Siting a New Wind Farm

Scott Greene, Ph.D.
Department of Geography and Environmental Sustainability
University of Oklahoma
Email: jgreene@ou.edu

Lesson Title: Siting a New Wind Farm

Grade Level: 6-8

Purpose/Overview:
The overall purpose of the lesson is to help students analyze a range of geographic information to develop a better understanding of human interactions with their environment via siting a windfarm in a foreign location. In this case that analysis is on the island of Ireland.

National Geography Standards from *Geography for Life*
Geographic Elements & Standards:
Standard 1: How to use maps and other geographic representations, geospatial technologies, and spatial thinking to understand and communicate information
Standard 14: How human actions modify the physical environment
Standard 15: How physical systems affect human systems
Standard 18: How to apply geography to interpret the present and plan for the future

Oklahoma Academic Standards for the Social Studies:

OAS 2012	OAS 2019
Content Standard 5.2 (Grade 7): Evaluate the effects of human modification of and adaptation to the natural environment.	**7.4.4** Evaluate the effects of human modification of and adaptation to the natural environment through transformation caused by agriculture, the use of modern irrigation methods, industry, demand for energy, and urbanization.
Content Standard 5.3 (Grade 7): Integrate visual information to analyze regional problems and policies having spatial dimensions in the Eastern Hemisphere.	**2.B.6-8.1** Draw upon gathered information to analyze how a specific problem can manifest itself in local, regional, and global levels over time, evaluating options for individual and collective solutions.

Geographic Themes:
Human-Environmental Interaction, Region

Objectives:
(Related to the National Geography Elements and Standards listed above)

Each lesson plan should answer in a short narrative these questions:

1. What **key topic/issue**(s) is/are associated with this lesson/unit?

2. **What should students know** after this lesson/unit?

3. **How will students apply** this lesson/unit **content**?

Materials:
Paper Handout, Map Handout, computer

Time Frame:
One 60-minute period (two for the optional add on and discussion)

Procedures:
See attached sheet for the student exercise.

Assessment Options:
Summarize what your suggested assessment will be. Refer back to objectives above: how will the teacher know that students have learned the intended objectives?

The assessment is based upon a combination of the students answering the questions correctly, and applying the relevant principles in the discussion and analysis. The assessment is designed as an individual assessment.

Resources:
Information from the Sustainability Energy Authority of Ireland
http://maps.seai.ie/wind/
German Wind Maps: http://notrickszone.com/2015/06/02/shocking-before-and-after-photos-how-wind-parks-are-devastating-idyllic-german-countryside/

Extension and Enrichment/Simplification:
The project could be expanded via a comparative analysis of the locations selected in Ireland to similar locations in Oklahoma (using available Google Earth files). Another option would be to use the optional information as provided in the exercise to compare different locations in Ireland. Similarly, a discussion of the impact of protected areas and wildlife concerns, or a discussion of why the operational wind farms are located where they are could be undertaken.

Connections (optional):
Include OAS standards for other disciplines/subjects (e.g., English/language arts, history, science and mathematics) that are met by your lesson/unit.