



• August 15-18, 2010 • Dallas, Texas •
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Renewable Energy Project Elements
Jim Snook, Sain Engineering Associates

Overview

Up to Speed: Stop for ACRONYMS only

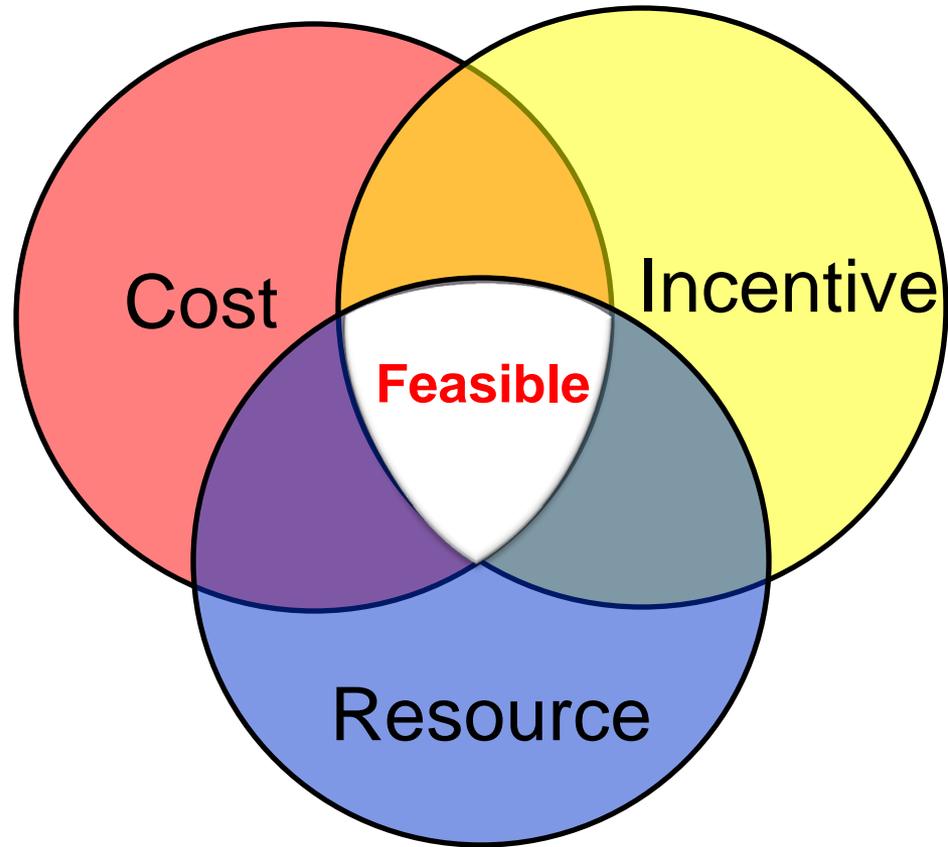
- Definitions
- Summary
- Phase I - Desktop
- Phase II - Site Visit
- Phase III - Final Analysis
- Execution

Definitions

- EAct – Energy Policy Act of 2005
- RE – Renewable Energy/Electricity
- PPA – Power Purchase Agreement
- RPS – Renewable Portfolio Standard
- REC – Renewable Energy Certificate
- SIR – Savings/Investment Ratio

