FOUNDATION WINDPOWER

Monterey County Board of Supervisors
Alternative Energy and Environment Subcommittee
Discussion of Wind Energy Potential for Monterey County
May 25, 2017



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Foundation Windpower Overview

FOUNDATION WINDPOWER

- Develop, build, own, and operate distributed wind projects
- Long-term power purchase agreements (20 year PPAs)
- On-site power generation for commercial and industrial users
- Top equipment suppliers, financiers:
- Solid customers:

Foundation Windpower 1.5MW GE turbine in Vernalis, CA

usbank

Taylor FARMS · SAFEWAY · Budweiser · WAL★MART · CEMEX · City of Soledad California · Mitsubishi Cement Corporation · Nestlé · Arrowhead · Inland Empire Utilities Agency · Teichert · NorthWestern Energy

30 MW Operating in CA + 35MW in MT

FOUNDATION WINDPOWER

Walmart
1.0/1.5 MW
Red Bluff, CA

+>25 MW under commercial development for 2017-18

Cemex
1.0/1.5 MW
Madison, CA

Superior Farms
1.0 MW
Dixon, CA

Safeway
2.0 MW
Tracy, CA

Anheuser Busch
1.5 MW
Fairfield, CA

Teichert
1.5MW
Vernalis, CA

Cemex Black Mountain
3.2 MW
Victorville, CA

Cemex River Plant
2.0/3.0 MW
Victorville, CA

IEUA
1.0MW
Rancho Cucamonga, CA

Robertson's Ready Mix
2.0/3.0 MW
Cabazon, CA

Nestle Waters
3.2 MW
Cabazon, CA

Wind Resource

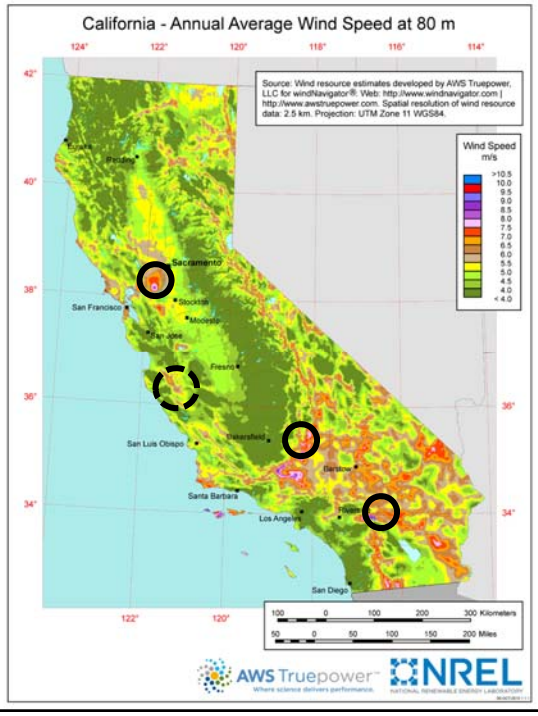
Current wind power development areas in CA

1. San Pablo Bay/Altamont
2. Tehachapi (SE Kern Co.)
3. San Gregorio (Palm Springs)
4. Salinas Valley

Salinas Valley Floor has reasonably good wind 6.0 to 7.0 mps (13 to 16 mph)

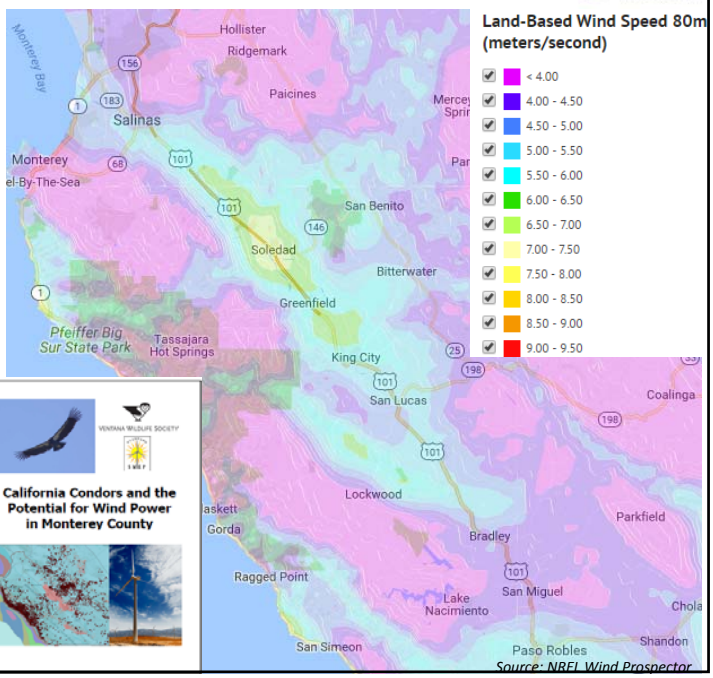
Consistent SE/NW direction

Great time of day pattern ~2:00pm to ~8:00pm (nice fit with solar)



