Community Acceptance of Utility Scale Wind Developments: The Role of Environmental Values and Justice in the San Gorgonio Pass, California

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Spring 2015

I would like to thank Dr. Hilary Boudet, Dr. Brent Steel, and Dr. Andrew Valls for their support and guidance in this research endeavor

This research was supported by the grant “Climate Change Adaptation, Sustainable Energy Development and Comparative Agricultural and Rural Policy,” National Institute of Food and Agriculture (NIFA), United States Department of Agriculture (2013-2016).
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1. Abstract

To face large scale environmental challenges like climate change, the Obama administration has turned to renewable sources of energy to offset the carbon emissions that result from traditional energy sources like coal and natural gas. However, finding suitable locations for large-scale renewable energy developments has proven difficult due to strong opposition from local communities. The common explanation of these responses, often referred to as NIMBYism (Not In My Backyard), does not adequately address the multitude of factors that lead to community opposition, and is not very useful in addressing community concerns from a policy standpoint. Using a case study of community response to wind development siting in the San Gorgonio Pass of Riverside County, California, this study outlines a framework in which community concerns about the development’s impact on the environment, both anthropocentric and ecocentric concerns, lead community members to involve themselves in the siting process. This involvement then turns to open opposition when individuals feel they have suffered an injustice regarding their access to the siting process (procedural justice) or the distribution of costs and benefits (distributional justice). This two-step framework offers an explanation of community opposition in the San Gorgonio Pass in order to expand understanding of best practices for siting utility scale wind developments.

2. Introduction

In recent years the Obama administration has turned to renewable sources of energy to offset the carbon emissions that result from traditional sources like coal and natural gas. Siting policy challenges have hampered this transition. Finding suitable locations for large-scale renewable energy developments has proven difficult due to strong opposition from local communities. The San Gorgonio Pass, located in the Coachella Valley approximately 100 miles
east of Los Angeles, is home to the oldest and third largest wind development in the state. California has been a national, and even global, leader when it comes to tackling environmental issues. This was certainly true in the late 1970’s and early 1980’s when shocks to oil prices that resulted from political conflict in the Middle East led the Carter Administration to promote the development of alternative energy sources. California led the world in wind energy development for much of the 1980’s and 1990’s, and today it is second only to Texas in installed capacity. The San Gorgonio Pass, which was home to one of the first demonstration wind farms that resulted from the push for new energy sources, provides a unique picture of how public opposition to wind energy has evolved since the late 1970’s.

Lack of social acceptance of utility scale wind is considered to be one of the most significant barriers to development (Strachan and Lal 2004). It is important to understand what motivates communities to oppose development in order to inform siting policy and facilitate the expansion of a significant source of renewable energy. The vast majority of current literature agrees that NIMBYism is too simple an explanation for community opposition to utility scale wind development. In gaining community acceptance, developers need to reach agreement with both local homeowners and local city and county officials on the development site (Wüstenhagen et al., 2007). This study is primarily concerned with the factors that trigger mobilization against wind energy. Active mobilization in opposition includes petition writing, attending public hearings, and letter writing. By identifying these factors, developers can proceed with the siting process in a way that promotes social acceptance of wind energy (D’Souza and Yiridoe 2014).

Today, The United States receives approximately 4.4% of its electricity from wind farms (Energy Information Administration 2015). California received about 6.97% of the state’s gross energy power from wind (California Wind Energy Association 2015). California’s Renewable
Portfolio Standards require it to receive 33% of its energy needs from renewable sources by the year 2020. The San Gorgonio Pass alone has an installed capacity of 683 MW (11.5% of the state’s capacity) and is the third largest wind development in the state. The site currently has 2,159 turbines, down from nearly 4,000 at its peak. As available land has been developed and zoning ordinances prevented further expansion, the wind industry has turned to “repowering” projects where many older turbines are replaced with fewer, larger, and more efficient models (California Wind Energy Association 2014). Since expansion slowed and repowering began, local opposition to wind development has quieted, but local residents who lived in the area through the development process are still vehemently anti-wind. This case study examines the factors and processes that led to community opposition in the San Gorgonio Pass by presenting an overview of the case and establishing a framework in which community concerns about the development’s impact on the environment and perceived injustice in the siting process lead to mobilization. This study focused on the time period ranging from 2008 to present, but concerns related to past development (from the early 1980’s) played a role in interviewee’s opinion about more recent development and concerns from that period were therefore included in the analysis. This two-step framework offers policy makers a clear picture of how the siting of utility scale wind projects can address the concerns of local community members.

