GreenWords

Community Wind In New Jersey

Facing Barriers
Leveraging Opportunities

Agenda

- Community Wind basics
- Community Wind in the context of Community Energy
- Understanding New Jersey's barriers
- Strategy recommendations

GreenWords

Community Wind – basics

- Smaller-scale (usually less than 20 mW)
- Locally initiated with local financial participation
- As diverse as
  - Single turbines erected by municipal utilities, school districts and tribal reservations
  - Multi-turbine installations owned by one or more investors and landowners
- ***Source:*** NACEL Energy Corporation

GreenWords

Community Wind – more basics

- A financial and legal model
- Can be behind or in front of the meter
- Provides power to a defined user pool
  - Individual shareowners
  - Local government entities
  - Cooperatives (usually farmers)
  - Beneficiaries of private community associations
  - Others yet to be defined
- Supports goals of renewable production, increased yield, resilience, local independence

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Added benefits: potential to attract supporting businesses

- All new industries attract supporting businesses
- New businesses in Texas (very little Community Energy) include
  - Nacelles
  - Wind Turbine Towers
  - Tower flange, bolts etc.
  - Steel fabrication
  - Carbon Fiber for Blades
  - Blades
  - Bolting Services
- Widespread Community Energy likely to attract the same
- Can add rateables to offset property taxes

GreenWords

Community Wind - Where It Works

- Europe
  - Germany
  - Denmark
  - UK
  - Netherlands
- United States
  - Minnesota
  - Washington
  - California
  - Iowa
  - Illinois
  - Pennsylvania
  - Massachusetts

GreenWords

Enablers and constraints

- Enablers
  - Financial incentives
  - Electric rates
  - Determined champions
  - Supportive zoning ordinances
  - Supportive political culture
- Constraints
  - Financing costs
  - Equipment, installation and maintenance costs
  - Interconnect costs and limitations
  - Determined opponents
  - Restrictive zoning ordinances
- Both
  - State and Federal policies
  - Wind resources

GreenWords

Stats

- Estimated total US wind energy potential: 10,777 billion kW/Year
  - More than twice the electricity generated in the U.S. today
- New Jersey
  - Potential Capacity (in MW): 1200
  - Annual Energy (in billion kW): 10
  - Existing projects (MW): 7.5 Power Capacity
  - Projects under construction (MW): 0
  - Rank In US (by Existing Capacity): 26
  - Rank In US (by Potential Capacity): 29

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Top 10 states: potential vs. installed wind capacity

State	Potential mW	Total Installed mW	Community Energy mW
North Dakota	1,210,000	345	7
Texas	1,190,000	5317	1
Kansas	1,070,000	465	.3
South Dakota	1,030,000	98	4
Montana	1,020,000	165	1
Nebraska	868,000	73	73
Wyoming	747,000	350	7
Oklahoma	725,000	689	.1
Minnesota	657,000	1299	320
Iowa	551,000	1295	36

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Top 5 States For Community Wind

State	Total Potential (mW)	Community Installations	Community Capacity (mW)
Minnesota	657,000	320	1299
Washington	33,000	205	1195
California	1,852,000	40	2484
Iowa	551,000	36	1295
Illinois	61,000	5	736

