

Social and Economic Dynamics of Large-Scale Renewable Energy Siting

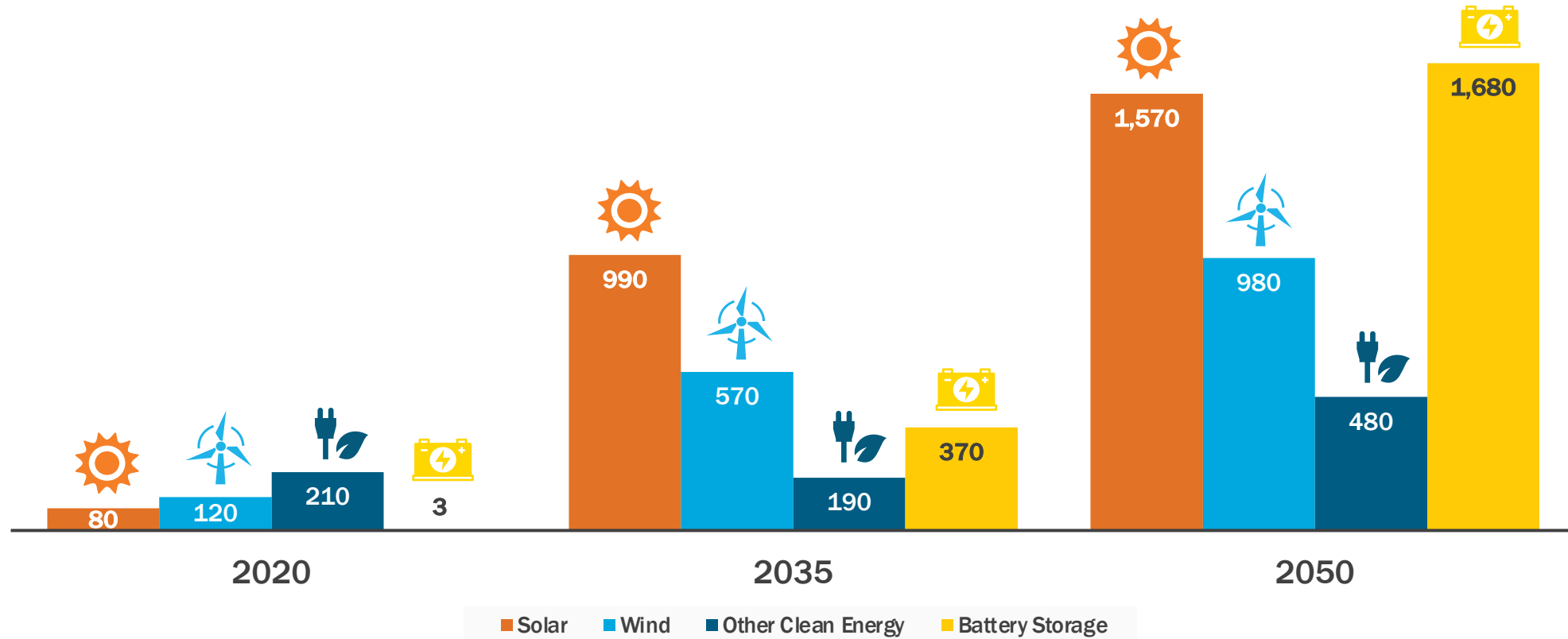
Kendra Kostek, EERE, Siting and Permitting Lead

October 13, 2022



Meeting our climate goals

- The Biden Administration's goals will achieve a carbon pollution-free power sector by 2035 and puts the US on an irreversible path to a net-zero economy by 2050.
- In order to achieve this goal a significant amount of renewable energy needs to be deployed by 2050.