3. Literature review

Wind power has become one of the most economically viable sources of renewable energy (Kick and Smith 2010). Surveys show that there is a high level of public support for wind energy; however, proposals have often been met with strong opposition at the local level (Devine-Wright 2013). The reasons for conflict are complex and difficult to understand, but it is important to tease apart the different factors that lead to community opposition from the general
idea of NIMBYism. Active mobilization is defined in terms of collective actions taken by local communities such as petition writing, attending public hearings, and letter writing (McAdam and Boudet 2012). Past literature has identified multiple reasons for local opposition to utility scale wind farms, including view pollution (Haggett 2011), interest in environmental issues (Ek 2005), inequality (van der Horst and Toke 2010), and access to the decision-making (Jobert et al. 2007, Haggett, 2011). In addition to this, Hall et al. 2013 identified four main themes (trust, distributional justice, procedural justice, and place attachment) as reasons for opposition.

This study contributes to this past research by demonstrating how values held by local community members, both those related to the environment and those related to justice in the siting process, play a role in community opposition. This study found that initial interest in development was triggered by concern about environmental impacts, both in terms of the visual impact on the people who lived in the area and in terms of the impact on wildlife. This initial concern turned to strong opposition when individuals within the local communities of Snow Creek and the Painted Hills perceived injustice in the siting process, both regarding procedural justice and distributional justice.

**Environmental values:**

Human relationships with nature are often governed by ethical underpinnings. Anthropocentric and ecocentric values associated with the environment can lead to concern about the impacts wind development will have on the environment. Anthropocentric values raise concern about the impact development may have on the surrounding environment in terms of its use to people—such as view pollution or disruptive noise. In contrast, an ecocentric view places an intrinsic value on nature separate from the benefits people derive from it (Kortenkamp and Moore 2001). Anthropocentric impacts on the human environment are much more personal in
nature (Abbott 2010). The idea of an intrinsic value is more difficult to grasp, but it is substantial enough to be the foundation of the scientific field of conservation biology and is expressed again and again by people who feel morally responsible to other species that share their environment (Worster 1988).

One of the factors that contributes to community mobilization against renewable energy facility proposals is the impact these utility scale developments have on the local environment. There is widespread public opinion that wind energy is “green energy” and is good for the environment (Abbasi 2013); however, there are some individuals who are deeply concerned about the impact wind turbines have on local wildlife. The success of wind energy depends on its ability to maintain a positive public image and negative impacts on wildlife hamper the ability to maintain this image. Therefore, it is critical that developments follow proper siting policy to minimize the negative impacts on wildlife. Literature that has been published on the effects of utility scale renewable energy projects on wildlife is not comprehensive. Of the peer reviewed literature on renewable energy, less than 7.6% assess environmental impacts and less than 1% examines the environmental risks associated with it (Gill 2005). There have been published peer reviewed articles on the impact of wind farms on birds, and some publications of the impact on bats. But other than these two narrow areas of study, there has been little research of the impact of wind on non-volant species.

Justice values:

Procedural justice can be used to characterize community sentiment regarding the fairness of the siting process and the degree to which members feel their voice is heard (Ottinger 2013). It is important for the local community to be engaged in the siting process and to feel that they have been consulted (Wüstenhagen et al., 2007) to prevent perceived unfairness.
Community members and other opposition stakeholders, such as regional environmental groups, may change their oppositional views if they feel that they have access to a fair siting process in which their views and concerns are taken seriously (Gross 2007, Wolsink 2000, 2007, Swofford and Slattery 2010). In siting utility scale wind developments, communities may be excluded from the decision making process or individuals may not be given adequate information about the siting process or their options for engagement (Hindmarsh 2010).