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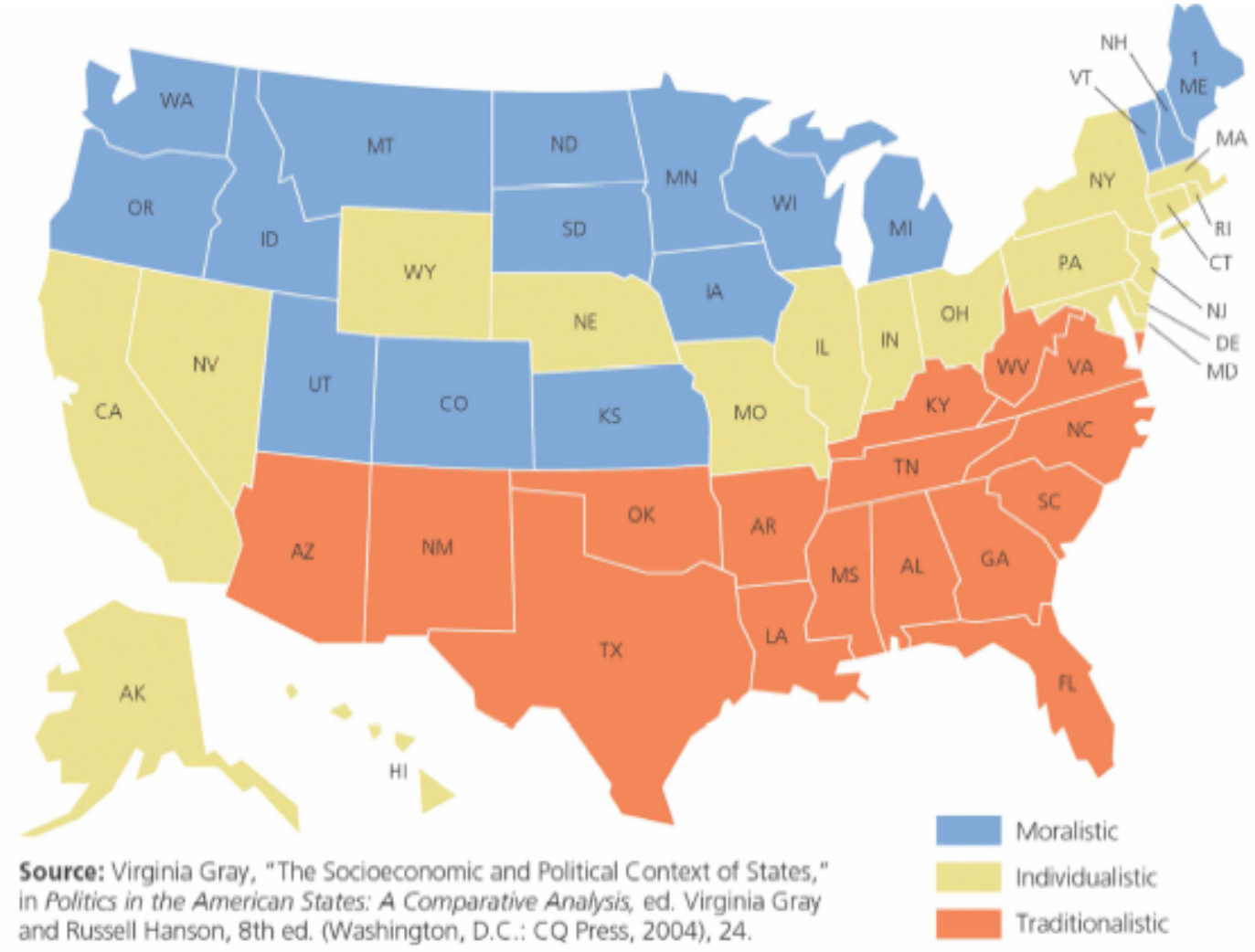
Dominant state political cultures



Source: Virginia Gray, "The Socioeconomic and Political Context of States," in *Politics in the American States: A Comparative Analysis*, ed. Virginia Gray and Russell Hanson, 8th ed. (Washington, D.C.: CQ Press, 2004), 24.

