Unlocking Distributed Wind Potential with Federal and State Programs

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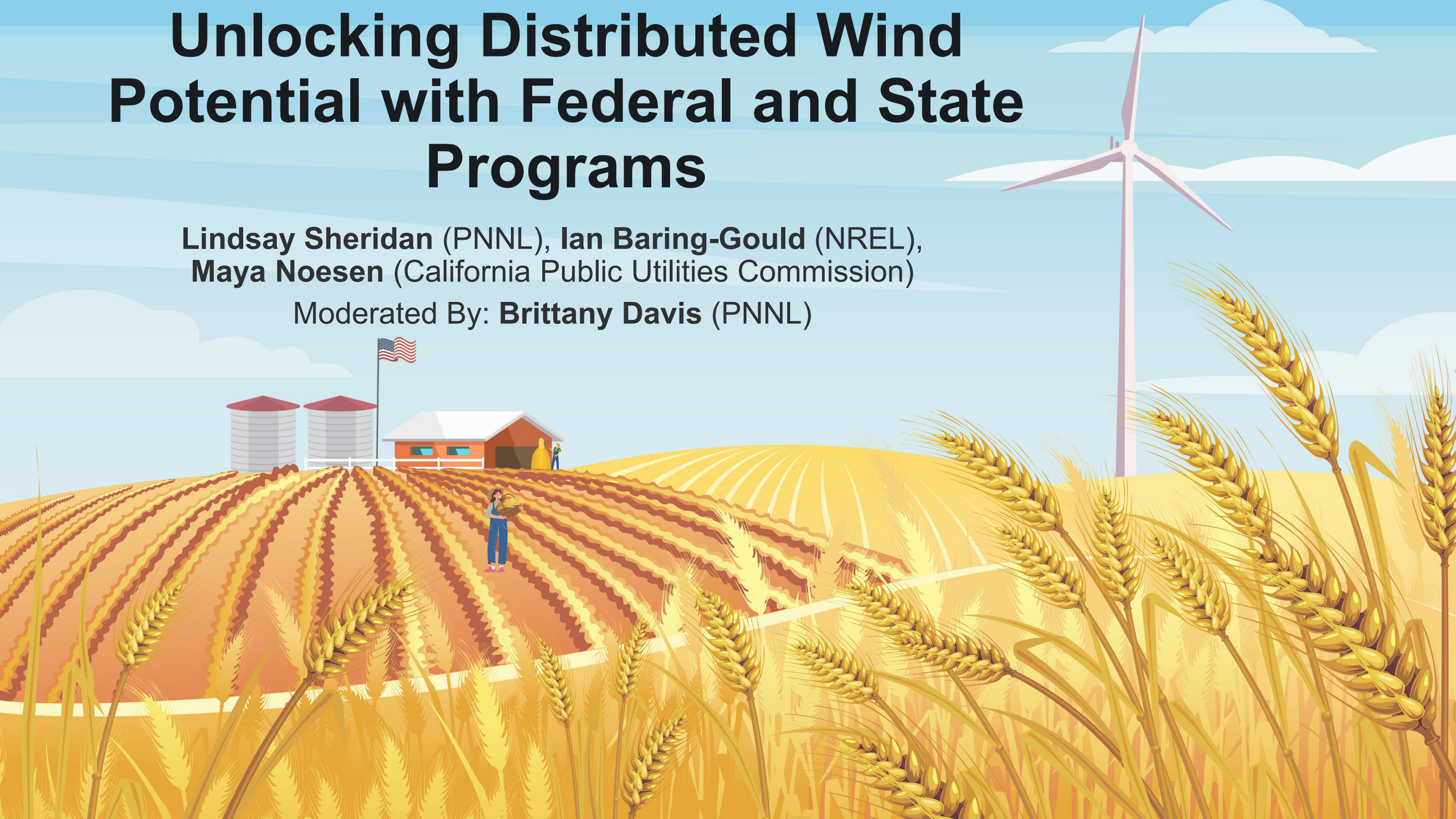

Impacts of Federal and State Programs on the US Distributed Wind Market

September 23, 2025

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Past and Present Incentive Programs Supporting Distributed Wind Projects

Federal Incentives

US Department of Agriculture (USDA) Rural Energy for America Program (REAP)

Loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or energy efficiency improvements

Section 1603 Payments

Direct cash payments from the US Department of the Treasury for certain energy systems, including wind, solar, and geothermal

