POWER POLITICS:

THE POLITICAL ECOLOGY OF WIND ENERGY OPPOSITION IN WYOMING

by

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This thesis entitled: Power Politics: The Political Ecology of Wind Energy Opposition in Wyoming

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ABSTRACT

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This study investigates growing opposition to industrial-scale wind farms in the United States (US). Opposition groups are often successful in halting or delaying turbine construction, which significantly impacts the feasibility of meeting the US Department of Energy's "20 percent wind energy by 2030" goal; the US now generates 3.5 percent of electricity from the wind.

Because wind farms require large tracts of open land and are mostly built in rural areas, this research focuses on the US West and examines opposition underway in east-central Wyoming. Wyomingites embody politically conservative and culturally individualistic ideologies that pose unique challenges for wind developers. Wyoming's historic dependence on coal mining and other fossil fuels industries also means that the wind industry is often perceived as a threat to jobs and the state's economy. However, a declining agricultural market and vulnerability from boom-and-bust extractive industries may well position rural communities to benefit from wind farms' steady economic outputs.

To deepen understanding beyond the typical 'NIMBY' (Not In My Back Yard) explanation, this research uses a political ecology framework. Political ecology examines environmental conflicts with particular attention paid to relations of power between stakeholders and with concern for equitable distribution of harms and goods. Findings in this study highlight two emergent narratives. First, wind energy is perceived as an imposition on local communities

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that may not have a voice in siting decisions and that may suffer disproportionate burdens. Second, a discourse of support for wind farms also emerges and characterizes opposition as a privileged effort to protect vacation property values, uphold an elitist construction of 'nature', and wage ideological war on renewable energy.

Through two case studies, this research provides textured insights into wind farm opposition that may help mitigate future contestations *as well as* anticipate networks of support in the US context. This work also poses larger, critical questions interrogating the logic of developing industrial-scale renewables in rural areas, far from the urban centers driving 'green' electron demand. Narratives articulated foreshadow future responses to wind farms, particularly in the US West, and lay a foundation for more equitable decision-making processes that designate wind energy landscapes.

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1. THE POLITICAL ECOLOGY OF WIND ENERGY DEBATES

1.1 Introduction to Project Objectives

"We are not against renewerable [sic] energy. We are against being steam rollered as a community to accept these large industrial structures less than a mile from our village; impacting our families, homes and businesses. Why? So that the energy companies can make profit while we suffer!" (*Wingates Not Wind farms*, March 2013)

The installation of renewable energy across the world has been on the rise for decades, motivated by increasing awareness of the externalities associated with the combustion of fossil fuels and facilitated by technological improvements. Among renewable energy sources, wind power has proven the fastest growing because of a host of desirable environmental and financial attributes. Wind energy promises to deliver energy free of carbon dioxide emission and other air pollutants while producing no toxic wastes, bearing no risk of nuclear meltdown, using no fuel and few heavy metals, and requiring no water. In addition, wind power is one of the cheapest forms of renewable energy available at this time (existing hydro power is estimated to be slightly less expensive than new wind energy) (Komor, 2004:32). In the last decade especially, turbine engineering has improved significantly, facilitating wind energy's rising contribution to total global electricity production. According to the Global Wind Energy Council, in 2011 alone 40.5 gigawatts (GW) of turbine capacity was brought online globally, representing investments of more than \$68 billion dollars. By the end of 2011, the total global installed turbine capacity was 238 GW (GWEC, 2012). This is a significant amount of energy – enough to power 62.5 million average American homes and to offset about 2,216 million tonnes of CO2/year from energy otherwise generated from coal plants.¹

Despite the economic and environmental benefits of wind energy outlined above, the development of this technology has generated heated opposition from communities across the

¹ Author's own calculations, assuming 1.02 kg of CO2 is produced for every kwh of electricity.

world, which are often successful in delaying or halting proposed wind farms altogether. Wind farms take up vast tracts of land – tens of thousands of acres more than, for example, a coal-fired power plant of the same generation capacity. Contemporary wind turbines stand over 500 feet from base to blade tip, and US Federal Aviation Administration rules require they be painted white for visibility and be mounted with nighttime blinking red lights to warn air traffic of their presence. As such, landscapes once devoid of industrial facilities are significantly transformed when they become 'planted' with the highly visible whirling towers, substations, and transmission lines that comprise a wind farm. Understandably, wind energy development remains a highly controversial energy topic.

Nearby communities express concern about the economic, aesthetic, environmental, and health impacts of large-scale wind farms. Ingrained in such anti-wind narratives are expressions of perceived inequities – that wind farms represent unfair burdens to the local communities where they are constructed, while distant, urban populations and energy companies reap the benefits. Wind energy opponents frequently level larger political and economic arguments against the viability of wind as a consistent, clean, and low-cost energy source, but it is the emphasis on 'inequity' – so frequently expressed in community-level contestations – that serves as the focus of this research.

This project uses a case study approach to examine how and why wind power opposition has manifested in Converse and Natrona Counties, in east-central Wyoming. Though opposition in Converse County to a proposed 100 megawatt (MW) wind farm serves as the central focus of this research, I also examine past contestation over the Chevron Casper Wind Farm in Natrona County. The Converse County opposition group, the Northern Laramie Range Alliance (NLRA), has successfully delayed the project from moving forward for over three years and is "fighting

this industrialization of our pristine mountain country, and the tax breaks and other favors that make it possible" (NLRA, 2012). Through a series of semi-structured interviews with county commissioners, employees of the wind development company, and local landowners – both opposed and supportive – I attempt to untangle the complex social conflicts over past and current wind energy developments in this region, with attention paid to the power dynamics inherent in this struggle.

This research deepens understanding of wind farm contestation beyond the commonly used 'NIMBY' (Not In My Back Yard) explanation. Instead, I argue that various interactions of power and knowledge play out between stakeholders and decision-makers upon the evolving wind energy landscape, and resulting decisions have impacts on communities and the environment. Furthermore, wind energy conflicts raise the question of whose voice and interests are attended to in wind development efforts, and whose are neglected. Who benefits from wind farms? Who is burdened? The electrons generated by large-scale industrial wind farms typically travel thousands of miles to reach the urban centers that consume them – thus, there is a potential for wind farms to impose burdens on rural populations that are disproportionate to the benefits (such as tax revenue, jobs, and lease payments) seen by those same communities. As such, the power dynamics manifested between communities, large corporations, state governments, nongovernmental groups, and the urban centers that are the main consumers of electrical production require critical examination.

1.2 Using Political Ecology

This study enlists a political ecology (PE) framework to investigate the views of those opposed to wind energy development in Wyoming and to interrogate the NIMBY attribution. Political ecology examines the way in which societies construct and govern their environment,

with a focus on the interconnections between natural systems and social systems. At the heart of this investigation is attention to relations of power and knowledge between different social groups, defined by, for example, class, race, and gender (see Forsyth, 2003). Rather than a specific discipline, political ecology has been understood to be a cross-disciplinary approach or framework that is not bound by a specific set of theories or methodologies. If there is one thread that weaves through the vast body of political ecological work, it is this emphasis on "explicit consideration of relations of power" (Robbins 2004:12) that emerge in critical examinations of environmental management and conflicts. In the natural resource context, power and knowledge are manifested through regulations, policies, and decision-making, which may benefit some social groups at the expense of others.

A critical political ecology framework is useful in understanding wind farm opposition. Political ecology could be simply defined as the politics of environmental science (including environmentally focused social sciences), thereby contrasted to more dominant, positivist, 'scientific' ecological studies typically conceptualized as 'apolitical'. PE scholars contend that *all* approaches to ecological management and environmental knowledge are inherently political. Thus, political ecologists often pose 'scaled up' questions about the role that regional, national, and global political economies all play in local environmental issues (Robbins, 2012) and point to the ways powerful global actors, markets, and networks can impact local peoples who arguably are the most dependent on the contested landscapes.

According to Forsyth, academic political ecology works first appeared in the 1960s and 1970s (though were not named as such) and emphasized "the philosophical and methodological challenges of 'ecology' to existing forms of science" in that ecology as a burgeoning practice was subversive in and of itself because it 1) expanded the notion of 'community' beyond the

human realm, emphasizing that humans and nature are connected, and 2) leveled a critique against human destructiveness, which marked a new era of the environmental political agenda (2003:5). In the following decades, a range of social scientists, including development and peasant studies scholars, anthropologists, feminist scholars, environmental historians, sociologists, political scientists, and geographers, engaged in the growing field of political ecology, resulting in a "healthy diversity" of scholarship (Robbins, 2012). An early articulation of political ecology was published in 1987 by Blaikie and Brookfield and examined land degradation across developing countries to find that, contrary to the dominant narrative concerning the 'primitive' farmers who in 'ignorance' 'abuse' the land, there are larger social and political "chains of explanation" that have to do with power, access to resources, and the marginalization of poor farmers – and resulting from their entry into the global market (1987). From this landmark text on degradation and marginalization, several more dominant themes emerged in political ecology scholarship, including examining social constructions of nature, environmental social movements, access to natural resources (often delineated along gendered, classed, and raced lines), conservation failures, and the politics of environmental laws and knowledge/science itself (which typically incorporates an understanding of traditional and/or indigenous knowledge systems into its analysis).

The resulting widely defined framework of political ecology has often been critiqued for being undefined and vague. As Walker identifies, "its coherence as a field of study and its central intellectual contributions remain the subject of sometimes contentious debate" (2005). I contend, however, that political ecology offers a particularly useful set of tools because it provides a nuanced understanding of environmental conflicts and embraces complexity by incorporating the historical, cultural, political, and economic contexts for environmental conflict across temporal

and spatial scales. According to scholars Goldman, Nadasdy, and Turner, diverse works in political ecology consistently incorporate three themes into analyses: 1) understanding of the biophysical processes that serve as platforms upon which conflicts play out, 2) attention to politics as being "geographically and historically situated," and 3) concern for social justice and marginalized groups (2011:7).

For a field that has risen to such prominence in environment-society research, especially among geographers, consideration of the biophysical processes that underlie environmental conflicts would seem imperative. However, critiques of political ecology have pointed to the fact that often PE scholarship is lacking a thorough treatment of the ecological factors (see Walker, 2005), focusing only or predominantly on the politics and political economy aspects of humanenvironment interactions. In their self-explanatorily titled work, "Against Political Ecology," Vayda and Walters state that "political ecologists have focused their research on environmental or natural resource politics and have missed or scanted the complex and contingent interactions of factors whereby actual environmental changes often are produced" (1999:167). Furthermore, they argue "some political ecologists…deal only with politics, albeit politics somehow related to the environment…what are actually studied are political controls or political contests over natural resources and not, or at least not to any significant extent, how the resources are affected by those controls or contests" (1999:168-169).

However, Walker proposes that what might be known as 'the environment' has shifted with the post-structuralist turn in political ecology (2005). Indeed, examinations of environmental knowledge, perceptions, and discourses have come to the forefront of humanenvironment studies, and, for many, the emphasis on these social politics and constructions (rather than biophysical processes) is more than sufficient. Demeritt (1994) argues boldly that

approaching the environment through these social aspects is the main project, since "Ecology is the discourse, not the living world itself" (p. 177). Watts contends, "political ecology rests on *the dialectical and non-linear relations between Nature and Society*," (quoted in Walker, 2005:78, emphasis in original). This point may especially be true for examining wind farm opposition through a political ecology lens, since wind farms have a minimal footprint upon the land, yet in terms of landscape aesthetics can be felt as highly impactful, posing a possible interruption of the Western construct of nature as pristine and devoid of human presence (for example, see Cronon, 1995).

Though social justice has been a common thread weaving through political ecological scholarship (and that arguably sparked the field's emergence), the emphasis on subordinated peoples and marginalization from environmental regulations or lack thereof is not necessarily a requisite aspect of political ecology. More recent 'first world' political ecology works, for example, often do not take for their subjects marginalized populations, such as in Paul Robbins' 2007 monograph exploring household lawn chemical application in the United States. In *Lawn People*, Robbins takes up the project of understanding his troubling finding that individuals who are *more* likely to have anxieties about the toxicity of the chemicals they apply to their lawns are *also more likely* to apply those chemicals on a regular basis. Robbins explores the internalized obedience of the lawn subject, and the notion of the lawn as an "agent," thus complicating the relationship between knowledge and action and arguing against dominant concepts of "choice, freedom, culture, and the autonomy and impotence of the nonhuman world" (2007:5).

Though political ecology has traditionally focused on environmental conflicts in developing countries, scholars are increasingly applying political ecology's concepts to industrialized/developed contexts (see, for example: McCarthy, 2002; Darling, 2005; Emery,

2005; McCarthy, 2005a; McCarthy, 2005b; Schroeder, 2005; St. Martin, 2005; Walker and Fortmann, 2003). Some scholars have debated the appropriateness of applying an approach that was largely developed in and for the 'Third World' to the 'first world', arguing that ongoing injustices in developing countries perpetrated by (neo)colonialist structures require "a political ecology that is focused on the Third World and which is distinct from research on other areas" (Bryant and Bailey, 1997:8). However, as McCarthy argued in his 2002 spearheading article on the 'Wise Use' movement of the rural American West, there is no reason to reserve the tools of political ecology for the 'Third World' only (see McCarthy, 2002). Geographer Richard Schroeder contends that, among other reasons, 'first world' political ecology may be especially appropriate considering that a) due to restructuring of global agricultural systems, 'Third World' conditions are occurring in many rural areas in the US, and b) in the neoliberal economy, global commodity chains and resulting injustices and political processes cannot be understood without considering industrialized countries' demand and consumption (2006). As described above, the conditions for a compelling political ecology examination of human-environment interactions are not limited to rural areas alone – Robbins' 'lawn subjects' are shown to be actants in a larger political economic system that influences how the American middle class negotiates lawn maintenance, including exposure to harmful chemicals and expensive procedures.

In the context of the global climate discourse and significant emphasis on emissions reductions, renewable energy has risen to the forefront of energy development efforts. Because renewable energy developments, such as wind farms, can impact the environment and nearby communities in significant ways, and because struggles over renewable energy landscapes have become so heated, wind energy contestation is a suitable candidate for a political ecological treatment. Michael Pasqualetti has shown that, across countries and contexts, renewable energy

developments harbor the potential to marginalize local populations that often have little to no voice in the matter (Pasqualetti, 2011). For example, in Oaxaca, Mexico, the potential for wind farms to impose on local communities has been highlighted recently in the media. In 2012, major protests against multi-national wind development companies were held by local indigenous communities, following a staggering push by the Mexican government to install wind power and help reach the country's goal of sourcing 30% of its electricity from renewable energy by 2020. According to a recent news article, the indigenous residents claim, "the wind farms take control of their land, affect fish and livestock with their vibrations, chop up birds and pit residents against each other for the damage or royalty payments. They also claim they see few of the profits from such projects" (Stevenson, 2012). The site of this particular contention is the Isthmus of Tehuantepec, home of several farming and fishing villages, and which separates the Gulf of Mexico from the Pacific Ocean. It is known as one of the windiest places on the planet, and has thus attracted Spanish and American energy companies. The conflict stems from the incidence of multiple transnational companies concentrating development in one highly desirable area. Mexico currently has about 1.3 GW of installed wind farm capacity spread over seventeen wind farms, and all but four of them are located on the isthmus. This is but one example of local contestation to wind farms engendering a more complex set of interrelations and concerns than the popular yet greatly simplified "NIMBY" frame.

Increasingly connected to political ecology scholarship, especially that which examines the politics of environmental knowledge and science, are insights from science and technology studies (STS). Political ecology and STS have recently been recognized to significantly overlap and complement each other:

"scholars working within the field of political ecology have increasingly felt it necessary to engage with the different ways in which 'nature' is perceived, studied, and presented

by different social groups – from local resource users to scientific experts whose assumptions, visions, and management techniques can be imposed on others. Work within STS has been extremely valuable in uncovering how 'expert' or scientific knowledge is constructed, used, and transmitted" (Goldman and Turner, 2011:5).

STS scholars argue that 'science' and other concepts are 'black-boxed' (after Bruno Latour, 1987), meaning that they are privileged as absolute, unquestionable truths. Consequentially, science itself is severed from the social, political, and human processes that have helped create it. Latour famously argued that, in the quest to be 'modern', Western civilization has continuously undertaken the project of 'translation and purification' in which nature and culture are separated in order to purify the role of science from human distractions such as religion and politics (1993). Latour, a sociologist of science, contends instead that "we have never been modern" and that in fact "no science can exit from the network of its practice" (1993: 24). The work of Latour and other STS scholars has shown that, in fact, science is 'coproduced', meaning that knowledge generated from a supposed objective scientific method is actually *co*-generated by equally influential cultural drivers, ranging from politically driven research funding allocations to personal motivations to achieve academic distinction to neocolonial suppression efforts. By continually reiterating the separation of the social and the natural – of science and politics – a network of nature-culture "hybrids" has proliferated (Latour, 1993). STS scholarship has opened the 'black box' of science in order to understand its hybridity, influenced both by the natural and by the social as "strands of a single, tightly woven cultural enterprise through which human beings seek to make sense of their condition" (Jasanoff, 2004:21).

STS scholars argue that positivist science is just one (privileged) knowledge system among many (such as indigenous or traditional knowledge), and that it "reflects the position from which one looks at it" (Jasanoff, 2004:32). In this way, ecological management strategies

and solutions to environmental problems that profess to be 'apolitical' are never truly so. Instead, they are "situated" (Haraway, 1988) and reflect cultural and politics agendas specific to the authority utilizing them. The concept of 'climate change', for example, is derived from the black-box of positivist science, and so too may be the resulting range of acceptable adaptation and mitigation strategies, including the implementation of industrial-scale renewable energy systems. Governments around the world have developed policies and incentives to quickly develop large-scale renewable energy systems, but the renewables drive itself could be seen as 'black-boxed' – an incontrovertible 'god term' to which there is no room for questioning. The project of STS scholarship is not to demonstrate that climate science, for example, is not *true*, but that it is a 'hybrid', co-produced and influenced by a range of human factors and agendas.

While political ecology scholarship has focused on the power relations between stakeholders in environmental conflicts, as well as the consequences of global political-economic processes on local communities, a 'critical political ecology' (see Forsyth, 2003) incorporates the insights of STS scholarship into a wider examination of not only *how* larger processes of science and political economy affect local human-environment dynamics, but also *whose* knowledge is being perpetuated and *why* it is being translated and circulated in the way that it is. In doing so, the tools of PE and STS make room for questioning environmental policies – such as the development of conservation areas and renewable energy systems – formerly understood as apolitical, objective, universal truths. Such a critical political ecology framework is useful in understanding wind farm opposition. Conflicts over renewable energy landscapes frequently express at the local level in response to larger political, scientific, and economic processes that drive industrial-scale wind farms. Communities experience direct impacts from wind farms – both positive and negative – and often feel they do not have a voice in siting decisions. Wind

farms are built by large corporations seeking profit and facilitated by national incentives, usually in response to market demand from distant, urban centers thousands of miles away.

In sum, the political ecology approach, though diverse and difficult to academically compartmentalize, is woven together by its critical emphasis on attending to the complexities inherent in human-nature interactions, manifesting across knowledge and resource claims that are generated through various scales and processes. Such claims mediate access to and control over environmental resources – including landscapes that may be consumed for aesthetic, rather than subsistence, purposes (see Walker and Fortmann, 2003) – which can disproportionately impact the local communities that depend on them. As such, this research employs a critical political ecology framework to consider how power and knowledge are exercised in the relations of those engaged in wind farm disputes in Wyoming, including wind energy developers and local, state, and federal governments, and across a variety of social groups, including ranchers, hunters, middle-class recreationists, wealthy oil families, and distant landowners. The political ecology framework thus offers a "far richer terrain of relations and conflicts" (McCarthy, 2005) than other, perhaps more dominant, approaches to examining environmental conflicts, with an explicit focus on the specific distribution of risks, benefits, and voice across these different social groups and situated within a 'scaled up' consideration of the larger political economy and global environmental discourse.

1.3 Justification for Case Study and Research Methods

This research takes for its case study wind energy conflicts in adjacent Converse and Natrona Counties, located in east-central Wyoming. Wyoming at large is a current hotspot for wind energy development, yet its conservative cultural politics and dependence on fossil fuel industries pose unique challenges for wind developers. Opposition to wind farms as articulated in

these case studies may be forerunning future renewable energy development controversies across the US West, where ample wind and solar resources exist. The oppositional narratives that emerge in these case studies may also be representative of nationwide ideological divides over fossil fuel use, responses to climate change, and the role of the federal government in state and corporate affairs. Wind energy opposition in Wyoming is important to understand, too, due to wind energy's potential for economic development in a state that has suffered from historic 'underdevelopment' and economic vulnerability from the 'boom and bust' extractive industries and declining agricultural market. Wind energy, alternately, offers steady, predictable economic development with few externalities and may be embraced by rural communities for this reason. The wind energy battles waged in Converse and Natrona Counties highlight well these ideological and political-economic dynamics, but they also offer a textured understanding of how wind farms disrupt emotional attachments to undeveloped landscapes and apprehensions about place-change resulting from industrial facilities such as turbines.

Wyoming has both large expanses of open land and ample wind resources (see Figure 1). The state is currently twelfth in the nation for its amount of installed wind capacity (built wind farms), and the National Renewable Energy Laboratory (NREL) estimates that it could be the country's eighth most productive state in terms of its total installed capacity potential (factoring in average wind speeds and available land).² NREL estimates that 44% of the state is available for wind resource development, after land exclusions (NREL, 2012b). The current governor, Matt Mead, is relatively supportive of wind energy development because of its economic development impacts. Additionally, the California electricity market is especially thirsty for green energy and willing to pay for 'green' electrons, which is driving construction of both wind

² After Texas, South Dakota, North Dakota, Montana, Nebraska, Kansas, and Iowa.

farms and transmission lines across the West. As such, several large projects are underway in Wyoming, including a proposed (and contested) 1000-turbine project in southern Wyoming financed by entrepreneurial giant, Phil Anschutz. This project is in the beginning stages, but if it is built, it will be the largest wind farm in the country and will represent a \$9 billion dollar investment. Clearly, a larger political economy is at work on Wyoming's rural landscapes. Speaking more broadly, in 2008 a US Department of Energy report estimated that the most rapid wind development in the coming decades will occur in the West, in states like Wyoming and Nevada, which harbor desirable wind resources, low population densities, and ample open lands (2008). As such, opposition movements in this region likely have significant implications for the national transition to a cleaner energy economy and foreshadow future dynamics in renewable energy development.



Figure 1: The National Renewable Energy Laboratory's 80-meter wind map, showing Wyoming's high wind energy production potential. (NREL, 2012b)

Despite its high wind potential, Wyoming's long-standing dependence on fossil fuel extraction and its conservative cultural politics pose unique challenges for wind developers that are indicative of larger ideological and political divides across the nation as a whole. For example, one resident claimed developers should "Put them [wind farms] in someone's backyard who voted for Obama" (Clarion Associates Survey Respondent, 2010). During interviews, many landowners in Converse County expressed that they were worried wind energy would replace traditional energies and thus reduce highly valued coalmine and coal plant jobs. Many of them pointed to the Obama administration's new rules for coal-fired power plant emissions, and perceived Obama's 'war on coal' and financial support of renewable energy as two sides of the same 'war on jobs' coin. Wyoming has "historically been known as an internal energy colony for the rest of the United States, akin to Alaska or West Virginia" (Strauss and Reeser, 2013:115), and the state's economy has relied on the extraction and export of raw products such as minerals, oil, and beef for the last century. In Converse County and neighboring Natrona County, mineral extraction industries provide hundreds of jobs, including at the local coal plant, coalmine, refineries, and numerous oil and natural gas operations.

While renewable energy is framed nationally in the context of climate mitigation and carbon emissions reduction, I found that this is not the case in Wyoming. This is due in part to the economic stronghold of the fossil fuels industry. The controversy over an installed sculpture at the University of Wyoming highlights this well. The sculpture, called "Carbon Sink: What Goes Around Comes Around," quickly received heavy criticism once installed from the mining industry and some members of the state legislature. The sculpture was a thirty-six-foot-wide swirl of charred Wyoming logs and chunks of dark coal created by the British landscape artist, Chris Drury. Drury said he had hoped his piece would help generate conversation about climate

change, fossils burning, and the connection to the unprecedented bark beetle infestation occurring across the Rocky Mountain West, which has killed hundreds of thousands of acres of trees. The president of the University asked that Carbon Sink be removed for the controversy it has spurred – coal companies especially felt it was "insulting" and a "stab in the back" to an industry that had supported the university with millions of dollars (Fugleberg, 2012). The director of the Wyoming Mining Association explained, "They get millions of dollars in royalties from oil, gas and coal to run the university, and then they put up a monument attacking me, demonizing the industry...I understand academic freedom, and we're very supportive of it, but it's still disappointing" (as quoted in Fugleberg, 2012).