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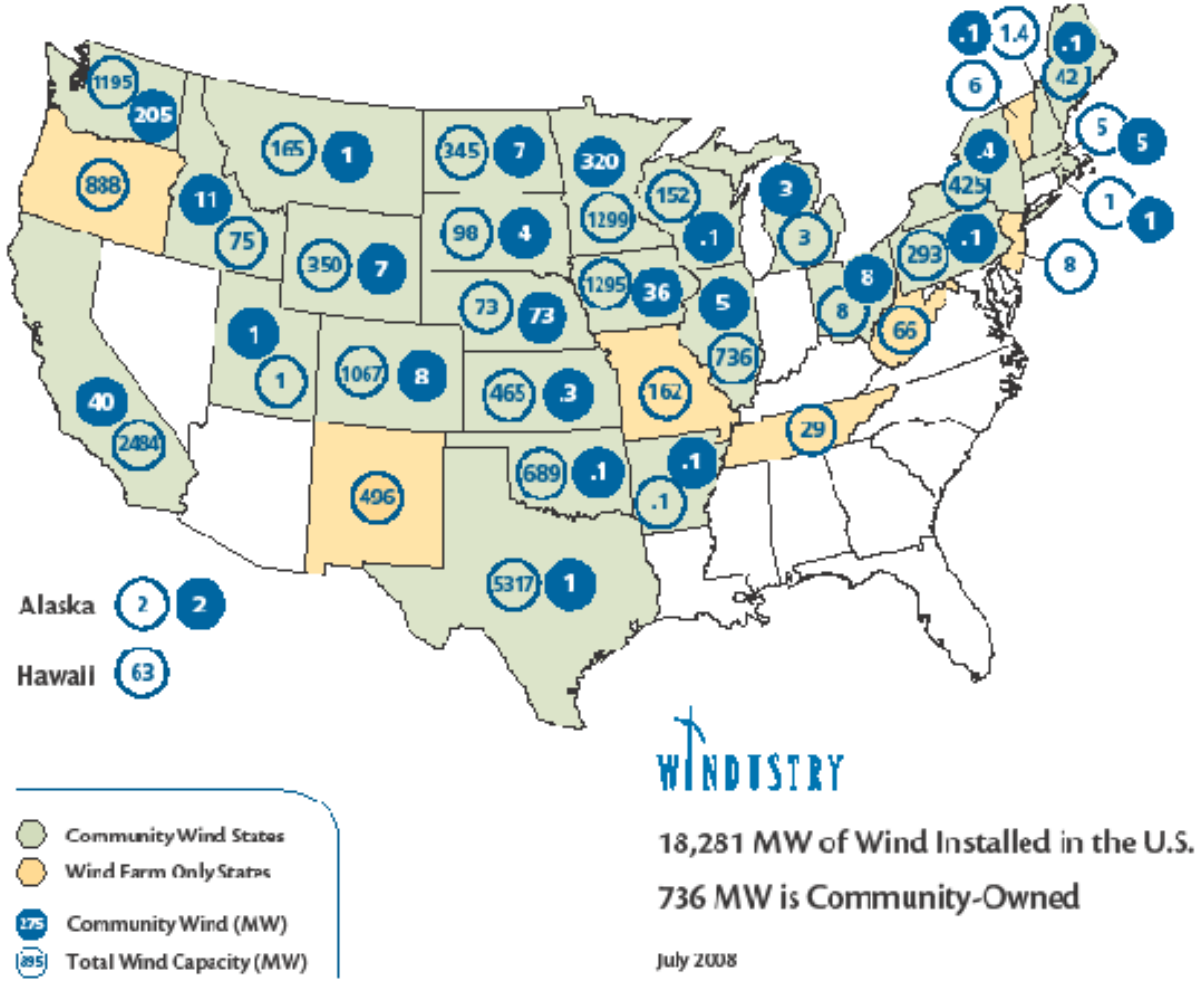
Political culture impacts community energy in general

- Individualistic cultures – 15 States
- Moralistic cultures – 16 States
- Traditionalist cultures (not relevant here) – 19 States

GreenWords

Installed Community Wind and Wind Capacity in the U.S.



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Individualistic cultures

- View democracy as a marketplace
- Private or group interests override public or community interests
- Believe Government action should only promote functioning of the market and private initiative
- Party loyalty is important; political conflict is more partisan than based on ideas or issues
- The public views politics negatively
- The public expects and tolerates a degree of corruption among public officials

Source: Daniel Elazar, "The American Cultural Matrix", 1975

GreenWords

Moralistic cultures

- The “commonwealth” conception dominates
- Politics is considered "one of the great human activities: the search for the good society."
- Citizens are expected to be highly involved in policy making
- Government is expected to be highly involved in the communities it serves
- Political conflict is less over party loyalty than over ideas and issues
- The public expects but does not tolerate governmental corruption

Source: Daniel Elazar, “The American Cultural Matrix”, 1975

GreenWords

Culture and innovation

- Governments in moralistic cultures
  - Lead public awareness to innovate and invest in the public interest
  - Have strong public backing in advance
  - Can put public interest above party loyalties
- Governments in individualistic cultures
  - Follow public demand to innovate and invest in the public interest
  - Usually face organized interest group opposition for new ideas and initiatives
  - Include intense non-ideological partisanship

What's different about Minnesota?