USDA High Energy Cost Grants

Construction or improvement of energy systems or energy efficiency improvements for communities that have annual average household energy consumption exceeding 275% of the national average

Federal Business Energy Investment Tax Credit, Residential Energy Tax Credit, Renewable Energy Production Tax Credit

State Incentives

California Self-Generation Incentive Program (SGIP)

Incentives to support existing, new, and emerging distributed energy resources

New York (NYSERDA) Small Wind Turbine Incentive Program

Incentive funds to encourage the installation of end-use wind energy systems for residential, commercial, institutional or government use

Iowa Production Tax Credit

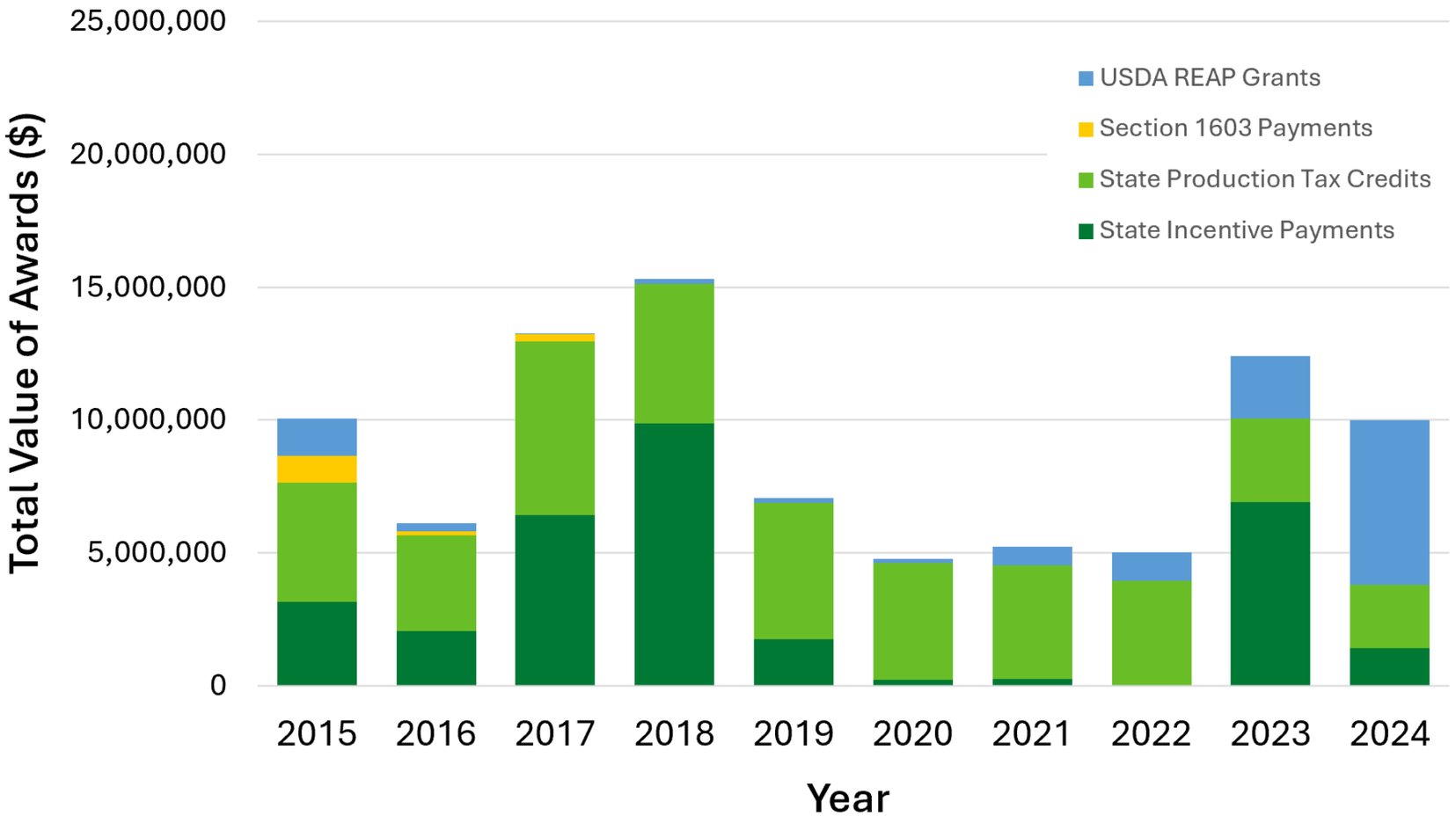
State production tax credit for energy generated, sold, or consumed onsite by eligible wind energy and certain non-wind energy facilities

New Mexico Renewable Energy Production Tax Credit

1¢/kWh tax credit for wind and biomass facilities; 2.7¢/kWh for solar facilities

Distributed Wind Incentive Awards

Over the last decade, distributed wind projects received over $89 million in awards from USDA REAP, Section 1603 payments, state PTCs, and state incentive payments.