As a further illustration of this point, I found that only one of the eighteen local residents I interviewed outright said they believed in the idea of *anthropogenic* climate change, and several told me that the notion that humans could influence the global climate was an arrogant one. Paradoxically, this region is heading into its second year of severe drought – the worst seen in fifty or sixty years according to local landowners – and this has significantly impacted ranchers' ability to grow enough hay for their cattle, requiring them to purchase hay at record high prices. Despite this, anthropogenic climate change was not part of local discussions, and thus neither was the framing of renewable energy within the context of climate mitigation and reducing carbon dioxide emissions. The *green* energy frame of renewables is controversial politically on many levels in Wyoming. It is perceived as one of the arms of the 'liberal-environmental project', which conservatives see as limiting their economic and individual freedoms. As will be discussed, the fact that wind energy is federally subsidized, especially, is controversial based on the grounds of it 'not playing on a level field' economically with

traditional energy sources. Instead, wind energy was discussed and debated in the frame of its economic impacts, both positive and negative.

Additionally, wind energy requires increased transmission capacities, and transmission, not social acceptance, might in the end be the biggest limiting factor of wind energy development in Wyoming. In constructing transmission lines, utilities are granted the right of eminent domain, which provides them the ability to cross private lands where necessary, paying a small, one-time fee for this use. Eminent domain upsets rural Westerners because it is felt as an overly strong hammer exercised by the federal government. Westerners do not like to be told what to do, and in general they greatly distrust the federal government (Krannich and Smith, 1998; Petrezelka and Marquat-Pyatt, forthcoming). Though wind developers cannot use eminent domain for turbines or connector lines, wind energy development is perceived as an infringement upon personal property rights due to the increased need for transmission lines.

The cultural politics of Wyoming, and across the West generally, in addition to the state's fossil fuels-based economy, mean that wind developers must work even harder to find ways to present their projects as beneficial to local communities. One angle that has found success is the economic benefit wind farms can bring to individuals and communities. Wyoming, the 'Cowboy State', has suffered "chronic underdevelopment" since the mid-1800s, which, according to American Studies scholar Frieda Knobloch, is due in part to a cultural association of the state as rural – an association that was in part constructed by state economic policy makers "clinging nostalgically and ineffectually to the state's 'wild west' image in its quest for development" (2001:202). The extractive industries so prevalent in Wyoming manifest as 'boom or bust' economies, highly vulnerable to fluctuating global commodity prices. These fluctuations can make a county rich one year, then leave it jobless and with damaged roads from over-sized

trucks the next. Wind energy, though associated with far fewer jobs, can provide the county with a tax revenue for the life of the project (anywhere between twenty and fifty years).

Ranching, another mainstay of Wyoming's economy and culture, is suffering nation-wide and is "poised on a trajectory toward extinction" (Walker, 2006). Ranchers are finding it increasingly difficult to retain their land and pay property taxes, and as a result often sell off portions of their property to stay afloat. Alternatively, wind energy can mean a stable, knowable source of income as landowners may receive between \$4000 and \$12,000 per turbine per year³ in lease payments. Thus, though wind opponents argue that wind turbines despoil the natural and historic attributes of the landscape, wind energy, I argue, can instead serve to retain the ecological and aesthetic integrity of landscapes through its capacity to keep ranching families on their land, negating the trend towards parceling and subdivision.

For the above reasons, I argue that wind energy development and opposition in Wyoming especially requires scholarly examination. By using the framework provided by political ecology, I consider the larger political economy at work upon Wyoming's social-economic landscapes as I examine differential power relations that manifest in the wind energy debate. In the tradition of political ecology, this research 'goes deep', or seeks a nuanced understanding of a particular environmental conflict, in order to scale up and pose larger postulations about the dynamics in wind energy development in the rural West. I utilize wind energy controversies underway in Converse and Natrona Counties to illustrate the larger political ecology of wind farm development and opposition.

My research methods were qualitative and primarily consisted of semi-structured interviews with three main groups: landowners, county commissioners, and employees of

³ Range obtained through author's research of various sources and verified April 12, 2013, by Mark Jacobson, employee at the National Renewable Energy Laboratory.

Wasatch Wind (Please see Table 1). I use the term "landowners" inclusively here in place of "residents" because I interviewed both local residents of Converse and Natrona Counties as well as landowners who lived outside of Wyoming. In all, I held twenty-four interviews.⁴ Interview lengths ran from forty minutes to three hours. The majority of these interviews took place in person, though five were conducted over the phone due to logistical and geographic difficulties, as well as one winter storm that prohibited my arrival to some individuals' residences.

INDIVIDUALS INTERVIEWED, BY TYPE							
CATEGORY	In-Person	Phone	Pro-Wind	Anti-Wind	Neutral	TOTAL	
Landowners	15	3	8	9	1	18	
Converse County Commissioners	3	1	4	0	0	4	
Wasatch Wind employees	1	1	2	0	0	2	
Total	19	5	14	9	1	24	

Table 1: Individuals interviewed, by type. Three groups were interviewed for this research: landowners (both resident and absentee), county commissioners, and employees of Wasatch Wind.

Interview participants were first selected based on publicly available information – the websites of the Northern Laramie Range Alliance (NLRA), Wasatch Wind, and Converse County. After contacting the leadership of the NLRA and employees at Wasatch Wind, I requested referrals and contact information for community members that might be willing to be interviewed. This strategy was very effective, and community members were generally very

 $^{^4}$ On five occasions, I interviewed two members of the same family (ie, husband and wife) – in each of these instances, family members held similar views and so I have counted them as one interview.

willing to speak to me on the issue. I was also able to interview four out of five of the county commissioners. Interview questions focused on participants' views of the Pioneer Wind Parks controversy, yet often times other wind farms were brought up and discussed (see Appendices A, B, and C). Participants were asked to express their feelings on whether or not they feel they had the opportunity to voice their opinions during the siting processes, whether or not they were satisfied with the permitting process at the county level, and on wind energy in general. Each interview was recorded with the individual's permission, and I took extensive notes, which were linked electronically through use of the Echo Smartpen. Each interview was then transcribed verbatim, though not each interview was transcribed in its entirety. Transcripts were read several times and culled for major themes, which serve as the basis for results presented in Section 3. In accordance with the requirements set by the Institutional Review Board of the University of Colorado and Protocol #12-0764, all individuals' identities were protected to the best of my ability – no names were used, and identifying data were kept to a minimum.

Additionally, I examined ten relevant editorials and letters to the editor that were present in the local media, including the *Casper Star-Tribune, Douglas Budget*, and *Glenrock Independent*. The purpose of this exercise was to further situate myself in the local debate and to make sure that my interview data had not neglected any major concern that might have otherwise been documented in an op-ed. Some of my interview subjects had written op-eds, but most had not.

I also utilized several procedural documents, reviewing relevant legal artifacts, including building permit applications, environmental reviews, state and county policies, and court documents. These were essential in developing a foundational understanding of the policies and legal issues pertaining to wind development in Converse County.

Lastly, I examined results from two surveys that had been conducted in Converse County: one that was initiated by the county, and one that was initiated by the local opposition group, the Northern Laramie Range Alliance.

1.4 Thesis Layout

This thesis is organized into three major sections (after the current introduction, Section 1). In Section 2, I present a review of scholarly explanations for wind energy opposition and then incorporate theoretical considerations of power, privilege, marginalization, and the social construction of nature. These include a discussion of how I conceptualize 'power' and 'marginalization' in wind energy debates, as well as connecting literature on the constructivist treatment of nature and landscapes. I also consider how landscape imaginaries of the American West specifically, as well as notions of the frontier, contribute to wind farm conflicts in this region.

In Section 3, I present the case studies and organize results into two narratives. First, through the example of the Chevron Casper Wind Farm, I examine the narrative of wind energy development as imposition on or burden to rural communities, despite economic promises by developers and planners. Second, I examine the political ecology of wind energy contestation as currently underway in Converse County, led by the Northern Laramie Range Alliance (NLRA). The NLRA has been opposing a proposal for the county's fourth wind farm since early 2009, due to the fact that it will be sited in the foothills to the Northern Laramie Range, a popular recreational, hunting, and summer home area. Proponents of the wind farm are the developer, Wasatch Wind, but perhaps more importantly, generational ranching families who hope to secure lease payments and who see the wind farm as a way to retain their land and way of life. Through my research I find that the battle is one divided over differing notions of landscape, nature, and

notions of what constitutes a private property right. I consider the political and financial capacities of the NLRA's leadership, as well as the role that private interests might play in this struggle, such as allegiances to fossil industries and protection of recreational property values.

Section 4 offers a conclusion. I pose 'scaled up' questions about the role of renewables in achieving carbon emissions offsets and about the current electricity transmission system in the US. Lastly, I argue that the expectation that rural communities should 'sacrifice' their landscapes for distant urban demand for renewable energy is troublesome.

2. BEYOND 'NIMBY': COMPLEXIFYING WIND ENERGY OPPOSITION

2.1 The Rise of Wind Energy (and opposition to it)

I live within the perimeters of this "wind farm" in my old family farmhouse Many of these farmhouses have tumbled down More will tumble as people escape the noise and the flicker and the unexpected symptoms they bring the pressure in the ears dizziness and nausea the inability to concentrate I can go on but part of my contract is that I can't talk about it can't even mention it. - Excerpt from poem by Mitchell Grabois: January 21, 2013

Opposition to wind energy has paralleled a rising trend of wind energy development worldwide. This trend is expected to only increase in the coming years. For example, current global installed wind energy capacity is about 280 gigawatts (GW), but according to estimates by the Global Wind Energy Council (GWEC, n.d.(b)), this will almost double by the end of 2016 to 500 GW (2012). GWEC also reports that total wind energy installation grew by 19% globally in 2012. In some countries, wind energy is already a major contributor to energy production – for example, in Denmark, the world's leader in wind energy production, wind-generated electricity now provides for nearly 25% of the national energy consumption.

The US currently draws about 3.5% of its electricity from the wind. According to the American Wind Energy Association, by the end of 2012 the total installed generating capacity of wind turbines in the US was 60 GW, producing around 157,698 gigawatt-hours (GWh) of electricity per year⁵ (AWEA, 2012). This is enough to power roughly 15.8 million average

⁵ Based on author's own calculations, given an average 30% generating capacity factor.

American homes⁶. Wind energy in the US is only expected to continue growing - the US Department of Energy has called for a "20% wind power by 2030" goal (2008), and the realization of this goal would require an additional 240,000 MW of installed capacity. As a frame of reference, a typical wind farm is between 100 MW and 300 MW (60 to 200 turbines), and so the DOE's 20% goal would require at minimum the development of an additional 800 industrial-scale wind farms across the country.

Wind energy development in the US has been driven by two main policy initiatives. First, the federal Production Tax Credit (PTC) incentivizes wind producers with a tax credit of 2.3 cents per kilowatt-hour produced. The PTC has historically dictated the pace of the wind industry in the US, and threats of the PTC expiring towards the end of 2012 significantly halted turbine manufacturing and investments in new wind energy facilities (the PTC was reinstated for one more year, 2013). The second major player in the US wind energy market is the enactment of Renewable Portfolio Standards (RPS) by state governments, which requires that investor-owned utility companies generate a certain percentage (usually 20%-30%) of electricity from renewable sources like solar and wind power. Most states have an RPS mandate, though seven states have voluntary "goals" and thirteen states, including Wyoming, have neither mandates nor goals.

If the US were to reach the D.O.E.'s "20% by 2030" goal for wind energy, this would require the installation of 300 GW more of wind turbine capacity. This represents a sharp increase in an already rapidly growing industry within the next seventeen years. On the ground, this represents hundreds of thousands of acres of land converted into wind farms, since industrially rated turbine generation capacity averages 1.5 to 2 megawatts (though some turbines

⁶ Based on author's own calculations, assuming an average household electricity consumption of 10,000 kwh/year.

have up to a 5MW generation capacity). Each turbine requires about an acre of land (though must less if just considering the "direct impact" – see footnote),⁷ plus the requisite network of roads, substations, connector lines, and transmission lines.

The increase in wind farm construction across the globe has seen the rise of a parallel social resistance movement. In the US and in Europe, roughly three quarters of proposed wind farms are never built due to the successful appeals, lawsuits, and petitions of individuals and organizations (Bell *et al.*, 2005; Phadke, 2011). According to a 2010 Harris Poll, only 12% of US citizens "oppose or strongly oppose a large increase in the number of wind farms" (2010). Yet, at the local level – in areas where wind farms are actually being built – a consistently strong opposition movement is frequently successful in delaying or even halting wind farm construction. Oppositional narratives typical invoke aesthetic and environmental impact and point to wind energy's "industrialization of the landscape" (NLRA, 2012), though economic and wildlife impacts are also often at the forefront of concerns.

Of all renewable energy technologies, and perhaps also many traditional energy sources, wind energy has perhaps the most potential to incite strong local opposition due to its extremely visible nature. While the open-pit gold, copper, and coalmines that exist in the West are breathtakingly enormous and grim, they remain for the most part hidden from the eyes of the public. The same is true of utility-scale solar plants, which are built at remote locations such as the Mojave Desert, and which sit low to the ground and so are not very visible to highway

⁷ As described by Denholm, Hand, Jackson, and Ong (2009), there are two methods for totaling the total acreage required for wind farms: the first considers only direct impacts to the land surface (disturbances from roads and physical infrastructure such as turbines), while the second method considers the entire acreage associated with the complete wind plant. Denholm, Hand, Jackson, and Ong find that the later is the most common way of measuring land needs of wind farms, but that this method is not representative of actual impacts (the physical footprint of the wind farm), which is far less.

passersby or nearby landowners. Coal plants, nuclear plants, and oil refineries are each visible, but are concentrated in specific areas and each receives raw materials by underground pipe or the occasional train or ship. Wind energy represents a new visualization of energy consumption. Geographer Martin Pasqualettti has offered this explanation:

"Because we cannot extract and transport the raw energy of the wind, reaping its many environmental benefits requires that we cope with the landscape presence of its development wherever it occurs. Sometimes this interferes with the value of open space, and sometimes it may be close to subdivisions. It is the immobility and very visibility of wind power that makes its presence unavoidable....it cannot be hidden underground, stored in tanks, or moved by trains" (2000).

My conversations with employees of Wasatch Wind – the developer at the center of the controversy in Converse County – illuminated that, indeed, wind power is visible on a level that is unprecedented and quite different than the infrastructure required for oil and gas development: "You have a wind turbine, it's 400 or 500 feet in the air, spins, and it's there for twenty, thirty, fifty years. And then you have a [an oil] well, you know, and it's temporary in those terms. And you can make it blend in a bit better."⁸ State-of-the-art turbines typically stand 500 feet from base to tip of the blade, and the largest stand 650 feet high – roughly the same height as a sixty-story building.

In the US, wind energy's rapid deployment has sparked the formation of opposition groups at the local, regional, and national level. Around the country, these groups have become increasingly successful in fighting wind farm proposals, utilizing savvy tactics, such as appeals to state and federal permitting boards, countywide landowner surveys, petitions to land commissioners, and pleas to city and county councils, which can incite moratoriums on wind farms. According to a 2010 academic study gauging perceptions of wind energy in Texas, "The local communities' approval for a project is not only a key aspect for the success of that project

⁸ Interview on March 8, 2013.

but also a driving factor for future wind energy developments in general" (Swofford and Slattery, 2010:2516).

Though the majority of US citizens support alternative energy and wind energy specifically (Gallup, 2013), there clearly exists what Bell, et al. have identified as a "social gap" in attitudes towards wind energy: general public support but high situational (community) opposition (2005). Wind energy thus has high potential to contribute significantly to the electricity makeup of the US, but only if such social issues are thoroughly addressed.

The wind industry's nascent years consisted of a process of trial and error that took its aesthetic toll on the landscape, and the social perceptions of wind farms may still be recovering. Phadke has recently mapped the geography of wind resistance across the country and contends that the wind industry is still burdened by the social "fallout" of these early years (2011:760). The industry's early history is rife with stories of failed turbines, dead birds, poor turbine maintenance and site abandonment, and communities were distraught at the appearance of broken machinery left to rust, broken and fallen over, upon their local landscapes.

In 1980, the country's first utility-scale wind farm was constructed in New Hampshire. The farm's twenty turbines experienced significant mechanical failure and the developer, US Windpower (which later became Kenetech), drastically overestimated the wind potential at the facility's site. As a result, the project was deemed a failure (D.O.E. New England Wind Forum, n.d.). Other sites across New England experienced similar difficulties. Additionally, many of the nation's first wind farms were built and later abandoned in California, since the state attracted wind developers in the 1980s by offering a 25% income tax credit for wind energy investments and by sponsoring wind measurement studies.
The 1990s saw more success as turbine manufacturers ironed out more mechanical kinks and increasingly modern and reliable technology became available. Wind farms in New England, California, Texas, and parts of the Midwest began producing electricity reliably and at a scale that was commercially viable. By the mid-1990s, California was a leader in wind energy, producing 30% of the world's wind energy and over half of all installed wind capacity in the US. Extremely large and visible wind farms, such as that at San Gorgonio Pass along Interstate-10 in Southern California (which currently consists of over 3000 turbines and delivers over 615 MW of electricity) arrived more prominently into public awareness. By the end of the 1990s, total installed capacity in the US was 2,474 MW, with thirteen states hosting utility-scale wind farms (and California alone hosting over half of total capacity) (NREL, 2012a). Since then, growth has accelerated at a blinding pace. The nation's capacity ballooned to over 9000 MW in 2005, and it is over 60,000 MW today (NREL, 2012a).

Anti-wind groups have formed on the local, regional, national, and global scales. For example, the North American Platform Against Windpower and the European Platform Against Windpower formed in the last five years. These groups unite member countries and argue that wind power is not green, not clean, and not economically viable. Additionally, they argue that wind energy can even threaten public health, due to the "shadow-flicker" from the blades spinning against the sun and also from the low-frequency "humming" that may cause insomnia in nearby residences.

In the US, National Wind Watch was founded in 2005 and remains an influential antiwind non-governmental organization, producing a variety of anti-wind publications, videos, and news updates. National Wind Watch argues, "Large-scale wind turbines cause significant harm to wildlife, people, and the environment. In return, because of the wind's low density,

intermittency, and high variability, they do next to nothing for reducing carbon and other emissions or dependence on other fuels" (National Wind Watch, n.d.). The group also contends that wind energy imposes unfair electricity rate hikes on consumers and believes wind energy is a "swindle" in which rich wind developers are heavily subsidized with taxpayer dollars and make a profit at the expense of the environment and communities. National Wind Watch serves its members by providing daily email updates with related news stories from around the world, as well as providing access to thorough archives of reports, articles, and video footage. Well-funded regional groups have also formed. For example in Idaho, the Energy Integrity Project professes to be a "watchdog for ratepayers, taxpayers, and the environment" and has funded a proliferation of anti-wind billboards advertising the group's "S*wind*le" campaign (Energy Integrity Project, 2013).

Resistance at the local scale poses huge – sometimes insurmountable – obstacles for developers. Community groups that form in opposition to proposed wind farms, such as the Northern Laramie Range Alliance in Converse County, have been successful in delaying or halting wind projects around the country. Even if a contested wind farm ends up being built, the opposition often results in years of delay and significant costs, which hamper the wind company's capacity to develop future projects. As such, this research project examining wind farm opposition in Converse and Natrona Counties provides insight into how developers, policymakers, and communities might anticipate and mitigate future wind farm battles. The larger trend of wind energy development is expected to continue to grow rapidly – especially in the American West – and this will likely bring local contestation, as is occurring in Wyoming. Thus, the results of this intensive research on the oppositional efforts in Converse and Natrona

Counties 'scale up' to offer insights and implications for future wind development across the West.

2.2 Scholarly Explanations for Wind Energy Opposition

"Turbines are getting so big and overpowering as to be outrageous in any rural context. Their impact on the landscapes and lives of people is totally disproportionate to the minuscule contribution they make in providing renewable energy and the pitiful savings they offer in CO_2 reductions." (Peter Ogden, as quoted in National Wind Watch news update, March 16, 2013)

The popular treatment of wind opposition is the attribution of 'NIMBYism'. NIMBY stands for Not In My Back Yard, and so-called "Nimbies" are often portrayed as individuals acting out of self-interest at the expense of a larger public good. Recent news stories demonstrate this well, such as *The Atlantic Monthly*'s "Can Wind Power Survive the NIMBY Syndrome?" (Keller, 2010); *The Guardian*'s "Windfarm nimbyism says no at a time when we need to say yes" (McCaffery, 2011), the *Huffington Post*'s "Polls: Anti-wind NIMBYs Are Small Minority" (Keane, 2011), and *The Daily Climate*'s "The New Look of NIMBYism" (Tyson, 2012).

The NIMBY acronym has historically referred to public opposition to unwanted local developments such as landfills, chemical plants, nuclear waste disposal sites, and prisons. The Oxford English Dictionary attributes the first media usage of this term to *The Christian Science Monitor* and *Forbes Magazine*, which both ran the first "NIMBY" stories in 1980. A key component of the NIMBY concept is that communities concede that, while such facilities are necessary, they are not welcome *close to home* where they may negatively affect property values, quality of life, and the overall community character. NIMBYism has been critiqued as a manifestation of class power, whereby a vocal elite is able to relocate projects destined for their neighborhoods to poorer communities that have no voice and no political power. Much environmental justice scholarship has demonstrated this dynamic, finding that undesirable land

uses are often disproportionately located near low-income and otherwise marginalized communities (see, for example: Downey, 2006).

NIMBY is often used to critique opposition to wind farms. A prominent example of this is the Cape Cod controversy, where political and financial elites who self-identify as environmentalists (as well as those who don't) oppose the construction of a renewable energy facility in their backyard because of a perceived impact on the views they enjoy from their properties. The Cape Cod controversy is largely characterized as a privileged battle waged by elite waterfront owners. What manifests in this and other situations may be the privileging of some landscapes over others:

"As an environmentalist, I support wind power, including wind power on the high seas. I am also involved in siting wind farms in appropriate landscapes, of which there are many. But I do believe that some places should be off limits to any sort of industrial development. I wouldn't build a wind farm in Yosemite National Park. Nor would I build one on Nantucket Sound, which is exactly what the company Energy Management is trying to do with its Cape Wind project" (Kennedy, Jr, 2005).

However, the terrain of renewable energy contestation is nuanced and varies by culture, region, and with each siting situation, even within the United States. In the rural US West, concerns about wind power disrupting 'wide open spaces' are prevalent in oppositional discourse, but so too are concerns about maintaining access to resources such as hunting, grazing, and recreation. Additionally, concerns over noise, "shadow flicker" and environmental harm such as migratory bird kills that may result from large-scale wind farms are also prevalent.

While media and industry accusations of NIMBY is continue to prevail, many scholars have argued that the roots of wind opposition are more complex than the simple explanation of individual interests (Devine-Wright, 2009; Phadke, 2011; Warren *et al.*, 2005; Wolsink, 2006). Maarten Wolsink has commented that the NIMBY concept is "empty" and "impedes a genuine analysis and obscures the variety and the possible validity of the range of arguments in facility siting, pro as well as con" (2006:89). A 2010 study measuring local perceptions of a wind farm in northern Texas reached the same conclusion, indicating that the "traditional label of NIMBY is does not adequately explain the attitudes of local wind farm opposition" (Swofford and Slattery, 2010).

Phadke also argues that opposition is more complex than NIMBY ism and points to ways that considerations of visual impacts have been largely ignored by planning agencies: "While NIMBY ism may be at play in certain cases and in individual reactions, discounting viewshed concerns as self-serving draws attention away from the large-scale transformations that wind energy brings to landscapes" (2011:764-765). Referring to the NEPA protocols used by the BLM to analyze environmental impacts of all developments on public lands, Phadke suggests that the agency needs to develop a new process that incorporates local concerns about visual impacts. As she argues, the BLM has focused on noise and wildlife impacts and has largely ignored the aesthetic changes brought by wind energy development, even though the National Environmental Protection Act requires land agencies to review potential wildlife, noise, visual, and cultural impacts.

The current process for wind farm permitting and development may also be lacking in democratic process, and as many scholars have pointed out, this may be a main cause for community opposition and feelings of disfranchisement (Phadke, 2011; Bohn and Lant, 2009; Pasqualetti, 2001; Swofford and Slattery, 2010; Leitch, 2010). Scholars call for additional research to understand the array of reasons underlying wind opposition and to find possible solutions or compromises. Phadke and other scholars suggest that the current lack of community inclusion in the wind farm siting and permitting process is perhaps the main source of contention. Hindmarsh and Mathews argue that wind opposition in Australia was largely a result

of a "democratic deficit" in the decision-making process for wind farm siting (2008). Vikki Leitch contends that public participation in wind farm planning is "imperative" and that communities must be engaged earlier in the planning process, though she concedes that implicating a participatory process will realistically fall to the voluntary efforts of developers, rather than being mandated by policy (2010). Phadke also suggests communities should have the right to retain "a degree of sovereignty over landscape values and imaginaries" (2011) and not be expected to willingly bear the burdens of the new energy economy without proper information and an appropriate chance to voice preferences over the location of turbines and the compensation they might receive for compromising certain visual or recreational values of surrounding landscapes.

