NORTHERN ARIZONA UNIVERSITY

Sustainable Energy Solutions

Arizona Wind Energy Assesment

Executive Summary

Developable Windy Land
and Economic Benefits

Full reports provided on enclosed CD

Prepared for
Arizona Wind Working Group

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Arizona Wind Energy Assesment

Apache County

Executive Summary

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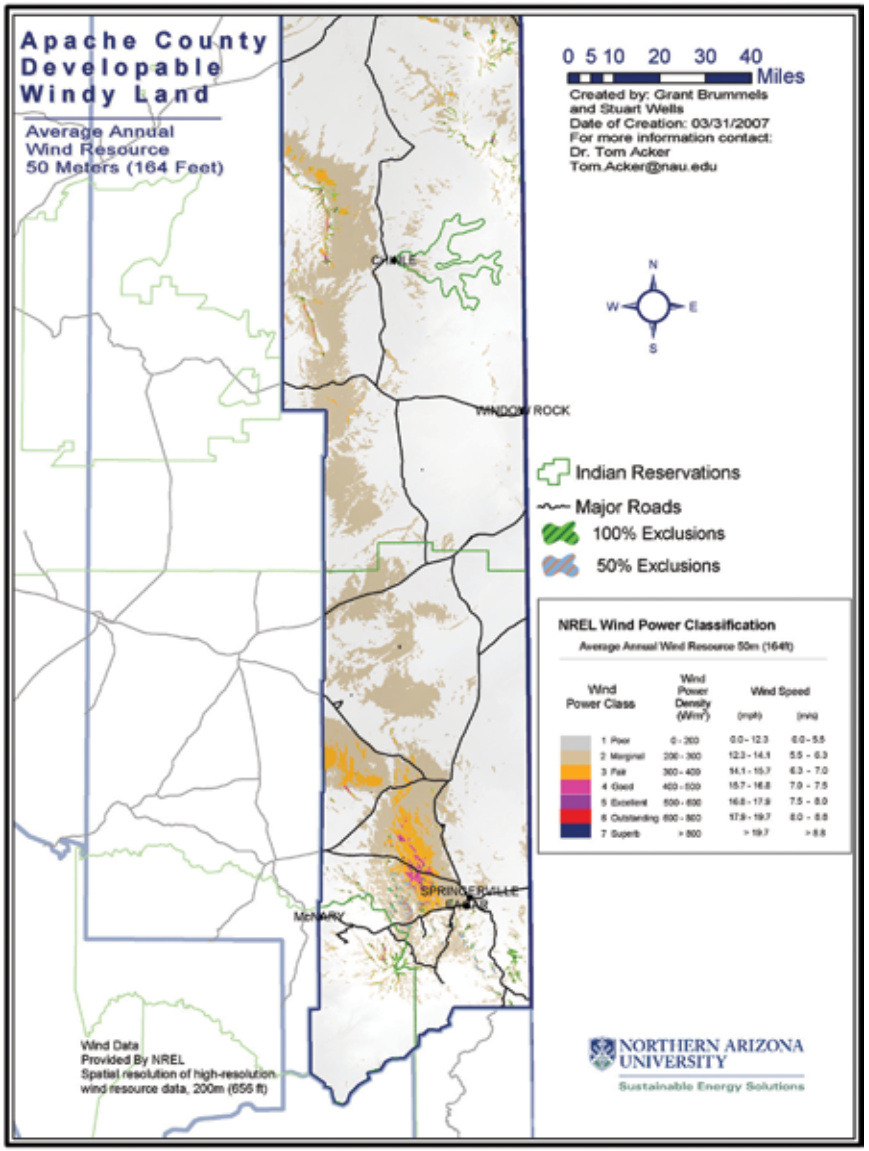
This report contains two wind energy analyses for northern-Arizona's Apache County. In the first analysis, the developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class in each county was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Apache County was estimated to be 3100 MW. The majority of developable windy land, 89%, was Class 3.

The second analysis determined the economic impact of constructing a wind energy project in Apache County. Utilizing National Renewable Energy Laboratory's Job and Economic Development Impact (NREL's JEDI) model in conjunction with Monte Carlo simulation, economic benefits categorized by jobs, earnings, and economic output were estimated for three different sized wind energy projects, 10.5 MW, 60 MW and 180 MW.