In addition to procedural justice, it is important to address concerns about distributional justice (Schlosberg 2007). Wind energy has been described as environmentally beneficial and locally destructive (Smith 2003, Kempton et al. 2005, Warren et al. 2005). Utility scale wind takes up vast amounts of space and impacts certain environmental factors around communities (such as the local viewshed). It is important for developers to ensure that developments are not taking advantage of the disadvantaged members of the population. Facilities that are sited on land that easy to purchase and affordable in low income areas may result in unintentional discrimination as the people who live in these areas do not have access to the resources that would effectively enable them oppose projects (Kaswan 2003). Community members need to feel that there is a just and fair distribution of the costs and benefits associated with wind development (Wüstenhagen et al., 2007). When it comes to concern about property values, most studies are contradictory. Some have shown that wind development does not reduce value (Sterzinger 2003), while others show that it can (Hoen 2011). Regardless if development impacts property values, local homeowners may perceive it as a threat and an injustice. In addition to property values other distributional concerns include viewshed pollution (Devlin 2005, Haggett, 2011) and noise (Pedersen and Persson 2007). Another issue with the distribution of costs and benefits of wind energy development involves the environmental impacts on wildlife.
Dramatically impacting the local ecosystems wildlife depends on is considered to be an injustice by residents who value conservation.

Mobilization framework:

In the context of the San Gorgonio Pass, this study combines theory developed by the past literature into a conceptual framework that describes community opposition to utility scale wind development. Initial community involvement can be triggered by concern about the local environment, both for its value to local residents and its value for ecological purposes. This initial concern can turn to opposition mobilization when individuals feel they had suffered an injustice, either through procedural justice or distributional justice at some point during the siting process. The framework below depicts this process. This two-part mobilization framework outlines how different environmental and justice values observed in the San Gorgonio Pass influence public opinion regarding utility scale wind development.

Figure 1: Conceptual framework of community mobilization against utility scale wind development in the San Gorgonio Pass, California.
Methods

This case study utilized a qualitative analysis of news articles, editorials, and interviews to gain a clear understanding of the factors and process that led to community mobilization in the San Gorgonio Pass California. The case study was conducted at the county level (unit of analysis) in order to more easily compare results with existing U.S. Census data. The San Gorgonio Pass in Riverside County, California, was selected for this case study, as it is one of the largest and oldest wind developments in the Western United States.

Coding coverage of the proposal in local newspapers identified key players and important events. Articles and documents were identified and compiled using key search terms (wind farm, wind energy, wind turbine, windmill, wind power) within the online database Access World News. Documents were then separated into relevant news articles and relative editorials and letters (this process took place Sept 2013- Jan 2014). These were then coded to identify key individuals, organizations, developments, and events (this process took place Jan 2014-May 2014).

Local newspapers (The Press Enterprise and Desert Sun) were examined for articles and letters to the editor that related to the wind development in the San Gorgonio Pass. The total number of documents totaled 49 articles and 7 editorials within a time period of 1992 to 2013. Selected documents were then coded to determine important players, events, and projects. Projects that occurred after 2008 were of primary focus, these included the Dillon Wind Power Project (2008), Mountain View 4 (2011), the Garnet Wind Project (2008), and the Edom Hill repower project (2008). Letters to the editor and quotes from news articles were then coded to identify major themes of local support and opposition. Documents submitted to local city and
county officials (19 in total), provided by interviewees, were also examined and coded to identify community concerns regarding wind development in the San Gorgonio Pass.