Because the wind industry is so new in many parts of the country, many county and state planners have not written specific policies that require or outline methods for community participation, such as are required for projects on federal lands. The competitiveness of the wind industry contributes to this; developers behave similarly to mineral prospectors, seeking to locate claims on valuable resources before their competitors beat them to it. As one wind developer explained to me, there is often there is no public process until after all the permits have been obtained and the landowner leases are signed (if the wind farm is to occur on private land). At this stage, often the developer holds a town hall meeting to describe their plan, but it is rare to seek input from the community prior to this point due to the high stakes involved in retaining the placement of the wind farm. This has led to a reputation of wind developers as secretive and stealthy outsiders seeking to profit from valued landscapes without much input from local landowners. A conversation I had with an employee of a wind company (not Wasatch Wind) explained that developers find themselves frequently in a 'catch-22' with local communities.

Because wind development is "cutthroat competitive," developers need to keep their plans quiet and require confidentiality agreements with their landowners; however, the secretive nature of their business causes uproar in the community at large, and so they feel there is a delicate balance of transparency and secrecy. He also reminded me that "developers are NOT green hippies, they are businessmen engaged in big business, billions of dollars."⁹

Communities voice concerns over detrimental impacts to wildlife and hunting opportunities, property values, tourism and traditional livelihoods, the soundscape (noise), and human health. But more than any of these concerns, communities seem most opposed to wind energy's impact on the aesthetics of landscape. As such, scholarly studies on local opposition to wind energy have focused particularly on this aspect of wind opposition. Phadke and other scholars suggest that aesthetics remain the top concern because landscapes contribute significantly to construction and maintenance of the rural cultural identity: "Looking across these oppositional groups, it is possible to see the presence of a sense of shared rural identity in the face of wind development" (Phadke 2011:762).

Speaking more broadly of conflicts over landscapes, Antony Cheng *et al.* suggests that "human connections with natural resources and the landscapes in which they occur are multifaceted, complex, and saturated with meaning" and that "natural resource politics is as much a contest over place meanings as it is a competition among interest groups over scarce resources" (2003). Along the same lines, Devine-Wright suggests, "new [wind] developments disrupt pre-existing emotional attachments and threaten place-related identity processes" (2009). Michael Woods asserts that rural movements are struggles to retain a rural identity: "…the motivation for new social [rural] movement mobilization cannot be reduced simply to material

⁹ Interview on March 2, 2012.

gain, but may concern the achievement of symbolic goals or the defense of symbolic resources" (2009:315). Patrick Devine-Wright suggests that public opposition to wind developments should thus be reconceived (as an alternative to NIMBYism) as a form of legitimate "place-protective action" in which communities understandably react to significant visual changes upon their surrounding landscapes. This leads to attempts "to prevent forms of change interpreted as disrupting place attachment and threatening place identity" (2009). The notion of attachments to certain notions of landscape and the social construction of nature are explored further in Section 2.4.

Communities in the West have also voiced concerns over the potential infringement of wind farms – and resulting transmission lines – upon private property rights. This is not a new theme in the history of land conflicts in the West – it was one of the central arguments of the 'Wise Use' movement, which began in the 1980s and which continue to underpin rural Western politics today. Understanding the threat wind farms may pose to rural identities, as well as potentially contrary rural values, will be essential in the success of future wind and other renewable energy implementation. I explore this concept further in Section 2.5.

2.3 Conceptualizing Power and Marginalization in Wind Energy Development

"All of the wind developers are coming from out of state and claiming our land as their own by abusing our state's lenient eminent domain law.....why are they not putting them along the Wasatch front, along the Oregon/CA coast?" (Clarion Associates Survey Respondent, 2010)

Communities experience direct impacts from wind farms – both positive and negative – and often feel they do not have a voice in siting decisions. Wind farms are built by large corporations seeking profit, are facilitated by national incentives, and are driven by 'green' electricity demand from distant, urban centers thousands of miles away. Thus, it is clear that a larger political economy of renewable energies is at work on rural landscapes. To untangle the power dynamics inherent in wind energy development, I turn first to the concept of 'green governmentality' or 'environmentality' to critically analyze the 'green electron' demand, mainly from urban areas, and to deconstruct its origins as well as its consequences.

The concept of 'green governmentality' (also 'environmentality' and 'ecogovernmentality'), has been taken up by several scholars and uses the Foucaultian analysis of power (governmentality) to understand environmental discourses and to explain how actions and perceptions towards the environment are shaped, by whom, and to what end. An early articulation of environmentality was expressed by Timothy Luke, who in his analysis of environmental organizations argued "discourses of environmentality can be seen fabricating disciplinary environments where power/knowledge operate as ensembles of geo-power and ecoknowledge" (1995:58). Luke argues later even more strongly that "most environmentalist movements now operate as a basic manifestation of governmentality" (1999:121). Following Luke, many scholars have employed 'environmentality' to examine how green subjects are made, by the state and by environmental movements (see for example: Agrawal, 2005).

One recent, prominent example of the utility of 'green governmentality' is Stephanie Rutherford's 2011 book, *Governing the Wild: Ecotours of Power*. Rutherford applies Foucaultian governmentality to critically analyze spaces of environmental education – the American Museum of Natural History, Disney's Animal Kingdom, Yellowstone and Grand Teton National Parks, and the documentary, *An Inconvenient Truth*. She argues that at these four sites are performed "a form of *governing*, defining the imaginings, discourse, and practices that make up what the Western bourgeois subject comes to know as nature" (Emphasis in original, 2011:xi). Rutherford proposes that very specific notions of the environment get perpetuated amongst those who visit these sites and that nature is fed to us in carefully constructed versions

and "with easily consumable narratives" that tell us how we should value the environment as well as *how we should act to save it* (2011:69). In this way, "particular regimes of truth, subject positions, representations of reality, practices of rule, and kinds of morality are formed through the circulation of green governmentality" (Rutherford, 2007:294).

Green governmentality is performed within households, in the selection of cleaning products, building products, children's toys, light bulbs, energy-efficient appliances, and lowvolume toilets. Consumers also have ample opportunity to purchase green credits sold as carbon offsets for a variety of activities, including airplane travel. Rutherford argues that the central problem with this manifestation of green governmentality is that it constricts the space for creating solutions to ecological problems. The power of governmentality is exerted through the guise of education and internalized by subjects as 'correct' ways of environmental knowing, including a restricted set of 'proper' behaviors such as green consumerist behaviors. These 'proper behaviors', she argues, both bypass and perpetuate the larger problem of overconsumption. Thus, as visitors of Rutherford's four environmental spaces learn, if they 'buy green' they can simultaneously save the planet and feel good about themselves, forgiving the guilt they are also instructed to feel about their impact upon the planet. Rutherford has previously argued that even though the "saving of nature is often taken for granted as an innocent endeavor, never implicated in relations of power and a noble exercise for the good of all life" (2007:295), such environmental discourses and practices are infused with hidden dynamics of power.

Green governmentality can be applied to help critically examine the drivers of renewable energy developments like wind farms. Consumer willingness to pay for renewable energy, which is usually priced higher than conventional energy, has been shown to correlate with age, education, and salary (Zarnikau, 2003), and has been predicted to support renewable energy

development in the US (Roe, Teisl, Levy, and Russell, 2001). Indeed, "consumer demand for green power has been a key contributor to the successful development of projects in several Mid-Atlantic States, Colorado, Wyoming, and in the Pacific Northwest, among others" (Bird, *et al.*, 2005). However, the demand for green electrons is usually fulfilled by construction of industrial wind and solar facilities in rural areas. In Wyoming, wind farms are built not for electricity consumption in the state, but to fulfill the market demand for green electrons in urban centers such as Salt Lake City, Las Vegas, and the whole of California.

As such, I propose the green governmentality of urban populations as the first of several layers in conceptualizing power in the wind energy debate in this way: green energy demand by distant, urban consumers seeking to alleviate their environmental ills can pose unfair expectations on the rural communities where most renewable energy facilities are (and will be) constructed.

Green governmentality is problematic in two ways. One, as Rutherford argues, the internalization of green consumerism as a solution to environmental problems is a constricted approach that encourages bypassing the real issue of consumerism. Two, where and how the green electrons are derived is not innocuous. In the current capitalist political economy, renewable energy facilities are built in the areas that are the cheapest (and therefore, the most profitable), such as Wyoming, *regardless* of whether these locations make the most sense from an ecological (or energy efficiency) standpoint – a not insignificant amount of electricity is lost in long transmission distances. There exists a rural-urban gradient of electricity generation, transmission, and consumption that is distinctly one-way: from rural to urban. A critical analysis of market traffic might ask why rural regions like Wyoming are expected to sacrifice their landscapes to fulfill the green energy demand of urban centers. A Converse County resident I

interviewed articulated this well, "California says we don't want carbon-based power, but California has also said we don't want wind farms up our coast. So they want wide open space while we produce the wind, but they don't want to use our coal, and when we try and build a transmission line they're going to object to it coming through San Bernardino."¹⁰

To further this argument, I now briefly consider the impacts of environmental movements upon rural communities. As McCarthy and others have noted, effects of the environmental movement in the United States on rural livelihoods and lifestyles range considerably but are often significant (McCarthy, 2002; Petrezelka and Marquat-Pyatt, forthcoming). The enactment of land conservation and enclosures, endangered species protections, and green energy facilities all bear on-the-ground ramifications for nearby rural communities. Furthermore, Forsyth has commented on the potential for the political activism of environmental social movements – such as the social movement promoting the transition to a clean energy economy in the US – to further entrench the hegemony of the existing dominant social group (2004). Forsyth acknowledges that social movements have "been largely responsible for establishing environmental concern as a significant topic of national and international politics," even leading to what some have argued amounts to "environmental democratization" (p. 196). However, he complicates this perspective by pointing to the fact that environmental social movements, in the US for example, are typically composed of "relatively more powerful middle classes" (p. 196) whose agendas may neither represent nor benefit lower socioeconomic groups. As has been discussed, in the wind power debate, the environmental movement for development of clean energy facilities is driven by a higher social class, mostly located in urban locations, while the

¹⁰ Interview on February 22, 2013.

residents of the rural communities that inevitably produce the green energy may not hold the same ideologies.

In that vein, rural residents across the world have been shown to often feel powerless and voiceless in the face of national and global political economies, which drive and demand resource extraction and processing in rural regions and which may have adverse impacts on health and quality of life. For example, sociologists Stephanie Malin and Peggy Petrezelka examined the impact of the uranium legacy on isolated communities on the Colorado Plateau, whose members were shown to have suffered a significant negative health impact without having been alerted by the government, which despite knowing of the health issues of uranium mining, neglected to regulate exposure in a government-owned mill in Monticello, Utah (2010). To be sure, rural residents rely on extractive and processing jobs, but as Malin and Petrezelka demonstrate, the risks and exposures that come with the production of resources and energy "can be experienced differentially based on geographic location and isolation," and, as such, rural residents are often subject to a higher level of risk than the average American (2010:1188). Malin and Petrezelka argue that the "[c]onsequences of differential exposure to risky technologies can have profound impacts on human physical and mental health; on isolated and politically powerless communities' abilities to protect themselves from adverse exposure" (2010:1188). Here, I argue, exists a second layer in understanding the power dynamics inherent in wind energy development. However, in order to understand the differential risk rural communities might experience from wind energy development, it is useful to first explore the concept of "risk society."

According to Ulrich Beck, "risk society" refers to the increasing uncertainties in today's highly mechanized and industrialized environments, in which no one truly understands the nature

or level of risks inherent in our society (1992). Giddens explained that risk is different than 'hazard' or 'danger', and that we are not necessarily living in a more dangerous or risky world than we were hundreds of years ago. Instead, we have transitioned to a world of "manufactured risk," which is specifically "created by the progression of human development, especially by the progression of science and technology"; Beck points to the fact that humans have now developed risks for which we have no frame of reference (1999:4). As such, a "plurality of 'future scenarios"" (p. 4) is created, which can then lead to unintended consequences, such as nuclear meltdown at Fukushima, and the health effects of uranium mill exposures on Monticello residents that Malin and Petrezelka highlight.

A common concern expressed in the context of wind energy development is the impact turbines might have on the health of nearby residents. Complaints range from 'shadow flicker' to what has come to be known as 'wind turbine syndrome':

"Many people living within 2 km (1.25 miles) of these spinning giants get sick. So sick that they often abandon (as in, lock the door and leave) their homes. Nobody wants to buy their acoustically toxic homes. The 'lucky ones' get quietly bought out by the wind developers—who steadfastly refuse to acknowledge that Wind Turbine Syndrome exists" (Pierpont, 2009).

The notion that there exists a wind turbine syndrome has been quickly taken up amongst anti-wind activists. Symptoms are said to include "migraine, motion sickness, vertigo, noise and visual and gastrointestinal sensitivity, and anxiety" (Pierpont, 2009). Medical professionals and researchers have examined this phenomenon, with inconclusive results. In 2007, the National Research Council published a report for Congress, *Environmental Impacts of Wind-Energy Projects,* which reports, "Low-frequency vibration and its effects on humans are not well understood. Sensitivity to such vibration resulting from wind-turbine noise is highly variable among humans...More needs to be understood regarding the effects of low-frequency noise on humans" (p. 109).

The contestation of wind energy's potential health impacts, however, gets tricky. It is true that significant numbers of residents living close to turbines have reported health effects with similar groupings of symptoms, but there are two main theories for why this might be so: 1) the low-frequency noise is harmful to human health, and 2) "psychogenic" factors, including the proliferation of *messaging* about wind turbine syndrome, are instead responsible (Chapman, 2013). According to Simon Chapman, eighteen literature reviews on health impacts from wind turbines have been published over the last ten years, and all have come to similar conclusions that the evidence in favor of a physiological wind turbine syndrome is not convincing. Chapman has suggested that "activists with hidden agendas" (2011) are behind the proliferation of wind turbine syndrome in Australia, not the increasing numbers of turbines themselves. He found in his 2013 study that "the large majority (82%) of health and noise complaints commenced after 2009 when anti wind farm groups began to add health concerns to their wider opposition" and concluded that health problems from wind turbines are "'communicated diseases' with nocebo effects likely to play an important role in the aetiology of complaints" (Emphasis added, p. 1). According to Chapman, the director of the anti-wind farm group, the Waubra Foundation, has significant interests in coal and uranium mining in Australia, and this might explain the group's aversion to wind energy (Chapman, 2011).

This paper does not attempt a thorough review of the health concerns that have risen in response to wind energy development. However, whether or not there exists an *actual* wind turbine syndrome, the fears and anxieties about such *and* the potential for private interest groups to spread misinformation about such both constitute power-laden dynamics worth considering. If

wind turbines do cause lack of sleep, anxiety, nausea or any of the symptoms claimed, then there may be an environmental justice issue at hand. As Brown reminds us, health issues deemed to be environmental can be difficult to link to specific sources and are often highly contested, amongst health professionals even (Brown 2007: 14).

On the other hand, if companies and private foundations that have interests in fossil fuels industries are indeed spreading misinformation and fears about turbines' impacts on health, then a whole new dynamic emerges. Opposition to renewable energy has been shown to extend to the larger 'debate' over climate change and the role the "climate change denial machine" (Dunlap and McCright, 2011) – consisting of conservative think tanks and foundations, the fossil fuels corporations, and corporate America – has had in 'manufacturing uncertainty' amongst the American public and policymakers (Oreskes and Conway, 2010). One example of this surfaced in early 2013: the DeSmogBlog (a watchdog blog against "the PR pollution that clouds climate science") noted that a Craigslist posting in New York City was soliciting "volunteers" who could make \$20 cash by agreeing to attend a rally and protest wind farm construction in England (Farron cousins, 2013). In another example, the American Tradition Institute (a right-wing policy thinktank) launched a protest "to combat 'global wind day' fanaticism" in 2012 (ATI, 2012). Additionally, the Heartland Institute, one of the most vocal organizations pushing climate skepticism (and which is funded by oil interests such as the Koch brothers and Exxon Mobil) has recently launched a campaign to attack state's renewable energy mandates by pushing the 'Electricity Freedom Act' through state legislatures (Eilperin, 2012). Examples such as these suggest that examinations of wind farm opposition must consider subversive forces that may be at work, and researchers must seek to discover the true motivations of opposition groups, if possible. As such, the strengths of the qualitative research and case study approach employed in

this study are the depth and texture that are revealed, which help to uncover the motivations that may be behind wind farm opposition -a task that would be nearly impossible in a quantitative analysis.

The third layer of my conceptualization of the power dynamics inherent in wind energy opposition, then, consists of a critical analysis of the opposition groups themselves. In Section 3.3, I explore the ways in which the *opposition* of wind energy can itself be power-laden and result in the marginalization of rural residents that *desire* wind turbines on their land for economic development opportunities.

I turn now to the role that the social construction of nature plays in the wind energy debate. Notions of nature, wilderness, and 'the frontier' underlie resistance to wind farm construction in the American West because turbines can interrupt symbolically imbued landscapes and attachments to undeveloped natures. However, notions of wilderness and nature as devoid of human presence are just one way of knowing nature, often held from more privileged stances as I will show. As such, a question of *whose* nature becomes privileged over others in wind farm debates emerges.

2.4 Wind Farms and the Social Construction of Nature

"The tiny, intermittent output of electricity and the negligible CO_2 savings cannot possibly justify the huge sacrifice of that most finite resource — our unspoilt and irreplaceable countryside. It is our duty to protect our rural heritage for present and future generations from such gross and unnecessary industrialization." (Angela Kelly, as quoted in National Wind Watch news update, February 26, 2012)

"For many Americans wilderness stands as the last remaining place where civilization, that all too human disease, has not fully infected the earth. It is an island in the polluted sea of urban-industrial modernity, the one place we can turn for escape from our own too-muchness." (Cronon, 1995:69)

"If they want to not have wind turbines on their land, that's their business...but they shouldn't be able to control what we want on our land...how much land do we lock away because it's pretty? Look at all the wilderness areas we've got now; all of the state and

parks and county parks and US parks we have already Just how much more are we going to lock away? (Converse County resident)¹¹

In his famous critique, William Cronon proclaimed that the notion of 'wilderness' "is quite profoundly a human creation – indeed, the creation of very particular human cultures at very particular moments in human history" (1995:69). For Cronon, the society responsible for this idea is Western civilization, which for hundreds of years has viewed *wilderness* by definition as being devoid of human presence and influence. The problem with this, he says, is that "any way of looking at nature that encourages us to believe we are separate from nature – as wilderness tends to do – is likely to reinforce environmentally irresponsible behavior." (1995:87) Cronon reminds us that wilderness is all around us, all the time, and that the wilderness in our backyards is as important (if not more important, because it's more imperiled!) as the wilderness in Yosemite National Park.

One cannot seek to understand social opposition to wind energy development without considering the role of the social construction of nature and attachments to undeveloped landscapes. In the West, rural imaginaries of place and romantic notions of the frontier continue to pervade both culture and identity, despite an ever-modernizing world requiring increasingly prodigious quantities of both energy and attention to environmental sensitivities.

Wind energy relates to this 'received' wilderness idea because, I argue, the pervasiveness of this notion throughout Western culture has greatly contributed to such heated responses to wind energy development. Wind farms necessarily require expansive (and thus transform) 'wide-open spaces' (a term made famous by the country music group, the Dixie Chicks). Cronon focuses on the wilderness idea as manifested in the enclosure of hundreds of millions of acres of land from human encroachment through the enactment of National Parks and National

¹¹ Interview on Feb. 2, 2013.

Wilderness Preservation Areas; since we journey to these areas to experience wilderness, he argues, we neglect the nature at home. Additionally, as Cronon argues, the idea of wilderness represents an escape from a history that in actuality consists of a troublesome eviction of native peoples and the erasure of their 'non-natural' activities, like burning forests, from collective memory.

However, the wilderness idea does not just manifest through the creation of protected areas – on a much deeper level, it establishes problematic "society/nature" and "primitive/technological" divisions, much in the manner of Latour's "purification" rituals (Latour, 1993). For example, without a wilderness devoid of humans, says Wallace Stegner – renowned author of the American West – "we are committed wholly, without chance for even momentary reflection and rest, to a headlong drive into our technological termite-life, the Brave New World of a completely man-controlled environment" (1960). Though Stegner does believe previously 'wounded' landscapes can be made to heal and thus qualify as wilderness, he doesn't seem to leave room for an acceptable wilderness that also has humans and human structures residing in it. According to Cronon, this sentiment is the central paradox of the wilderness idea. In the dualism is the problem, because:

"we therefore leave ourselves little hope of discovering what an ethical, sustainable, *honorable* human place in nature might actually look like. Worse: to the extent that we live in an urban-industrial civilization but at the same time pretend to ourselves that our *real* home is in the wilderness, to just that extent we give ourselves permission to evade responsibility for the lives we actually lead" (Emphasis in original, 1995: 81).

In the United States, the life *we actually lead* is a life of enormous energy consumption: personal computers, iPads, cell phones, air conditioners, household heating, video game consuls, flat-screen televisions. Yet the social and environmental consequences of this lifestyle are largely hidden from us. In reference to another piece of Stegner's writing invoking similar sentiments,

Cronon remarked "If living in history means that we cannot help leaving marks on a fallen world, then the dilemma we face is to decide what kinds of marks we wish to leave." (1995:88). Here lies the debate: do wind turbines despoil landscape? If the question is whether or not they are industrial facilities, then the answer is most definitely yes. But when we consider the alternative – constructing additional non-renewable facilities to meet the ever-growing demand for electricity – the notion of a hybrid human-nature landscape of wind turbines becomes more acceptable. An employee of Wasatch Wind pointed to the fact that the visual presence of a coal plant extends far beyond the geographic bounds of its facilities: "all you have to do is look fifty miles around and see the smoke coming out of there... it might not be towers, but you see it."¹² We are not trained to see that already our landscapes fit the definition of Latour's human-nature hybrids; wind turbines simply represent a new and different form of visual impact upon a landscape already not pristine.

Cronon has received critical responses, and so has the more general notion of a social construction of nature. In *The Great New Wilderness Debate: An expansive collection of writings defining wilderness from John Muir to Gary Snyder* (1998) and *The Wilderness Debate Rages On: Continuing the great new wilderness debate* (2008), scholars Michael P. Nelson and J. Baird Callicott present two 600-page-plus volumes dedicated to the project of deciding if understanding wilderness and nature as socially constructed ideas has any merit. Social constructivists believe that there are no neutral, pure representations of nature, that all are enacted through the workings of political, cultural, and scientific customs. Opponents like Eileen Crist argue "probing into the assumptions and repercussions of the 'social constructivists "do not

¹² Interview on March 8, 2013.

deconstruct their own rhetoric," and this reflects "the recalcitrance of anthropocentrism to buttress the drive to humanize the Earth" (2004:5-6). The notion that it is humans that assign meaning to the natural world through a process of hybridization or co-production is particularly contentious in this debate. Some anti-constructivists take issue with the notion of this process because:

"The idea of imputing meaning to the natural world presumes a standpoint separate from it....Openly or implicitly, the natural world is portrayed as mute, intrinsically meaningless, ontologically indeterminate, epistemologically unavailable, and aesthetically indistinct...Nature becomes narrated, theorized, inventoried, and comprehended – birthed into signified existence – by human activity" (Grist, 2004:8).

Constructivists like Donna Haraway argue that the "view from nowhere" that is professed in the Western, positivist, scientific way of knowing is problematic because it does not exist. Instead, Haraway argues for "situated knowledges" that are "locatable" and "partial," because there is no way to truly perform what she calls the "God trick" of escaping our embeddedness in our particular social, political, economic, and cultural context. Thus, "only partial perspective promises objective vision" (1988). As such, the constructivist view of nature argues that the wilderness idea is one created by a specific culture (Western) in a specific political-economic context for the benefit of a privileged class and race (white, middle-class).