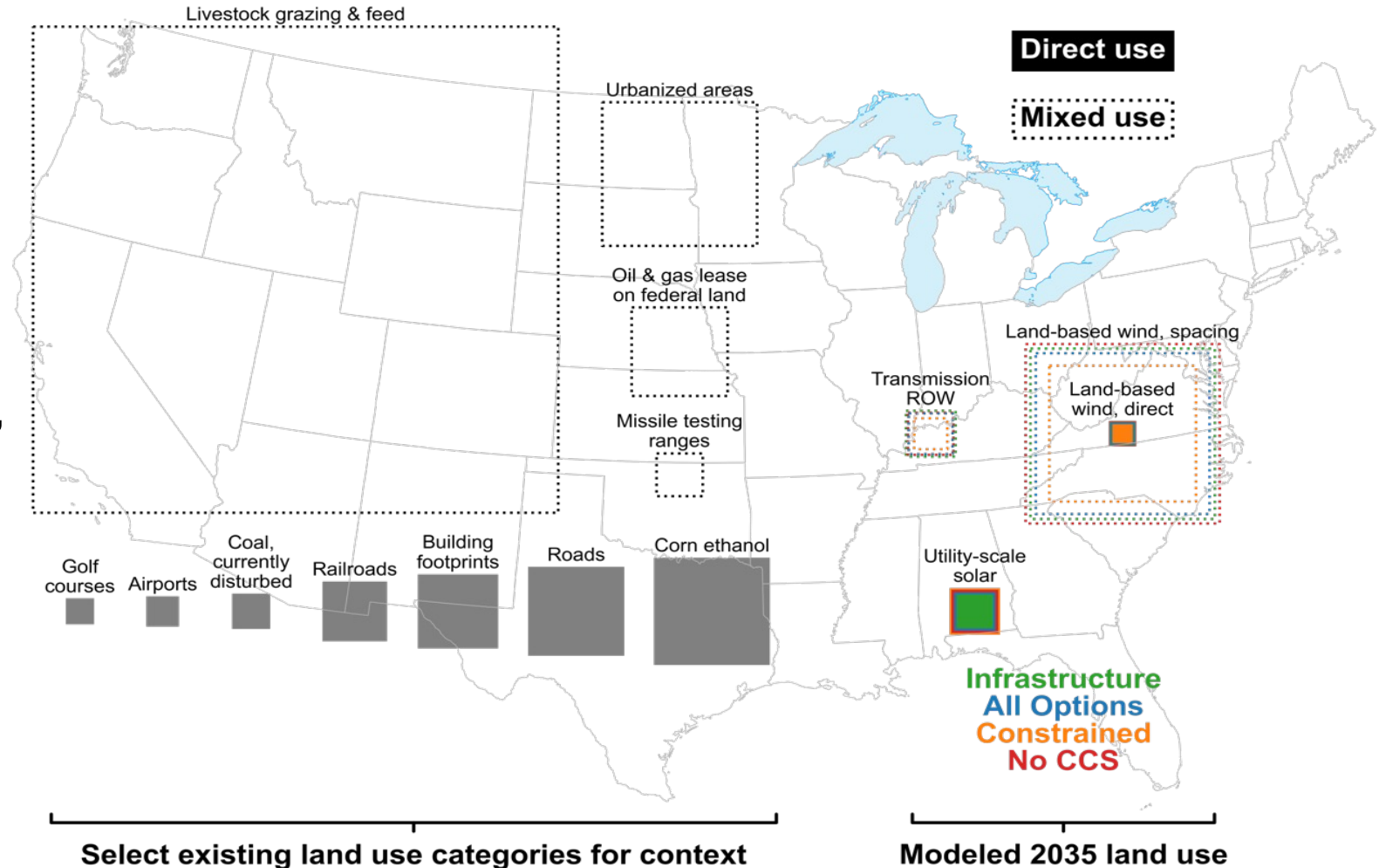


Renewable energy capacity to achieve 100% power-sector decarbonization with increased electrification by 2050, in GW
Source: NREL Solar Futures Study

Scale of deployment needs land at an unprecedented pace

The scale of deployment will likely affect many communities across the country because of the amount of land required.

- Solar energy may require **+ 29,000 km²** by 2035.
- Land-based wind may require **+ 7,000 km²** of direct land use, **+346,000 km²** indirect land by 2035.



Source: NREL 100% clean electricity study

EERE resources & ongoing research

ENERGY.GOV
Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

WINDEXchange

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Wind information by state

select a state

WINDEXchange provides resources to help communities weigh the benefits and impacts of wind energy.

Utility-Scale Wind

Distributed Wind

Land-Based Offshore Community Residential

RAPID Regulatory and Permitting Information Desktop Toolkit

U.S. DEPARTMENT OF ENERGY

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RAPID / Geothermal

GEOTHERMAL Toolkit

Access the Engage Tool

Visualize your energy future.

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Navigating the complex system of federal and state regulations and permits can be one of the biggest hurdles geothermal developers face. The Geothermal Regulatory and Permitting Information Desktop Toolkit offers a solution.

Solar Funding OPPORTUNITY

U.S. DEPARTMENT OF ENERGY Office of ENERGY EFFICIENCY & RENEWABLE ENERGY SOLAR ENERGY TECHNOLOGIES OFFICE

Foundational Agrivoltaic Research for Megawatt Scale (FARMS)

BERKELEY LAB

ELECTRICITY MARKETS & POLICY

ABOUT US RESEARCH PUBLICATIONS VISUALIZATIONS TOOLS WEBINARS NEWS

National Survey of Attitudes of Wind Power Project Neighbors

U.S. Department of Energy

Solar Power in Your Community

A guide for local governments on how to increase access to and deployment of solar PV.