For a 60 MW wind energy project

- ***Jobs during construction***: median was 6 jobs
- ***Jobs during operations and maintenance phase (O&M phase)***: median was 9 jobs
- ***Earnings during construction***: the median was $0.16 million
- ***Earnings during O&M phase***: median was $0.33 million annually
- ***Output (economic activity) during construction***: median was $0.69 million
- ***Output during O&M phase***: median was $0.18 million annually



Arizona Wind Energy Assesment

Cochise County

Executive Summary

Developable Windy Land and Economic Benefits

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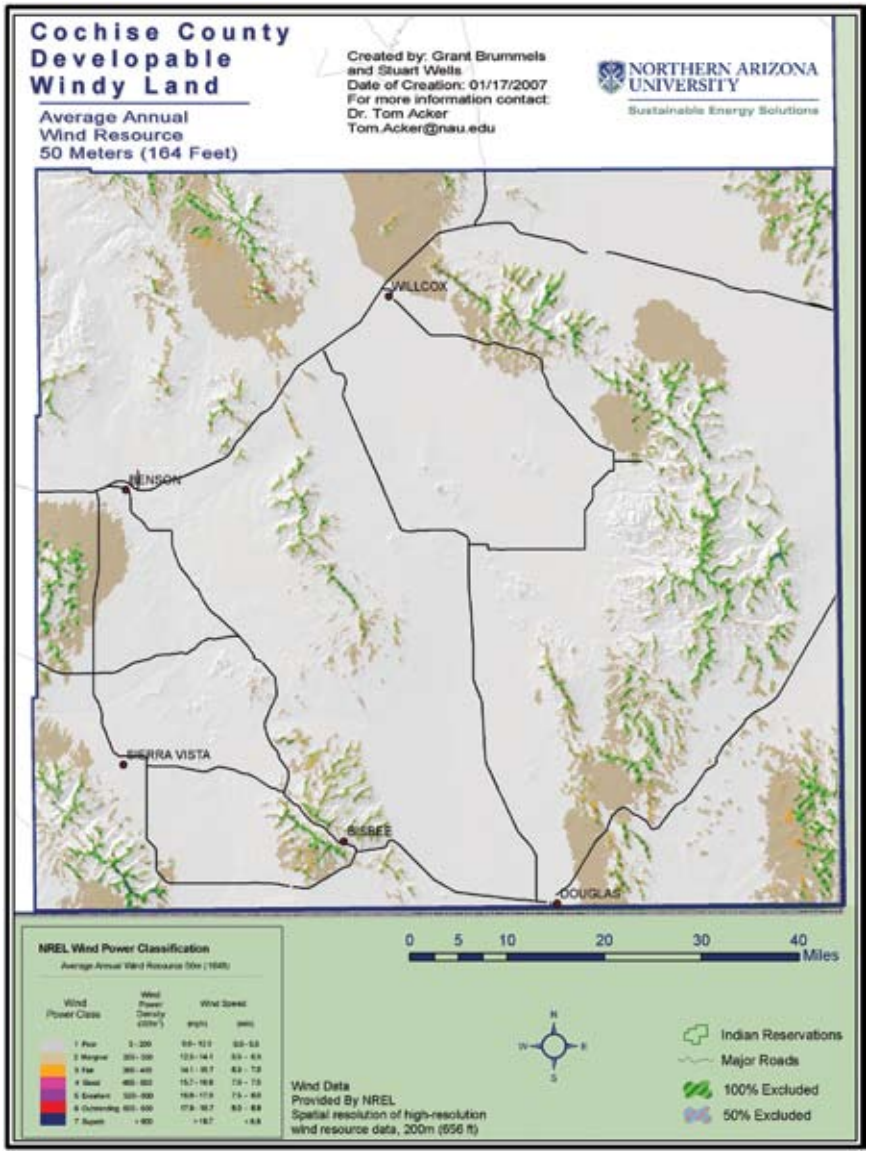
This report contains two wind energy analyses for southern-Arizona's Cochise County. In the first analysis, the developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class in each county was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Cochise County was estimated to be 275 MW. The majority of developable windy land, 80%, was Class 3.