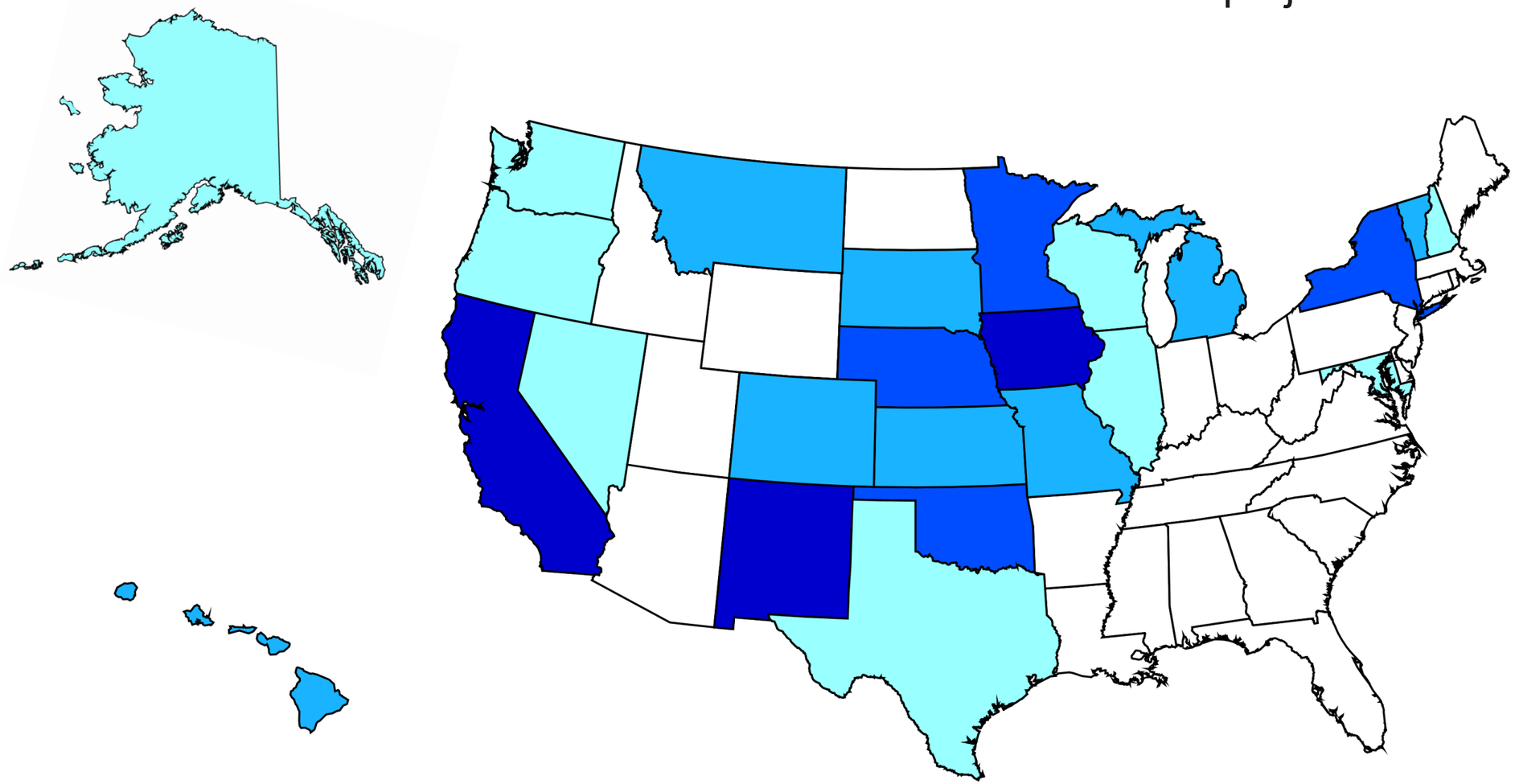


Some incentives are/were known to be available for distributed wind, but are difficult to track:

- Federal tax credits because information on how many wind projects have claimed them is not public record
- USDA High Energy Cost Grants because the grants typically cover systems with multiple technologies, and grant portions allocated to wind are not distinguished

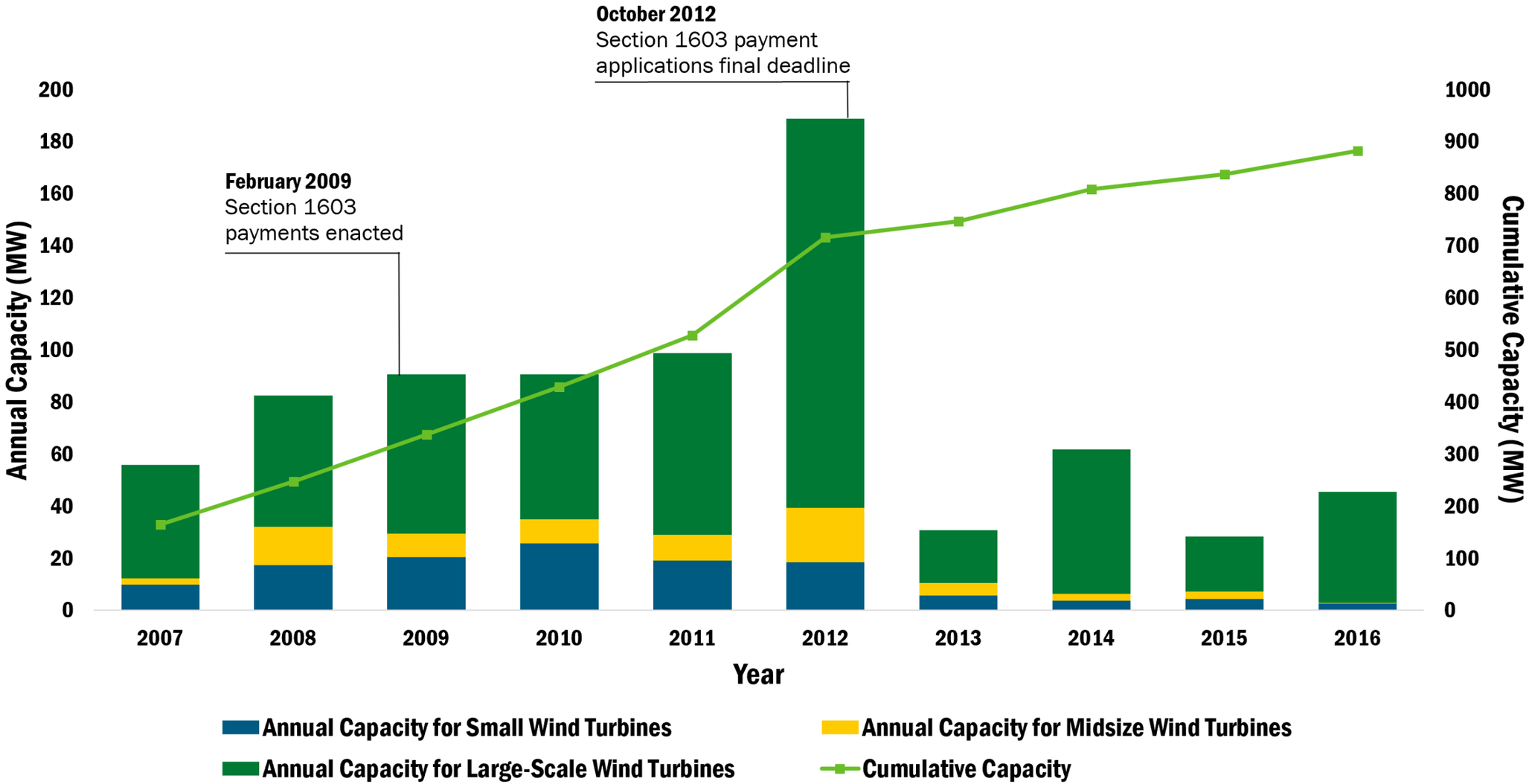
States Receiving Distributed Wind Incentives

Iowa ($34M), California ($23M), and New Mexico ($11M) lead the United States in incentive award amounts for distributed wind projects