NREL Releases Comprehensive Databases of Local Ordinances for Siting Wind, Solar Energy Projects

New Machine-Readable Data Sets Compile State, Local Zoning Laws and Ordinances for Siting Wind Energy and Solar Power Projects To Inform Planning for Decarbonization Goals

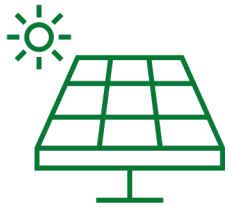
Solar Funding OPPORTUNITY

U.S. DEPARTMENT OF ENERGY Office of ENERGY EFFICIENCY & RENEWABLE ENERGY SOLAR ENERGY TECHNOLOGIES OFFICE

Deploying Solar with Wildlife and Ecosystem Services Benefits (SolWEB)

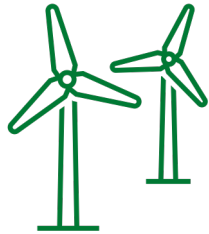
DOE's siting working group

The Office of Energy Efficiency and Renewable Energy (EERE)'s working group with participants from all four technology offices.



Solar Energy
Technology Office
(SETO)

Michele Boyd
Juan Botero



Wind Energy
Technology Office
(WETO)

Patrick Gilman
Joy Page
Raphael Tisch

Renewable Energy

Office of Energy Efficiency & Renewable Energy

Renewable Energy Office

Kendra Kostek



Water Power
Technology Office
(WPTO)

Tessa Greco
Simon Gore



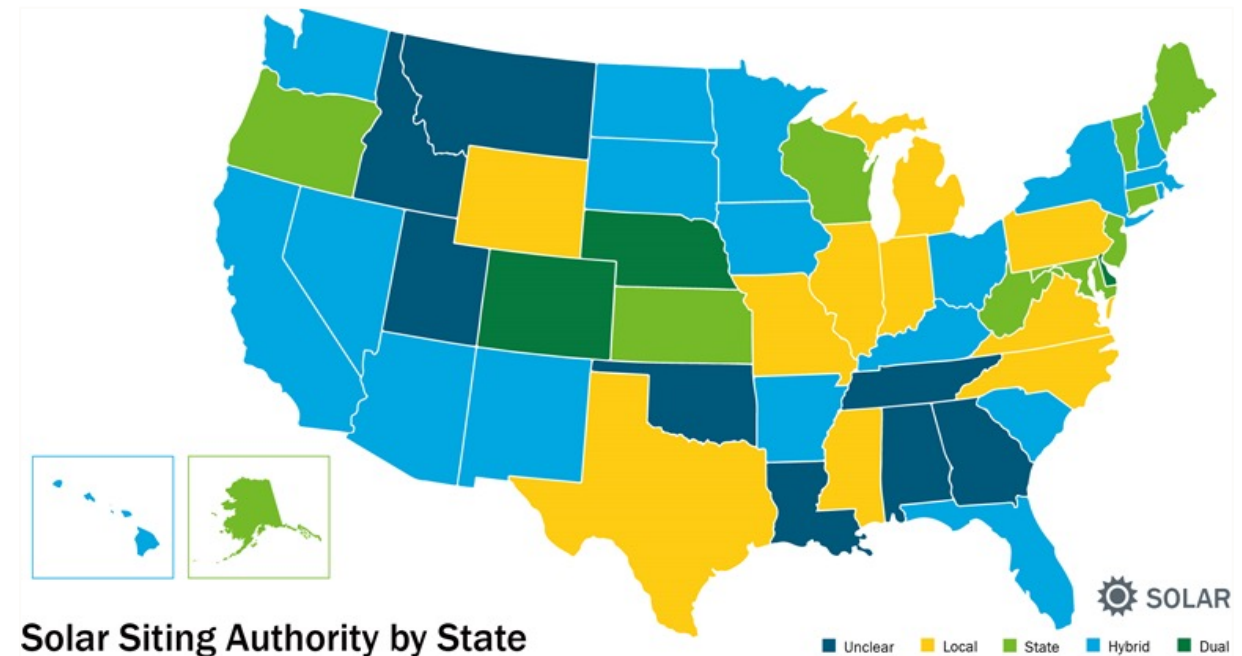
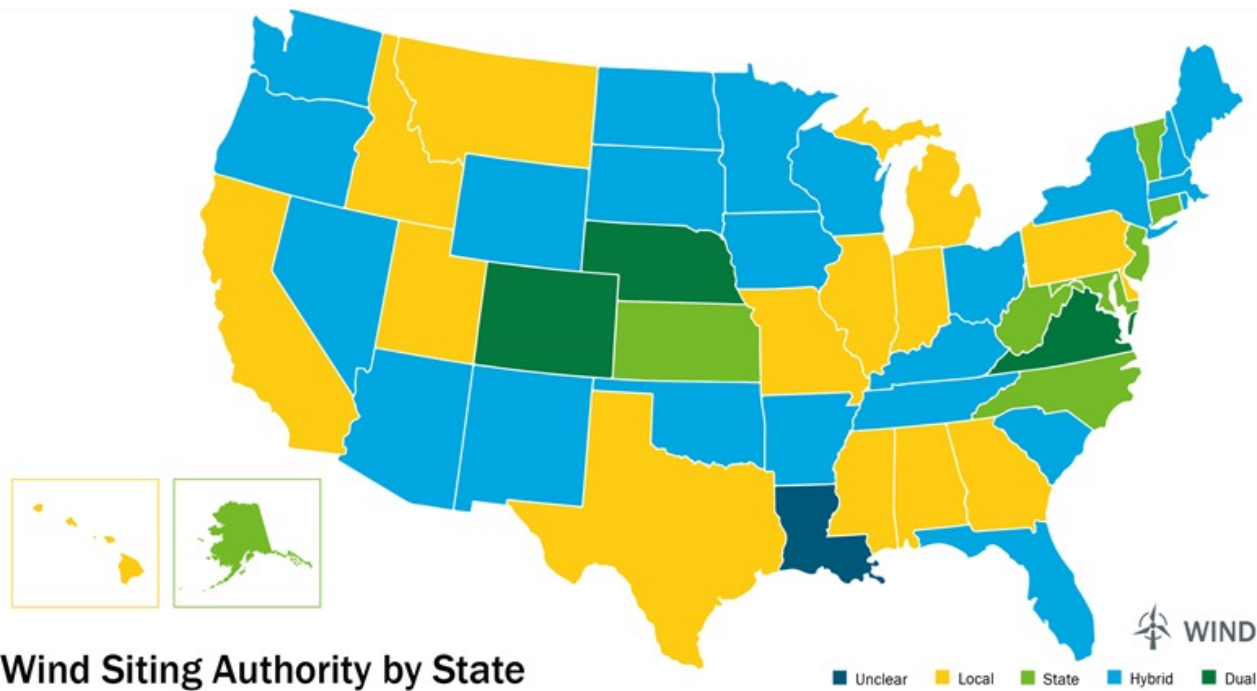
Geothermal
Technology Office
(GTO)