Cronon also points to the fact that different views about nature led to the exclusion of marginalized peoples, such as Native Americans in the formation of US National Parks. He points to one of numerous examples in which the Blackfoot Nation was excluded from Glacier National Park in Montana at its creation in 1910. This phenomenon has been a major concern of many political ecology scholars, for the influence of the global environmental discourse on conservation has had extremely problematic impacts on indigenous communities around the world who happen to be located next to areas targeted by national governments, international

environmental groups, and biological scientists for wildlife/biodiversity conservation and tourism development (see Robbins, 2012). Mara Goldman argues that wildlife conservation in Tanzania has effectively constituted a human rights infringement and rendered the Maasai "strangers in their own land" (Goldman, 2011). Indeed, "the application of scientific knowledge entails the production and imposition of one nature/society and the erasure of others" (Nadasdy, 2011:132). Because its opposition is so tied to particular beliefs about nature, examinations of wind energy debates must examine the politics of which/whose nature is promoted and which/whose is neglected (and what social justice implications follow). The power and politics inherent in such debates will inevitably exclude certain voices.

Cronon also argues that when it comes to deciding what counts as 'natural', including the people who lived in the wilderness for thousands of years prior to the arrival of Europeans, such perceptions have many ironies. He asks poignantly "why in the debates about pristine natural areas are 'primitive' peoples idealized, even sentimentalized, until the moment they do something unprimitive, modern, and unnatural, and thereby fall from environmental grace?" (1995:85). This dynamic is dramatically illuminated in the debate presently unfolding in Converse County over the siting of the Pioneer Wind Park. The Northern Laramie Range Alliance has a specific notion of what natural landscapes should constitute within the "pristine mountain country" of the Northern Laramie Range: one that does not include wind turbines (NLRA, 2012). The NLRA's idea of pristineness and cowboy culture encompasses nostalgia for the frontier lifestyle: ranching, riding the open range, and living close to the land. But ironically, if the NLRA's 'nature' wins out, it could be to the exclusion of the families who have lived upon and ranched the land continuously since the mid- to late-1800s. Indeed it is the very cultural history romanticized by the NLRA that these families have created and lived for over a hundred

years. By inviting wind turbine development upon their land, the ranchers in the Northern Laramie Range essentially 'fall from grace' (to quote Cronon) in the eyes of the opposition because they seek contemporary technologies to supplement their lifestyles. Without the added income from wind turbines, the ranchers' alternative may be selling off parcels of land, which often results in subdivision and cabin construction – resulting in a different but arguably more severe landscape despoliation.

Cronon conceived of the wilderness idea as a convergence of two notions: wilderness as the sublime and wilderness as the frontier. Though 'wilderness as sublime' is a much older concept in Western history, "the frontier is more peculiarly American" (1995:72). The frontier notion is problematic, Cronon argues, because it has privileged certain social groups over others:

"The very men who most benefited from urban-industrial capitalism were among those who believed they must escape its debilitating effects. If the frontier was passing, then men who had the means to do so should preserve for themselves some remnant of its wild landscape so that they might enjoy the regeneration and renewal that came from sleeping under the stars, participating in blood sports, and living off the land...More often than not, men who felt this way came, like Wiser and Roosevelt, from elite class backgrounds. The curious result was that frontier nostalgia became an important vehicle for expressing a peculiarly bourgeois form of antimodernism" (1995:78).

In addition to the importance of the wilderness idea (constructed or not), I argue, the prevalence of the frontier myth and romanticization of 'cowboy' culture and history also feed heavily into debates over wind energy development in the US West particularly. Anxieties over the loss of tradition, heritage, and cultural identity pose unique challenges for wind developers in this region, and thus opposition must be understood in this context. As such, central to understanding wind farm opposition in this region is an understanding of the cultural politics and ideologies that underlie land use debates in the West. The next section explores this.

2.5 Situating Wind Energy Opposition in the US West

Conflict over access to and use of land and natural resources in the American West is not a new story, and contestations against wind energy development that have sprung up over the last decade are perhaps the most recent iteration of a recurrent battle. In this section I intend to situate current vocalizations against wind energy development in rural areas within the context of similar rhetoric employed by the 'Wise Use' movement, which was particularly strong in the 1980s and 1990s and that fought for local control over public lands and private property across the American West. While there are many factors at play in opposition to wind power in the West, I argue that drawing a conceptual connection between these two social movements (antiwind and Wise Use) provides a useful framework for understanding the increasing wind power resistance seen in rural areas across the West.

Many regions in the West fulfill the two main requirements for development of wind energy: significant wind resources (windiness) and plenty of open land upon which to site the acres and acres of turbines. The US Department of Energy estimates that the most rapid wind development in the coming decades will occur in the West, in states like Wyoming and Nevada with both robust wind resources and low population densities (2008). Though overall not as windy as states in the Great Plains Basin (North and South Dakota, Nebraska, Kansas, and Oklahoma), states in the West promise significant wind resources and are proximal to electricity markets demanding green electrons, such as California.

Much renewable energy development is projected to occur on federal land managed by the Bureau of Land Management (BLM). The BLM manages almost 250 million acres in the US, and the great majority (over 99%) of these lands exist in the West (BLM, 2010). The "West" is usually defined as the contiguous eleven Western states of Arizona, California, Colorado, Idaho,

Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming, plus Alaska. Across these twelve states, the BLM has identified 20.6 million acres as suitable for wind energy development. The agency currently has forty pending applications for wind farms, which together would provide a total installed capacity of over 7000 MW (BLM, 2012).

Additionally, private lands in the West, including farms, ranches, and estates, provide much potential for wind energy development. Currently, most wind energy development occurs on such 'fee' land, since it often provides a faster track for developers that avoids the NEPA process required on public land.¹³ Many Western state and county development agencies have conceptualized wind energy as a new 'crop' that can provide landowners and counties with beneficial revenue streams.

There are many reasons that individuals and communities oppose wind farms. However, rural Westerners may be uniquely positioned to oppose such developments for two reasons. First, though economic identities of the rural West are often accustomed to extractive industries, wind energy brings a uniquely drastic transformation of previously undeveloped landscapes, which make up place-based identities, especially in rural areas (Devine-Wright, 2009). As one opposed Wyoming resident stated:

"I have land in Wyoming to enjoy the beautiful views and wildlife, not to look at wind turbines. The land needs to be left virginal, not ruined with wind turbines. Keep the turbines off the beautiful land and the Laramie Mountain Range, keep them where the land is open and does not have much aesthetic value and people do not visit or live." (Clarion Associates Survey Respondent, 2010)

A second reason wind developers may be faced with unique challenges in the rural West is due to the anti-federalist and culturally conservative values, as clearly articulated in ongoing

¹³ As an interesting aside, Texas is the US leader in wind energy capacity, hosting over 10,000 MW of the nation's 47,000 MW. Texas has a small percentage of public lands (compared with most states in the West), and as such the great majority of wind turbines in Texas are located on private land through profitable leases with landowners.

'Wise Use' movement, which fought for rights on and access to federal lands. The beliefs and battles set in motion by Wise Use movement in the 1980s and 1990s are still at play in the West today, and understanding the main arguments underlying Wise Use's rhetoric will help scholars, planners, and developers address and anticipate opposition to wind farms in this resource-rich area.

Wise Use was a reaction to the advent of a new, vigorous environmentalism in the 1960s and 1970s. During these decades, the enactment of environmental laws like the Clean Air Act (1963), the National Wilderness Preservation Act (1964), the National Environmental Protection Act (1969), and the Clean Water Act (1977) limited the activities of individuals and corporations upon public and private lands. Rural communities whose livelihoods, recreational activities, and identities were dependent on access to public lands began to voice opposition to the new terms of conservation and environmental protection. Local groups formed around the West starting in the late 1970s to battle environmental organizations and the federal government. Wise Use's central complaint was that local sovereignty was being lost to distant, urban elites – including bureaucracies and professional environmental groups in D.C. – who had no local knowledge of the lands they exerted control over (McCarthy 2002). According to James McCarthy:

"Wise Use claimed to be a grassroots social movement, rooted in a regional culture, responding to overly intrusive outsiders. It defined itself mainly in opposition to the environmental movement, environmental regulations, and federal agencies governing land uses, all of which it portrayed as arrogant, ignorant outsiders intruding on local communities and denying them their livelihoods and right to self-determination" (2002:1283)

Environmental activists contend, however, that the Wise Use movement was (and is) orchestrated largely by corporations or by "front groups" that receive corporate funding. In his 1994 book, *The War Against the* Greens, David Helvarg argues that Wise Use was never as grassroots as it appeared but was instead a set of "astroturf" groups (neither "green" nor "grass")

staged by corporations with interests in unlimited exploitation of natural resources. Other critics have recognized a central paradox in the Wise Use argument: "While the West sees itself as the land of rugged individualism...it is also the region of the country most dependent on the federal government" (Nelson, 1984:27).

The height of the Wise Use movement was between the late 1980s and 1990s, but its rhetoric and arguments are alive on today's right-wing political stage. For example, current land rights groups, such as Taking Liberty and the American Land Rights Association, still lobby for private property rights and deregulation. Taking Liberty argues:

"The environmental movement isn't about saving the planet from destruction, it's about *control, power, and money* [emphasis added]. Urban sprawl, endangered species, ecosystem management, farmland protection, biodiversity, and hundreds of other so-called environmental programs all have one thing in common – they all detrimentally affect the private ownership of real property." (Taking Liberty, 2012)

Wise Use advocates are also still fighting federal control of public lands. The unsuccessful initiative in late 2010 by the Secretary of the Interior Ken Salazar to establish 'Wild Lands' on BLM lands in the West incited fury from Western residents and several lawmakers. Secretarial Order 3310 would have placed millions of acres of BLM land under consideration as protected wilderness. Opponents such as Representative Doc Hastings (R-Wash) argued that it would further "lock up" important multi-use areas (*The Washington Independent*, 2011). At a March 1, 2011, hearing on Order 3310, Congressman Rob Bishop (R-Utah) remarked to the state's governor, Gary Herbert, "Utah has ten percent private property, so congratulations for being governor over ten percent of Utah" (Crane-Murdoch, 2011). These types of sentiments illuminate an underlying frustration about the lack of local control of lands and reflect a specific set of values embodied by rural Westerners.

Much of the rhetoric against wind power in Wyoming is strongly similar to that of the Wise Use movement (see Table 2). Advocates of Wise Use argued mainly against the control that 'elite outsiders,' including the federal government and environmental groups, had over rural lifestyles, culture, and livelihoods. Rural wind opponents argue along similar lines and protest what they believe to be a disproportionate burden their communities are expected to bear in the wind energy race for global carbon mitigation, corporate profits, and increased energy demands. Both the Wise Use and anti-wind movements argue against what they view as unfair distributions of power and control, which they perceive of as linked to the class privilege of outside elites. Indeed, Phadke concludes that "wind energy opposition is fundamentally about *who speaks for and negotiates* [emphasis added] conflicting social commitments to technology, economic values, and an imagined American pastoral identity" (2011:754). A resident of Wyoming clearly expressed this sentiment:

"The money mongers have found a way to capitalize on the government subsidized wind boom, provide power to their states, and keep their views unobstructed." (Clarion Associates Survey Respondent, 2010)

Table 2 below synthesizes arguments central to the Wise Use movement with the rhetoric of wind farm opposition in Converse County, Wyoming. I use statements from Converse County landowners taken from a wind energy opinion survey that was ordered by the Converse County Board of Commissioners in 2010 to illustrate the narratives of both movements:

Comparison of Wise Use and Wind Opposition Arguments			
Wise Use Argument	Wind Opposition Counterpart	Corresponding concerns of rural residents	
Private property is a constitutional right; landowners should have ultimate rights to the management of their own lands.	Wind energy & corresponding transmission lines threaten private property rights.	"Wind development needs to be sited where all landowners in the area want the development. In the NLR, most adjacent landowners do not want wind OR transmission. It is not about money compensation, it is about personal property rights." (Q. 6, R. 4)**	
		" eminent domain is used to force people to put stuff on their land they don't want." (Q. 5, R. 108)	
		"No one should be forced into putting transmission lines or wind power on their property." Q. 5, R. 25)	
		"As a property owner, I feel I should be able to make decisions about my land that are not mandated by the government, even local." (Q. 6, R. 32)	

		"Adjacent land owners and landowners in transmission corridors personal property rights are being ignored" (Q. 6, R. 6)
Dunal nacidante auffan a	Bungt nosidants suffer a	"We own the property - stay off." (Q. 7, R. 121)
disproportionate impact from	disproportionate impact from the	our state exists to provide power to other states." (O.
environmental efforts, such as	construction of nearby wind farms &	5, R. 21)
protected land conservation.	transmission lines.	"I am concerned that the counties or cities that hear
		the impact from these developments will see very
		few dollars from taxes, etc." (Q. 5, R. 54)
		"Hunting and harvesting is very important to this
		could have an impact on our lives." (Q. 5, R. 190)
		"Why should we have to look at the turbines when
		we get so little benefit from them other than the eyesore and noise?" (Q. 6, R. 77)
		"I really don't feel that a few companies should control what is built and then they move on to other
		projects and we the citizens of Converse County
		have to look at the ugly eyesore they created for the
		rest of our lives." (Q. 5, R. 30)
		short lived passion in Washington and when the
		reality of the high cost and inefficient energy costs,
		we will be lift [left] with these horrendous wind turbings in our mountains " $(O, 5, P, 23)$
Environmental regulations on	The construction of transmission	"I am only concerned about the fact that landowners
private land are a form of	lines & wind farms on or near private	are compensated and that they don't try to put
"takings," & landowners	property represents a financial	limitations on landowner rights." (Q. 5, R. 36)*
snould be reimbursed according to the 5th	buraen, & landowners snould be reimbursed accordingly.	
Amendment.		
		"Do we get money for it? Then yes. If not then I
		R. 191)
		"Property owners physically impacted by industrial
		projects should be fairly compensated with an annual payment system." (O. 5, R, 43)
		"People who live with these [nearby turbines] should
		be compensated to offset any costs from how these
		developments impact communities and infrastructure, etc." ($O_5 = R_54$)
Rural residents should have	Wind farms & transmission lines	"I don't want them closing access to areas of
open access to public lands, for	limit access to public lands.	hunting." (Q. 5, R. 99)
both commercial & recreational uses.		
		"USFS [United States Forest Service] has closed a
		lot of trails for ATV [All Terrain Vehicle riding]
		"[concerned about] limits to access for camping"
		(Q. 5, R. 129)
		"I am very concerned with access to hunting, fishing, and roadways" (Q. 5, R. 247)
		"[concerned about] loss of hunting on state land, the loss of grazing land " $(0.5 \text{ P} \cdot 147)$
The environmental movement	The push for wind energy is driven by	"Put them in someone's backyard who voted for
is biased towards distant,	distant, urban elites who do not have	Obama." (Q. 5, R. 99)
urban elites & ignores the	to suffer the impacts that rural	
it most impacts.	resments uo.	
-		"All of the wind developers are coming from out of
		state and claiming our land as their own by abusing
		they not putting them along the Wasatch front. along
		the Oregon/CA coastthe money mongers have
		found a way to capitalize on the government
		and keep their own views unobstructed." Q. 5, R. 21)

		"The money mongers have found a way to capitalize on the government subsidized wind boom, provide power to their states, and keep their own views unobstructed." (Q. 5, R. 21)
		"I am not against wind just putting it in the wrong places to light up LA at the expensive of ruining Wyoming Mountains and wildlife." (Q. 5, R. 42)
Environmental regulations & conservation threaten the lifestyles and cultural identity of rural regions.	Wind farms & transmission lines threaten the lifestyles and cultural identity of rural regions through the transformation of open landscapes.	"If large industrial development (read wind farms) are allowed in this area, the present culture of Douglas [County] will be destroyed." (Q. 5, R. 32)
		"This area has been kept in pristine condition by the landowners and county for the benefits it provides the public with regards to ranching and 'tourism.' Once developed it will be forever changed for the worse" (Q. 5, R. 37)
		"Taking away my Wyoming heritage of wide open spaces. I really like the county and want to live as my family has done for the last 100 years." (Q. 5, R. 147)
		"My family's roots are here and I don't want to see wind farms or power lines changing the land." (Q. 5, R. 203)
*Quotes taken from the 2010 Clarion Associates survey of Converse County, as ordered by the Board of County Commissioners.		
··· Ο indicales question number, and κ indicales respondent number; both correspond to survey data.		

Table 2: Comparison of Wise Use and Wind Opposition Arguments. Compiled by the author.

When wind farms are sited on public lands adjacent to rural communities that use them for hunting, recreation, and livelihoods such as grazing cattle, wind energy development may be seen as yet another environmentalists effort imposing its agenda while limiting local access to and activities of the natural environment. The Wise Use movement employed this framework – urban environmentalists imposing on rural communities. If a 'democratic deficit', then, does exist in wind farm and other renewable energy siting decisions, this perception will likely only grow and increase opposition in these areas, highlighting the need for a more inclusive process whereby county planners and energy developers enlist the support and input from community members and attempt to understand local values and sensitivities.

Additionally, as is illustrated in Table 2, private property rights are at the center of arguments against wind farms in Converse County. Related to this is the issue of eminent domain, which can be used by utility companies to construct new transmission lines – the need for which often associated with the construction of new wind farms. However, as we will see in Section 3, the sanctity of private property rights in the West also works in favor of wind energy

developers, since residents often see the capacity to place wind turbines on private property as a personal right that should trump neighbors' desires for an unobstructed 'viewshed'. Thus, developers and policymakers should seek to understand rural Western values, such as private property rights, not only because this understanding might beneficially inform the development process (where and how) but also because it might procure unexpected allies.

2.6 Conclusion

In this section I have extended the understanding of wind farm opposition beyond the often-used 'NIMBY' label. I have described the global trend of wind energy development, which is expected to keep rising rapidly, and have explored the scholarly explanations for expanding anti-wind movements. Scholarly discussions focus on the aesthetic impacts of wind farms and have urged planners to respect that the visual impacts are significant and may interrupt local place-attachments to symbolic landscapes. While they are environmentally benign relative to the extraction and burning of fossil fuels, wind farms represent perhaps the most visibly intensive form of energy available, with turbines standing 500 feet in the air and visible for miles around. However, while an average wind farm might require a much larger footprint than fossil fuel-burning plants, the actual footprint of a wind farm is less than an acre per turbine (plus some land for roads and substations) and the overall environmental impact is drastically less. Often, wind farms can be used concomitantly with other practices, such as cattle grazing and farming, and can provide steady financial inputs to landowners and county governments.

In the tradition of political ecology, I have also laid conceptual foundations in three key domains: how we might conceptualize relations of power in wind energy debates, how and why symbolic landscapes and the social construction of nature interwoven in such debates, and how historic and cultural politics specific to the US West may contribute to wind farm opposition in

this region. With regard to power relations at multiple scales, I argue that urban consumers' desire for green electrons – theorized as yet another manifestation of 'green governmentality' – and the larger political economy of renewable energy development can unfairly burden the rural communities that are expected to host them – *if* those communities are not included in siting decisions and if they experience only negative impacts and few benefits. I also argue that, while medical studies of the health impacts of wind farms are inconclusive, communities' perceptions of there being a health impact can lead them to feel marginalized, especially if turbines are sited relatively close to residences and other community structures. Last, I argue that an examination of wind farm opposition would be incomplete without also investigating the role that political divides play in wind energy contestation – especially in politically conservative states like Wyoming where renewable energy is often seen as a green project perpetuated by left-of-center politicians and organizations. Additionally, economic and ideological allegiances to fossil fuels industries also drive wind energy opposition, especially in Western states that have long depended on a fossil-fuel-extraction economy.

Employing William Cronon's critical examination of 'the trouble with wilderness', I argue that the notion of nature as separate from humans is a central underpinning in debates over wind farms. Since turbines need vast spaces and indicate human presence, wind farms are bound for explosive contestations as they collide with notions of the nature that 'should be', even if that landscape is already a Latourian 'hybrid' of human and nature. In the vast, open landscapes of the West, both residents and distant appreciators may be attached to cultural ideas of the frontier and the open range, while ranchers seeking wind energy development on their land essentially 'fall from grace' by announcing their interest in a new paradigm of technology and modernity.

I also argue that wind energy development in the rural American West poses unique challenges for wind developers that, if approached carefully, may also become opportunities for beneficial stakeholder support and collaboration. Specifically, I argue that existing cultural politics associated with the Wise Use movement over access to and control of land and resources must be carefully understood and incorporated into wind energy planning in this region. The sanctity of private property rights and the threat of eminent domain, used in the construction of new transmission lines to carry wind power to urban centers, have dissuaded Wyomingites from the prospect of wind energy. However, private property rights values may generate unique alliances in wind energy development. Ranchers seeking new forms of income have begun to invite developers onto their land to generate turbine lease payments, which provide supplemental income that help ranchers retain their land in an increasingly challenging agricultural economy.

Because of the extremely visible nature of wind farms, scholars have called for a more democratic process for their permitting and siting that is *genuinely* inclusive of the communities in which they are built. The current level of community engagement in siting processes is often relegated to one or two required public hearings, arranged only after the developer has already invested large amounts of time and money in siting the wind farm. As such, developers often feel they have to be somewhat inflexible in addressing community concerns. Still, the character of the wind industry is such that it is highly competitive, and market demand for innovative energies that deliver consistently low electricity rates mean that developers must try to secure the best wind resource and willing landowners before their competition does. As large energy companies enter rural communities to construct industrial wind farms, they must be attuned to local concerns – doing so will empower both communities and wind developers and in the long run will reduce costly and time-intensive negotiations with opponents. I turn now to the case study.

3. LOCALIZING THE ANALYSIS: WIND ENERGY CONTESTATION IN WYOMING

According to University of Wyoming's Wind Energy Research Center, "Wyoming is known as the Saudia Arabia of Wind" (Univ. of Wyoming, 2012). As is discussed in Section 3, Wyoming is a highly targeted state for wind energy development because of its high wind resource and its low population density. It is the highest ranked state in the country for its number of land-based class six and seven wind sites, which have the greatest electricity generation potential (Univ. of Wyoming, 2012). The southern and eastern parts of Wyoming have the most consistent and best wind speeds, and Converse and Natrona Counties – the geographic focus of this research – lie near the heart of the state's best wind resource (see Figure 2). While this research focuses mostly on Converse County, it includes an analysis of opposition to a wind farm developed in adjacent Natrona County – the Chevron Casper Wind Farm – where residents became greatly upset due to particularly close siting of turbines to homes (see Section 3.2.1).

What follows is a brief introduction to Converse County's demographics, ecology, wind development policies, and an overview of existing and proposed wind developments. I provide an explanation and timeline of the current contested wind farm in Converse County, the Pioneer Wind Parks I and II. In the following case study analyses (Sections 3.2 and 3.3), I discuss two narratives that emerged from my research. First, I explore the discourse of wind energy *development* as an imposition on rural communities that may feel marginalized by turbines and that may not have a voice in siting decisions. Second, I examine the power dynamics at work within the wind *opposition* movement itself in Converse County – driven by a powerful and well-funded group – and I ask critically 'whose nature' is perpetuated in this battle, and at what cost to whom.



Figure 2: The National Renewable Energy Laboratory's map of average annual wind speeds in Wyoming, *with author's addition:* the red box represents the approximate location of Converse County, and the green box represents the approximate location of Natrona County.

3.1 Community, Policy, and Wind Energy in the 'Saudi Arabia of Wind'

"I'm a Christian and I believe that we have a creator and he made wind, and I think that he also made the land and everything else, and I think we were created to benefit from our environment and not to abuse our environment but to definitely use it in ways that are responsible, and I see wind energy as a way to do that. It's a resource that when harnessed has great potential for energy generation, and I think it makes sense to do that in a responsible way." (Converse County rancher¹⁴)

Converse County is home to 13,404 individuals living in 5,564 households (US Census

Bureau, 2010). Converse County residents have reasonable access to living-wage jobs - due in

part to the employment opportunities and royalties from a recent boom in natural gas, oil, and

coal bed methane, but also due to existing coal mining. The median household income is

¹⁴ Interview on April 5, 2013.

\$54,599, and the per capita income is \$27,656 – very close to the state average per capita income of \$27,860, which ranks Wyoming as the seventeenth highest state for per capita income in the country (US Census Bureau, 2010). Between 2007 and 2011, 8.5% of individuals were living below the poverty level, well under the national average (US Census Bureau - State and County Quick Facts, 2013). Converse County also has a very low unemployment rate – of the 7,333 individuals in the workforce only 3% were unemployed in 2010 (US Census Bureau, 2010). As of January, 2013, this rate had risen to 4.3%, still well under the 7.9% national average for that same time (US Bureau of Labor Statistics, 2013).

Converse County covers 4,255 square miles, over half of which are covered in the county's 435 farms and ranches (US Department of Agriculture, 2012). The county is bisected by Interstate-25, which cuts east-west through the southern half of the county and provides a visual representation of the ecological transition between two main ecological zones: prairie to the north and foothills to the south. The majority of the county lies at the southern border of the Powder River Basin and can be classified as semiarid rolling plains, extending between 5000-6000 feet and underlain with soils derived from shale and sandstone. This region has little water available, and as such prairie vegetation includes a mix of drought resistant short grass and mixed grass species as well as several hardy shrubs, such as several varieties of sagebrush (Chapman *et al.*, 2004). Cattle grazing and alfalfa production are common land uses, and pronghorn antelope, mule deer, and sage grouse share forage with livestock. Due to the rich oil, gas, coal, coal bed methane, and uranium deposits, mining has significantly transformed the landscape and continues to do so through surface mines, road networks, and other infrastructure.