The second analysis determined the economic impact of constructing a wind energy project in Cochise County. Utilizing National Renewable Energy Laboratory's Job and Economic Development Impact (NREL's JEDI) model in conjunction with Monte Carlo simulation, economic benefits categorized by jobs, earnings, and economic output were estimated for three different sized wind energy projects, 10.5 MW, 60 MW and 180 MW.

For a 60 MW wind energy project

- ***Jobs during construction***: median was 27 jobs
- ***Jobs during operations and maintenance phase (O&M phase)***: median was 11 jobs
- ***Earnings during construction***: the median was $0.76 million
- ***Earnings during O&M phase***: median was $0.43 million annually
- ***Output (economic activity) during construction***: median was $3.21 million
- ***Output during O&M phase***: median was $0.98 million annually



Arizona Wind Energy Assesment

Coconino County

Executive Summary

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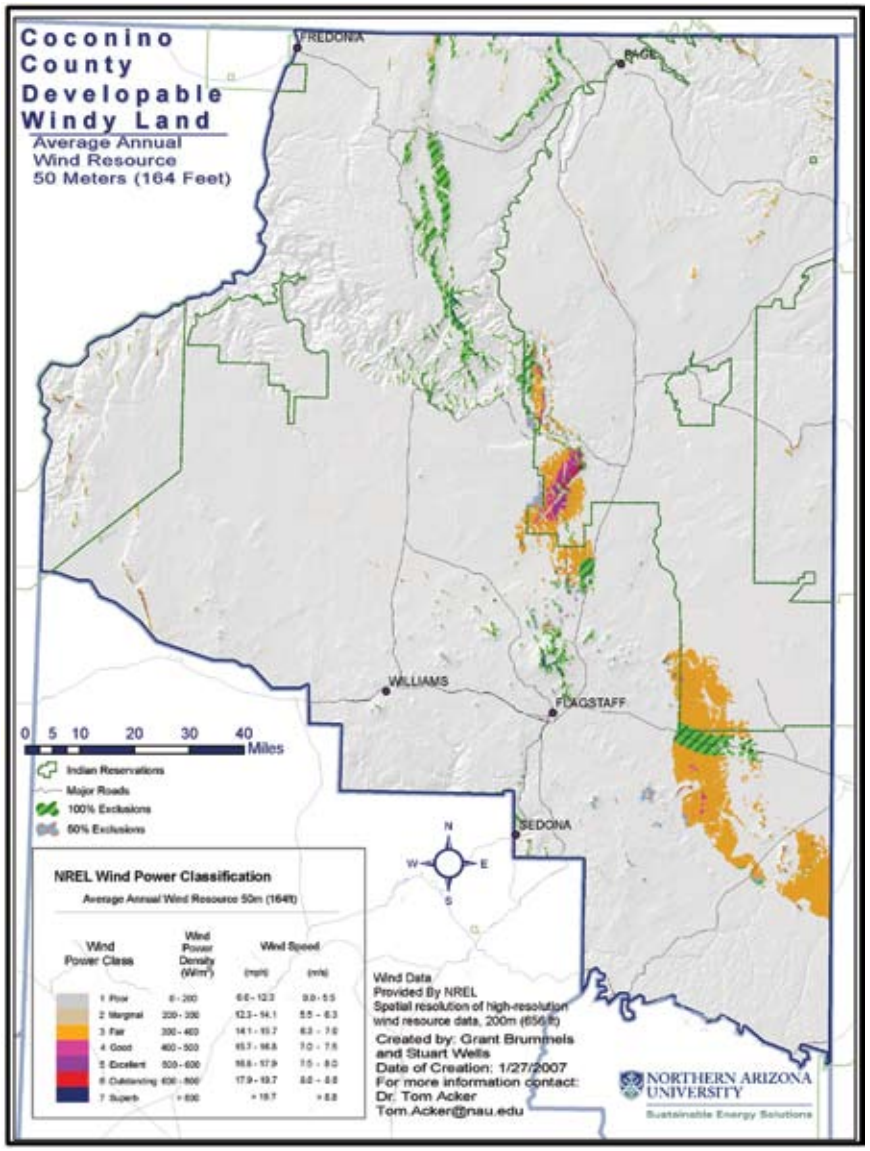
This report contains two wind energy analyses for northern Arizona's Coconino County. In the first analysis, the developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Coconino County was estimated to be 7200 MW. The majority of developable windy land, 92%, was Class 3.