Qualitative interviews were used as the primary data for the San Gorgonio Pass case study. Those individuals mentioned in multiple news articles were contacted for interviews (45 individuals were contacted) during the fall of 2014 and winter of 2015. Of the 45 individuals who were initially contacted, 18 responded or referred me to another qualified individual who would be willing to participate in an interview. Four phone interviews were conducted in addition to 14 in person interviews in Southern California. Interviewees included 2 city and county officials, 3 biologists, 3 BLM officials, 2 industry participants, 3 environmental advocates and 4 local community opposition members (refer to Appendix A for complete table of interviewees). Interviews ranged in length from 20 minutes to three hours, with an average length of one hour and fifteen minutes. Interviews were semi structured and focused around community mobilization around wind development. Questions prioritized interviewee’s involvement in the siting process, their past involvement in other community issues, and their opinions on environmental issues (refer to Appendix B for complete list of questions). The 18 interviews were transcribed and coded to identify major themes to opposition and support in the case of wind development in the San Gorgonio Pass. These findings were guided by theory covering environmental values, procedural justice, and distributional justice.

The following codebook was used to code comments from interviews:
From these extensive codes, comments were grouped further into the following categories:

<table>
<thead>
<tr>
<th>4 Themes:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Anthropocentric Values</td>
<td>View</td>
</tr>
<tr>
<td></td>
<td>Noise</td>
</tr>
<tr>
<td></td>
<td>Quality of life (loss of what residents had come value about their home)</td>
</tr>
<tr>
<td></td>
<td>Recreation/tourism</td>
</tr>
<tr>
<td></td>
<td>Poor maintenance (broken wind turbines, blade throw)</td>
</tr>
<tr>
<td></td>
<td>Fires (early wind turbine models caught fire)</td>
</tr>
<tr>
<td></td>
<td>Cultural/tribal/artifacts</td>
</tr>
<tr>
<td></td>
<td>Blinking lights</td>
</tr>
<tr>
<td></td>
<td>Health issues/safety (dust, valley fever, rodent infestations)</td>
</tr>
<tr>
<td><strong>2) Ecocentric Values</strong></td>
<td>Wildlife (concern about wind turbine impacts on wildlife)</td>
</tr>
<tr>
<td></td>
<td>Preservation/conservation</td>
</tr>
<tr>
<td></td>
<td>Avian (concern about wind turbine impacts on birds)</td>
</tr>
<tr>
<td></td>
<td>Bats (concern about wind turbine impacts on bats)</td>
</tr>
<tr>
<td></td>
<td>Rare/threatened/endangered species</td>
</tr>
<tr>
<td></td>
<td>Intact ecosystem/habitat destruction</td>
</tr>
<tr>
<td></td>
<td>Ground vibrations (impact on animals like burrowing owls and desert tortoise)</td>
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<tr>
<td>3) Distributional Justice</td>
<td>Property value (loss of value)</td>
</tr>
<tr>
<td></td>
<td>No direct benefits (in terms of jobs and electricity)</td>
</tr>
<tr>
<td></td>
<td>Loss of cultural/tribal/artifacts (unfair impact on local values)</td>
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<tr>
<td></td>
<td>Health/Valley Fever</td>
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<tr>
<td></td>
<td>Ruining the/our environment/wildlife viewing</td>
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<tr>
<td></td>
<td>Inefficient (didn’t deliver the electricity the wind turbines promised)</td>
</tr>
<tr>
<td>4) Procedural Justice</td>
<td>Science is poor/poor monitoring (didnt trust in the science)</td>
</tr>
<tr>
<td></td>
<td>Corruption/paid off (percieved corruption from campaign funds donated by developers)</td>
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<tr>
<td></td>
<td>Lack of access to decision making process</td>
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<tr>
<td></td>
<td>Felt threatened/humiliated/intimidated</td>
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<td></td>
<td>Lies/lack of trust (couldn’t trust in a fair process)</td>
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<td></td>
<td>Lack of information, misinformation, no public notice of meetings, poor communication</td>
</tr>
<tr>
<td></td>
<td>Financial inequality (couldnt finance opposition)</td>
</tr>
<tr>
<td></td>
<td>Lack of political connections (decisions were made by people opposition didn’t have access to)</td>
</tr>
</tbody>
</table>
4. Case Study of the San Gorgonio Pass

The following sections outline the history of wind development in the San Gorgonio Pass, the factors that lead to environmental concern (both anthropocentric and ecocentric environmental values), and the factors that lead community members to perceive procedural and distributional injustice in the siting process.