Just south of Interstate-25, sharply ascending foothills rise from the prairie to 6500-7500 feet and eventually give way to the higher elevation mountains of the Northern Laramie Range,
which reach to between 8000 and 10,270 feet (see Figure 3). The foothills comprise a unique ecoregion classified as "foothills shrublands," which comprise the transition from the northern prairies to the higher elevation sub-alpine forests of the mountains (Chapman *et al.*, 2004). The foothills are of semiarid ecology and consist of similar species of sagebrush and grass as exist in the lower prairies, with the exception of additional riparian areas supporting willow, cottonwood, and boxelder. Elk, mule deer, whitetail deer, antelope, and cattle share this ecoregion, often competing for winter forage.

The foothills area is also home to several large landowners, many of whom have resided on family land since original acquisition through the Homestead Act in the late 1800s. Many of these large landowners are fourth and fifth generation ranchers, and many support wind energy development since it can supplement the increasingly financially challenging occupation of ranching. Others are owners of recreational ranching properties or summer vacation homes whose primary residence may either be in Wyoming or another state. The State of Wyoming and the US Forest Service also manage land in this vicinity.

It is in the foothills of the Northern Laramie Range that Converse County's fourth wind farm – the Pioneer Wind Parks I and II – is being proposed by Salt Lake City developer Wasatch Wind (see label "B" in Figure 3). Converse County currently has three industrial-scale wind farms, all of which were developed in the plains area north of Interstate-25. As such, heightened local concern regarding the Wasatch project is largely due to the perception that this wind farm will be built 'in the mountains'. In actuality, the turbines will be sited in the foothills, in what some locals refer to as the "first range" – the first step up from the prairie as one ascends into the Northern Laramie Ranges – not in the mountains proper. Nevertheless, the foothills themselves

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are aesthetically unique and are used by locals for recreational and hunting purposes during nonwinter months.



Figure 3: Map showing the southern half of Converse County. Note that south of Interstate-25, the prairie gives way to foothills, then to the more prominent peaks of the Northern Laramie Range. Label "A" marks the town of Glenrock; surrounding Glenrock to the north, east, and west, are the county's existing three wind farms. Label "B" indicates the site of the proposed and contested Pioneer Wind Parks I and II. (Map generated with permission from Google Maps: Imagery ©2013 TerraMetrics, Map data ©2013 Google)

There are two main roads that penetrate the Northern Laramie Range from the north, and the wind farm will be built close to where they conjoin in the foothills. As a result, cabin owners, hunters, and other recreationalists would pass by the wind farm on their way into the mountains. This is a controversial issue for many residents: "With this wind farm up there, I mean a lot of people bought homes and property and whatnot on the pretenses that it was serene and quiet and

not industrialized and what not, well then to have an industrial facility move in...that's not right."15

Converse County's existing three wind farms were built on the plains to the north of Interstate-25. The first was completed in 2008 (with additions in 2009) by PacifiCorp (the parent company to Rocky Mountain Power, the electricity utility serving Converse County). PacifiCorp constructed the Glenrock Wind Project on company land reclaimed from a surface coal mining operation that had provided coal to the Dave Johnston Power Plant, just east of Glenrock. The wind farm consists of 158 turbines and has a registered capacity of 237 MW. The turbines are visible for miles around and loom above the town of Glenrock near Interstate-25. The county's second and third wind farms were constructed by Duke Energy, a Fortune 500 company that is also the largest electric power holding company in the US. Duke Energy's Converse County wind farms consist of the Campbell Hill Windpower Project and the Top of the World Windpower Project. Campbell Hill came online in 2009 and consists of 66 turbines, and Top of the World began commercial operation in 2010 and consists of 110 turbines. (For a timeline of wind farm developments and policies in Converse County, see Table 3). According to county commissioners I spoke with, these three wind farms were constructed with relatively little opposition from local residents, though some landowners told me they went up very quickly and without most people knowing what was going on until construction had already begun. One county commissioner relayed that locals "probably should have had more of a voice."¹⁶

¹⁵ Interview on Feb. 16, 2013.
¹⁶ Interview on Feb. 22, 2013.

COUNTY, STATE, AND FEDERAL EVENTS RELEVANT TO WIND ENERGY IN CONVERSE COUNTY					
TIME FRAME	EVENT	DESCRIPTION			
1999	PacifiCorp/Eugene Water & Electric Board	Wyoming's first windfarm built in southeastern Wyoming. 85 MW.			
Late 2008	Transmission line	Gateway West transmission line route to California proposed through Converse County, ignites formation of Northern Laramie Range Alliance.			
2008	PacifiCorp	PacifiCorp constructs Converse County's first wind farm near Glenrock on a reclaimed coal mine. 66 turbines.			
2009	PacifiCorp	PacifiCorp adds 66 turbines to Glenrock Wind Project.			
2009	PacifiCorp	PacifiCorp adds 26 turbines to Glenrock Wind Project.			
2009	Chevron (Natrona County)	Chevron Casper Wind Farm built despite opposition from nearby residents and allegations of "illegal siting."			
December, 2009	Duke Energy	Duke Energy constructs Converse County's second wind farm, Campbell Hill Windpower Project. 66 turbines, 10,500 acres.			
2010	State law	Wyoming state legislature passes a wind production tax of \$1/MW to generate income from wind developers. 60% of revenue goes to counties, 40% to the state. Goes into effect January 1, 2012.			
2010	State law	Wyoming state legislature passes Wind Energy Facilities Act, which sets minimum and consistent standards for industrial wind development. Also gives counties the ability to enact stricter regulations.			
October, 2010	Duke Energy	Duke Energy constructs Converse County's third wind farm, Top of the World Windpower Project. 110 turbines, 17,000 acres.			
2011	State law	Wyoming state legislature passes Wyoming Wind Energy Act, which defines wind energy rights and declares that such cannot be split from the surface estate.			
February, 2011	Wasatch Wind	Wasatch Wind submits application to Converse County Board of Commissioners and to Wyoming Industrial Siting Council. Permits granted.			
June, 2011	County law	Converse County (along with 8 other counties) enacts regulations for wind energy development by passing a land use plan. Some counties pass pertinent zoning laws.			
2012	Federal law	Federal Production Tax Credit extended for one year			

Table 3: County, state,	and federal even	its and policies	relevant to	wind develop	ment in
Converse County.					

Heightened opposition to wind development in Converse County began in early 2009 with the Pioneer Wind Parks I and II proposal. Utah developer, Wasatch Wind, as well as several other wind developers, became attracted to this region in late 2008 for its quality wind resource and a growing databank of favorable meteorological data compiled by local landowners interested in hosting turbines. Wasatch Wind began scouting the area in 2008 and started talking with landowners to gauge their interest. At this same time, Rocky Mountain Power, along with Idaho Power, were proposing a new 1000-mile transmission line that would connect a substation in Glenrock with a substation in Idaho and provide more capacity to the transmission network that extends to California. Gateway West, as it is called, was initially proposed to cut across the Northern Laramie Range, and this greatly alarmed landowners and resulted in the formation of the Northern Laramie Range Alliance (NLRA). Though the NLRA was initially created to oppose the Gateway West route through the mountains, the group quickly added to its agenda the opposition of wind energy development in the mountains.

By fall of 2009, Wasatch Wind had begun signing leases with landowners and envisioned a 100 MW, 62-turbine wind farm sited mostly on private land but partially on state land. At this point, the NLRA had held its first series of community meetings and was well organized with a website, a member list, a petition drive, frequent communications to the board of county commissioners, and an effort to encourage residents to send letters of protest to the county, the State, Wasatch Wind and its financial backers, the Bureau of Land Management, and US Senators and Representatives. Wasatch Wind was invited to speak at some of the NLRA meetings and took the opportunity to reach out to the community, answer questions, and address concerns.

At first, the NLRA's strategy was to enact county zoning against wind development above 6000 feet on the grounds that such 'industrial development' would impair their mountain scenery, way of life, recreational opportunities, property values, and the overall pristine nature of the Northern Laramie Range. Across the community, the issue was heating up rapidly as the NLRA spread awareness through a proliferation of meetings, mailings, email alerts, website, petitions, and newspaper ads.

To address these concerns, the county commissioners contracted an independent firm, Clarion Associates, to conduct a survey to measure public opinion on potential zoning measures that would directly target the issue of wind farm development at higher elevations. Converse

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County had no zoning (and still doesn't) and so has little control over the siting of wind farms. The survey received 412 responses, 50% from property owners in the county (Clarion Associates, 2010), and 84.6% said they had concerns regarding wind farm development. In answer to the question, "should Converse County develop zoning regulations that address County-specific issues related to wind energy development?" 62.4% answered "yes" (Clarion Associates, 2010). Despite the seeming support for zoning, none has been enacted in Converse County, wind or otherwise.

The NLRA at this point was also conducting its own poll of the county and had an independent mailing firm send a poll card with three answer options ("for," "against," or "no opinion" regarding the Wasatch Wind project) to all mailing addresses in Converse County. By the end of 2010, the NLRA reported that 1,430 poll cards had been returned, for a total response rate of 23%. According to the NLRA, the poll showed "overwhelming opposition" to the Pioneer wind farm, with 73.2% answering "opposed" and just 5.4% answering "no opinion" (NLRA, 2011). However, there has been concern regarding the legitimacy of this study. As one resident explained to me:

"The NLRA paid a mailing company, not a scientifically based objective polling company, to send out a questionnaire that had leading questions developed by the NLRA on it. There was no way to make sure that the mailing was not 'cheated,' in effect 'stuffing the ballot box' could have occurred, I would think it did. The mailing was supposedly sent to 'residents' of Converse County including many who just own land in the county but do not reside here."¹⁷

Despite the NLRA's opposition, Wasatch Wind continued forward, shifting some turbine locations in an attempt to appease concerned landowners. By July of 2010, the company had successfully negotiated a twenty-year power purchase agreement (PPA) with Rocky Mountain Power, a critical step towards the project's success. In November of 2010, Wasatch Wind

¹⁷ Personal email communication with Converse County resident on Feb. 8, 2012.

initiated its own community meeting, and over 150 interested residents attended. On February 2, 2011, the company formally submitted its application to both the Converse County Board of Commissioners and to the Wyoming Industrial Siting Council. Both permits were granted. It was at this point that the NLRA began a full-fledged legal fight against the Pioneer Wind Parks project, appealing the state permits and taking the issue before the Federal Energy Regulatory Commission, the District Court, and the state Supreme Court. (Please see Table 4 for a timeline of events pertinent to the Wasatch Wind project.)

The issue of zoning is an important one in the context of wind development in Converse County. As one county commissioner explained:

"I personally think there's a role to have some zoning in Converse...The problem is people want me to 'tell *you* what to do but don't tell *me* what to do'. 'You shouldn't burn your trash, but don't tell me I can't park my cars'. Those are the extremists. I get several calls a year from people saying 'my neighbor is doing X,' and I go 'I understand, we don't have any rules in place, if you would like to support zoning that's the tool the State of Wyoming has given us'. 'Well, I don't want zoning, I just want you to stop them from X', and I say 'I don't have the authority.'"¹⁸

For counties in Wyoming that have no zoning, the only authority they possess to regulate wind farm siting was given to them through the state's 2010 Wind Energy Facilities Act (WS 18-5-504). The Act set minimum and consistent development standards across all counties for items like setbacks from roads and residences. It also permitted counties to create stricter regulations for wind development through either zoning or the creation of a land use plan. Additionally, counties have the authority to implement temporary moratoriums wind farm proposals, and several Wyoming counties have done so while they deliberate on their own wind regulations.

¹⁸ Interview on Feb. 22, 2013.

TIMELINE: WASATCH WIND PIONEER WIND PARKS I & II PROPOSAL					
TIME FRAME	EVENT	DESCRIPTION			
March, 2008	Wasatch Wind approaches landowners	Local landowner installs anemometer to study wind speeds on his property in the Northern Laramie Range. This attracts Wasatch Wind in the fall of this year.			
Late 2008	Proposed transmission line route incites opposition.	Gateway West transmission line route to California proposed through Converse County, ignites formation of Northern Laramie Range Alliance (NLRA).			
May, 2009	NLRA holds first meeting	Northern Laramie Range Alliance holds first county meeting; 200 interested citizens show up.			
Fall 2009	Wasatch Wind signs leases	Wasatch Wind signs first leases with landowners.			
2010	County conducts survey	Converse County contracts Clarion Associates to conduct survey asking community regarding concerns about wind energy development and if they support zoning regulations for wind farms. Out of 412 responses, 84.6% had concerns and 62.4% supported some type of zoning.			
July, 2010	Wasatch Wind signs PPA	Wasatch Wind signs Power Purchase Agreement with Rocky Mountain Power			
Late 2010	NLRA conducts survey	NLRA conducts county-wide survey, received 23% response rate (sent to all mailing addresses in Converse County) with 73% "opposed" to the Wasatch Wind project.			
15-Nov-10	Converse County enacts wind regulations	Converse County adopts Wind Energy Siting Regulations, including a permit application process specific to wind farms and adopting setback regulations as required by the Wind Energy Facilities Act (WS 18-5-504)			
November, 2010	Wasatch Wind initiates community outreach	Wasatch Wind holds first citizen meeting in Glenrock.Over 150 people attend.			
February, 2011	Wasatch Wind applies for permits	Wasatch Wind submits application to Converse County Board of Commissioners and to Wyoming Industrial Siting Council. Permits granted.			
May, 2011	County grants Wasatch permits	Converse County grants Wasatch Wind permits for the Pioneer Wind Parks I and II project.			
July, 2011	State grants Wasatch permits	Wyoming Industrial Siting Council grants Wasatch Wind permits for the Pioneer Wind Parks I and II project.			
January, 2012	District Court rules in favor of Wasatch Wind	District Court rules in favor of Wasatch Wind against NLRA, upholding issuance of permits.			
March, 2012	FERC rules in favor of Wasatch Wind	Federal Energy Regulatory Commission deny petition filed in July 2011 by NLRA to stop Wasatch Wind farm.			
December, 2012	Supreme Court rules in favor of FERC and Wasatch Wind	Wyoming Supreme Court rules in favor of FERC/Wasatch Wind against NLRA and upholds issuance state and local permits.			

Table 4: Timeline of events pertinent to the Wasatch Wind proposal for Pioneer Wind Parks I and II.

Converse County is one of nine counties that have taken action in this regard, and the

Board of Commissioners enacted a land use plan that set wind energy siting regulations to

"promote public health, safety, convenience, and general welfare within Converse County"

(Converse County, 2010). The county's regulations outline the permit application process for

wind developers, require a specific project plan and emergency plan, specify the fees for permit

violation, require a public comment period, and produced slightly stricter setback regulations

than are required by the 2010 Act. Converse County's setback regulations are as follows:

- The base of all towers must be located no less than 110% of the maximum height of the wind turbine tower from any property line adjacent to the facility (unless waived in writing by the property owner).
- The base of all towers must be located no less than 110% from any public road right-ofway.
- The base of all towers and other structures (substations, etc) must be located no less than five and a half times the maximum height of the structure and never less than1000 feet from any platted subdivision, unless waived in writing by all owners of land within the distance specified here.
- The base of any tower must be located no less than ten times the maximum height of the tower and never less than one thousand feet from a permanent residential dwelling or occupied structure, unless waived in writing by the owner of the dwelling, in which case the base of the tower must be located no less than 110% the maximum height of the tower from the dwelling.
- The base of any tower must be located no less than ten times the maximum height of the tower from the limits of any town.

Beyond setbacks, the county has no power to define and enforce areas that it would like

to keep 'off limits' to wind energy development. As a county commissioner expressed to me, "We don't have zoning. So by not having zoning we have limited tools in the box to deal with it [wind development]." He went on to explain that the county cannot overstep the specific level of authority that is given to them by the state: "without zoning it's a carve-out, and it's almost a [an illegal] Converse County exclusion at the legislative level, because if we don't have zoning, the wind law said we could do this, the law didn't say we could do more than that"¹⁹ Yet the same county commissioner told me that "zoning for a specific industry is problematic" because it would single out certain industries while privileging other. Among most of the landowners I

¹⁹ Interview on Feb. 22, 2013.

spoke with, zoning was treated as a 'four-letter word'. For example, one rancher who was supportive of wind but adamantly against zoning remarked:

"I'd be totally against the zoning cause once you started it, where would you stop? You can pull out a project like that or a pig farm whatever you want to use, and say man if you had zoning we wouldn't have to have that. But the other problems you would have would outweigh any benefits I think. It's not to say you shouldn't have planning, you should have some kind of planning, education of people you know show them a better way to develop the mountains or wherever they are. I am a firm believer in that, but you don't have to force them."²⁰

Furthermore, just because many residents in Converse County value the mountains over the plains doesn't constitute an equitable basis for zoning against wind farms in that specific location. As one individual put it: "what makes [a mountain-residing landowner's] private property rights in the mountains any less valuable than what people consider ugly plains? I understand the desire for that but I can't rationally say that individual has less rights."²¹

Consistently, residents supportive of the Wasatch Wind project saw wind energy development as a private property rights issue in which landowners who wanted to allow wind turbines to be sited on their land should be allowed to do so. Yet, despite the cultural significance of private property rights in Converse County, the lack of zoning unquestionably does limit the commissioners' ability to designate where wind farms can and cannot be located. Since zoning is so culturally and politically unacceptable, but since there is obviously a need for a higher level strategy for future wind farm siting, Converse County will likely need to be creative in the future with how to engage landowners in a visioning process for turbine locations, landscape values, and an equitable approach to landowner rights.

No industrial facility in Converse County has instigated the level of opposition that has arisen in response to Wasatch Wind's Pioneer Wind Parks I and II. The county has a large and

²⁰ Interview on Feb. 22, 2013.

²¹ Interview on Feb. 8, 2013.

very visible coal-fired power plant adjacent to Interstate-25 and near the town of Glenrock, a criss-cross network of transmission lines, and is also undergoing a recent boom in drilling for shale oil and hydraulic fracturing for natural gas and coal-bed methane, which produces flares that can be frequently seen on the Converse County nighttime horizon. When asked if the same level of opposition might be met for a fossil fuels operation proposed in the mountains, a local resident told me:

"I think there probably would be just because a lot of people to some extent hold the mountains as sacred, they think that nothing should change and nothing should be done. So I think there would be some amount of opposition [to mining and drilling]; it would probably be somewhat more acceptable because more people are maybe familiar with process and that sort of industry in our county."²²

Uniformly, local landowners felt that energy developments that were more in line with current industrial practices and that were not as visible would be met with less opposition. I had this exchange with a resident of neighboring Natrona County who had had an eleven-turbine Chevron Casper Wind Farm built in his backyard:

What if Chevron had built a refinery out there?

"That would have been fine. I don't know if I would have said anything."

Even though it would have disrupted your view of the open space, also?

"Well think about how tall a refinery is. It's not 600 feet tall."²³

One of the steering committee members of the NLRA also told me that he would rather have a nuclear plant in his backyard than a wind farm. This begs the question as to why wind farms incite so much opposition as compared to other, more traditional forms of energy. One resident answered this question by stating, "Oil fields don't stand out and tear up the land like this. They're not nearly as tall – even the derricks are half the height of those. And once you hit

²² Interview on April 5, 2013.

²³ Interview on Feb. 17, 2013.

oil or gas then you put either a pump jack or a gas pipeline and there's nothing sticking up hardly."²⁴ To many, wind farms are considered much more visually unappealing than other forms of energy generation, which is in line with the scholarly explanations for opposition outlined in Section 2.

Some residents also explained to me that they felt wind farms were an unfair burden to their community, perceived as a benefit to developers and distant urban centers at the expense of their local landscapes and property values. I explore this narrative next.

3.2 Wind Farms as Burden: Power Dynamics in Wind Energy Development

"It's like living under a 747." (Natrona County resident)²⁵

"They don't care. This is very impersonal what they're doing in the state." (Natrona County resident)²⁶

"There's just so many shady things when you dig further into the wind, it just looks shadier and shadier. You can just tell it's all smoke and mirrors. I've heard coal gets a lot more subsidy than we do; well of course they do, they produce 500 times more energy than you do." (Converse County resident)²⁷

As discussed in Sections 1.2.1 and 2.3, wind energy conflicts raise considerations of

whose voices and interests are furthered by wind energy development, and whose are neglected.

A multitude of questions emerge: Who benefits from wind farms? Who is burdened? What

constitutes a burden? Is it unfair that rural areas are expected to "sacrifice" their landscapes for

urban populations thousands of miles away? Is it a problem that counties have little voice in

controlling where developers site wind farms (especially those with no zoning)? What

opportunities do local landowners have to voice their concerns when a big wind project is

proposed next to them? Burdens may manifest as the concern that wind farms may negatively

²⁴ Interview on Feb. 15, 2013.

²⁵ Interview on Feb 15, 2013.

²⁶ Interview on Feb. 8, 2013.

²⁷ Interview on Feb. 17, 2013.

impact property values, have negative repercussions on human health, reduce access to hunting areas, and disrupt the aesthetics of locally valued landscapes. In the next section, I describe the case of the Chevron Casper Wind, which was built relatively close to a residential area. This story is illustrative of the potential for wind companies to impose inequitable burdens on local communities.

3.2.1 An 'illegal' siting? The case of the Chevron Casper Wind Farm

"I was just going to town and out by our fence out here there was a man with a tripod and a camera ... so I stopped and said 'Hey how are you?' he said 'oh fine,' I said 'what are you up to?' And he said 'well haven't you heard about the wind farm they're going to put in right behind us?' and I said 'you know no, I sure haven't.' So that's how I found out. That was pretty poor, I thought, of our county government and of Chevron. It just got worse as it went." (Natrona County resident)²⁸

In 2009, Chevron Global Power Co. announced their intention to build an eleven-turbine wind farm on an 11,000-acre plot of unused refinery land near an Evansville neighborhood in Natrona County, three miles east of Casper. Reportedly, notice cards were sent to all residences, though several individuals reported never having seen such notices, as referenced in the above quote. Chevron did eventually hold several public meetings and experienced a high level of opposition from the residents that would be close neighbors with the wind farm. Particularly, some landowners were upset that Chevron had received permission from the Natrona County commissioners to site turbines inside of the buffer zone that had been set in the county's wind energy regulations. According to Section F.1 of the regulations: "All WECS [Wind Energy Conversion Systems] Project structures shall be set back at least one-quarter mile from any Primary Structure...The owner of the Primary Structure may waive this setback requirement; but in no event shall a WECS Tower be located closer to a Primary Structure then 1.10 times the WECS Tower Height." (Natrona County, 2008) If the properties are zoned as "ranching,

²⁸ Interview on Feb. 17, 2013.

agricultural and mining, or urban agricultural," the setback increases to one half mile from all primary structures. Additionally, the regulations specify "Setbacks distances may be modified at the discretion of the Board of County Commissioners if the following performance standards are met. a) Affected adjacent property owner(s) have provided a waiver to the set back requirement..." (Natrona County, 2008). However, the regulations also specify that turbines must be sited *only* 110% the maximum height of the turbine *from residential property lines* (as opposed to residential structures). Thus, contentions may arise if residential landowners had planned to build additional structures close to their property lines.

One resident I spoke to told me that his and several neighbors' properties were zoned as agricultural, and thus Chevron was required to place turbines at least a half mile from his house. Chevron applied for a variance from the county board of commissioners to place turbines inside this buffer and was granted permission to do so without receiving a waiver from the affected landowners. Despite ensuing opposition, Chevron completed its eleven-turbine wind farm by December of that year, and one of the turbines was placed within 774 feet of the closest residential property boundary; seven were constructed within 900 feet, and in all, nine of the eleven turbines were placed within the half-mile buffer from property lines, specified by the county regulations (information based on a site map from Chevron and calculations provided by a local resident). According to one resident, eighteen houses were also within the half-mile agricultural buffer zone. Some residents felt they had been betrayed by the board of commissioners and that the wind farm had been built illegally and inappropriately close to homes and property lines.

One landowners who had invited me into his home for the interview opened the curtain that had been draped over his kitchen sliding door and pointed out the window. Three turbines

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rotated in the near distance. He told me that the shadow flicker (made from the turbine's blades moving in from of the sunlight) was especially bad in the summer, when longer days cast lengthy shadows from turbines blades on his house: "In the summer, that's about three months' worth [of shadow flicker]. When the sun sets the shadow flickers go for ... there's nowhere you can get away from it. You have to get used to it."²⁹ He even told me that one family ended up moving because their daughter had epilepsy, which they were worried would be triggered by the shadow flicker.