The second analysis determined the economic impact of constructing a wind energy project in Coconino County. Utilizing National Renewable Energy Laboratory's Job and Economic Development Impact (NREL's JEDI) model in conjunction with Monte Carlo simulation, economic benefits categorized by jobs, earnings, and economic output were estimated for three different sized wind energy projects, 10.5 MW, 60 MW and 180 MW.

For a 60 MW wind energy project

- ***Jobs during construction***: median was 56 jobs
- ***Jobs during operations and maintenance phase (O&M phase)***: median was 16 jobs
- ***Earnings during construction***: the median was $1.58 million
- ***Earnings during O&M phase***: median was $0.61 million annually
- ***Output (economic activity) during construction***: median was $6.38 million
- ***Output during O&M phase***: median was $1.24 million annually



Arizona Wind Energy Assesment

Graham County

Executive Summary

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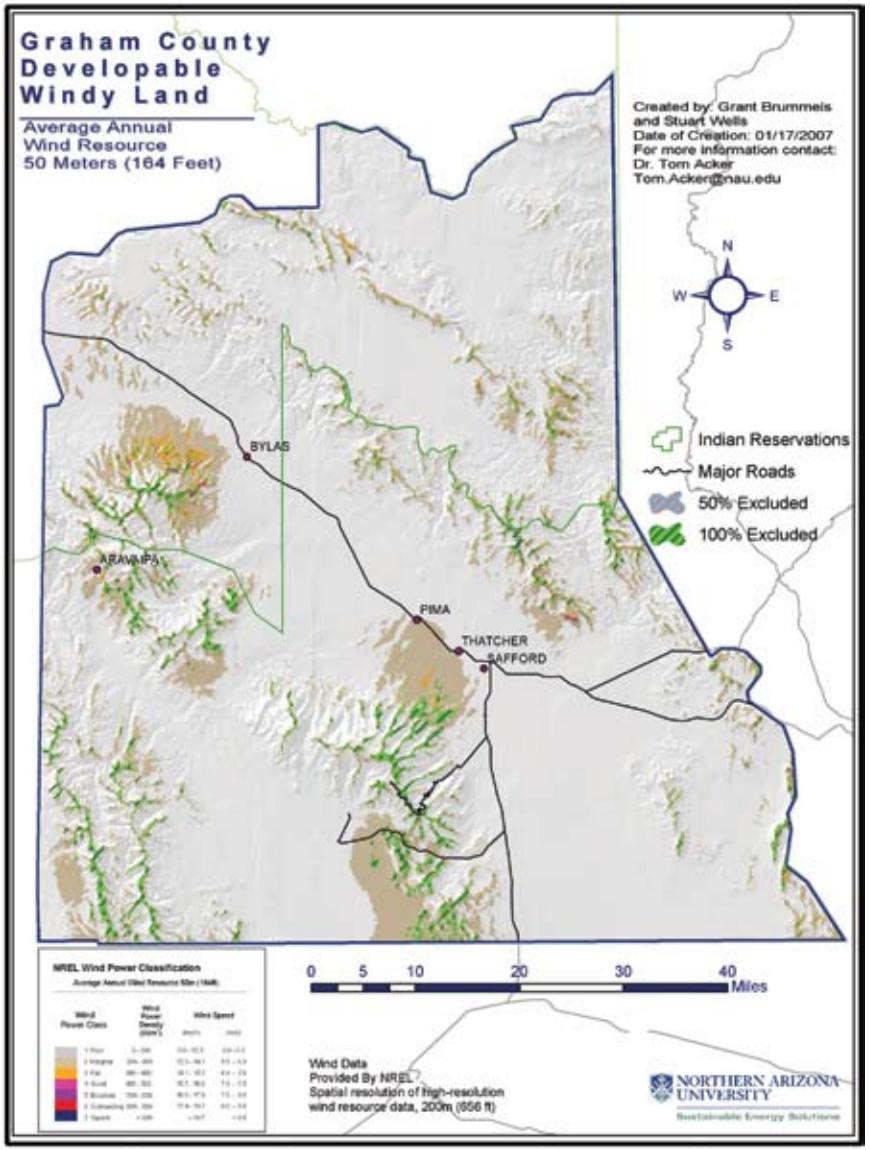
This report contains two wind energy analyses for southeastern-Arizona's Graham County. In the first analysis, the developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class in each county was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Graham County was estimated to be 340 MW. The majority of developable windy land, 82%, was Class 3.