Incentive Impacts: Installations

Example: Section 1603 Payments



Incentive Impacts: Levelized Cost of Energy

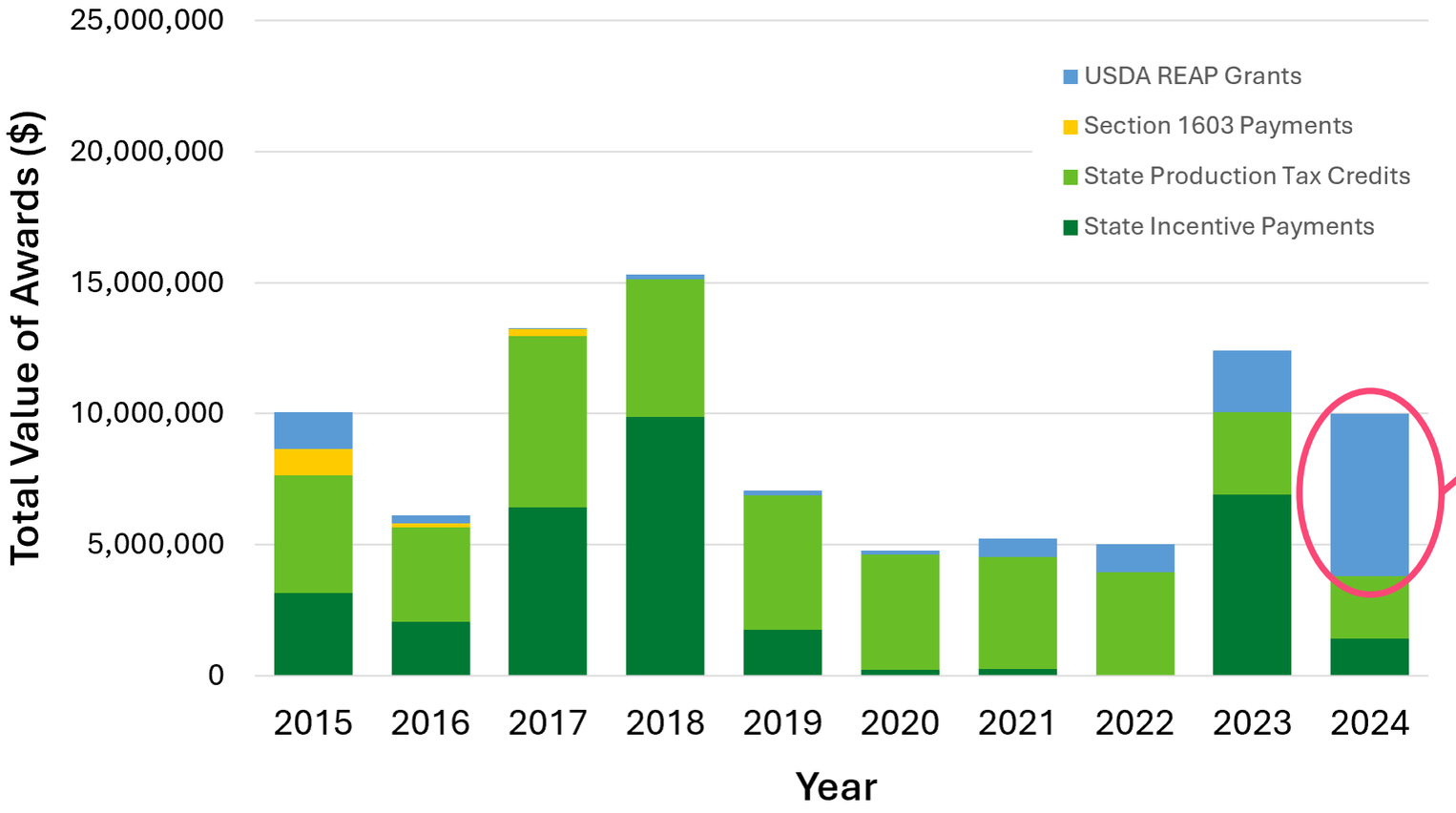
For a sample of 42 distributed wind projects using small wind turbines that were allocated USDA REAP grants in 2024, PNNL estimated LCOE using:

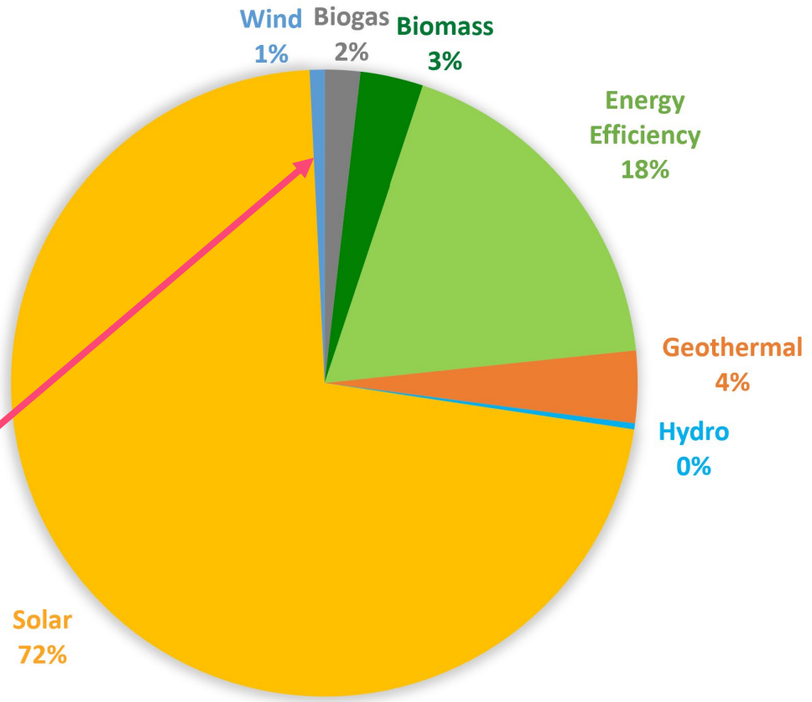
- Installation costs, estimated annual energy production, and nameplate capacities from USDA
- Operational expenditure costs and fixed charge rates for distributed wind projects estimated in NREL's Cost of Wind Energy Review: 2024 Edition

Without incentive funding	With incentive funding
Average LCOE = **16.5¢/kWh**	Average LCOE = **8.5¢/kWh**

Distributed Wind's Share of Incentives

Example: USDA REAP Grants





Distributed Wind Incentive Case Studies

Goldberg Family Farm, MN

2 x 25-kW Eocycle wind turbines

MN State Senator Carla Nelson

These distributed wind case studies were assembled and published by the Distributed Wind Energy Association.

GOAL: Reduce electricity costs and ensure survival of 5th generation agricultural enterprise

INCENTIVE: USDA REAP grant

IMPACT: Estimated payback period of 5 years

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Distributed Wind Incentive Case Studies

Cemex Black Mountain Quarry and River Plant, CA

2 x 1.5-MW GE wind turbines + 2 x 1.6-MW GE wind turbines

GOAL: Cost effective and sustainable energy for a large industrial operation

INCENTIVE: California Self-Generation Incentive Program + U.S. Incentive Tax Credit

IMPACT: Economically feasible project development leading to 25% lower energy costs than utility rates

These distributed wind case studies were assembled and published by the Distributed Wind Energy Association.

Distributed Wind Incentive Case Studies

Walker Brothers Roofing Company, IA

1 x 15-kW Bergey Windpower wind turbine

GOAL: Increase energy independence and reduce electricity costs

INCENTIVE: USDA REAP grant + federal tax incentive

IMPACT: Company saved thousands of dollars

These distributed wind case studies were assembled and published by the Distributed Wind Energy Association.

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For More Information

The Distributed Wind Energy Technology Data Update shares the landscape of installations, costs, performance, incentive impacts, and more for distributed wind projects across the US.

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Thank you!

Status Update: Rural Energy for America Program (REAP)

September 23, 2025

Ian Baring-Gould

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Rural Business-Cooperative Service

- Business & Industry Guaranteed Loans
- Rural Energy for America Program Guaranteed Loans & Grants
- Value Added Producer Grants
- Intermediary Relending Program
- Rural Economic Development Loan & Grant Program
- Rural Microentrepreneur Assistance Program
- Rural Business Development Grants
- Rural Business Investment Program
- Rural Innovation Stronger Economy Grant Program
- Rural Cooperative Development Grant

Rural Energy for America Program Project Types

- Renewable Energy Systems (RES)
- Energy Efficiency Improvements (EEI)
- Energy Efficiency Equipment and Systems (EEE) for Agricultural Production or Processing (Loan Guarantee Only)

Photo by Bill Schwankl, Alternative Energy Services

Rural Energy for America Program (REAP)

Provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for **renewable energy systems (RES) or to make energy efficiency improvements (EEI)**.

