The Effects of Wind Power on Beach Tourism

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Problem

• Although little empirical research has been undertaken to examine offshore wind power’s effect (positive and negative) on tourism, opponents often cite perceived threats to tourism.

The Survey

• Survey of out-of-state beachgoers conducted in July and August 2007
• Cross-section of respondents obtained by sampling on weekends and weekdays at less and more developed beaches in Delaware:
  - Less developed beaches: Cape Henlopen, Delaware Seashore State Park, Fenwick Island State Park
  - More developed sites: Bethany Beach, Dewey Beach, Rehoboth Beach, Bethany boardwalk
• Beachgoers were sampled systematically through a geographic-transect method at each beach.
• This method involved walking the beach parallel to the shore and then cutting in a straight line toward the ocean at regular, pre-determined intervals, intercepting the closest adult (one per group) that fell on the line.

Survey Questions

• Respondents were shown a series of wind farm simulations (including those in Figure 2) at increasing distances from shore and asked whether their decision to visit the beach might have changed had a wind farm existed at each distance.
• The survey also investigates out-of-state beachgoers:
  - Opinions on wind power in general and offshore
  - Frequency of beach visits
  - Stated changes in beach visitation with a coal plant located 6 miles inland
  - Likelihood of visiting a beach to see a wind farm at least one time, and to take a tour of an offshore wind facility
  - Likelihood of selling property located in a beach community if a wind farm were to be built offshore
  - Criteria for beach selection
  - Trip expenditure levels

Objective

• Estimate the effect of offshore wind development in Delaware on tourism.
• Examine the link between the presence of offshore wind farms and beach selection.

Additional Survey Results

Table 1: Support to place turbines in ocean (n=1534)

| Likelihood of visiting a beach with turbines | Encouraged | 15.9% |
| | Appropriate | 12.8% |
| | Tolerated | 5.7% |
| | Neutral | 2.0% |

Table 2: Likelihood of taking a boat tour (n=1010)

| Likelihood | Very Likely | 15.5% |
| | Somewhat Likely | 28.0% |
| | Somewhat Unlikely | 23.1% |
| | Very Unlikely | 21.4% |

Contingent Behavior Modeling Results

• Logistic regression was employed to predict beachgoers’ reported likelihood of visiting a Delaware beach after viewing a 6-mile simulation. That likelihood is significantly increased among respondents below 30 years of age.
• Conversely, a significant, inverse relationship exists between the likelihood of visiting a Delaware beach and the following variables:
  - mean income
  - mean trip cost
• Additional modeling will further uncover the effect of offshore wind power on Delaware beach tourism.

Policy Implications

• Based on these findings of beach visitors’ statements of intent to switch beaches, we would not advise developers of offshore wind to claim that there will be no negative impact on tourism. Some beachgoers report they would avoid beaches with visible turbines.
• However, the reported avoidance effect diminishes with greater distance from shore, the avoidance of wind turbines is less than the avoidance of fossil fuel power plants, and the avoidance of beaches with wind turbines is substantially less than attraction, to beaches or boat tours, in order to see the wind turbines.

Figures and Tables

Figure 2. Simulated views of offshore wind turbines as shown to respondents. Of the four distances used in the survey, two are shown here.
Figure 3. Reported visitation at varying wind distances (n=488)

Selected Survey Results

Figure 4. Likelihood of visiting a new or different beach, at least once, to see a wind farm 6 miles from shore (n=485)

Figure 5. Comparison of beach choice: wind farm 6 mi. offshore vs. coal or natural gas plant 6 mi. inland (n=976)