Section A:

Background of Wind Development in the San Gorgonio Pass:

The regulations and siting policies of utility scale wind farms have improved dramatically since they were first developed in the late 1970’s and early 1980’s (Gipe 1995). When the wind industry was in its infancy, policies ensured that developers were paid subsidies based on rated capacity rather than the actual energy production of that turbine. The subsidies for some of the early turbines could prevent developers from losing money regardless of the turbines electricity
production. After the initial boom in the early 1980s, federal industry assistance programs were not renewed in 1986. Due to the lack of funding, projects that were already an eyesore to some members of the public fell into further disrepair. This was especially the case in the San Gorgonio Pass, which forms the entrance to the tourism dependent City of Palm Springs. The disrepair and abandonment of the early wind farms in the Pass resulted in the public viewing wind energy as nothing more than a scam that provided tax breaks for the rich (Gipe 1995). This public perception damaged relationships between city and county officials, community members, and wind energy developers and created local opposition to further development (Righter 2011). The San Gorgonio Pass in Southern California was one of the first examples of utility scale wind development in the world and provides one of the clearest examples of community opposition to wind (Throgmorton 1987, Pasqualetti 2005).
Figure 2: Arial view of the San Gorgonio Pass. White coloration depicts areas that have wind development and the red area depicts the Cabazon Ridge Wind Farm that was proposed but not developed.

Early developers were under the mistaken impression that widespread public support for renewable energy would ensure minimal local opposition to wind turbines (Gipe 1995). In the early days of development, siting policy prioritized the windiest places as these were comparably empty and would not compete with other land uses. Initially, the challenge of installing wind turbines turned out to be their highly visible nature; the people who lived in the area witnessed the many technological failures of a fledgling industry that provided few, if any, local benefits. The early days of broken turbines, oil leaks, noise, and dust from construction served to foster resentment among local community members (Gipe 1995).

This resentment eventually led to the City of Palm Springs suing the US Department of the Interior. Riverside County held public hearings, financed a public survey, and created a general plan document that incorporated Wind Energy Conversion Systems (WECS) into a designated Wind Energy Resources Zone that ensured the turbines could not encroach on Palm Springs. This document applied to all future wind development in the Pass. Commercial Wind Energy Conversion Systems (WECS) permits are granted by Riverside County. The first ordinance was established in 1982 and amended 11 times until it was finalized in 1995. The final ordinance states that WECS arrays are permitted in W-E zone and W-1 zone so long as they have over a 100kw capacity and they are granted a WECS permit. All applicants are required to hold a public hearing (and notify all homeowners within half a mile - 2640 ft.) of the public hearing. The county planning commission is in charge of presiding over the public hearing.
In 1999 the Palm Springs annexed county property where much of the wind development had taken place. This led direct benefits in the form of tax revenue for the city and allowed the city to issue Conditional Use Permits (CUPs), which require developers to maintain their turbines. In addition to the land acquisition and the designation of the Wind Energy Resource Zone, the local College of the Desert also launched the Desert Energy Enterprise Center, which trains technicians in wind turbine operation, maintenance, and safety. The efforts to protect the community of Palm Springs from view pollution and the direct benefits that the city received ensured that opposition (from the community of Palm Springs) died down.

A 1985 survey that was commissioned by Riverside County found that despite the negative publicity, the public was not especially interested in the wind development (Pasqualetti 2005). However this survey focused mainly on residents of Palm Springs (which is east of the main development area) and did not include many members of the small rural communities outside of the city who lived in close proximity to the turbines.

