

Principal Analyst – Policy and Markets

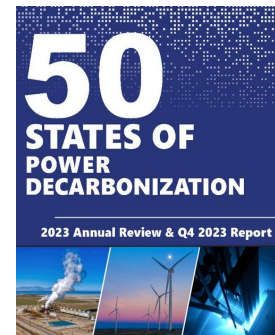
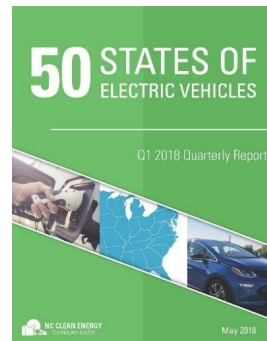
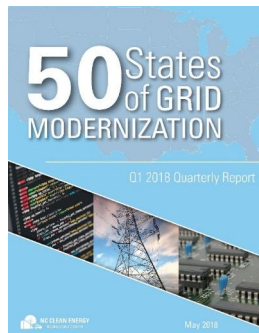
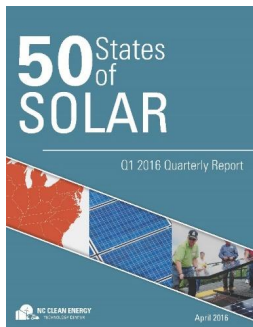
North Carolina Clean Energy Technology Center

About the NC Clean Energy Technology Center

- UNC System-chartered Public Service Center administered by the College of Engineering at North Carolina State University
- Mission is to advance a sustainable energy economy by educating, demonstrating and providing support for clean energy technologies practices, and policies
- Objective research, analysis, & technical assistance
- Manages the Database of State Incentives for Renewables and Efficiency (DSIRE – www.dsireusa.org)

50 States Report Series

- Quarterly publications detailing state and utility changes related to: (1) solar policy & rate design, (2) grid modernization and energy storage, (3) electric vehicles, and (4) decarbonization



What is Grid Modernization?

- Actions making the electricity system more resilient, responsive, and interactive
 - Smart grid and advanced metering infrastructure
 - Utility business model reform,
 - Regulatory reform
 - Utility rate reform
 - Energy storage
 - Microgrids
 - Demand response

Barriers to Clean Energy and Grid Modernization Solutions

- Access to Wholesale Markets
 - Clean Energy Interconnection
 - DER Aggregation
 - Wholesale Market Expansion
- Incorporation of Variable Resources
 - Smart Grid Technologies
 - Energy Storage Deployment
 - Time-of-Use Rates
 - DER Compensation
- Consideration of DER in Planning Processes
 - Integrated Resource Planning
 - Distribution System Planning
 - Utility Business Model/Performance-Based Ratemaking

Access to Wholesale Markets

- Clean energy projects have had difficulty connecting to wholesale markets
 - Market rules not equipped to handle characteristics of clean energy resources
 - Interconnection backlogs
- FERC rule changes and wholesale market expansion can/have addressed some issues

Energy Storage Interconnection

- FERC Order 841
 - Ensures access to wholesale markets for electric storage resources
 - ISOs/RTOs implemented
- FERC Order 2023
 - Reform of interconnection processes
 - Adopts first-ready, first-served system
 - Implementation in early stages

DER Aggregation

- Smaller DERs can be aggregated to a resource scale that would allow participation in wholesale markets
- FERC Order 2222
 - Ensures access to wholesale markets for DER aggregators
 - ISOs/RTOs at varying stages in implementation
 - State opt-out for demand response resources

Wholesale Market Expansion

- Wholesale markets in new areas can increase access for clean energy resources
- CAISO Expansion
 - WEIM
 - Expanded Day-Ahead Market
- SPP Expansion, Markets+
- SEEM

Incorporation of Variable Resources

- Variable resources can be challenging for the grid and older utility rate structures
- Smart grid technologies and new rate structures can address to some extent

Smart Grid Technologies

- AMI
 - Can facilitate DER compensation
 - Allows residential-level demand response programs
 - Direct load management programs
- DERMS
- Microgrids

Energy Storage Deployment

- Energy storage facilitates variable resources
- Storage Targets
 - Maryland
 - Michigan
- Distributed Storage Incentives
 - Illinois
 - California
 - North Carolina

Time-of-Use Rates

- Time-of-Use Rates can reward DER for energy provided at peak times
- Some states/utilities have been moving to mandatory residential time-of-use rates, although there have been some obstacles
- Rates may include critical peak pricing or real-time pricing

DER Compensation

- DER compensation rates have been controversial but are moving to more sophisticated structures
 - Illinois compensation for inverters
 - Hawaii energy storage rates

Planning Processes/Utility Business Models

- Rules can require more thorough consideration of clean energy resources and DERs in utility planning processes
- Utilities can be given incentives in performance-based ratemaking for incorporation of DERs

Integrated Resource Planning

- Energy storage playing a large role in many utility resource plans
- More states requiring or considering legislation to require integrated resource plans
- IRPs required to align with state clean energy goals

Distribution System Plans

- Distribution system planning processes can encourage utilities to consider non-traditional alternatives to standard grid investments
- Non-wires alternatives
- Illinois Grid Plans

Utility Business Model/Performance-Based Ratemaking

- Performance-based ratemaking can alter traditional incentives for standard grid and resource investments
- Performance metrics can include DER incorporation
- Incentives for energy efficiency, demand response, clean energy and energy storage contracts

Questions?

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Q&A

Thank you for joining!

**Reach out to
kristen@climate-xchange.org with any
additional questions!**

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