

Status of U.S. Green Power Markets ("Ten Years After")

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Ten Years Since Moskovitz Article

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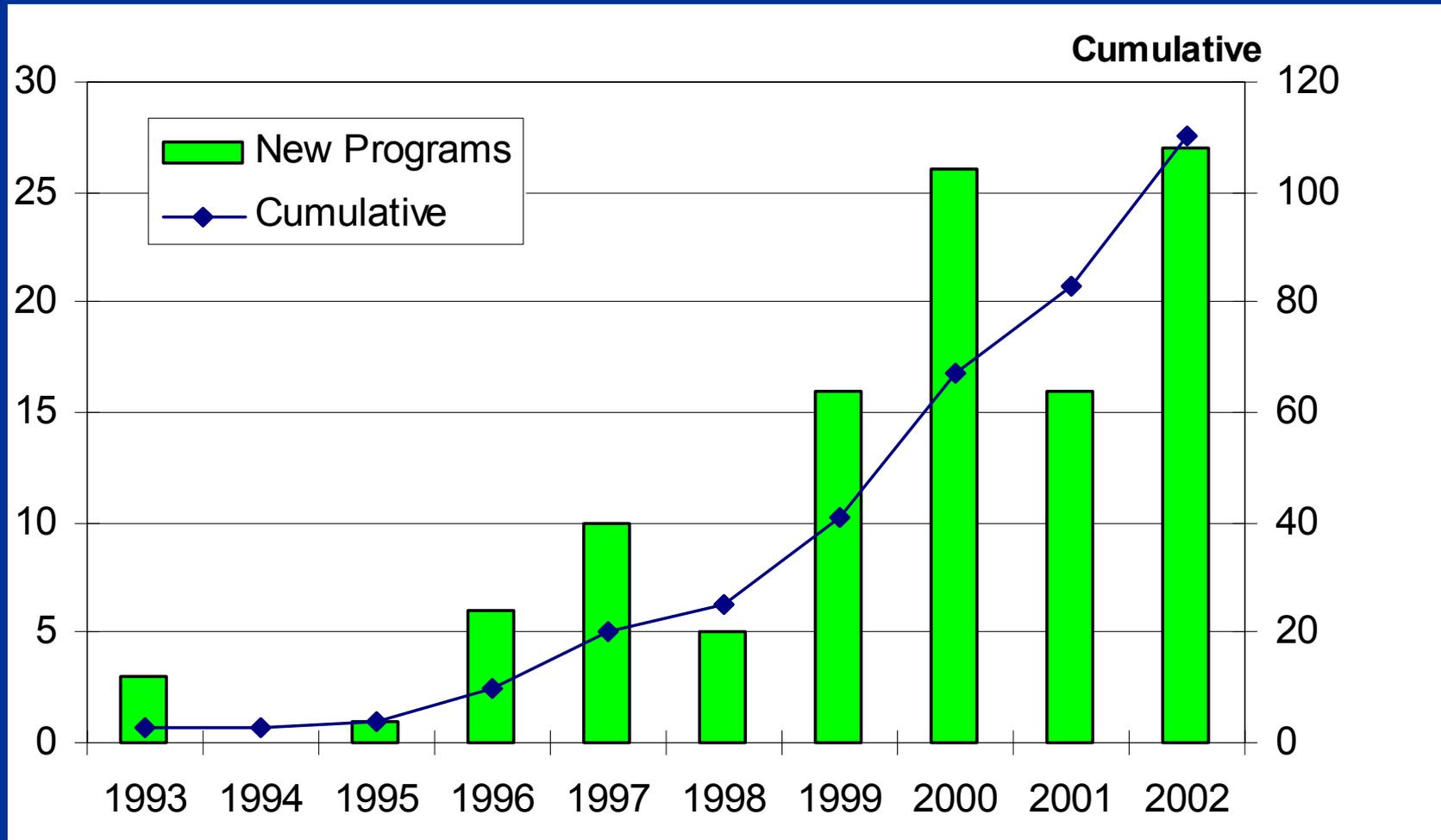
- ***Green pricing***

- An optional electricity service for customers to increase the use of renewables beyond that level deemed “cost-effective” (under IRP) for the utility to supply all of its customers.
- Participating customers pay the incremental cost of acquiring the renewable energy, generally as a fixed premium to the standard retail rate.
- Non-participating customers are held harmless.

