The Promise of California Wind in Addressing Climate Change

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Summary

- **Wind can provide 10% of California's electricity by 2020 (or sooner)**
- **Wind is economic, proven technology, and grid-compatible**
- **Wind will bring economic benefits to the state – early state action will help**

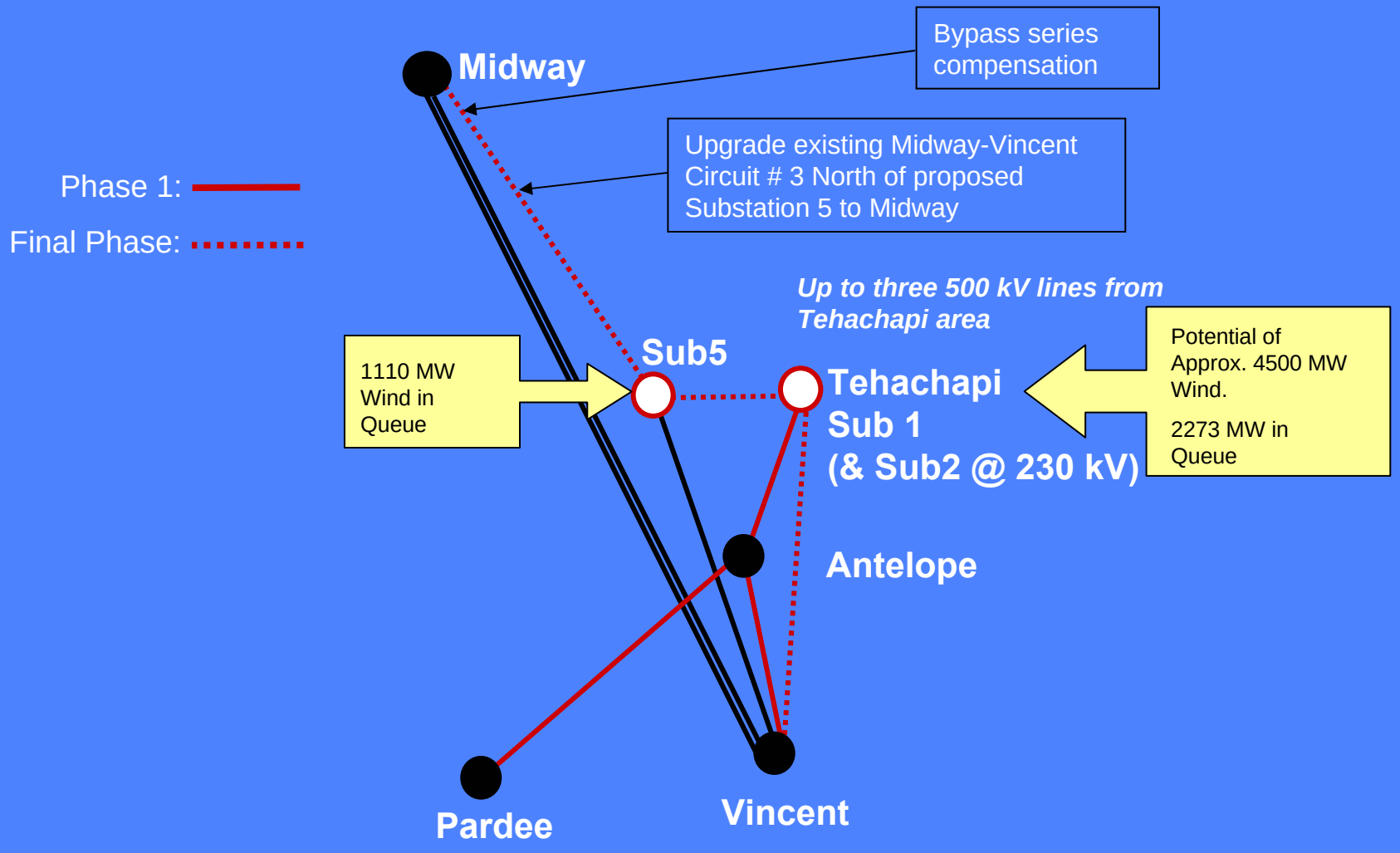
Wind Works

- 2,150 MW wind installed in California, 9,149 MW in U.S., 50,000 MW worldwide
- CA Wind Costs: 5.5 – 6.5 ¢/kWh
- Goal: 10,000 MW of capacity inside California by 2015-2020 -- a five-fold increase over today, providing ~10% of California's electricity

10,000 MW Goal is Realistic

- **CEC estimate: 100,000 MW of developable resource potential in CA**
  - 14,000+ MW at high wind speed sites, 85,000+ MW at low wind sites
- **RPS wind contracts signed for 700-1,000 MW -- 170 MW on line**
- **5,600 MW of projects have filed grid interconnection requests (as of 3/06) – transmission planning underway**

ISO's Plan to Move Tehachapi Wind to the Grid



No technical obstacles to wind generally …

- **"No fundamental technical barriers to wind up to 20% of system peak demand"**
- **"20% wind can be managed with proper design and operation of the system –back-up power not required"**
- **"20% wind imposes system costs of 10% or less of the wholesale cost of wind -- less with good forecasting"**

-- *Utility Wind Integration State of the Art*, Utility Wind Integration Group, with the APPA, EEI & NRECA (May 2006)

…or in California

- CEC RPS Integration Cost Report: current capacity imposes “negligible” costs on system
- Current technology fully meets grid standards
- Wind contributes to system reliability – earning “capacity credit” of ~40% of a new project’s nameplate rating (current fleet ~25%)

Wind will benefit California

- Construction, operation of projects only part of the picture
- Job potential is in component manufacturing, e.g., generator, gear box, controllers, anemometers, blades, and towers
- Over 16,000 U.S. industrial companies have technical potential in wind manufacturing
- Almost 2,000 firms in California – more than any other state

Example: Ameron International Diversifies Into Wind

◄ Water line

◄ Wind Towers ►

Re-envisioned jobs – not lost jobs

- Greenhouse gas reduction means adapting jobs
- Machinists, electricians, engineers – the kinds of jobs people want
- In 5 years, G.E. says alternative energy products will account for more than a quarter of energy equipment revenue
- But we're playing catch-up: Europe supplies 90% of the global wind market due to strong, stable policies

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