Figure 4: Sign posted by an upset landowner whose property is less than 800 feet from turbines in the Chevron Casper Wind Farm. Author's own photo.

This incident occurred prior to the 2010 Wyoming Wind Energy Facilities Act, which

enacted the minimum setback requirement from all permanent residential dwellings of ten times

²⁹ Interview on Feb. 17, 2013.

the maximum height of the tower and never less than 1000 feet, unless waived in writing by the owner of the dwelling. As reported in a 2010 article in the *Casper Journal*, a governor's aide wrote a letter to one of the landowners stating "Your issue with siting was one of the primary drivers for establishing the minimum state setbacks that were passed during the 2010 Wyoming legislative session. The governor's office is well aware that the legislation doesn't help you. However, your advocacy has helped others in similar circumstances" (Fladager, 2010).

Residential landowners were also upset because they believed that the new wind farm would unfairly reduce their property values, given how visible and how close the turbines were sited to their homes and property lines. According to a September 2010 report by Casper realtor Glen Taylor, properties adjacent to the Chevron wind farm are now "virtually unmarketable" and "no reasonable buyer would choose a property close to the wind towers over a property that isn't close to wind towers unless the price is so low that the investment would be a no brainer" (as cited in Fladager, 2010). Taylor also reported that the primary reason given for his clients' loss in interest in listings in this area was learning about the proximity to the wind farm. However, scholarly research of impacts to property values from nearby wind farms has not been conclusive (see for example Hoen, Wiser, Cappers, Thayer, and Sethi, 2009).

All Converse County landowners that I interviewed were well aware of the Chevron wind farm issue, but they had mixed perspectives on it. One individual referred to the neighborhood affected by the wind farm as the "armpit" of Casper: "They brought in the property values that's the armpit of Casper. You know, the trail park and dog pounds, and whatever else you want to look at was out there. So was it really gonna damage the property values of the homes that were there? Probably not."³⁰ This sentiment elicits a dynamic that much environmental justice

³⁰ Interview on Feb. 15, 2013.

scholarship has worked to illustrate: industrial facilities often are sited in disproportionate quantities near lower income areas where individuals may not have the resources or voice to successfully protest them. The Chevron wind farm is troublesome in this way.

In the end, several individuals felt that they had been misled by the commissioners and marginalized by Chevron. As one person remarked of the commissioners, "They just did it because they can, you know that's the bottom line. I didn't know how they could either but it was obvious when it came down to it. They didn't listen to anybody."³¹ Not one of the landowners received any money from Chevron, though Chevron did try to provide a payment to one of the most vocal landowners:

"In a dark parking lot after the meeting I was approached by two or three Chevron reps in a dark parking lot, the parking lot around the school. [They said] ... what can we do to make you happy? I said, 'I don't want to live next to a wind farm'. 'No ... really, what can we do to make you happy'; I said 'I don't want to live next to a wind farm', and that went on for a half hour."³²

The case of the Chevron Casper Wind Farm illustrates the problematic power relations that may exist between local residents, county planners, and transnational companies. Residents felt that they had been significantly marginalized for what they considered to be a public relations effort by a global oil giant. However, wind energy development in rural areas is often framed as having great potential for economic development – and perhaps these benefits can balance or outweigh any negative impacts. Next I consider the narratives that emerged in response to the economic aspects of wind energy.

³¹ Interview on Feb. 17, 2013.

³² Interview on Feb. 17, 2013.

3.2.2 'What jobs? What taxes?' Examining wind energy's economic impact

"We hear oh all this wind energy is going to bring all this money into our state and into our county and all that – where is that? We haven't seen a dime of it." (Converse County resident)³³

"When I see them [turbines] I see a waste of money. I see something that we could have spent money in a much better way and had much better results. That's why they are annoying. The waste and the whole thing. I can't get past the waste and the lack of the open space." (Natrona County resident)³⁴

In March of 2013, a tax settlement was reached between Duke Energy and the state of Wyoming. The Department of Revenue agreed to value Duke Energy's Top of the World Windpower Project at \$296.9 million, \$117.8 million less than the value it had been paying taxes on. According to several articles in local papers, this meant that Converse County would be receiving \$820,000 less in tax payments from Duke Energy for the two wind farms it operates in the county (Voge, 2013a). Several landonwers expressed to me that they thought this was yet another example indicating that wind farm companies were 'cheating the system' and that developers had an 'unfair advantage' over other businesses due to federal subsidies and state incentives.

The largest financial incentive that wind developers receive is the federal Production Tax Credit, which offers developers a tax credit of 2.2 cents per kilowatt-hour produced. However, many states and counties offer their own incentives for wind developers. For example, until the end of 2011, Wyoming exempted all sales tax on all equipment used in the construction of wind farms, up to the point that the project becomes connected to the grid. Additionally, sometimes counties offer their own incentives to attract wind developers to generate property tax revenue and to increase overall economic development. While county and state tax incentives and

³³ Interview on Feb. 8, 2013.

³⁴ Interview on Feb. 15, 2013.

exemptions may be used successfully to attract developers, they may also reduce a county's badly needed revenue and "may serve to erode public support for wind projects, particularly in rural communities, which are perhaps in greatest need of additional tax revenue and where the majority of wind development is likely to occur" (Bird *et al.*, 2005).

However, tax revenue can be significant for counties and states where policies are set up to maximize property, sales, and generation tax revenues. A newly proposed wind farm in Carbon County, Wyoming, for example, is estimated to generate \$300 million in property tax revenue for the county over the project's first twenty years of operation. Additionally, it is estimated to generate over \$230 million in sales tax, 53% of which would go to the county, and \$150 million from Wyoming's wind production tax, 60% of which would go to the county (US Bureau of Land Management, n.d.). Though Wyoming's sales tax exemption expired in 2011 and has not been reinstated, many individuals I spoke with thought that the sales tax exemption was still in place. This likely contributed to their belief that wind developers were receiving unfair 'handouts'. Additionally, the state implemented a \$1/MW wind energy production tax in 2010 (the Wind Energy Excise Tax), which began generating revenue in January of 2012 and collected over \$2.6 million its first year (Voge, 2012b). Sixty percent of the revenue from the generation tax goes directly to counties, while 40% remains with the state – this is a significant amount of revenue for counties, and wind farms can become a county's single largest source of property tax revenue. Perhaps, then, discontent with wind farms' local economic contribution may be due to a gap in understanding – it will likely take time for communities to realize these economic benefits.

Many individuals I interviewed also expressed distaste for the federal Production Tax Credit, pointing again to the 'unfair advantage' that wind power enjoys on the energy market.

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While it is true that wind industry is dependent on this federal subsidy, individuals often did not acknowledge that many other industries are subsidized as well, including fossil fuels, agriculture, and financial lenders. Uniformly, opposed individuals felt that wind energy has received too high a federal subsidy, for too long:

"I don't believe in any of them [subsidies]. But I do think in a certain case like wind it screws the market terrible; it lets them be inefficient when they don't need to be. Plus this has been going on for 20 years. By now it either should sink or float."³⁵

"I've gotten to have a very bad taste in my mouth for wind energy in general. I didn't realize when I saw that first turbine go up how heavily that that is subsidized. I didn't realize the way things worked, um, with like these small qualifying facilities forcing their way into the queue, how that was going to eventually going to come out in higher rates in my power bill. And then to see that these turbines only last about as long as what it takes to get them paid for, and then it's gonna have to start all over again, so there's no real net gain out of it. I started wondering is this really a good source of energy, or is it just a good way to siphon more money out of the ratepayers pockets?"³⁶

Although a strong argument can be made in favor of subsidizing an industry if it

engenders benefits for the greater good, there is unquestionably a "paradox" inherent in such

"market-friendly policies" for renewable energy:

"This paradox arises from the inconsistent policy goals of (1) letting markets make technology choice decisions and (2) intervening in the market to ensure that renewables are chosen more often than they would be if the policy didn't exist. That is, 'market friendly policies' have two contradictory goals: letting the market make its own decision, but ensuring that the market decides to use renewables. There is no easy solution to this paradox, but it is worth recognizing" (Komor, 2004:12).

The financial prioritization of renewable energy development by the federal government

indicates and encourages the 'green governmentality' discussed in Section 2.3. Governments

around the world are creating policies and incentives to deploy renewable energy systems with

the assumption that they will help mitigate climate change, yet these efforts don't resolve the

larger problem of energy overconsumption – in fact, they may distract from this larger problem.

³⁵ Interview with Converse County resident on Feb. 15, 2013.

³⁶ Interview with Converse County resident on Feb. 16, 2013.

According to some scholars, consumption of fossil fuels and subsequent emission of carbon dioxide into the atmosphere – the driver of climate change – will only be curtailed by stronger policies, such as a carbon tax (York, 2012). Landowners in Converse County were attuned to several larger paradoxes resulting from 'green governmentality':

"...the money mongers [developers] have found a way to capitalize on the government subsidized wind boom, provide power to their states, and keep their own views unobstructed!"³⁷

"Here's Obama, he's saying we've got to have renewable sources of energy. Then he turns around and says it's ok for us to ship coal to China, where they have zero E.P.A. [Environmental Protection Agency]. They can burn it however they want to, so are we doing any good? If that coal isn't burnt in our power plants where we have scrubbers and E.P.A. regulations, then we're going to be putting more carbon dioxide into the air – or whatever it is that ruins the ozone – than ever before. This doesn't make any sense to me!"³⁸

Several local landowners also expressed to me that they believed their electricity rates

had increased due to the wind farms built in Converse County over the last few years. For

example, one explained, "Our electricity rates are higher locally - they're still low relative to

other states, but we pay a higher number because of wind subsidies. And [the] wind [is] here!"³⁹

While I was not able to verify the cause of the rate hikes, nor the fact that the hikes actually

occurred, it is still significant that this is the local perception.

Another contentious economic issue is that often planners and developers tout job creation as part of the benefits of new wind farms, but in reality residents don't feel they have seen the number of jobs promised. In the initial construction phase of a wind farm, local contractors, earthmovers, and equipment rental companies enjoy a rush of new work. But once the wind farm is built, usually only a handful of employees are required to perform routine

³⁷ Clarion Associates Survey Respondent, 2010.

³⁸ Interview with NLRA steering committee member on Feb. 16, 2013.

³⁹ Interview on Feb. 1, 2013.

maintenance and operational duties – and often, they are specialized nonlocal employees that arrive from other areas. According to the National Renewable Energy Laboratory's Jobs and Economic Development Impact Model, once constructed, wind farms require between four and eight full-time employees per 100 MW of installed capacity (as cited in Jakle, Geiger, McDonough, and Lovato; 2011).

While four to eight jobs may not sound significant, they are living-wage, steady jobs that could support a family, and these are increasingly rare across the rural West. As noted by Brown et al. (2012), wind farm construction and operation contribute to an increase of employment in other local industries that may supply required materials, such as concrete, hardware, and gravel. Property taxes paid by local governments can often become the single largest source revenue for counties, which may expand capacity for county government employment. Additionally, turbine lease payments to landowners expand their capacity to purchase local goods and services, which bolsters the overall economy and can generate additional jobs. Conversely, if wind farms displace other land uses that may require more labor, such as mining, then the net economic impact may be negative. Brown et al. (2012) developed a model to account for the economic inputs and outputs of wind farms for several US counties and found an average net increase of 0.5 jobs per megawatt of wind farms installed between the years 2000 and 2008 – many of these jobs are generated indirectly as discussed above. For a 100 MW wind farm, this would mean an increase of fifty jobs, far above NREL's estimate of four to eight jobs per 100 MW, which only accounted for jobs directly linked to wind farm operations.

Unfortunately, in Converse County a past wind energy construction subcontractor left town after building the Glenrock Windpower Project without paying their bills. According to one resident this greatly affected general distrust of wind developers and wind farms:

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"One company that was hired when the project was finished left without paying bills. They owed Homax Oil company over a million dollars in fuel, they owed Cat out of Casper a million some dollars of equipment, they owed some of the local businesses here in town that did the tire repairs thirty or forty thousand. They skipped town, they ended up in a lawsuit. So automatically these small businesses that were relying on that got stiffed, right there was a big flag that every wind company is gonna screw us."⁴⁰

Aside from this incident, wind energy development in Converse County has provided economic benefits, but many residents did not seem aware of these. Developers and county officials have the opportunity to educate the public on such economic benefits in order to bridge this gap in understanding, which may help mitigate general opposition to wind energy. It may also be helpful to initiate conversations about *all* federal subsidies – from renewables to fossil fuels.

3.3 Wind Farms as Benefit: Power Dynamics in Wind Energy Opposition

As has been discussed, opposition to wind farms is commonly explained as the 'NIMBY syndrome'. A main project of this research is to interrogate the NIMBY label and to show that rural residents can be marginalized by the siting of wind farms and that they have genuine concerns that require attention. I have argued here that wind energy companies do sometimes impose on rural communities, and that planners, developers, and policy makers must take care to ensure that local voices are elicited and responded to.

However, as I researched the current contestation over the Wasatch Wind project and proceeded through interviews with stakeholders, a second narrative emerged in wind energy opposition. In Converse County, fourth- and fifth-generation ranching families struggle to make a living and also to retain their land as property values continue to climb. For these families, the placement of wind turbines on their land would mean lease revenue that would help them sustain their challenging livelihood. The families I spoke with in support of the Wasatch Wind project

⁴⁰ Interview with Converse County resident on Feb. 15, 2013.

characterized the opposition movement as an elitist, deep-pocketed effort to protect vacation homes and or trophy ranch values and to retain a specific notion of 'nature' in the Northern Laramie Range. One family explained to me that if turbines were constructed on their property, they would be able to carry health insurance for the first time. Turbines would also mean they would be able to keep their land, ever threatened by the nationally declining agricultural market and by increasing property values in the area. Thus, I examine the power dynamics inherent in the opposition *movement* in Converse County and document the discourses in support of rural wind energy development.

First, in Section 3.3.1, I discuss the argument in favor of the Pioneer Wind Parks I and II, with specific focus on the ranchers who would benefit from the wind farm. I argue that development of the wind farm may also have positive benefits ecologically by facilitating retention of large property holdings in the face of a trend of subdivision and gentrification. In Section 3.3.2, I explore the arguments proposed by the Northern Laramie Range Alliance. Last, in Section 3.3.3 I explore the power dynamics of the group's leadership, which consists of several social elites with disproportionate financial resources and political and legal access.

3.3.1 Ranchers and Turbines: The Case for Turbines in the Northern Laramies

"It doesn't take long to do the math and figure out that ok this turbine's gonna be here 20 to 30 maybe 50 years and it's gonna generate x amount of money per year off of less than an acre. That acre if it's producing corn is gonna make how many dollars a year? Pretty quick you're going, you know what, put them anywhere you want. Cause that turbine is going to produce more than I can make agriculture-wise; it's gonna produce more than 100 cows would in a year. One turbine would. It's just dollars and cents and common sense" (Northern Laramie Range rancher)⁴¹

"There are other landholders with similar local pedigrees who are attracted by industrialscale wind development. They've engaged in ranching, but are unhappy with the financial returns. Even though it may make sense financially to sell their mountain property at high, recreationally-driven prices and exchange into much larger, wind

⁴¹ Interview on Feb. 15, 2013.

appropriate acreage on the plains, their feelings of family heritage may lead them to push for industrial wind development on their existing mountain property. Not surprisingly, they are opposed to the objectives of the Alliance." (NLRA, 2009)

Windy Ridge is both the name of and an accurate adjective for describing the area slated for the Wasatch Wind project. Ranchers I spoke with told stories of parts of their roofs blowing off on especially windy days. One rancher remembered, "we did have a wind speed meter, and I think the highest gust it recorded that winter was in excess of 90 miles an hour – but it didn't even last one winter season, it blew apart."⁴² Another said, "some nights you're lying in bed and you see the windows flex…the main thing about the wind is it just wears on you, you get sick of it."⁴³ Still another recounted, "we were trying to move cattle one day and the wind was just horrible! We couldn't get the cows to move, rocks were hitting us in the face … we fought [the cows] for three hours and never got them moved, and I finally just said: enough!"⁴⁴

One rancher has been collecting meteorological data for several years and reports that the wind farm would enjoy a capacity factor "in the high forties," which is exceptional for wind farms. Not only does the site enjoy a high capacity factor, but it also has a consistent wind velocity, causing turbines to be more even more profitable. This site in the Northern Laramie Range is one of the top wind sites in the state (revisit Figure 2 on page 62). As such, ranchers reason that:

"The wind is going to blow whether the turbines are there or not. So to me I think wow, why wouldn't we use it? Just like if we had a pasture that had grass two feet tall this summer we'd think wow, we should really turn some cows in there and we would. That's how I see the wind. It's blowing, it's costing us money; you have to do more maintenance because of the wind. It's damaging to our buildings and things and I think to be able to benefit from that would be a really great thing."⁴⁵

⁴² Interview on April 5, 2013.

⁴³ Interview on April 5, 2013.

⁴⁴ Interview on Feb. 15, 2013.

⁴⁵ Interview on April 5, 2013.

Additionally, ranchers in the Northern Laramie Range see wind energy as their chance to capitalize on a natural resource, as many ranchers across Wyoming have done to supplement the ranching income. Ranching families in the Northern Laramie Range do not have the minerals and oil that ranchers on the prairies to the north have been able to capitalize on. One rancher explained to me, "In Wyoming there is enough energy industry everywhere that most of the big ranches around usually subsist on, like, oil surface damages, or uranium and natural gas. We don't have any of those up here [in the mountains], so we're one of the few that actually does just survive on cattle."⁴⁶ Another rancher told me "If we had an oil well, for crying out loud, we'd drill it!"⁴⁷ As such, the potential to receive lease payments from wind farm developers for turbines is viewed as a sort of resource extraction in its own right – especially since the Northern Laramie mountains are so 'rich' in wind.

Ranching is an historic livelihood and a cultural fixture of Wyoming. It is also one of the predominant land uses, as it is across the West. Wyoming currently ranks first in the nation for average size of farms and ranches (2,745 acres versus the national average of 420 acres) and has the eleventh highest percentage of land in farms and ranches of all states, with over 30% of its land being used for agricultural purposes (US Department of Agriculture, 2012). However, as is occurring across the US, ranchers and farmers subsisting solely off ranching income are struggling to stay afloat (Walker, 2006). This is due to both a declining agricultural market and increasing property values through a process of rural gentrification, especially in scenic mountainous areas that are desirable to both in-state and out-of-state residents desiring summer vacation properties or a recreational ranch property (often called a ranchette, a trophy ranch, or a hobby ranch). According to geographers Hannah Gosnell and William Travis, ranches constitute

⁴⁶ Interview on Feb. 2, 2013.

⁴⁷ Interview on Feb. 15, 2013.

the largest privately held undeveloped lands in the Rocky Mountain West, but ranch "turnovers" (sales) are proceeding at a significant rate as ranching families are financially unable to retain their land. Gosnell and Travis found that 54% of ranch acres sold between 1990 and 2001 in this region were purchased by "amenity buyers" (for private recreational purposes) and 62% of acres were sold to out-of-state residents (2005). Economists Sanchita Sengupta and Daniel Edward Osgood point out that this process of subdivision and ranch sales constitute a "dramatic turnover in land stewardship" across the Western US. Sanchita and Osgood report that if hobby ranches and farms were defined as those producing \$10,000 or less in profit per year, then over 60% of all agricultural operations in the US would qualify (2003).

The trend of 'amenity migration' is well documented in scholarly work and is often conceptualized as 'rural restructuring' in which the socioeconomic character of a rural region is rapidly changed by in-migration from former urbanites seeking a quieter way of life (see, for example: Gosnell and Abrams, 2009; Nelson, 2001; Woods, 2003). Such 'exurban' areas experience a sort of "landscape aestheticization" (to borrow from Duncan and Duncan, 2001) in which landscapes formerly used for resource production become valued for their aesthetic characteristics. Landscapes such as the Northern Laramie Range, then, sit at an "uneasy crossroads" between traditional land uses, such as ranching, and relatively new land uses, such as recreation and hobby agriculture (Walker and Fortman, 2003). As Duncan and Duncan (2001) poignantly note, "Landscapes become possessions for those with the wealth and power to control them" and "members of certain communities can mobilize enough economic and cultural capital (Bourdieru 1984) to create landscapes that have the power to incorporate and assimilate some identities *while excluding or erasing others*" (p. 387; emphasis added).

Several ranchers in Converse County spoke to how this rural gentrification dynamic has impacted them and the community at large. Recounted one rancher, "they [opponents of the wind farm] will spend, you know, \$2 million for a thousand acres to hunt their elk. When, in 'ag' value, it's only worth \$300 or \$400 dollars [per acre]. So we can't compete ... we would like to expand our operation, but we can't pay that kind of money and then pay for it through agriculture."⁴⁸ Another told me:

"Through the years families have not been able to make it, and so they've sold those ranches off. And when those sell off either as a large ranch or it's sold to development – they break it into two or three smaller parcels. Or one guy buys it and then he develops it. So we're losing our 'ag' base...used to be anybody that went up the road had access to the Forest Service for hunting and to the cricks for fishing, we all shared what we had, we very rarely turned anybody away if they stopped and asked. So with the sale of all of these ranches that butt up to National Forests, the people that are coming want their privacy, so they've shut the access off and it becomes their private little hunting reserve."⁴⁹

Additionally, though scholarly and public criticism has been leveled against ranchers over the last decades for the damaging impacts of grazing cattle (a nonnative species) (Freilich, Emlen, Duda, Freeman, and Cafaro, 2003), ecologists and conservation organizations have recognized the importance of ranches in maintaining open spaces in the ever-subdividing West (ie, "cows not condos") (see, for example Brunson and Huntsinger, 2008; The Nature Conservancy, 2013). Because ranchers are struggling so much to retain their land and way of life, wind turbines can represent a relatively ecologically benign way for them to receive extra profit from their land. Cattle can be grazed under turbines, and turbines require no water or fuel inputs beyond (vegetable-based) oil for the rotor. Support for wind farms in rural areas for this reason has been demonstrated in other studies (Mulvaney, Woodson, and Prokopy, 2013; Bidwell, 2013).

⁴⁸ Interview on Feb. 2, 2013.

⁴⁹ Interview on Feb. 15, 2013.

Turbines do kill birds, but avian fatalities are dwarfed by the estimated 2.4 billion birds killed by housecats each year (Loss, Will, and Marra, 2012). Additionally, wind farms do require the construction of a network of roads, which can have ecological impacts, but ranchers told me that these roads would be a welcome addition to their ranch since they didn't have the funds to build quality roads to access different parts of their properties.

Yet another way that the sale and conversion of working ranches – whether into large trophy ranches or numerous smaller vacation properties – has impacted ranchers and the community is through the ecological and wildlife processes it affects. When large parcels of land are sold to individuals who intend to use it for vacation/recreational purposes or as a private game reserve, often the community hunting that was formerly allowed on the parcel is no longer permitted by the new owner. Thus, the trend of subdivision and rural restructuring can decrease hunting opportunities for community members. Additionally, local landowners I spoke with claim that the elk have learned that they are relatively 'safe' (from hunters) on hobby/trophy ranch property, and so they gravitate to those reserves during hunting season. Locals believe this contributes to the elk population boom that the Northern Laramie Range (and much of the intermountain West) is currently experiencing (see Peterson, 2012; Wyoming Fish & Game, 2012). This in turn means that ranchers are competing with ever-growing elk herds for forage for their cattle:

"During the hunting season when people are out [for hunting] all the game, they're not dumb, they go to where they're safe. When the hunting season ends, then they come back. We're getting eaten out right now. It's terrible. And we can't get a harvest. We tried to manage our herds so that we can get a harvest."⁵⁰

"We always leave grass to come back to. Well when we're going to the pasture in the spring times, the elk are ahead of us. They are constantly cropping, getting the crème of

⁵⁰ Interview on Feb. 15, 2013.

the crop as they go to the next pasture. And so by the time our cows get there it's already been grazed."51

The fight to preserve the 'viewshed' of the mountainous country by the Northern Laramie

Range Alliance is particularly ironic to ranchers in the area because they feel that the aesthetics

of the area have already been significantly altered by the continuous march of development that

has brought increasing recreational landowners to the area:

"Now when you drive up there, there's a fence every 40 acres, and a road, and a cabin on that hillside, and a cabin on that hillside, and a cabin on that hillside. So for us, the aesthetic view of the mountain has already been ruined. And that's back in the real mountains. The wind farm is going to be out here on the barren flats."⁵²

On a larger scale, much of the area's aesthetic character has arguably already been

impacted by industrial developments across the county and by pollution from the coal-fired

power plant:

"If you go up on our higher land you can look towards Glenrock and you can see the coal fired power plant. And on the rare days when it's not windy down here, and you can see the brown haze. So I would much rather see the sticks with whirlygigs on them that than brown smudge."53

Many ranchers feel that wind energy development would *preserve* the historic character

and natural beauty of the mountains because it would help ranchers to retain the homesteaded land they've been on since the 1880s. For example, one of the most striking historic landmarks in the range is the Grant family barn (see Figure 5). According to a Grant family member, the barn is over 125 years old. It is appreciated as a symbol of the historic ranching tradition in Wyoming. and tourists allegedly come from miles around to snap photos of the structure. Though it is still standing, it needs stabilization work, and this is one of the ways the Grant family would plan to use extra income from turbine lease payments:

 ⁵¹ Interview on Feb. 2, 2013.
 ⁵² Interview on Feb. 2, 2013.