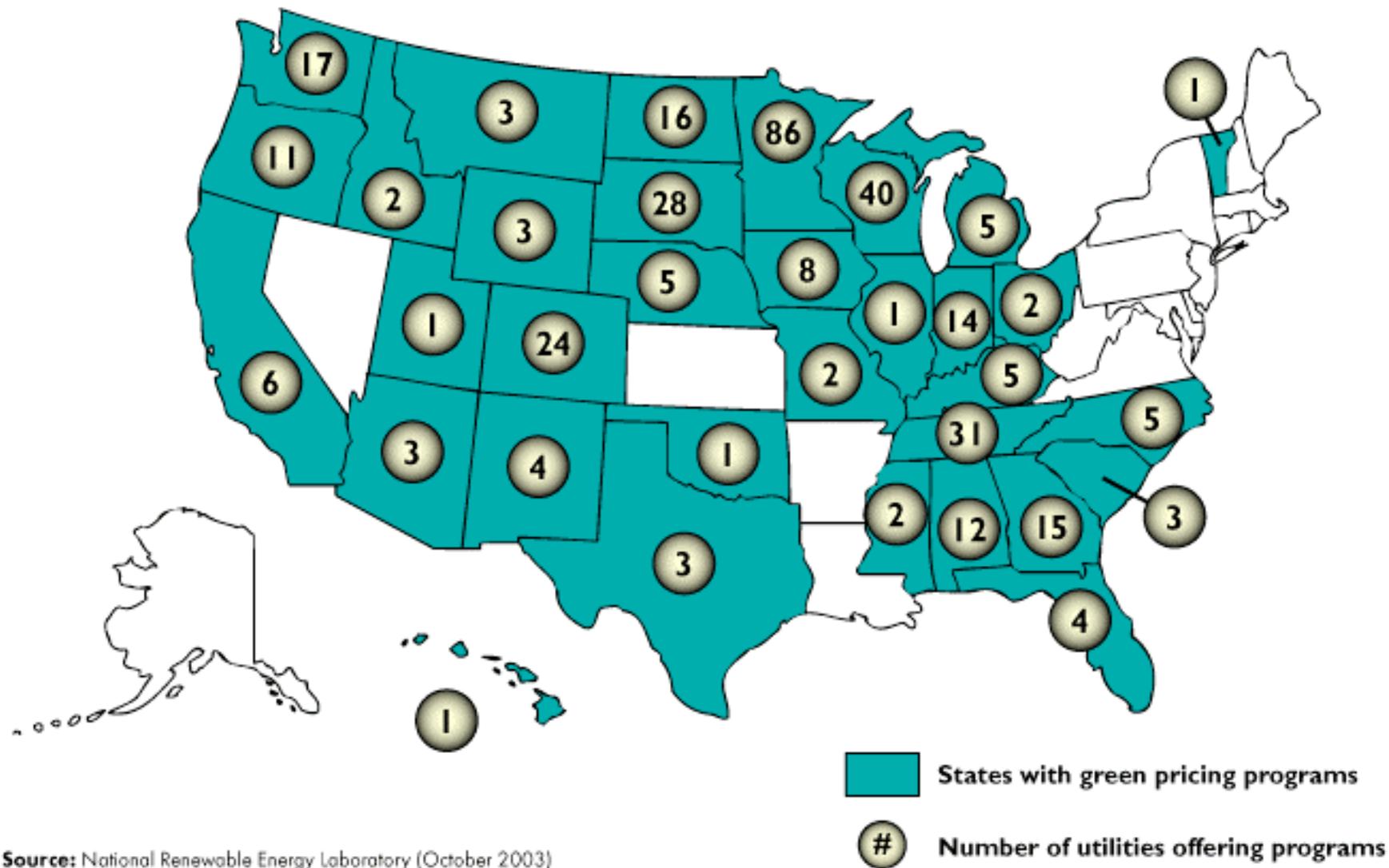
- ***Indirect benefits***

- Initiation of a green pricing program will focus greater public and institutional attention on renewable energy.
- Customer demand for green power will force utilities to “test the market” for renewable energy supplies.

