

Green vs. Green vs. Green: Implications of alternative views on sustainable wind energy in Kansas

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Abstract. In the 19th century, windmills dotted the Kansas plains. In the 21st century, a new kind of windmill is emerging – large imposing turbines – not for pumping water, but for generating electricity. As demand for clean renewable energy sources increases exponentially, important questions remain about the implementation and long-term sustainability of wind energy initiatives in the state of Kansas. Environmental conservation and equitable stakeholder compensation concerns pose challenging counter-claims that must be reconciled. The juxtaposition of *green* (clean renewable) energy demand versus *green* environmental stewardship versus *green* equitable economic consideration is the focus of this qualitative study. Utilizing key informant interviews, focus groups, and relevant public information sources, the authors coded and analyzed data via inductive thematic analysis, as described by Boyatzis. Three thematic elements emerged (i.e. the three *greens*) and were then considered deductively within the context of wind energy development in three Kansas counties: Butler, Kiowa, and Wabaunsee. Results and potential implications of these dynamics for wind energy development in Kansas are discussed.

1. Introduction

The increasing demand for clean renewable energy sources, or so-called *green* energy, has promoted the development of large-scale commercial wind energy initiatives. The state of Kansas ranks second in wind-producing potential in the United States [1]. However, this potential is mitigated by several factors including, economic, environmental, infrastructure, legislative, regulatory, and technological constraints [2].

Kansas is also home to one of the few remaining tallgrass prairie ecosystems in the world. Chiefly located in the heart of the Flint Hills, these grasslands are among the last acres remaining, less than 4 percent, of the nearly 140 million acres of tallgrass prairie that once covered the Great Plains [3]. Consequently, many individuals and advocacy groups have actively opposed the encroachment of any perceived threats to these lands, including the advent of large-scale wind farms. Where commercial wind energy initiatives have been welcomed, the piecemeal nature of development in the state over the past decade and the lack of identifiable benchmarks has created the potential for significant disparities in economic remuneration between the various counties and landowners involved. These juxtaposing forces, namely, the demand for *green* (clean and renewable) energy, the demand for responsible *green* environmental stewardship, and the demand for *green* equitable economic consideration raise important concerns that must be reconciled in order to have sustainable support from the individuals and local communities implicated and the broader public at large.

2. Experiment, Results, Discussion, and Significance

During the Fall 2010 semester, graduate students in a qualitative research methods course conducted key informant interviews, focus groups, and document analysis. Subsequently, the authors analyzed this data along with additional public information documents, including local news reporting, stakeholder websites, various county and city documents, and information derived from the Kansas Energy Information Network (KEIN) website, through data-driven inductive thematic analysis, as detailed by Boyatzis [2][4]. Three thematic elements emerged: 1) the demand for clean renewable energy, 2) the demand for environmental conservation and preservation of specialized lands, particularly tallgrass prairie ecosystems, and 3) the demand for equitable consideration of stakeholder financial interests. The resultant themes were then considered deductively in the context of three Kansas counties: Butler, Kiowa, and Wabaunsee. Each county demonstrates an archetypical representation of one or more of the identified elements.

In December 2003, the Butler County Commission ruled in favor of wind energy projects to support a lagging economy and promote economic stability. The Elk River Wind Project in Butler County began operations in December 2005 and is one of the state's earliest and largest (150 MW) commercial wind energy sites. Located in the southern region of the Flint Hills, the site is not without controversy. Opponents of the initiative were concerned

that wind farm development would endanger local wildlife, harm the native grassland ecosystem, and disrupt the open scenic vistas. However, proponents argued the project would secure economic gains including a PILOT (payment in lieu of taxes) agreement with the county that would yield \$2,250,000 over a 15-year period, undisclosed royalty payments to the five principal landowners, increased revenue and employment from project construction and operations-related jobs, and increased local tourism [5]. Butler County officials ultimately determined that the prevailing economic interests overshadowed any remaining environmental concerns.

On May 4, 2007, a devastating F-5 tornado destroyed a significant portion of the community of Greensburg, Kansas (in Kiowa County). In the aftermath, Greensburg adopted unprecedented stringent green environmental building and energy standards as part of a branding strategy – “*Greensburg, KS: Rebuilding...Stronger, Better, Greener!*” – to attract and retain residents and support the long-term economic viability of the community [6]. The green energy initiatives included the development of a 12.5 MW commercial wind energy site by John Deere Renewables (now Exelon Wind, LLC) to supply the community’s electric power needs. The wind energy project broke ground in October 2009 and became operational on March 5, 2010. The novel use of renewable energy credits (RECs) and other offsets allow the community to boast that it is particularly *green*. This strategy demonstrates a unique confluence of green energy and green economic interests in order to promote long-term community sustainability.

In June 2004, the Wabaunsee County Commission banned commercial wind development in the county. Proponents of the ban felt it was required to protect the rights of the broader public to preserve the indigenous tallgrass prairie ecosystem despite the potential environmental benefits of green energy. Local landowners who favored wind energy development in the county argued that the region was ideally situated near existing high-voltage transmission lines, in contrast to sites in western Kansas [2]. They also felt they were being denied basic property rights to derive economic benefit from land lease contracts with wind developers. Subsequently, litigation was argued before the Kansas State Supreme Court. In October 2009, the Court ruled that the Wabaunsee County Commission has the right to prohibit construction of commercial wind turbines in the county. However, the Court acknowledged that certain questions remain about the constitutionality of some aspects of the ban. In contrast to Butler County, Wabaunsee County officials determined it was in the best interest of the county to place environmental stewardship concerns, including the preservation of scenic vistas and threatened wildlife habitats, above any potential economic gains or energy benefits derived from green wind power development.

3. Conclusion

The three “green” thematic elements that emerged in this study represent archetypical factors that must be properly reconciled to ensure long-term sustainability of wind energy projects. In the case of Butler County, consideration of green economic interests overshadowed green environmental stewardship concerns. However, Greensburg elected to rebrand itself as a vanguard green energy community as a means of securing economic sustainability. Finally, in Wabaunsee County, local officials decided to forego potential economic gains from wind energy development in favor of preserving dwindling tallgrass prairie lands. Each of these models demonstrates the need for ongoing public acceptance and support throughout the decision-making process. This process requires comprehensive consideration of stakeholder concerns through community engagement that promotes open communication.

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