Jeff Winick
Jenn Livermore

Defining siting of renewable energy

- How do we define “Siting”? Identifying, acquiring, and preparing a location and the planning for construction, operation, and decommissioning. Federal, state, and local agencies create and apply rules for projects; land and water use planning, rules, regulations, and codes determine whether permission is granted.
- Local governments have at least some siting authority in ~80% of states.

Key issue: State & local governments with the authority to permit projects may lack the necessary staffing capacity, resources, and familiarity with the issues. This will be further stretched as proposals increase.

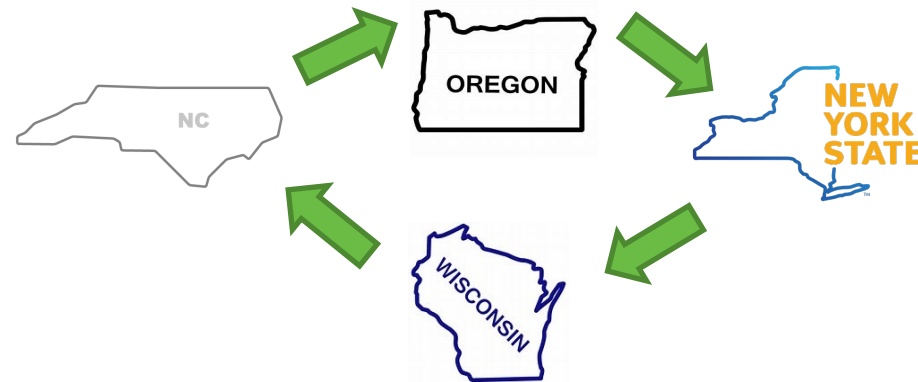


New EERE led siting workshop series for States

New Workshop Series: This will be a series that cycles through individual siting topics. The topics are based on feedback from State Energy Offices and polling of priority areas with NASEO. Save the Date: **Launching Nov. 2nd!**

Objectives include:

- Introduce SEOs to other SEOs, key resources, experts, and programs designed to remove barriers to large-scale renewable energy siting.
- Promote peer learning between SEOs and encourage continued engagement on renewable energy siting topics.
- Enable EERE learn more about the siting challenges that SEOs and their constituents are facing and track interest from workshop participants on priority topics and opportunities for further engagement.
- Topics include: existing state siting programs, community acceptance, land use competition, public policies and community benefits, and navigating environmental guidelines. More dates to come!



Thank you!

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