Available Funding for RES projects (Historical)

- Grants can cover up to 50% (IRA) or 25% (Farm Bill) of total eligible project costs
- Loan Guarantees on loans can cover up to 75% of total eligible project costs
- Combined grant and loan guarantee funding can cover up to 75% of total eligible project costs

Current Status

- Funding for approved projects is being released (March 25th press release) – lots of proposals still in limbo
- Inflation Reduction Act funding applicants (50% grants or grants & garneted loans) paused on December 31, 2024, to work through backlog of applications.
- REAP grant and combined grant and guaranteed loan applications (25% grants or grants & guaranteed loans) are currently closed to new applicants through the end of September 2025. Guaranteed loans being accepted.

https://www.rd.usda.gov/programs-services/energy-programs

REAP Applicant Eligibility

Agricultural Producer	Rural Small Business
 	 
Individual or entity that receives 50 percent or more of their gross income from agricultural products – crops, livestock, aquaculture, forestry operations, nurseries, dairies	• **For-profit small business** - as defined by the Small Business Administration (SBA) • **Rural area or non-metro community of ≤ 50,000** • **Website: www.rd.usda.gov/reap (use rural area link)**

Renewable Energy System (RES) Requirements

Proposal is lengthy and time consuming, but working with an experienced developer is more manageable.

Proposal Requirements

- Technical Report
- Resource assessment
- Project specification
- Commercially available
- Demonstrated economic impact
- Environmental and historic review

Technologies

- Solar
- Wind
- Small Hydroelectric
- Anaerobic Digesters
- Biomass
- Geothermal
- Wave/Ocean Power

Historically applications have been accepted year-round with quarterly review periods. Contact your local USDA Rural Development office for support and assistance.

Updates to the regulations were being developed, it is unclear what the requirements will be going forwards.

Hopefully, we will know shortly.

Outside of ensuring proper submissions, USDA consideration is focused around “does this project make sense?”

- Is the power for the project's consumption or is it for sale? If for sale is there a power purchase agreement (PPA) or is net metered? Net metering agreements can change - they may not run for the term needed to have the project paid off.
- Who is performing the work? Are they qualified? Have you verified the contractor’s qualifications and references?
- If the project is supplied power to the facility site, how will it be wired to the current distribution system? Is the turbine going to supply AC power? What is the onsite power to be used?
- Who is going to perform routine maintenance on the turbine? Where on the property will the turbine be sited? How was the site selected?

Wind Resource. Provide adequate and appropriate data to demonstrate the amount of renewable resource available. Indicate the source of the wind data and the conditions of the wind monitoring when collected at the site or assumptions made when applying nearby wind data to the site.

For RES Projects

Enable the calculation of the percentage of historical use of energy compared to the amount of renewable energy that will be generated once the project is operating at its steady state operating level. If the project is closely associated with a residence, demonstration must be made that 50 percent or more of the projected renewable energy will benefit the agricultural operation or rural small business; and

Demonstrate that the RES will operate or perform over the project's useful life in a reliable, safe, and a cost-effective manner, which may include but is not limited to addressing project design, installation, operation, maintenance, and warranties.

REAP Grant Levels

REAP has three levels of applications:

- Total project cost of $80,000 or less (Form 4280-3A)
- Total project cost less than $200,000, but more than $80,000 (Form 4280-3B)
- Total project cost of $200,000 or greater (Form 4280-3C)

Application Requirements for the proposal include:

- SAM registration and a DUNS number
- Energy audit or assessment
- Financial information and documentation of eligibility

Applications are approved, but payments are not made until there is proof of installation, which requires applicant to cover project costs and potentially work at risk.

Turbine Certification Requirements

Applications should state the certification that the turbine has been listed to. The wind turbine model should meet one of the following standards:

- ACP 101-1 (AWEA 9.1) - American small wind turbine standard. More information can be found here: https://www.pnnl.gov/distributed-wind/market-report/small-wind-turbine-certifications
- IEC 61400 or IECRE – International standard for all wind turbines

Turbines can also be “Commercially Available” but this requires demonstrating key factors:

- Has both a proven and reliable operating history, including at least 1 year of documented operation in the US.
- Provide a verified, measured power curve based on operational data.
- Documented UL or other international electrical and mechanical safety certification.
- Provides a published product manual including design, maintenance, and installation procedures and practices (this is not met by a product specification sheet).
- Have domestic service, maintenance, and availability of spare parts.