⁵³ Interview on Feb. 2, 2013.

"The reason that the historic value is being preserved and is still here, the reason we have a barn that's 125 years old standing there, is because we value it incredibly and we haven't said no, let's just replace it with it something else. It's not really that useable. Honestly some of the things that I know that our family would do if we benefited financially from wind development would be to do maintenance on the historic structures."⁵⁴

Additionally, supportive ranchers proclaim that wind turbines would also allow them to

continue inviting community members onto their private ranch land for hunting and recreational

purposes:

"Yes it [is] beautiful, we acknowledge that, we understand that. But when people came to us [to use the land], we shared that with them, we allowed them to fish and picnic, come and go as they please for over 100 years. Maybe that's our fault maybe we shouldn't have done that a hundred years ago. But now that we want to do something for ourselves, shame on me. You know, that's the way I see it. We've got to try to survive or if I should sell you won't have an opportunity to be there like you have in the past."⁵⁵

⁵⁴ Interview with Grant family member on April 5, 2013.

⁵⁵ Interview on Feb. 15, 2013.



Figure 5: The historic Grant family barn, over 125 years old. The barn is located within a few miles of the site of the proposed Pioneer Wind Parks I and II project. Author's own photo.

Even the NLRA acknowledges "Much of [the area's] character comes from the perseverance of ranchers who have sustained their livelihoods for decades in the face of tough markets and even tougher weather" but also "from landholders making their living elsewhere who've been drawn to the scenic rural landscape and have preserved its open spaces" (NLRA, 2012). But what ranchers feel the NLRA fails to see or admit is that the wind farm would facilitate the preservation of all what the NLRA claims to value – open views, vital herds of elk for hunting, and the cultural heritage of the mountains. One rancher articulated this well:

"If we all turn into a suburb up here, we'll [the ranchers] be gone and then they won't have their elk, and they won't have their scenic beauty. All they will have is their Front

Range in Colorado. They don't understand that there won't be any elk hunting if that's what happens...That's what it'll be, just a billion houses up here."⁵⁶

I turn now to a discussion of the NLRA's arguments against wind energy in the Northern

Laramie Range.

3.3.2 The NLRA: "Fighting this industrialization of our pristine mountain country"

"No one wants to have a retreat in an industrial zone." (NLRA steering committee member)⁵⁷

"We can't have lots of people burning lots of stuff; that's bad for the planet. But we also can't 'destroy the village in order to save it'." (NLRA steering committee member)⁵⁸

"It's like taking up smoking because you drink too much. And now you're a smoker as well as a drinker." (Frida Payle, as quoted in National Wind Watch email update, April 28, 2012)

The Northern Laramie Range Alliance (NLRA) claims 906 members. In the membership

statistics I was given, NLRA members were identified if they had signed and sent a petition to

the NLRA declaring they "strongly object to the development of industrial scale wind farms in

this region" and encouraging local officials "to use all means legally at their disposal to halt

further development of industrial-scale wind farms in the Northern Laramie Mountains until a

fair and legal process has been established" (NLRA, n.d.). The membership statistics claim 513

members from Converse County, 229 members from Natrona County, 108 residents from other

counties, and fifty-six out-of-state residents. While this is an impressive membership list, several

residents expressed to me their concern that many individuals on the NLRA's membership list no

longer wish to be considered members. I was not able to validate the membership list.

I was able to interview six of the seven steering committee members, and though their opinions represented a range of reasons for being involved in the NLRA, all expressed a central

⁵⁶ Interview on Feb. 2, 2013.

⁵⁷ Interview on Feb. 25, 2013.

⁵⁸ Interview on Feb. 25, 2013.

concern that a wind farm would significantly and permanently change the character of the

Northern Laramie Range:

"I have a ranch above Glenrock... if the wind farm goes in, over 95% of the place will be visible from the ranch."⁵⁹

"We just want to preserve that little special area that's left because it's one of the very few mountain ranges. Well it's like Jackson Hole, you know, they would never thinking of putting more wind turbines there. Well, this is Converse County's little jewel that not a lot of people know about."⁶⁰

"...if they build them here we're going to have the flashing lights. If you came up here at night you wouldn't see anything, you wouldn't see the stars."⁶¹

"You know how much cement they put at the bottom of these? There's no way that's ever going to be moved, so that's there forever."⁶²

"Eventually these properties will be owned by my heirs, I hope, and I hate to have them devalued as a result [of transmission lines and wind turbines]."⁶³

"It's just the scale of them is what bothers me. They shouldn't be by houses; they shouldn't be...cause they're as big as mountains, they shouldn't be in the mountains. They should be, um, I don't mind up all along I-80. I don't mind that."⁶⁴

The steering committee is made up of a variety of types of individuals; of the six I

interviewed, two were from Converse County, three were from adjacent counties, and one was

from Washington D.C (but spent up to six weeks a year in Converse County). Four out of six had

lived or still live in the Northern Laramie Range, and five had property there. One had property

adjacent to the proposed wind farm; and the rest had summer homes or ranches that were miles

from the site. Thus, of the five steering committee members that had land in the Northern

Laramie Range, four would not be able to see the proposed wind farm from their properties,

⁵⁹ Interview on Jan. 25, 2013.

⁶⁰ Interview on February 8, 2013.

⁶¹ Interview on Feb. 3, 2013.

⁶² Interview on Feb. 16, 2013.

⁶³ Interview on Feb. 3, 2013.

⁶⁴ Interview on Feb. 3, 2013.

except when driving Boxelder Road on the way to their land. One who lived far from the wind site expressed his concerns nonetheless:

"My concern was the domino effect. Then the property would be devalued over here and then the next neighbor would say well, you already have the visual impact, you've devalued my property, so I might as well build a wind farm here and that it would leapfrog over into [his valley], which, generationally, cause I like to think in generational terms, you would end up devaluing the entire Northern Laramie Range...so that was my concern about the wind farm, uh, that eventually you would see the leapfrog over into our properties."⁶⁵

The NLRA's primary mission is to 'fight industrialization' of the 'pristine' Northern Laramie Range, including transmission lines and wind farms. The organization's view of the mountains as 'pristine', however, varies significantly from how several ranchers' I spoke with view the mountains and nature. One might think this is due to the working relationship ranchers have with the land: they see it as a place where they can graze their cows and make their living. For example, an NLRA steering committee member told me: "I think the ranchers don't see it as a beautiful place...it depends on what you're talking about and who you are talking to but I think they think it's pretty to a point but they're around it so much."⁶⁶ However, the ranchers expressed their view of nature differently. Though they considered it a beautiful place in which they are fortunate enough to live and work, several acknowledged "nature isn't natural anymore."⁶⁷ They pointed to, among other examples, the heavy management of wildlife populations (such as importing bears from other parts of the state) and the overabundance of elk (a result of human-induced predator deficiency). In addition, cattle grazing is allowed on state and national forests lands, which has altered the ecology significantly. Parts of the Northern Laramies have also been logged and harvested for gravel. On a broader scale, a warming climate

⁶⁵ Interview on Feb. 3, 2013.

⁶⁶ Interview on Feb. 3, 2013.

⁶⁷ Interview on Feb. 2, 2013.

and the incidence of drought has led to drier forests and vegetation die-offs (Breshears et *al.*, 2005), as well as eruptions of bark beetle infestations across western North America (Bentz et *al.*, 2010; Hicke et *al.*, 2006) and a shifting and more frequent and intense fire regime (Westerling et *al.*, 2006). As discussed, the ranchers listed the aesthetic changes that the Northern Laramie Range has undergone over the last decades, resulting from an increasingly subdivided landscape and a higher prevalence of summer homes and cabins.

The NLRA also claims its membership includes several generational ranchers opposed to the Wasatch project and any wind development in the mountains because it "would completely transform the landscape around them for the financial benefit of a few of their neighbors" (NLRA, 2009). One steering committee member, when asked to reflect on the wind farm's financial benefits, which would keep many ranchers on their land responded as such:

"A traditional cow calf operation is very challenged. Always has been...it's always been a tough business, the weather, there are just so many things that can impact you, so most ranches look to other sources of income to supplement...So uh wind would be one additional item if you wanted to do that. The difficulty there is it damages your neighbor. Ultimately my gravel pit will be reclaimed. Ultimately the horses move away all of that stuff. I don't think I'm negatively impacting my neighbors. The wind [power] does. It's so visible."⁶⁸

Several NLRA members were also concerned about the impact that wind farms might

have on the experience of hunting in the mountains:

"It's not the same fishing or hunting when you have a wind turbine whoosh, whoosh, whoosh in the background, it is just not the same experience. And maybe that's just a mental thing for me. It's not how it should be, it's not natural."⁶⁹

"That's one of the fears, you know. Most wind facilities they don't allow hunting. Really it doesn't matter, what hunting is there available on a wind farm, you don't want to shoot the turbines, and I mean one stray bullet may cost you your home...what are you gonna do, sneak from one turbine to the next to sneak up on the prey? I mean, that's not hunting. It's – hunting is more of an enjoyment of the outdoors and getting out and being

⁶⁸ Interview on Feb. 3, 2013.

⁶⁹ Interview on Feb. 8, 2013.
out just with the outdoors. Why would you want to go into an industrial facility to hunt? And you know those big blades spinning around and stuff, I doubt real serious that there's going to be a lot of animals to hunt."⁷⁰

The NLRA's concern with wind development in the mountains is based on a particular view of nature and a specific notion of what the Northern Laramie Range should look like and be used for. The group also claims there is a higher "degree of public engagement with the landscape" in the mountains versus the high plains to the north and that "for this broader community the fear is that the decisions of a handful of large landholders to industrialize will make this kind of landscape – and the contribution it makes to the quality of life in Wyoming – even rarer still" (NLRA, 2009). The NLRA correctly asserts that the area is afforded no jurisdictional land protection (such as a national park or wilderness area) and that the recreational opportunities in the mountains may therefore easily be jeopardized.

Lastly, opponents I talked to leveled larger suspicions about the wind energy industry as

a whole, which took up a peripheral but still strong role in their opposition to the Wasatch

project:

"You look at who's backing these wind farms and a lot of it's just big equity firms that are going to convert to cash in five years anyway and make a ton of money."⁷¹

"We're gonna look back and say maybe it should have been supplemented, maybe it should have been subsidized; but what was subsidized in the last eleven years in the PTC was, um, just entrepreneurs putting up wind turbines as fast as they could so they could get the money...maybe there was, um, honorable intentions, but I don't think so or in most cases."⁷²

"And wind has got such a high government subsidy, and what happens when the government finally quits subsidizing them, do they just walk away and leave that place trashed? I don't know. These are questions we just don't know."⁷³

⁷⁰ Interview on Feb. 16, 2013.

⁷¹ Interview on Feb. 8, 2013.

⁷² Interview on Feb. 3, 2013.

⁷³ Interview on Feb. 8, 2013.

However, proponents of wind energy, including the editors of the Casper newspaper,

have leveled suspicions against the wind opposition movement in Converse County, the NLRA specifically, and on a national scale as well. The next section will cover the role that private interests – including protection over property values and connections to fossil fuel industries – may play in wind farm opposition. This section will also discuss the position of power held by several leaders of the Northern Laramie Range Alliance and will consider how this power may result in a disproportionately loud narrative of opposition. I explore the NLRA as a possible 'vocal minority' over-representing public opinion against wind energy development in Converse County.

3.3.3 Private interests and power relations in wind energy opposition

"Because the key organizers of the Northern Laramie Range Alliance include people with deep pockets – among them Kenneth G. Lay, vice president and treasurer of the World Bank, and oil and gas businessmen Diemer True and Tom Swanson – it's safe to say the plaintiff is positioned to wage an extensive legal battle." – *Casper Star-Tribune* (Editorial Board, 2011)

"The NLRA bears an uncanny resemblance to the Alliance to Protect Nantucket Sound. The chairman of that group is Bill Koch, a coal and natural gas baron, who, according to Forbes.com, put \$1.5 million into the group's effort to stop a wind-farm proposal right off Cape Code on environmental grounds." – *High Country News* (Thompson, 2009)

Many individuals feel that the NLRA has been successful in delaying the Wasatch Wind

project primarily because of two leaders' political access and financial capacity. Additionally,

some in the community are suspicious of two NLRA leaders' connections to the oil industry.

Three steering committee members generally come under attack in these regards: Ken Lay (no

relation to the controversial past Enron CEO), Diemer True, and Tom Swanson. One community

member told me:

"Not many people have the time nor the fortitude to fight something like this. There may have been a fight and it may have lasted a little, but without guys like them, I mean they've found ways of flanking the enemy and fighting the battle and who would have ever thought. Boy, if it would have been me, we would have lost this fight a long time ago."⁷⁴

"We have Diemer True, Kenneth Lay, and then a couple others, Farleigh oil, who have really deep pockets. And they have had environmentalists opposing them for most of their careers, so they know what stances to take. So from the very get go it's been delay, delay, delay. So you know if there's a decision that's coming up then they will find something to delay when that decision can come out. For someone else if they wanted to go appeal the [Federal Energy Regulatory Council], you have to pay \$25,000 to appeal that. Most people wouldn't do it; they've done it three times."⁷⁵⁷⁶

To understand the foundation for comments such as the above, it is worth pointing out the biographies of the predominant leaders of the NLRA. As is discussed in the *Casper Star-Tribune* quote above, Ken Lay worked for the World Bank from 1982 to 2010, serving as both the treasurer and vice president for several years (World Bank, n.d). Lay is now the Senior Managing Director of the Rock Creek Group, a global investment firm (Williamson, 2010). He resides most of the year in Washington D.C., and in 1992 bought a property in the Northern Laramie mountains – known as White Creek Ranch – and reportedly spends four to six weeks a year there. Lay is on the board of Wyoming's chapter of The Nature Conservancy. Lay reinstated his license with the California State Bar in order to work on legal action against Wasatch Wind. Additionally, Lay produces much of the content comprising the NLRA's website and communications. He reports that the website was designed and implemented on a volunteer basis by a family member skilled at web design.

Diemer True comes from a strong lineage of Wyoming oil and ranching family businesses. According to *The Land Report*, the True family is the 32nd largest landowner in Wyoming, holding 255,000 acres (The Land Report, 2013). The True family has been successful

⁷⁴ Interview on Feb. 16, 2013.

⁷⁵ Interview with rancher, Feb. 2, 2013.

⁷⁶ The NLRA states that they only made one appeal to FERC (that included paying the \$25,000 fee) not three separate appeals.

in the oil industry and operates several petroleum firms, including True Oil Company and True Drilling LLC, an oil-marketing firm (Eighty-Eight Oil Company), transportation companies (Belle Fourche Pipeline and Black Hills Trucking), and oil field and tubular sales (Toolpushers Supply Co), in addition to seven ranches, two farms, and two feedlots (IPAA, 2013).

The True family has large properties in the Northern Laramie Range and has signed leases with Wasatch Wind for turbine siting in the Pioneer Wind Parks I and II project. However, Diemer True separated from the family business in 2006 and now runs his own ranching operation in La Prele Valley, in the eastern foothills of the Northern Laramie Range. Diemer True, along with his two sons, run Diamond Oil & Gas, LLC, an oil and gas exploration and production company that operates in Wyoming and the greater Northern Rockies (Diamond Oil, n.d.). Diemer True has also been very politically active over his lifetime, both from inside the government and from outside. He was in the Wyoming state legislature for twenty years (four years in the House of Representatives and sixteen years in the Senate), serving as a state Republican Party chairman from 1992 to 1996. He also worked as the chairman of the Independent Petroleum Association of America (a national trade group) from 2001 to 2003 and is now the treasurer. One of his big projects while working for IPAA was heading an industry push for expanding the royalty-in-kind program (McCartny and Tempest, 2009), which the New York Times has referred to as a "scandal-ridden program" that allows oil and gas companies to pay royalties to the federal government with oil and gas instead of with money (Straub and Geman, 2009). Diemer True has his own (albeit brief) SourceWatch page (SourceWatch, n.d.), in which he is also identified as the former director of Frontiers of Freedom – a right-wing policy group – and an early board member of the American Legislative Exchange Council – the corporation-backed legislators' association. According to CampaignMoney.com, Diemer True's

political campaign contributions in 2008 totaled \$68,135 and in 2010 were \$21,815 (Campaign Money, 2013). All this is to show that if there is a cause Diemer True feels passionately about, he has the means by which to engage in that issue powerfully – both politically and financially.

The third NLRA steering committee member that has come into the spotlight is Tom Swanson. Swanson is a Casper local of 32 years and a manager at Farleigh Oil Properties. Together with Bill Farleigh, Swanson purchased 6000-acre Echo Mountain Ranch in the Northern Laramie Range several years ago as an investment property. Swanson was shortly thereafter bought out by Farleigh but acts as a 'mouthpiece' for Farleigh on the Wasatch wind farm issue and an advocate for the mountains in general. Swanson is also an ardent fly-fisherman and directs The Two Fly Foundation, a nonprofit whose objectives are to "enjoy a truly remarkable fishery, interact informally with peers in the oil and gas industry, and raise money for deserving Wyoming charities" (The Two Fly Foundation, 2008). Management of the NLRA's membership list is funneled through another employee at Farleigh Oil Properties. While at Farleigh Oil Properties, I was generously provided several maps showing land ownership in the Northern Laramies and the plots of leased land for the Wasatch project.

Like the ranchers who desperately hope to receive land lease payments from turbines, so too does each member of the NLRA steering committee have a personal and emotional stake in the Wasatch Wind issue. The NLRA's mission is framed as preventing 'inappropriate' wind energy development in the mountains for reasons resonant of any standard preservationist argument. However, as I interviewed each steering committee member, I began to hear an undertone that was as equally about preserving the mountains as it was against wind energy in general. Steering committee members expressed to me their beliefs that wind is not a viable

source of energy that should be developed at all; they cited consumer rate hikes, federal subsidies, and the landscape footprint required by wind farms.

While the NLRA claims the specific objective of preserving the mountains from industrialization, the group has been involved in a larger battle against wind over what are known as "qualifying facilities," set up under the Public Utility Regulatory Policies Act of 1978 (PURPA). The qualifying facilities (QFs) law was established to encourage diversification of electricity generation through special regulatory privileging of renewable and co-generation facilities. Utilities are required to not only purchase electricity produced by QFs under 80MW, but to also prioritize QFs over other generating sources by placing them at the head of the queue and by paying a set rate for electricity produced, regardless of current trends in prices. This has frustrated some utilities because they feel forced to integrate a multitude of smaller energy sources into their grid, which can be logistically challenging. Though Wasatch's Pioneer Wind Parks I and II project is 100 MW in total, it counts as a QF because each of the two segments or 'parks' is only 50MW, and the two parks are separated by a distance greater than a mile. The NLRA has alleged that QFs are unfair and produce rate hikes for consumers. Specifically, the NLRA has argued that Wasatch has "gamed" the system and that their wind project should not qualify as a QF because "these allegedly separate projects share common ownership, a single "collector" transmission line and point of connection to the grid and common operations and maintenance facilities" (NLRA, 2011b). As such, the group helped introduce a 'consumer protection' bill in the Wyoming legislature in January of 2013 (Senate File 142) that would have mandated: "a utility shall not be required to enter into a transaction to purchase energy or capacity from such a facility unless the cost of energy...are determined by the commission to be less than or equal to the utility's avoided cost..." (State of Wyoming, 2013). The bill passed the

state Senate in February 2013 but died in the House. The NLRA has also taken the matter before the Federal Energy Regulatory Commission (FERC). Both efforts have failed. One NLRA steering committee member asserts that the QF issue is a matter of national importance: "Look at Idaho – they are getting overrun with little wind farms. Big wind developers would come in and say they were small developers to get better benefits. They break up their plant into two different wind farms; this is what Wasatch did."⁷⁷

Numerous community members I spoke with told me they thought two steering committee members were involved in the NLRA specifically because, as oilmen, they simply hate wind energy. While there is no way to evaluate the truth of these allegations, it is worth pointing out that Tom Swanson has no property in the Northern Laramie Range and Diemer True lives nowhere near the Wasatch Wind site. True's main ranch is in the La Prele Valley, over ten miles to the east of the wind farm site; his second ranch is further into the mountains and also miles from the proposed wind farm site. In fact, of all steering committee members' properties, Ken Lay's is the only one that would be within direct site of the Wasatch wind farm. Still, concerns about having to drive through the wind farm on the way to the mountains, as well as concerns that the wind farm would 'domino effect' into several more wind farms that would dominate the mountains was clearly and frequently expressed to me.

It is illuminating to describe the lengths the NLRA has gone to stop the Wasatch wind farm and the way that their actions are viewed by members of the community. According to the NLRA steering committee, county commissioners, employees at Wasatch Wind, and community members, the group's strategy has been to delay construction as long as possible through a vast variety of legal battles and roadblocks:

⁷⁷ Interview on Jan. 25, 2013.

"We just try to throw up any blocks, any road blocks we can."⁷⁸

"Delay, delay, delay. And they have pretty deep pockets to fund their projects, and whatever they are trying to do, where we don't."⁷⁹

"I would contend there isn't a lot of rationale to their opposition, they're just throwing everything they can at the wall trying to get it to stick. They're not worried about the outcome of every specific one, they just want to take time to kill it."⁸⁰

"...[opposition is] really difficult because it takes a lot of peoples' time and money and at the end of the day, the coal mine will probably be built, the wind farm will probably get built at some point, and what do you have to show for it is a lot of attorneys making money and a lot of stress, and you get to where you need to but the process is not good.... which is what the NLRA learned. Diemer, he's been fought by environmentalists and he's just taking those same tactics and using them against us."⁸¹

Initially, the NLRA focused its efforts on spreading awareness of the wind farm proposal

to local residents of Converse County, holding meetings, gathering membership, setting up a

website, putting together a petition asking county commissioners for a moratorium on wind

development, and placing full-page ads in the local newspapers. The NLRA designed some

visual representations of what the wind farm might look like, in which turbines were

disproportionately large and close to residences (see Figure 6). According to one community

member, this resulted in a type of disinformation campaign:

"I think their steering committee did try to *misinform* at several junctures. They would produce pictures or documents of things that were inaccurate or never would have happened. I think they tried to scare a lot of people into supporting them. They produced a picture of gigantic-looking, oversized wind turbines and towers, and I think they also produced a picture of some road networks...but instead of asking Wasatch what size roads they planned to build for turbine service they produced a picture making it look like I-80, which obviously was not accurate...they tried to mis-inform and scare people into supporting them in different ways."⁸²

⁷⁸ Interview with NLRA steering committee member on Feb. 3, 2013.

⁷⁹ Interview with Converse County rancher on Feb. 15, 2013.

⁸⁰ Interview with Converse County Commissioner, Feb 22. 2013.

⁸¹ Interview with Wasatch Wind employee, Mar. 8, 2013.

⁸² Interview with Converse County resident on Apr. 5, 2013.



Figure 6: A visual representation of the proposed wind farm created by the Northern Laramie Range Alliance. (Source: NLRA, 2010:2)

When the NLRA was not successful at repealing the wind farm permits granted at the county level, they repealed the permits granted by the Wyoming Industrial Siting Council. When that effort was unsuccessful, the NLRA and the Northern Laramie Range Foundation (NLRF; a non-profit foundation created by the NLRA in 2009), challenged the Industrial Siting Council before the Eighth Judicial District Court in two civil suits challenging the permit issuance. When that attempt failed, the NLRA then took the matter to the Federal Energy Regulatory Council in a petition to stop the wind farm on the grounds that it was illegally categorized as a Qualifying Facility. The opposition group also challenged Wasatch before the Wyoming Public Service Commission then took the issue to the Wyoming Supreme Court; both agencies ruled in favor of Wasatch.