Small rural communities outside of Palm Springs still had to contend with the installation of more turbines. The communities of Snow Creek and the Painted Hills vehemently opposed any further construction, and viewed developers, city officials, and county officials with distrust. In 2004 one of the most controversial wind farms, called the Cabazon Ridge Wind Farm, was proposed for 1,800-acres near the village of Snow Creek (which is nestled at the base a San Jacinto Mountain about ten miles west of Palm Springs). Enron Wind had proposed the same parcel of land for development in 1999. As a result of opposition efforts, the area was designated as a National Monument in 2002 and Enron’s proposal failed. In 2004 the property owner filed a lawsuit against the county to allow development regardless of the scenic designation. The local residents were eventually successful in their opposition to the wind
farm, although the development hasn’t been completely set aside yet. Bob Gates, a senior vice president with Enron Wind (2002), said “I understand that some people would rather not look at windmills, but as a society, you can't stop progress because three or 10 people don't want it" (Henry 2002, The Press Enterprise).

Figure 3: Timeline of wind development in the San Gorgonio Pass

At one point in time there were over 4,000 wind turbines in the pass, but as development expanded local zoning rules placed limits where turbines could be installed. Eventually, the San Gorgonio Pass no longer had any new land to offer and developers turned to repowering (replacing existing turbines with larger more powerful ones) in order to increase capacity. In spite of the lack of new development, local homeowners and environmentalists from outside of the area are still concerned about the wind development. 18 interviews were conducted in order to identify what factors and processes led to opposition. The following two themes outline this study’s findings regarding the concerns local residents had about environmental values and the
perceived injustice that triggered community mobilization in opposition to wind development in the San Gorgonio Pass.

Section B:
Theme 1: Community involvement was triggered by environmental values (both anthropocentric environmental concerns).

Going back as far as 1987, when windmills were first introduced into the San Gorgonio Pass, local residents perceived the wind development in the pass as degradation of their environment and community (Throgmorton 1987).

Figure 3: Distribution of concerns about environmental impacts

The above chart shows the division of different value sets of the 18 individuals who were interviewed for this project. A total of 205 comments were coded. The concerns about ecocentric
and anthropocentric values were fairly evenly divided with 57% of the comments expressing concern about ecocentric impacts and 43% of the comments expressing concern about anthropocentric impacts.

Figure 4: Observed anthropocentric concerns about the environment.

The anthropocentric values (composed of a total of 87 comments) were divided into five main categories. The majority of comments on anthropocentric concern revolved around the view pollution caused by turbines. Other concerns included potential impacts on health (such as the dust from construction), culture (such as the loss of artifacts), noise (caused by the sound the blades made when they turned), and the “other” category, which mainly incorporated general concerns about quality of life.
Figure 5: Observed ecocentric concerns about the environment

Most ecocentric comments focused on the impact to wildlife, such as the loss of birds and bats, but also focused on potential harm to nonvolant wildlife such as the desert tortoise. Ecosystem stability and the loss of habitat was another concern that was mentioned frequently. Vulnerable species such as those that has been listed as threatened, endangered, or rare were also mentioned frequently in interviews. The “other” category was composed of comments that voiced a general concern about preservation and conservation concerns. Not all ecocentric comments were focused around the value of the environment separate from its use to humans, concerns about wildlife, the largest category, include concerns about the loss of birds and bats in terms of their value to local homeowners as a fixture of their identity with their desert community. For example, Joyce Manley, a local homeowner, said “I used to sit out on the porch in the summertime in the evening and watch the swarms of bats. I used to see so many red tail hawks” (Interview 4).

From the 18 individuals who were interviewed, five were identified as non-local opposition and five were identified as local opposition. Both groups were concerned about the
environment, but the non-local opposition was much more concerned about ecocentric values while the local opposition was concerned about both anthropocentric and ecocentric values.

Ecocentric values for the environment are framed in terms of the intrinsic value of nature. In interviews, non-local individuals primarily commented on concerns about habitat destruction, ecosystem stability, and wildlife mortality such as bird and bat mortality (ecocentric values). The local opposition was primarily concerned about the anthropocentric attributes of their environment. In interviews, local opposition expressed concern about the environment being impacted in terms of viewshed pollution, noise from the turning of turbine blades, and the loss of wildlife viewing (anthropocentric values).