The second analysis determined the economic impact of constructing a wind energy project in Graham County. Utilizing National Renewable Energy Laboratory's Job and Economic Development Impact (NREL's JEDI) model in conjunction with Monte Carlo simulation, economic benefits categorized by jobs, earnings, and economic output were estimated for three different sized wind energy projects, 10.5 MW, 60 MW and 180 MW.

For a 60 MW wind energy project

- ***Jobs during construction***: median was 9 jobs
- ***Jobs during operations and maintenance phase (O&M phase)***: median was 17 jobs
- ***Earnings during construction***: the median was $0.16 million
- ***Earnings during O&M phase***: median was $0.51 million annually
- ***Output (economic activity) during construction***: median was $0.88 million
- ***Output during O&M phase***: median was $1.20 million annually



Arizona Wind Energy Assesment

Mohave County

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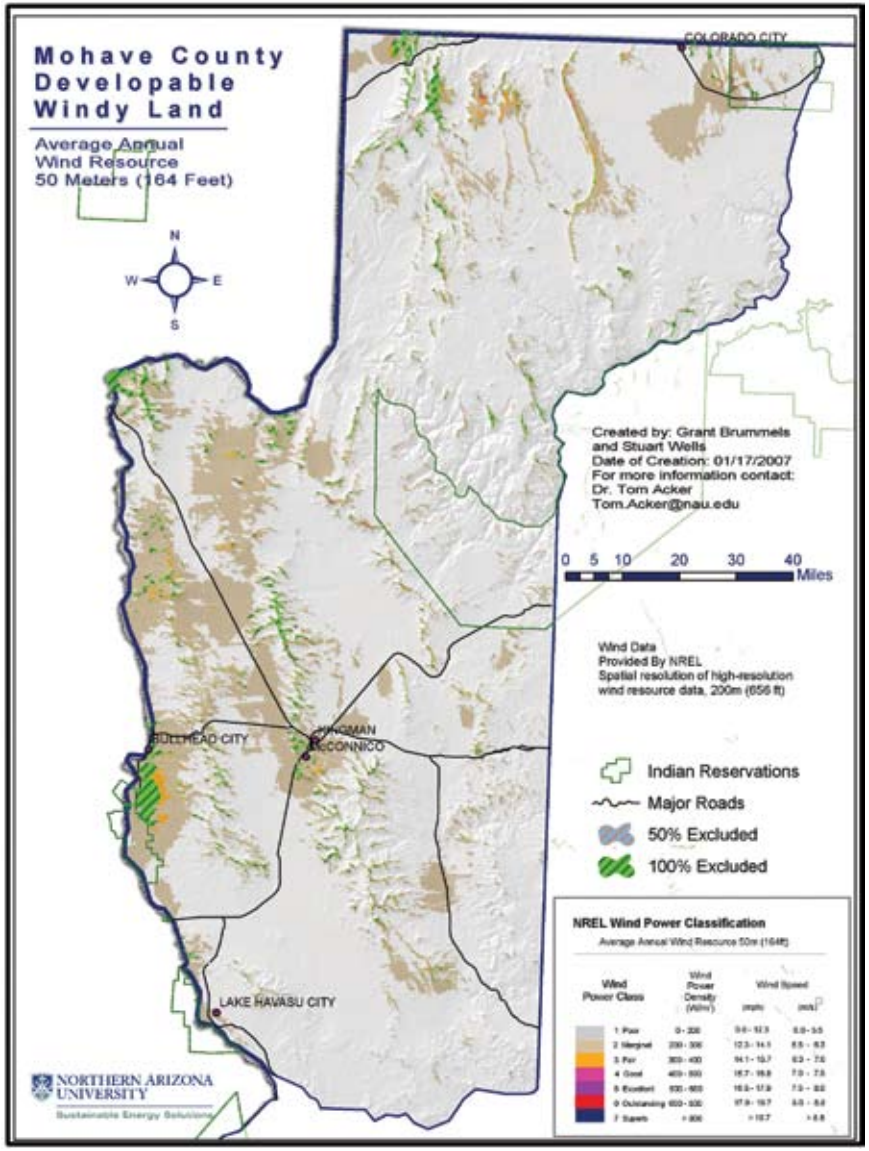
This report contains two wind energy analyses for northwestern-Arizona's Mohave County. In the first analysis, the developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class in each county was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Mohave County was estimated to be 1100 MW. The majority of developable windy land, 88%, was Class 3.