The NLRA has also done much at the local level to delay the Wasatch project in any way possible. Ken Lay had his ranch, White Creek Ranch (also known as Huxtable Ranch), added to

the National Register of Historic Places in 2011 (Wyoming Historic Preservation Office, 2013). According to a county commissioner, Lay also attempted to convince Wyoming Game and Fish and the US Fish and Wildlife Service to declare his ranch as a core sagegrouse habitat area (sagegrouse are a candidate for the Endangered Species list). Before the Industrial Siting Commission, the NLRA asked that all the data for the bird studies be thrown away due to the challenge that the biologists had no way of calculating how high the present species regularly flew - if they were successful in this challenge, Wasatch would have had to start over on two years of bird studies. One community member even alleged that somebody planted a blackfooted ferret (*Mustela nigripes*), which has been on the endangered species list since 1967 in the area. Additionally, the NLRA has contributed thousands of dollars to the campaigns of political candidates, at the county level in 2010 and 2012 (for commissioner) and at the state level in 2009. According to one county commissioner, the NLRA contributed \$8000 towards the campaign of his opponent in the 2012 race, which is a relatively significant amount of money: "I spent a total of \$2500 or \$2700 for my campaign. The alliance put \$8000 towards their opponent to try to beat me."⁸³ The candidate sponsored by the NLRA in the 2009 election for the Converse County seat in the State House of Representatives was Richard Cannady (the incumbent in that race). Cannady has since passed HB0048, "Placement of Wind Energy Facilities," requiring all new wind farms to be a mile or more away from public schools, churches, cemeteries, historic landmarks (such as Lay's White Creek Ranch), parks (city, county, and state), and Native American religious grounds. All these examples demonstrate that the NLRA is sophisticated, politically savvy, and financially equipped to wage legal and political battles of a high caliber.

⁸³ Interview on Feb. 15, 2013.

The group's delay tactics, legal battles, and political strategies aside, what many community members consider one of the most egregious action taken by the NLRA is its opposition to the upgrades to Mormon Canyon Road, which would be necessary for Wasatch Wind to construct its project. The county road runs through a quarter-mile of land owned by the Bureau of Land Management (BLM), and as such the county had to apply to the BLM for permission to make the road upgrades, including an expansion of the existing road footprint. The NLRA has urged the BLM to require a public hearing and comment process, environmental assessments, and historic assessments, as are required for major operations on federal lands, which would require yet more time (NLRA, 2012). As previously discussed, there are two main roads leading into the Northern Laramie Range from the north – Boxelder and Mormon Canyon, with Mormon Canyon the steeper and more dangerous road. Wasatch plans to pay for construction costs to redevelop Mormon Canyon Road, making significant improvements and grading it for trucks, while residents use Boxelder Road during construction (the most commonly used road anyways). Several families live up Mormon Canyon and commute on the dangerous road daily, yet the county has not had the money to make safety improvements to the road. The community would thus benefit since Wasatch is offering to pay for upgrades:

"They're defying public safety because of the wind farm that they don't want to look at." $^{\!\!\!^{84}}$

"It's gonna be good for me cause we'll get the road fixed."⁸⁵

"It is absolutely ridiculous for anybody to oppose that safety upgrade to that road... I think it's shameful that they're opposing it. It's a tiny piece of the road that they're arguing over. Would that road be as high on our priority list if we didn't have this project? No, but we've got an opportunity to leverage our ability to work and their wanting to do an improvement to that road that will benefit everybody."⁸⁶

⁸⁴ Interview with Converse County resident on Feb. 15, 2013.

⁸⁵ Interview with Converse County resident on Feb. 2, 2013.

⁸⁶ Interview with Converse County Commissioner, Feb. 22, 2013.

Still, the NLRA makes a point not singular in the realm of environmental concerns over renewable energy development, especially on public lands. Under the Obama administration, Interior Secretary Ken Salazar has established a 'fast-track' program to expedite renewable energy permitting on federal lands. Secretarial Order 3285A1, for example, stated that "Encouraging the production, development, and delivery of renewable energy is one of the Department's highest priorities" and ordered managers "to encourage the timely and responsible development of renewable energy and associated transmission" (Department of the Interior, 2010). Environmentalists have opposed the fast-track plan, arguing that it risks harm to natural and cultural values of pristine public lands. Some media coverage has followed suit, framing the program as "unprecedented access" to federal lands never before enjoyed by energy companies (see, for example: Wells, 2013 and Hudson, 2012). As the NLRA has pointed out, the Boxelder-Mormon Canyon loop is a frequent pleasure-driving circuit for recreationalists and is featured in Dan Lewis's 8,000 Miles of Dirt: A Backcountry Travel Guide to Wyoming. Still, proponents counter by citing the existing safety concerns of Mormon Canyon Road, which would be alleviated by road upgrades made by Wasatch Wind.

In attempts to work with opponents, Wasatch Wind has engaged in several discussions with the community, including a six-month settlement process in 2011 with the NLRA and one opposed family that lives near the site of the wind farm. One Wasatch Wind employee believes that the NLRA had no real intention in accepting a settlement, even though the group stayed engaged for six months over what Wasatch Wind calls "an extreme amount of money" that the company would have given to the Northern Laramie Range Foundation to use for conservation or however the group saw fit:

"We spent [six] months and probably \$50,000 putting the settlement agreement together when not one minute of that [six] months were they ever serious about doing it...so it's like if you don't want, to say you don't want to. If you want to, then you're serious about it and you don't waste people's time and money because we're all human beings...I spent weekends, I sacrificed my family vacations to work on the settlement agreement, with my parents and my children and my husband sitting in a room on Memorial Day weekend."⁸⁷

Wasatch Wind estimates that, overall, they've spent over \$1 million in legal fees, most of which has been spent fighting fire waged by the NLRA. The opposition has cost Wasatch more than money: due to delay caused by the NLRA, the company's power purchase agreement with Rocky Mountain Power has expired because they were not able to construct the wind farm and start delivering power by October, 2012, the agreed-upon deadline (Wasatch Wind, 2012).

The NLRA expresses concerns that would resonate for any environmentalist who has ever loved a place. Truly, the Northern Laramie Range offers opportunities to experience stunning mountain-based recreation, cultural ranching history, world-class hunting, and a beautiful retreat for summer cabin owners. But competing claims to different land values have rendered the fight over the Wasatch Wind project a fiery one, with many families who have lived year-round in the mountains for generations supporting the wind farm for the capacity it provides to make a better living, carry health insurance, and stay on their land. On a larger scale, the wind farm could serve to retain, not destroy, ecological integrity and aesthetic value through retention of land ownership and thus avoidance of further subdivision. Even community members not involved financially in the Wasatch Wind project assured me that the wind company has 'bent over backwards' to engage the community and has appropriately applied for and received all the requisite permits.

The NLRA has failed in its attempts to halt the project before the county, the state siting agency, the district court, the state supreme court, and before FERC. In the end, if the voices of

⁸⁷ Interview with Wasatch Wind employee, Mar. 8, 2013.

the NLRA do triumph, it will be due to the leadership's political sophistication and financial capacity, as well as the group's complex endeavors to trump wind on a larger scale in Wyoming through efforts such as the recent bill in the state legislature attempting to negate qualifying facilities. If the NLRA does end up the 'winner' in this battle, the 'losers' would constitute not only the Grants and other families who would have otherwise received turbine lease revenues, but also the community at large through missed jobs and equipment sales, and property and generation tax revenues. Additionally, as in the Cape Cod controversy in Nantucket Sound, the Wasatch Wind project is poised to make a significant contribution to the country's green electricity generating base, and would generate enough power for the equivalent of 35,000 typical homes each year (Wasatch Wind, n.d). The 'losers', then, might be conceived to include all those who might have benefitted from cleaner air, less carbon emissions, and greater energy security. On the other hand, the concerns of the NLRA are being echoed around the country, and serious consideration must be given to siting of these large-scale industrial systems and the communities they impact.

3.4 Conclusion

"It's just another facet of the future. It's just the way it's gonna be. And the way they are shutting down all these coal fired power plants, we need power. You can't hold things back." (Converse County resident⁸⁸)

The case of the Chevron Casper Wind Farm demonstrates that wind energy development – driven by consumer demand of urban areas, green public relations efforts of corporations, and by federal policies and incentives – can impose on rural communities. However, concerns about turbines' impacts on health and property values are alleviated in part by maturing state regulations and setback requirements. The wind industry in Wyoming is relatively new

⁸⁸ Interview on Feb. 2, 2013.

compared to other extractive industries, and it is therefore not surprising that there are 'kinks' to be worked out in the regulatory structure.

However, as the contestation in the Northern Laramie Range indicates, local landscape values present significant challenges for wind developers. Wind farms are highly visible and have arrived fairly quickly upon the stage of Wyoming's 'wide open spaces'. While Wyomingites may be accustomed to the presence of heavy industry on their landscapes, 500-foot whirling towers seen for miles around are a new landscape phenomenon. Similarly, some areas like the Northern Laramie Range are perceived as special by local residents, and county planners may need to map such areas for wind developers in the future. Still, stakeholders hold vastly differing values about landscapes, as well as differing notions of 'nature'.

Wind farms can provide the financial capacity for ranchers and farmers to stay on their land, which can have radiating benefits for the community at large and for an area's ecological integrity. Wind farms also provide significant property tax revenues for counties and create jobs both directly and indirectly. In Wyoming, wind farms also provide revenue from a \$1/MW generation tax, 60% of which goes directly to counties. Despite these benefits, oppositional narratives in Converse County center on the perception that wind farms do *not* economically benefit the counties where they are located, and this indicates an information gap. Opponents also expressed concern and distaste for the federal subsidies that the wind industry relies on, which is consistent with the overall anti-federalist attitude in many areas of the rural American West (Jacobs, 1995).

Rural areas across the West are undergoing a process of rural restructuring and gentrification, whereby traditional large ranches are sold and subdivided for recreational purposes because ranchers are not able to make enough of a living to pay rising property taxes

and stay on their land. Wind farms offer a potential solution through lease payments for turbines sited on private land. In the Northern Laramie Range, this is the case for several land-rich but income-poor ranching families who hope to see the Wasatch Wind project to completion. However, opposition by the Northern Laramie Range Alliance has delayed this project for several years, and the NLRA would negate this financial opportunity for several struggling ranching families.

There are troublesome power relations at play in the struggle over the Wasatch Wind project. Leaders of the NLRA maintain positions of political and financial power that have facilitated the prolonged battle against the Wasatch Wind project. Though the NLRA has not won a legal case yet against Wasatch Wind, the group has been successful in causing the project's delay and instilling concern in the community about the wind farm that arguably would not have been there otherwise. Members of the NLRA are genuinely concerned about retaining the current landscape aesthetic in the Northern Laramie mountains. However, the group also levels strong arguments against wind energy more generally, such as the recent legislation the group introduced into the Wyoming State legislature to negate the qualifying facilities statute of PURPA. These attacks against wind energy more generally (beyond just its development in the mountains) as well as the leadership's connection to the oil industry also present problematic dimensions when considering the sincerity of the group's plea for landscape preservation.

Oppositional discourses about renewable energy more generally in Converse and Natrona Counties are representative of debates churning in the larger realm of national politics, especially within conservative circles. Wind farms are perceived both locally and nationally by right-wing groups as a liberal endeavor that is overly incentivized by the federal government and motivated by a problem they don't believe exists (climate change). Renewable energy systems may then

threaten not only landscape attachments, but also ideological allegiances, political divisions, and commitments to fossil fuels industries.

Though uncertainty over the longevity of the federal Production Tax Credit has generated uncertainty for US developers and has slowed down wind energy development, the global trend of renewable energy will only continue to increase (GWEC, n.d.(b)). In the US, market demand for green electrons and the Obama administration's emphasis on clean energy systems will continue to drive developments like wind farms across the country. Many of these will be built in rural areas with ample open spaces, such as Converse and Natrona Counties, but developers will face challenges in these areas due to communities' conservative ideologies and emotional attachments to undeveloped landscapes. Competing claims to the 'pristine' natures impacted by wind farms must be carefully examined, and political ecology offers an approach for untangling oppositional discourses and for considering inherent power dynamics in struggles over landscapes proposed for wind energy development. As the case studies of Converse and Natrona Counties have shown, developers and planners in similar areas must not only anticipate social obstacles but also cultivate networks of support, through open processes of stakeholder engagement as well as educational campaigns about the economic benefits of wind farms. With rising demand for renewable energy, this approach will become increasingly important.

4. CONCLUSION: ETHICS AND WIND ENERGY LANDSCAPES

Using a political ecology framework, my analysis of wind energy opposition in eastcentral Wyoming has demonstrated that wind energy debates are nuanced and vary from case to case. Convergent with other scholars' work, I have shown that an understanding of wind resistance must go 'beyond NIMBY' to gain deeper insight into the claims made about wind farms' impacts on rural communities and surrounding landscapes. From my investigation of two case studies, the Chevron wind farm and the Wasatch Wind project, emerged two principle narratives: wind farms as burden, and wind farms as benefit. These narratives have revealed that many individuals feel wind farms impose upon their sense of place, and in some cases on their health and property values. However, those who support wind farms for economic reasons characterize the oppositional movement as an elitist effort motivated by the desire to protect property values and to retain a particular notion of 'nature'.

While wind energy companies bear the potential to impose on rural communities that may not want wind farms, so too do a multitude of energy companies that arguably have much greater impacts on public health and the environment – the legacy of victims from uranium mining and milling across the Colorado Plateau, and recent concerns over the impact of hydraulic fracturing on water quality both illustrate this well. In Wyoming, landscapes have been significantly transformed by a century of mineral extraction and mining. Opposition to wind energy landscapes, however, is driven by the enormous visibility of turbines, which reach heights unprecendented by traditional energy technologies. However, as my research has shown, opposition to wind energy landscapes is also driven by deeper ideological contestations over federal subsidization of renewable energies and is often connected to powerful figures and groups that are motivated to maintain the current political economy of fossil fuels industries.

Still, though rural communities benefit from wind farms economically though tax revenues, lease payments, and jobs, an obvious question of equity emerges when considering that the vast majority of the energy produced gets shipped to urban populations who are not required to experience the landscape impacts. This driver of renewable energy development can be understood as driven by 'green governmentality' consumer demand, internalized and perpetuated by 'green subjects' who demand clean energy because they have internalized it as the 'correct' environmental behavior. However, as Rutherford and others have pointed out, this type of green consumerism is problematic because it does not address the consumption behaviors that are arguably the root of the world's environmental problems. Renewable energy development is driven also by large businesses seeking profit – wind farms wouldn't get built otherwise – also operating within the capitalist political economy.

Enmeshed in the larger issue of global climate change, the question of how significantly renewable energies contribute to carbon emissions reductions should also be considered. Sociologist Richard York has shown, for example, that each unit of non-fossils-generated electricity produced over the last fifty years has displaced less than one-tenth of a unit of fossil fuel-derived electricity (2012). He thus concludes that, if the goal is to reduce use of fossil fuels, the implementation of a carbon tax would be much more effective at suppressing fossil fuels (and thus emissions) than are current policies to encourage more renewable energies. Technological fixes such as renewable energy, hybrid cars, and geoengineering will not be sufficient when consumption is the key issue, and may not be ethical. An employee of Wasatch Wind touched on this issue, which was surprising given that this person made a living by developing wind farms:

"I'm conflicted. I see this as a gateway, I don't see it as the answer. I see renewables as a gateway, eye-opening that we need to do something different. Because solar, I mean,

solar isn't tall but it is expansive and you just rip everything out below it. That would be one area I'd probably agree with [the NLRA] on. Just that the landscape, a bit of the landscape and a bit of the acreage that it takes. But you know, we have this voracious need of energy, everybody likes their iPads and their flatscreen TVs. And maybe if you have to look at it, you won't use so much of it, so you don't need to build as much, you know?"⁸⁹

If consumption is the problem, perhaps Americans should have a more direct connection with individual energy consumption – for even more visibility of the resources and technologies that provide us with our electricity. Wind energy is arguably the most visible form of energy available to us, and perhaps this is an unrecognized benefit of wind farms: they directly represent the amount of energy we consume. In this way, wind farms prevent us from being divorced from the realities of our consumptive lifestyles. Pasqualetti has made this argument, proposing that because electricity itself is invisible and clean, it does not inspire connection to the resources that procured it and instead "misleads the public by suggesting that the environmental costs of electricity are less than they actually are." He argues thus that we should "value wind-power landscapes as benign reminders that the conveniences we enjoy and the lifestyles we lead have attendant costs…This may be, after all is said and done, the most important reason to develop wind energy" (2001).

So, then, should industrial-scale wind farms be located next to urban centers, where the majority of their power will be consumed, instead of in rural areas where power demand is drastically lower? Though this would also alleviate transmission difficulties – one of the largest, if not the largest obstacle for wind farm development in Wyoming – wind farm development in or proximal to urban areas is unlikely given the current technology and wind resource geographies.

⁸⁹ Interview on Mar. 8, 2013.

Still, industrial wind farms offer significant economic opportunities for struggling rural communities. Unlike the boom and bust cycles of fossil fuels economies, wind energy could provide a more stable source of income for both county governments and for individuals. As such, county planners might enlist their constituencies in deciding whether (and where) large-scale wind farms are desirable upon local landscapes. However, most counties – especialy those without zoning – do not possess this authority, such as Converse County.

Beyond indirect (albeit significant) benefits such as tax revenues, only employees of the wind company and those individuals privileged with large land holdings are usually able to reap direct financial benefits from wind farms. To disperse benefits more widely, some companies have initiated 'good neighbor payments' or 'community benefit provisions' to individuals living close to wind farms but who do not have suitable land for turbines. However, this approach has caused some problems, since the decisions about who is eligible for these benefits have been shown to be at times highly contested (Bristow, Cowell, and Munday, 2012). A recent report by the National Resources Defense Council argues that economic benefits should be more widely distributed across communities and highlights a program in Sherman County, Oregon, where every household receives an annual royalty payment of \$590 (Druckenmiller, 2012), enabling all residents to share in the revenue stream of the wind farm. Some studies have also shown that community-owned wind farms are more socially accepted that developer-owned wind farms (Warren and McFadyen, 2008). Possibilities for how developers might arrange community benefit programs are numerous, and additional creative options may emerge in the coming years that could alleviate some social opposition.

Many researchers suggest that a potential solution to opposition lies in a participatory approach in which communities are actively engaged and consulted throughout the wind farm

planning process (Dimitropoulos and Kontoleon, 2009; Eltham, *et al.* 2008; Leitch, 2010; Phadke, 2011, Swofford and Slattery, 2010). Such an approach might take the form of a citizens' advisory board, in which local residents would be appointed to represent the community's concerns and interests in the land proposed for development, as well as provide liaisons that could disperse accurate information throughout the community (Stafford and Hartman 2012). Still, some scholars wonder if, in the current capitalistic system, "do isolated rural communities possess real agency in determining their own economic or political destinies?" (Malin and Petrezelka, 2010:1198). Even if some do, this would require a somewhat unified community voice, which often does not exist, as illustrated in the case of Converse County.

What remains to be seen is whether opposition is truly a result of a "democratic deficit" (Hindmarsh and Mathews, 2008), or if there are greater underlying attitudes towards wind power, and more generally toward renewable energy and environmentalism, that may in the end undercut genuine attempts by developers to include communities in planning processes. Drawing from cultural theory, West, Bailey, and Winter (2010) have shown that the propensity to accept or deny renewable energy facilities may be based on individuals' belief systems and worldviews and thus may be less malleable than is thought by policymakers and developers. There may also be larger forces at work – for example, a group of rightwing organizations, including Americans for Prosperity and the American Legislative Exchange Council (ALEC), have waged a national fight against renewable energies like solar and wind, from introducing legislation to fight state renewable energy policies to manufacturing opposition and building public opposition (Goldenberg, 2012). Examples abound in the scholarly literature documenting conservative thinktanks' hugely funded efforts to thwart climate science, policies, and mitigation efforts such

as renewable energy technologies (see for example: Jaques, Dunlap, and Freeman, 2008; Oreskes and Conway, 2010; Dunlap and McCright, 2011; Jacques, 2012; Jacques and Dunlap, 2013).

Still, there may be good reasons to limit renewable energy developments to certain areas deemed acceptable by the majority of the population. Author Bill Bryson recently cautioned that poorly placed wind farms have resulted in a public less willing to work to fight climate change (Gray, 2012). The Chevron Casper Wind Farm in Natrona County provides an example of a poorly placed wind farm that has elicited negative public perceptions. The ongoing battle in the Northern Laramie Range, where many local residents *are* supportive, presents another perspective. As this case study demonstrates, public opinion may be difficult to accurately measure when a powerful opposition group has the resources to speak loudly and persistently.

In the tradition of political ecology, I have examined wind farm opposition in east-central Wyoming with explicit consideration of relations of power. I have shown that multiple forces are at work on rural wind energy landscapes. Transnational corporations, national policies and incentives, urban consumer demand, political ideologies, and competing notions of 'nature' all play out on the wind energy battlefield. While many individuals are supportive of wind energy development for the financial opportunities it provides, others feel that the placement of turbines pose threats to health, property values, cultural values, the state's economy, and residents' sense of place and rural identities. Power relations in wind energy opposition can be considered part of the "regional political ecology of the rural American West," (Walker, 2003) as ongoing land ownership change and rural gentrification rapidly transform social dynamics and landscape values in this region. As shown in the Northern Laramie Range case study, opposition to wind energy in the foothills, despite much local support, is indicative of this larger rural restructuring trend. This project has demonstrated that not only are power dynamics at work in rural,

industrial-scale wind energy development, but within the opposition movements themselves. Deeper understanding of these nuances and relations of power, as well as consideration of the logic and equity of developing industrial renewables facilities in isolated, rural communities – will help anticipate and mitigate future opposition. More importantly, these considerations could contribute to developing more ethical decision-making processes for determining the how, where, and why of wind energy landscapes.

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Appendix A: Interview Guide – Landowners in Converse and Natrona Counties

1. How long have you lived in Converse County?

2. How did you first get involved in the Wasatch Wind issue? Will you have turbines on your land?

3. Why you do you believe the project is being opposed?

4. Can you describe the planning process for siting wind farms in Converse County?

5. Do you believe there is enough opportunity for public input?

6. Do you believe Wasatch was transparent throughout their process?

7. In your opinion, were any of the previous wind farms developed in Converse or Natrona Counties unfairly permitted or sited? Do you think most residents would agree with you?

8. What do you believe the NLRA's main issue is with the Wasatch project?

9. How do you feel about renewable energy more generally?

10. Do you believe renewable energy is an important component of clean air? What about climate change mitigation?

11. What to you is the main benefit of wind energy development?

12. What do you think, aesthetically of wind turbines? Do they bother you at all in any way?

13. Do you believe there are some places wind farms should and should not be sited?

Appendix B: Interview Guide – Converse County Commissioners

1. How long have you lived in Converse County?

2. How long have you been a commissioner? Have you been a commissioner through most of Wasatch Wind's process to obtain a permit for Pioneer Wind Parks?

4. What is your level of involvement in wind farm planning and permitting?

5. Can you please describe the current process that wind developers must go through in order to obtain a permit for building wind farm in Converse County?

6. I am curious as to how much community input was solicited for the Pioneer Wind Parks permit, if any. My study looks at the positive and negative impacts (mostly focused on social and economic, not environmental) of industrial scale wind energy in rural communities. Any thoughts on this?

7. In general, can you describe the current opportunities that exist for community members to give their input in wind farm planning?

8. In your opinion, why did the Pioneer Wind Parks proposal see so much more opposition (ie, the start up of the Northern Laramie Range Alliance) than the wind farms that already exist in Converse County?

9. Do you think if community members had been provided more opportunities to be involved in the permitting process that there would have been less opposition? Do you see changes that should be made along these lines?

10. In your view, what is the main cause for controversy over the Pioneer Wind Parks proposal? Is there a way this may have been avoided?

11. Are you aware of the permitting processes that other counties in Wyoming have implemented for wind farms? How do these compare to Converse County's current regulatory system? I understand that some counties have implemented moratoriums on new wind farms – has Converse County considered this?

12. The NLRA found with their survey that over 70% of county residents are opposed to the Pioneer Wind Parks proposal. Does this sound accurate? Overall, do you think county residents view industrial-scale wind farms as a positive or negative development in Converse County? Why?

13. At the county planning level, are there any new rules or regulations that are in the works to make it either easier or more difficult for wind farms to be permitted in Converse County?

Appendix C: Interview Guide – Employees of Wasatch Wind

1. How long have you been working on developing a wind farm in Converse County?

2. How does this length of time compare with other wind farms you have developed?

3. Can you describe the nature of the opposition that you have seen with the Pioneer Wind Parks proposal?

4. Why do you think there was so much more opposition to this wind farm than to the others that currently exist in Converse County?

5. Can you describe the regulatory mechanisms you have had to go through in Converse County?

6. Can you describe the level of community education, outreach, and participation that you have solicited in Converse County?

- 7. In your opinion, has this helped or not?
- 8. In retrospect, would you have done anything differently?

9. In your view, what is the chief complaint of those opposed to the wind farm, including that of members of the Northern Laramie Range Alliance?

10. What do you think the future of wind development in Wyoming holds?