Summary

Key Project
Factors
Simplified

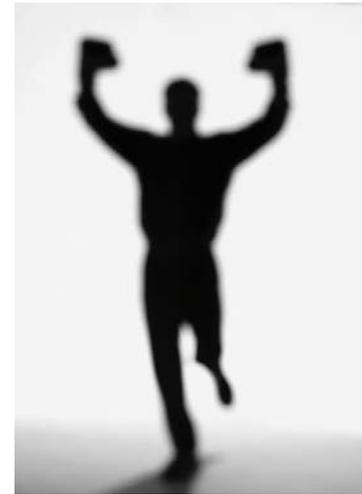


Summary

Manage Expectations

Have a Champion

Key Project
Factors



Phase I: Desktop

- Looking for opportunities

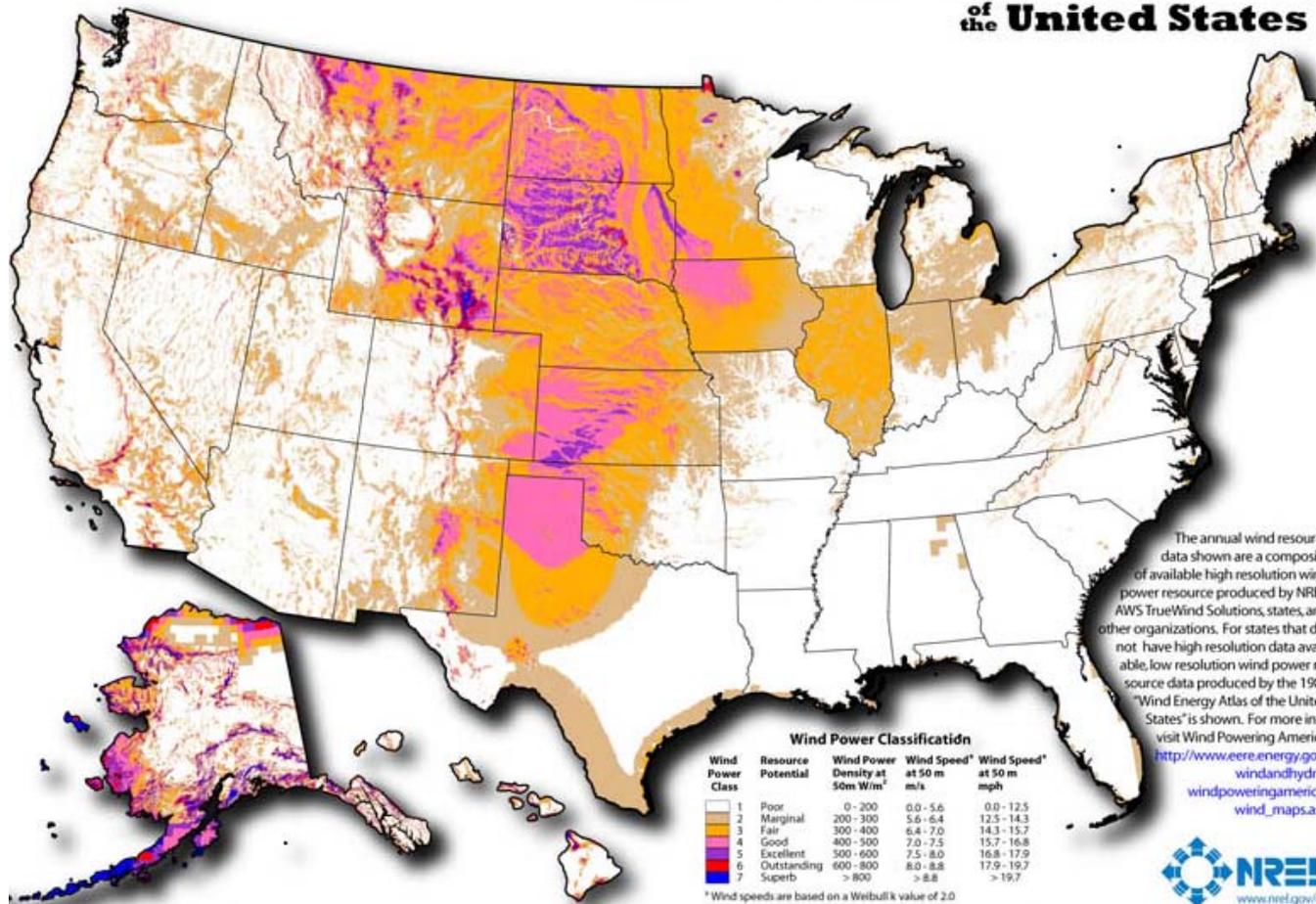


Phase I: Desktop

- Resource
 - Solar, wind, biomass: Check maps

Phase I: Desktop

Wind Resource (50m) of the United States

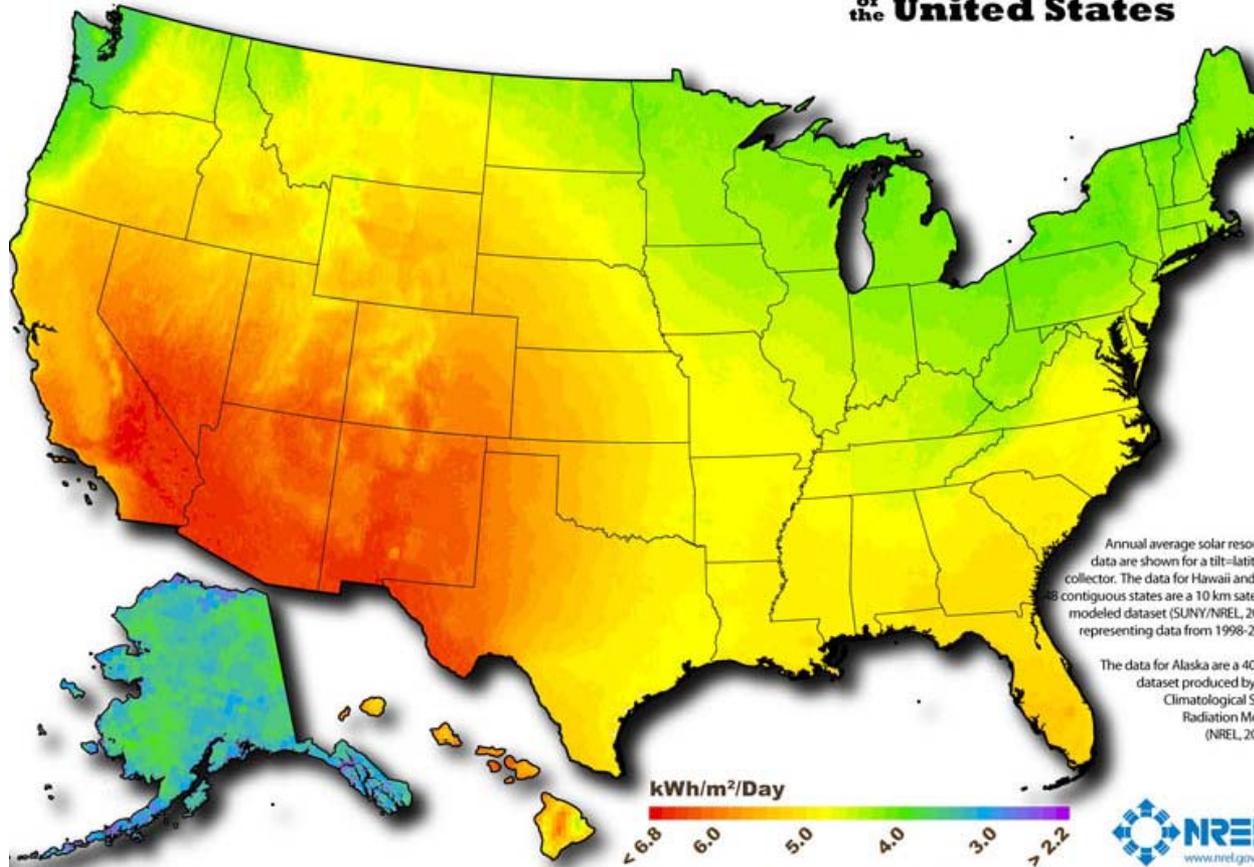


Author: Billy Roberts - December 12, 2008

This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy

Phase I: Desktop

Photovoltaic Solar Resource of the United States



Author: Billy Roberts - October 20, 2008

This map was produced by the National Renewable Energy Laboratory for the U.S. Department of Energy

Phase I: Desktop

- Resource
 - Solar, wind, biomass: check maps
 - Geothermal generation: serious investment
 - Biomass/WTE: local resource is key
- Estimated RE production cost (\$/kWh)
- Existing electric costs
 - Average cost (\$/kWh)
 - Demand charges (\$/kW)
- Check for other RE projects →



Phase I: Desktop

Additional PPA Factors

- Renewable Portfolio Standard (RPS)
- Value of REC
 - Compliance or voluntary market
- Tax incentives
 - Investment or Production Credits
 - Depreciation
 - Tax relief (e.g. real estate)

Phase II: Site Visit

- Environmental issues
 - Endangered species, contamination, etc