The second analysis determined the economic impact of constructing a wind energy project in Mohave County. Utilizing National Renewable Energy Laboratory's Job and Economic Development Impact (NREL's JEDI) model in conjunction with Monte Carlo simulation, economic benefits categorized by jobs, earnings, and economic output were estimated for three different sized wind energy projects, 10.5 MW, 60 MW and 180 MW.

For a 60 MW wind energy project

- ***Jobs during construction***: median was 68 jobs
- ***Jobs during operations and maintenance phase (O&M phase)***: median was 24 jobs
- ***Earnings during construction***: the median was $2.07 million
- ***Earnings during O&M phase***: median was $0.77 million annually
- ***Output (economic activity) during construction***: median was $7.25 million
- ***Output during O&M phase***: median was $1.82 million annually



Arizona Wind Energy Assesment

Navajo County

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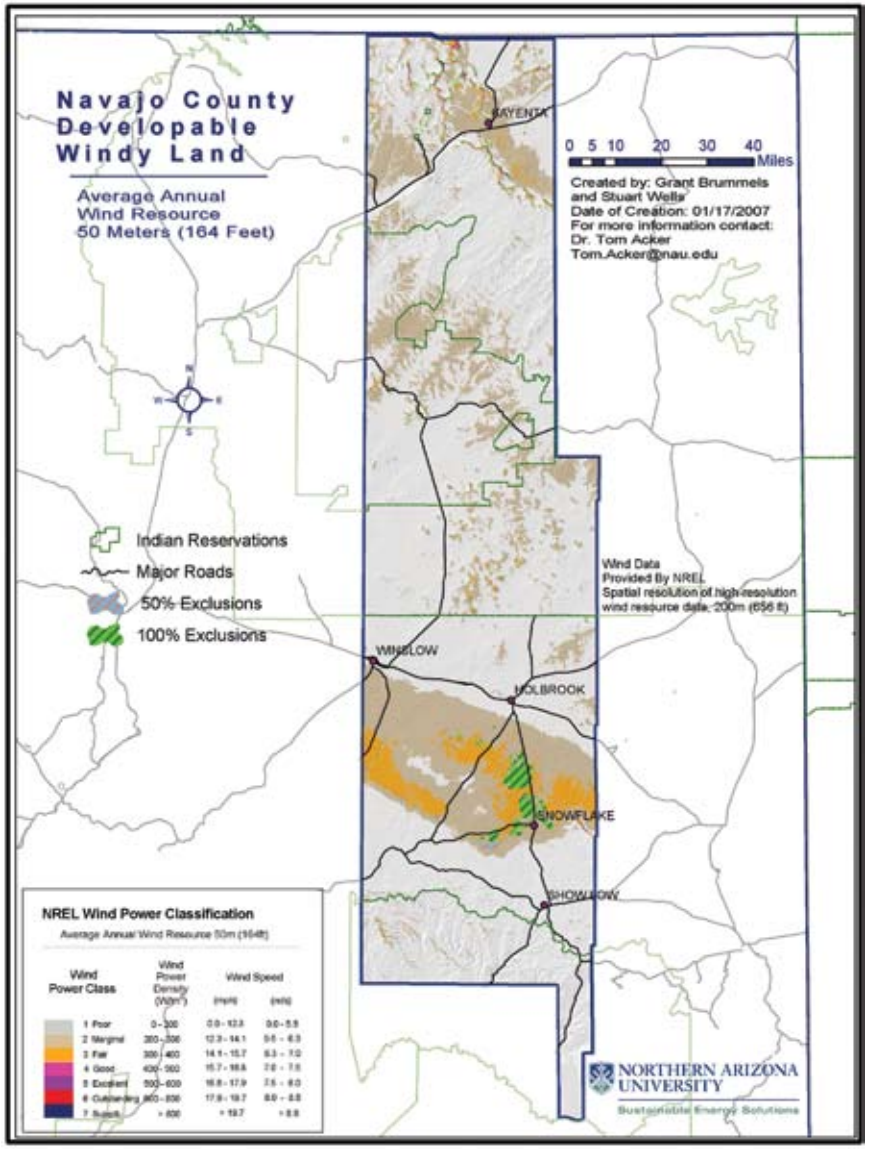
This report contains two wind energy analyses for the northern Arizona county, Navajo County. In the first analysis, the developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Navajo County it was estimated to be 4800 MW. The majority of developable windy land, 97%, respectively was Class 3.