Recent USDA Press Release Indications

From an August 19th, 2025 press release from USDA

> “ Effective immediately, USDA will implement the following programmatic actions:
>
> - *For the USDA Rural Development Business and Industry (B&I) Guaranteed Loan Program wind and solar projects are not eligible.*
> - *For the USDA Rural Development Rural Energy for America Program Guaranteed Loan Program (REAP Guaranteed Loan Program), USDA will ensure that American farmers, ranchers and producers utilizing wind and solar energy sources will install units that are right-sized for their facilities. If project applications include ground mount solar photovoltaic systems larger than 50kW or ground mount solar photovoltaic systems that cannot document historical energy usage, they will no longer be eligible for the REAP Guaranteed Loan Program, and priority points will no longer be given for REAP grants.”*

https://www.usda.gov/about-usda/news/press-releases/2025/08/19/secretary-rollins-blocks-taxpayer-dollars-solar-panels-prime-farmland

How to Apply

Expecting USDA to start accepting applications on October 1st, check in with USDA state personal on status of REAP and other open funding opportunities.

- Applications are accepted through state offices: A list of state offices is available at: https://go.usa.gov/xJnHR.
- State-based USDA Rural Development Energy Coordinator can help answer your questions. A list is available at this link: Rural Business-Cooperative Service State Energy Coordinators (usda.gov).
- Technical Assistance Providers: https://www.rd.usda.gov/technical-assistance-awards
- NREL REAP Website contains checklists that can help submit quality applications. https://www.nrel.gov/state-local-tribal/rural-energy-for-america-program.html
- DWEA developed Ag Wind portal. https://www.agwindenergy.org/

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Thank you

Unlocking Distributed Wind Potential with California's Self-Generation Incentive Program (SGIP)

Maya Noesen
SGIP Regulatory Analyst
California Public Utilities Commission

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SGIP Historic Impact

- 34 completed behind-the-meter wind turbine projects with over 42 MW of installed capacity
  - Most active projects are for wind systems ~20 kW

SGIP's Generation Budget

Incentive Rate: $2/W

The Generation Budget will close to new applications at the end of 2025

Currently Displayed: Generation as of 9/17/2025

	CSE	SCE	SCG	PG&E
Step Status	Open	Open	Open	Open
Active Step	3	3	3	3
Step Opening Date	June 19, 2024	June 19, 2024	June 19, 2024	June 19, 2024
Days in Step	455	455	455	455
Authorized Collections	$17,552,138.52	$46,947,425.80	$12,691,254.23	$59,806,755.49
Reallocations	$17,922,196.44	$30,088,368.85	$1,276,207.83	$31,380,459.67
Authorized Rollover	$2,970,941.55	$3,889,426.39	$869,521.33	$8,468,520.25
Allocated Funds	$1,000,000.00	$5,503,400.00	$0.00	$15,961,601.40
Available Funds	**$1,600,883.63**	**$15,245,083.34**	**$12,284,567.73**	**$20,933,214.67**

SGIP Generation Budget Criteria

Table 7.3a: Sizing Requirements for the Applicable Generation Systems

Generation Technology	Incentivized Capacity	Sizing
Wind Turbines	Based on the highest electrical output from the manufacturer's power output curve for wind speeds up to 30 mph including inverter losses.	< 333 kW Up to 200% of previous 12-month Annual Peak Demand (1)
	Systems less than 30 kW in capacity require a minimum hub height of 25 feet. Systems 30 kW and greater do not have a height limitation.	≥ 333 kW Up to 300% of previous 12-month Annual Peak Demand (1)

- Wind turbines must be certified by an accredited certification body to AWEA 9.1-2009, ACP-101-1-2021, or IEC 6400-1 or -2 (design) plus IEC 61400-12 (performance) and IEC 61400-11 (acoustics).
- 20-year service warranty
- An engineering survey or study **must confirm that the average annual wind speed at the hub height of the wind turbine is equal to or greater than 10 mph (4.5 m/s).**
  - The wind resource can be verified using wind resource maps from NREL or the CEC and standard formulas for correcting differences in tower heights or by gathering wind data on site at the turbine's proposed hub height for one year.
  - For wind projects <30 kW in capacity with tower heights <80 feet: modeling results using wind turbine models such as NREL's SAM or the AgWind Wind Report must be provided in conjunction with the results from the NREL or CEC wind resource maps.

For More Information on SGIP

- Go to www.selfgen.com
  - SGIP Handbook will list out all program requirements in more detail
  - Contact page for each Program Administrator
  - Updated available funds
  - SGIP Developer Eligibility Application