- 125 municipal utilities, most members of Joint Action Agencies (15-20 municipal utilities each)
  - Jointly own their own generators
  - Must generate 25% from renewables by 2025 per state mandate
  - Some contract for power from large generators who can produce a surplus
- Big utilities don't object – see carbon taxes on the horizon
- Partnerships with community-based developers and utilities are growing
- PPAs by municipal utilities becoming important component in the market

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What ELSE is different about Minnesota?

- Often cited as the ultimate Moralistic State
- Long tradition and culture of interlocal cooperation
- Coherent political drivers
  - Bipartisan consensus on major policy issues frequently comes together at the state level
  - State gives direction to municipalities based on bipartisan consensus
  - Municipalities follow state direction

Source: Melissa Peterson, Windustry

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Correlations

- 3 of the top 4 states with the most Community Wind energy relative to total capacity are Moralistic states
  - Minnesota – 1299mW, 320mW CW
  - Washington – 1195mW, 205mW CW
  - Iowa – 1295mW, 36mW CW
- Individualistic states are a mixed bag
  - California – 2484mW, 40mW CW
  - Missouri – 165mW capacity, no CW
  - Wyoming – 365 mW capacity, 7mW CW
  - Nebraska – 73mW capacity, ALL CW
- Individualistic New Jersey – 8mW capacity, no CW
- Traditionalistic states (mostly Southern) are not in the picture at all – EXCEPT Texas: 5317mW, 1mW CW

Why New Jersey's culture matters

- ALL cooperative initiatives face high entry barriers in individualistic cultures
- New Jersey ranks high for cultural individualism, reflected in
  - Home Rule fragmentation
  - Resistance to interlocal cooperation
  - Intense local interest group politics
  - Contracting and purchasing practices

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Home Rule fragmentation

- 567 municipalities
- 611 school districts
- 190 local authorities
- 212 fire districts
- 21 counties
- All have taxing or assessing authority
- 33.3% of towns have less than 5,000 residents
- 20% have less than 2,500 people
- 5 have less than 100 people
- Municipalities totally encircled by other towns

Source: New Jersey Department of Community Affairs

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Lack of interlocal cooperation

- Underdeveloped planning, implementation and management infrastructure
- Shrinking state support resources
- Parochial interests complicate negotiation of agreements
- Resource imbalances between have and have-not communities create tensions

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Local interest group politics

- Interlocal initiatives often seen as threats to existing local jobs
- NIMBY attitudes thwart common-good initiatives
- No overriding state or interlocal authority can carry interlocal initiatives forward
- Local officials put partisan interests first

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Contracting and purchasing

- Often influenced by personal and business relationships
- Seen as part of normal business practices
- Tolerated by public

Impact on Community Energy

- Small communities lack financial resources and public backing to stand on their own
- Neighboring communities don’t want to share resources with each other
- Duplication of local positions and functions complicates planning and implementation
- Purchasing and contracting practices often work against best solutions

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Impact on NJ Master Plan goals

- Offshore wind alone cannot meet the goal
- Technically feasible onshore wind faces all NON-technical barriers described above
- But, the barriers may be a Maginot Line
  - Need not be attacked head on
  - May be overcome with an end-run

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The End-Run

- Focus on Common Interest Developments
- Emphasize business case and reliability over environmental benefits
- Leverage successful, adaptable models
  - Existing community energy programs in 5 states, starting with Minnesota and Iowa
  - Models in Germany, Denmark, and the UK
  - Power purchase agreements
  - Electric cooperatives
- Focus on the model, not the power source

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Common-Interest Developments

- Include about 1M New Jerseyans (1 out of 8)
- 2002 NJ DCA estimate: 494K association-related housing units, growing about 7% per year.
- Boards have broad discretion to invest residents' money for common good (2-edge sword!)
- Board v. Homeowner politics often intense and bitter – NOT just a variant of municipal politics
- Members often perceive more common interests than residents of surrounding municipalities
- Adjacent communities can create opportunities for inter-community sharing