The second analysis determined the economic impact of constructing a wind energy project in Navajo County. Utilizing National Renewable Energy Laboratory's Job and Economic Development Impact (NREL's JEDI) model in conjunction with Monte Carlo simulation, economic benefits categorized by jobs, earnings, and economic output were estimated for three different sized wind energy projects, 10.5 MW, 60 MW and 180 MW.

For a 60 MW wind energy project

- ***Jobs during construction***: median was 32 jobs
- ***Jobs during operations and maintenance phase (O&M phase)***: median was 14 jobs
- ***Earnings during construction***: the median was $0.86 million
- ***Earnings during O&M phase***: median was $0.51 million annually
- ***Output (economic activity) during construction***: median was $3.54 million
- ***Output during O&M phase***: median was $1.15 million annually



Arizona Wind Energy Assesment

Greenlee County

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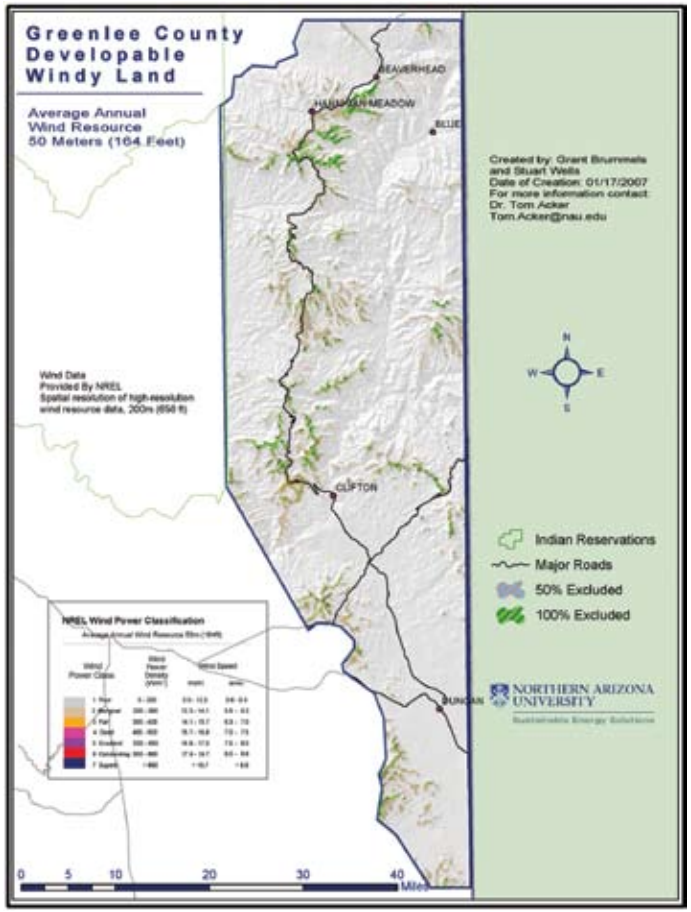
This report contains a wind energy analysis for southeastern Arizona's Greenlee County. The developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Greenlee County was estimated to be 53 MW. The majority of developable windy land, 78%, was Class 3.



Arizona Wind Energy Assesment

Yavapai County

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This report contains a wind energy analysis for central Arizona's Yavapai County. The developable wind energy capacity was estimated using a geographic information system. Specifically, the amount of windy land by wind class was determined. Development exclusions were then applied and the developable windy land was determined. The wind energy potential in Yavapai County was estimated to be 55 MW. The majority of developable windy land, 89%, was Class 3.