Growth in Utility Green Pricing Programs



Utility Green Pricing Activities

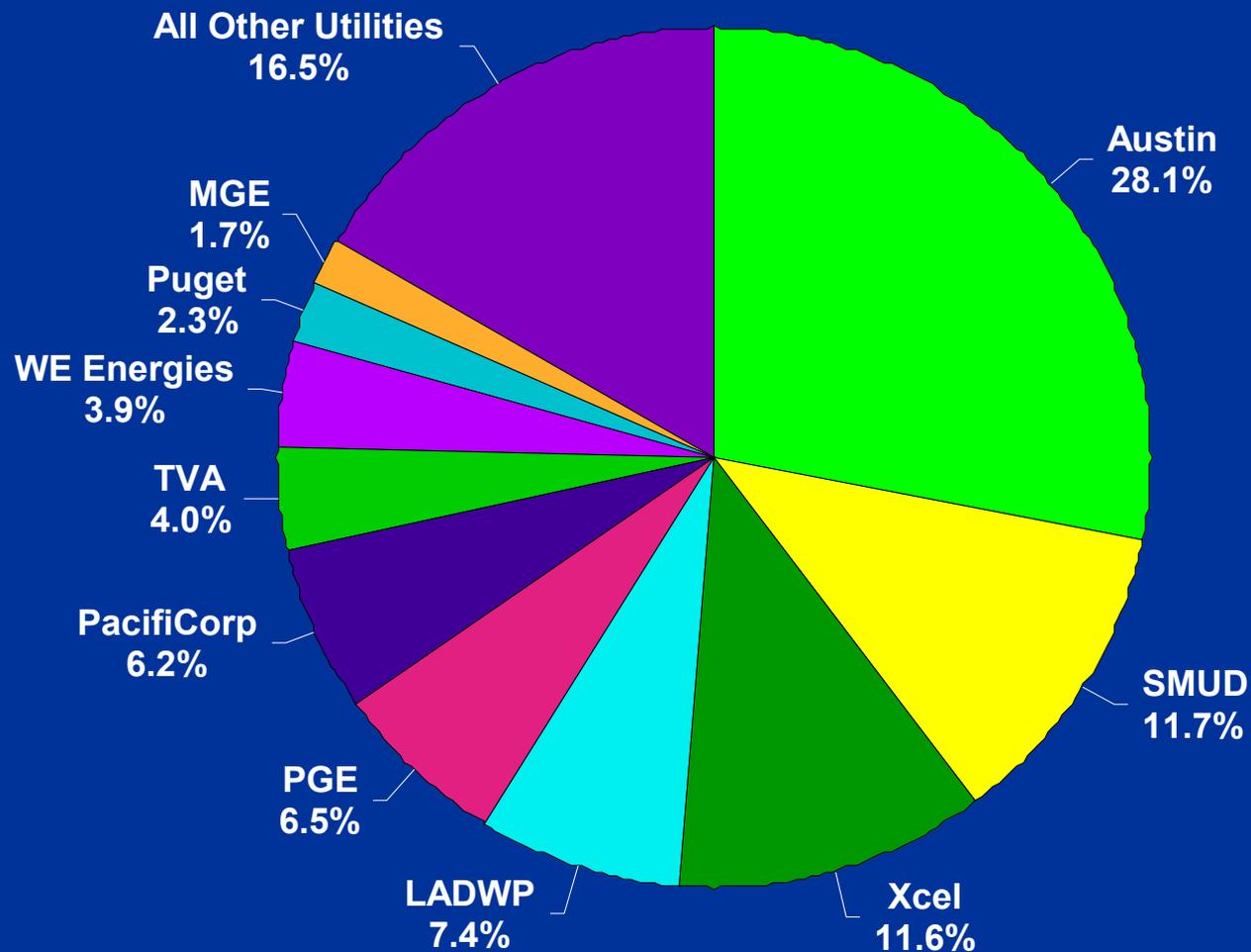


Source: National Renewable Energy Laboratory (October 2003)

Green Pricing: Ten Years After

- **More than 350 utilities in 33 states have announced or implemented green pricing programs.**
- **The top programs are achieving 3% to 6% customer participation, but average participation is around 1%.**
- **Product quality and marketing commitments vary widely.**
- **Green pricing has generated public interest.**
- **Green pricing has lead to renewable energy policy initiatives.**