Most common types of CIDs

- Planned Unit Developments, e.g. Twin Rivers, East Windsor
  - First PUD in the US, founded in 1970
  - Based on mixed land use
  - Homeowner owns entire property, including land
  - Locus of landmark CID lawsuit and decision
- Planned Residential Developments, e.g. Briar Ridge Estates, East Brunswick
  - Clusters of single-family homes, no associations
- Condominium Associations, e.g. Society Hill, Lawrenceville
  - Homeowners own interior of their homes
  - Exteriors are common property

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Limitations

- NJ has no experience with Community Energy
- Need to extensively modify out-of-state and EU models to NJ realities
- Not all CIDs have enough internal open space to isolate turbines
- Added costs if offsite installation necessary
- May require supermajorities to approve
- Requires adoption of Model Ordinance by governing municipality
- Individual projects then require approval by Association Boards and homeowners

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Points of leverage

- Many have large common-ground areas
- Architectural uniformity is common
- Border areas between communities are potential sites (if suitable)
- Residents often have more environmental awareness than surrounding communities
- Residents often interact on issues of common interest
- Adaptable financing models are in place

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Emphasis on cost containment

- Residents worry equally about rising energy costs and new association cost assessments
- Many see alternate energy as a good potential investment but demand to see the numbers
  - Residents often distrust Boards' good faith
  - Again, politics are INTENSE!
- Many communities are in areas where wind is a viable option
  - Jersey Shore
  - Skylands

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It’s already happening

- New out of state communities including solar installations in common areas
- Some communities including assessments for future energy investments in fees
- Earliest communities are aging, need redevelopment, ready for “greening”
- Financing models are in place in several states

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Minnesota "Flip" model

- Allows local ownership of a major portion of a wind project
- Locals partner with an equity investor
  - Equity investor uses Federal production tax credits from a qualifying wind project
  - Equity investor often repays locals' pre-project costs, e.g. permits, wind studies, transmission studies, etc.
- A Project LLC owns and operates the wind project
  - Owners: equity investor and separate local owner LLC
  - Equity investor usually finances the project
  - Agreement allocates governance and financial rights between equity investor and locals
  - Equity investor retains controlling interest for at least the first 10 years, to utilize all the PTCs
  - At an agreed-on date, ownership "flips" - locals owners gain controlling interest for the remainder of its life

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Wisconsin "Flip" model

- Variant of Minnesota Flip Model
- Aggregate multiple projects under 1 PPA and financing agreement
  - Challenge: difficulty of aligning multiple projects with different landowners on a similar timeline
  - Best bet: multiple landowners on adjacent properties
- Example (in development: EcoDane project (EcoEnergy LLC) in Dane County, WI
  - Brings together four landowner/investors on a combined 10 MW community wind project
  - TWIST: EcoEnergy LLC will retain majority ownership after the "flip," minimizing risk for landowner/investors

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Federal enabling legislation

- Rural Community Renewable Energy Bonds Act (S. 672) - Sen. Ken Salazar (D-CO)
- Co-sponsors:
  - Sen. Gordon Smith (R-OR)
  - Sen. Hillary Clinton (D-NY)
- Would fund tax exempt private-purpose bonds for locally owned community energy projects
  - Less than 40 MW
  - Minimum 49% in-state ownership
  - Minimum 10% local ownership
  - Intended to supplement PTC for small projects
  - Lowest cost-of-capital of any financing mechanism
- NOT limited to wind
- In Senate Finance Committee since March 2007

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Required New Jersey enablers

- Municipal adoption of Model Ordinance to enable CIDs to begin feasibility studies
- Definition of CIDs as Renewable Energy Opportunity Zones
- Legislation to enable NJ Flip Model
- Supporting enablers
  - Aggregated net metering
  - Feed-in tariffs
  - Others?

Summing up

- Community Energy works in EU and in states with supporting cultures
- Can be a major contributor to goals of NJ Energy Master Plan
- NJ culture creates high entry barriers
- Common Interest Developments may enable end-run around barriers

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More information

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