Valley Specific Wind Resource

Areas adjacent to Highway 101 surrounding Soledad and between Greenfield and King City have the most potential



Consistent with area found suitable for wind development by 2009 study from Stanford and Ventana Wildlife Society

Distributed Wind vs. Traditional Wind Farm

	Distributed Wind	Traditional Wind Farm
Pros:	• Small facilities (1-10 turbines) limits footprint and ground impacts • Located in disturbed industrial areas which reduces impact on wildlife • Below condor flight (450' vs. 1500') • Reduces need for transmission lines • Retail pricing for power • Visible symbol of environmental stewardship • **CUP/MND**	• Large facilities (50 to 200 turbines) • Scale economies for development, construction and O&M • Higher wind resource drives greater production and revenue
Cons:	• Lower wind resource • *Dis*-economy of scale for one-off development, construction and O&M • Closer to population centers creates permitting challenges • Load unequal to generation (need net metering) • Rule 21 interconnection difficult	• Located in prime wind areas (ridgelines, hilltops) resulting in greater impacts on avian species • Requires significant planning and investment in transmission • Wholesale pricing for power • EIR

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Salinas Valley Turbines

Taylor Farms, Gonzales, CA (August '14)

City of Soledad, CA WRF (July '14)

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Environmental Benefits

	Taylor Farms	City of Soledad
Capacity Factor:	34%	39%
MWh/Year:	4,400	5,025
Lbs Carbon Avoided/Year:	3,300,000	3,750,000
GHG Equivalent:	• 460 homes electricity use • 110,000 incandescent bulbs replaced with LED • 2,950 acres of U.S. forest	• 520 homes electricity use • 125,000 incandescent bulbs replaced with LED • 3,350 acres of U.S. forest

Source: US EPA Greenhouse Gas Equivalencies Calculator, Foundation Windpower

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Standard elements of MNDs

- Siting in disturbed, industrial/agricultural areas
- Co-located with load
- APLIC standards for connector lines
- Modern turbines
  - Higher gear ratios (22 RPM makes blades visible)
  - Monopole vs. lattice structure
- Biological assessment (bird counts, condor flight tracking)
- Shadow flicker and noise studies
- Traffic plan
- Post construction monitoring

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Economic Value Proposition for Customer

Immediate Payback

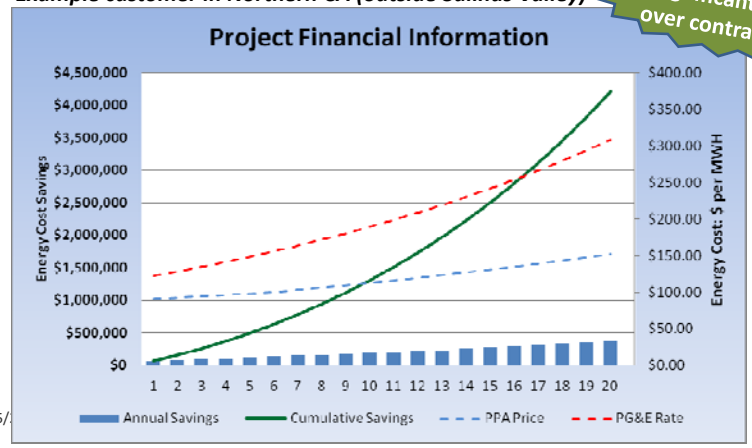
- FWP covers up front capital ex and all operating ex

Significant Savings

- Immediate savings from current utility rates
- Utility price increases historically escalate at >5% annually

Customers can achieve significant cost over contract life

Example customer in Northern CA (outside Salinas Valley)



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Economic Benefits

- **Customers enjoy 5% to 20% reduction in power price from PG&E rates**
  - City of Soledad saves $100,000 to $125,000 annually
  - Will be $3-4 million over life of equipment
- **Job creation**
  - ~ 30 direct jobs during construction (civil, structural, electrical)
  - Purchase concrete, misc. building materials locally (~$1MM/turbine)
  - 4 permanent jobs for O&M (statewide operations)
- **Job retention**
  - Taylor Farms reduces costs for electricity, keeps its facility economically competitive vs. relocating to lower cost region or loosing market share to foreign competition
- **Property taxes paid to County**

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How can Monterey County encourage more?

- **Accelerate environmental permitting process in County**
  - Specifically identify areas entitled for wind energy development
  - Work with California Department of Fish and Wildlife / U.S. Fish and Wildlife Service, to enumerate locations and procedures for distributed wind projects
- **Appeal to PG&E and CA Public Utilities Commission to reduce unnecessary engineering and equipment to "protect" the grid**
  - Reduce timelines for interconnection study process
  - Encourage ReMAT wind projects by identifying areas where grid can accommodate distributed wind projects
- **Encourage federal and state government to**
  - Protect and extend tax credits for wind energy generation
  - Expand adoption of Community Choice Aggregation
- **Become a user of distributed wind energy for County facilities**

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