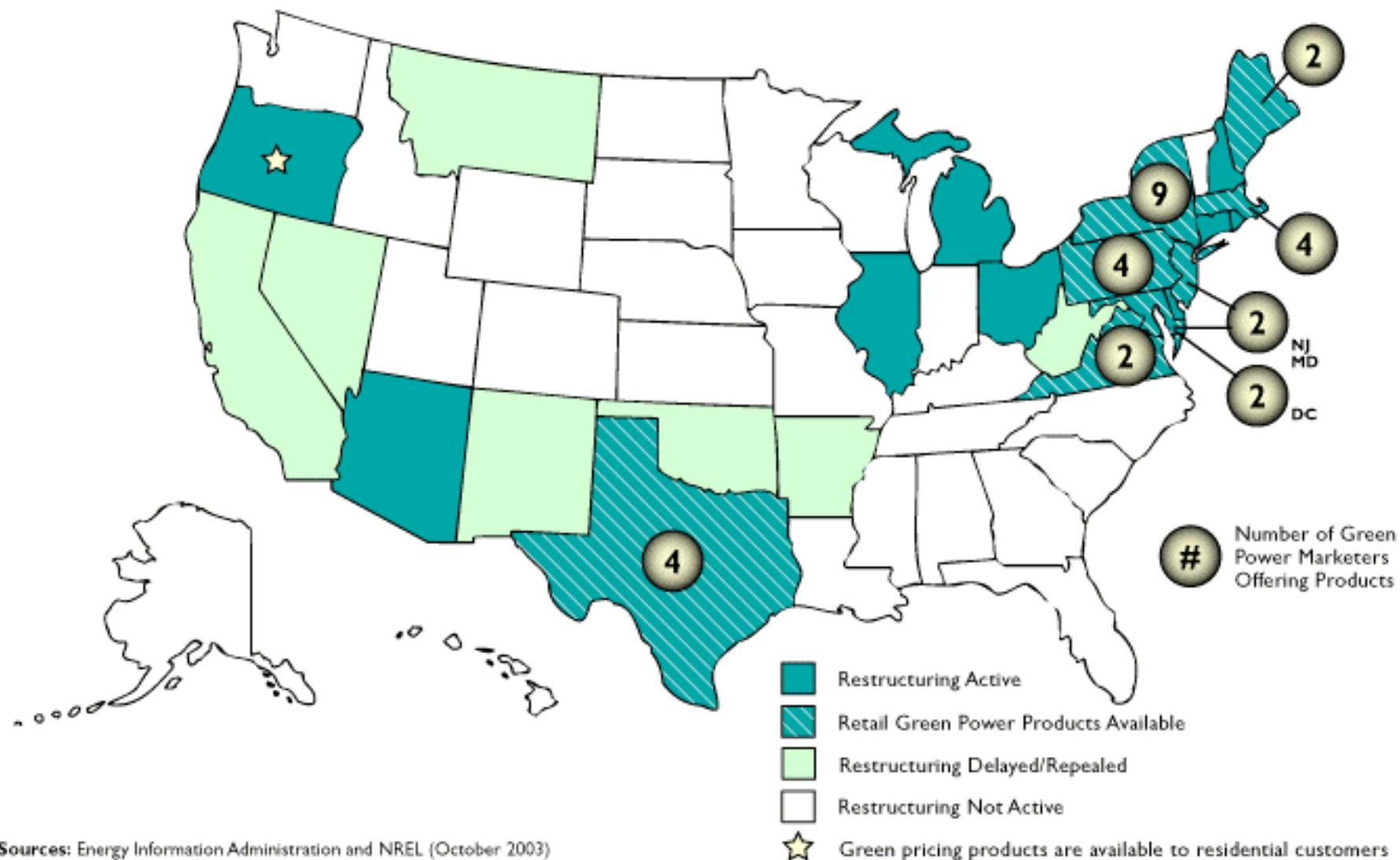
Utility Green Power Sales - 2002



The Rest of the Market

- **About 20 retail green power marketers are active in 8 states (+ D.C.) in which green power products are sold competitively.**
- **Nearly 50% of U.S. customers have access to a green power product from their utility or from a competitive power supplier.**
- **Eighteen renewable energy certificate marketers are active across the United States.**

Green Power Marketing Activity in Competitive Electricity Markets



Sources: Energy Information Administration and NREL (October 2003)

Green Power Market Highlights - 2003

- Large green power purchases by non-residential customers.

Examples

- 78,000 MWh/yr by Dyess Air Force Base (TX)
 - 54,000 MWh/yr by State of New Jersey
 - 45,000 MWh/yr by Austin School District
 - 40,000 MWh/yr by University of Pennsylvania
 - 51 MW of wind and RECs by the Green Power Market Development Group
- Some utilities have lowered their price premiums.
 - First statewide green pricing program launched (NC).
 - Default electricity suppliers beginning to offer retail green power products in restructured markets.
 - Required in some states
 - RECs market becoming increasingly active.

Green Power Success Stories

- **New renewables capacity is being installed to supply the voluntary purchase market.**
- **Some utilities and marketers are providing fuel-price stability benefits.**
- **Selling to non-residential customers.**
- **Marketing partnerships.**
- **Certification and verification activities.**

New Renewables Capacity Supplying Green Power Markets (2002)