- Land Availability
 - Land Use Restrictions
 - BLM withdrawn land
 - State/local lease conditions
- Mission compatibility
 - Height/size restrictions, radar issues, etc

Phase II: Site Visit

Additional PPA Factors

- Legal/Regulatory Impediments: 40 USC 591
 - Partner with local utility or
 - Secure rejection and
- Develop PPA



Phase III: Final Analysis

- Annual cost of existing service
 - Model historic load with rate schedule
 - Check alternative electric rates
- Annual cost of renewable electricity
 - Model total cost
 - Demand charges
 - Standby costs
 - Net metering

Phase III: Final Analysis

- Land availability
 - Acres available
 - Location and access to grid
- Savings/Investment Ratio (SIR)
- Environmental

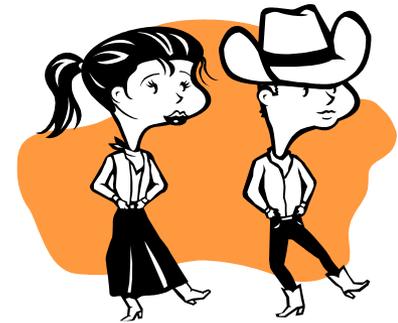
Phase III: Final Analysis

Additional PPA Factors

- Land
 - Valuation
 - Agreement type (lease, easement, term)

Execution

- Government Funded
 - ECIP, SR&M
 - Design, contract for construction
 - Operate and maintain
 - Interconnect agreement



Execution

- Power Purchase Agreement
 - Sign a contract
 - Pay the bill



Conclusion

For complete details on PPA Execution

Mr Steve Dumont

Session # 8

Contracting: Renewable Energy Contracting

Wednesday 8:30 am



Conclusion

Questions and Answers



Conclusion

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