<u>Source</u>	<u>MW in Place</u>	<u>%</u>	<u>MW Planned</u>	<u>%</u>
Wind	913.3	93.0	302.0	70.0
Biomass	45.1	4.6	76.1	17.6
Solar	4.8	0.5	1.4	0.3
Geothermal	10.5	1.1	49.9	11.6
Small Hydro	8.6	0.9	2.0	0.5
<i>Total</i>	<i>982.3</i>	<i>100.0</i>	<i>431.4</i>	<i>100.0</i>

Key Barriers to Market Expansion

- **Access**
 - Only about 10% of utilities offer green pricing.
 - Green power marketers are active in just more than half of restructured state markets.
 - Renewable energy certificate products not widely recognized in retail markets.
- **Appeal**
 - Green power premiums remain high.
 - Median is 2.5¢/kWh; average has been falling slightly
 - Fuel price protection offered by only a handful of utilities.
- **Awareness**
 - Even the best products will not be purchased if consumers are not aware of (or do not understand) them.

Market Developments to Watch

- **Additional state green pricing requirements?**
- **Partnerships between green power marketers and utilities/default suppliers.**
- **Whether green certificate products can crack mainstream retail markets.**

Green Power Marketing in the United States: A Status Report

Sixth Edition

Lori Bird and Blair Swezey

**NREL**

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The U.S. Department of Energy's *Green Power Network* provides news and information on green power markets and utility green pricing programs. You will find links to green power providers and product offerings, and information on consumer and policy issues that impact the development of green power markets.

<http://www.eere.energy.gov/greenpower>