The five local interviewees were all homeowners who expressed clear concern about impacts to their local environment and the five non-local interviewees were biologists with UC Riverside, the BLM, and the FWS who expressed concern about the environmental impact of turbines primarily related to ecological degradation. These two sets of five interviews were coded into four categories (ecocentric values, anthropocentric values, distributional justice concerns, and procedural justice concerns) using an initial open coding scheme and a secondary closed coding scheme (see methods section for codebook). The total number of comments coded for non-local individuals was 111 and the total number for local individuals was 137 for a total sample size of 248 comments. These two groups were then compared in terms of the proportion of comments per interview related to ecocentric and anthropocentric values (below), and the proportion of distributional and procedural justice concerns (Section C).
Figure 6: Comparison of anthropocentric and ecocentric values for non-local and local opposition.

These five non-local interviews were coded for a total of 57 comments. These five individuals were biologists who worked either for UC Riverside (3 interviewees), the Fish and Wildlife Service (FWS) (1 interviewee), or the Bureau of Land Management (BLM) (1 interviewee). It is clear from the above chart that non-local opposition was not very concerned about anthropocentric values when it comes to impacts on the environment. It should be noted that many of the scientists that compose these ecocentric interviewees do not live in close proximity to the wind turbines, unlike the communities of Snow Creek and the Painted Hills. It may be that their distribution of environmental concerns would change if they had to live with the impacts to their own environment. (Interviews 1,2,6,9,10)

Five local interviews were coded for a total of 70 comments. These individuals were composed of 4 local homeowners and one local activist. It is clear from the above distribution that local opposition, while focused more on anthropocentric concerns, were also concerned about ecocentric concerns such as the loss of wildlife. (Interviews 3,4,7,11,17). It is difficult to distinguish between ecocentric and anthropocentric comments regarding wildlife, since wildlife can be valued in terms of its beauty to people rather than an intrinsic value separate from human
benefits. The high level of ecocentric comments may reflect anthropocentric individuals valuing wildlife in terms of their own benefit.

It is important for policy makers to understand the complex set of values individuals associate with their environment. In the policy process developers need to demonstrate an appreciating for these concerns if they are to convince local communities and outside scientists and environmentalists that their voices are being heard in the policy process. In the case of the San Gorgonio Pass, early developers failed to do this. For example, Brad Adams, president of Whitewater Energy 2004, said "Developers in the past have just gone ahead and just bullied through everyone" (Osterwalder 2004, The Press Enterprise).

Section C:
Theme 2: Opposition was triggered by what local community members perceived to be injustice regarding distributional justice and procedural justice.

While initial concern about the environmental impacts the wind development would have on the local environment, strong opposition was triggered by perceived injustice regarding access to the siting process (procedural justice) and the distribution of costs and benefits associated with development (distributional justice). Concern about the impacts on the environment (anthropocentric and ecocentric) may trigger community interest and mobilized the community against wind development, but when individuals perceive an injustice in the siting process, this involvement can turn into vehement opposition and break down channels of communication so that compromise becomes difficult. The main injustices described by interviewees in this study included distributional and procedural justice concerns.
Figure 8: Distribution of concerns about injustice

Of the 18 interviews that were conducted, 162 comments regarding justice concerns were coded. Of those comments, 74% expressed concern with procedural justice in the siting process and 26% expressed concern with distributional justice.
Figure 9: Observed distributional justice concerns

**Concern about property devaluation, the lack of direct benefits, and direct impacts:**

Interviewees demonstrated concern about a lack of distributional justice regarding property devaluation (didn’t believe the studies that said their homes were worth the same amount), lack of cost effectiveness (they didn’t produce the energy they promised), lack of direct benefits (the energy didn’t go directly to the community), and lack access to information about the development. For example, Terry Weiner, Staff member of the Desert Protective Council (interview 7), commented: “The wind projects don’t produce as much energy as they promise, they are inefficient.” April Sall, a local preserve manager also commented: "You have a project that is benefiting a constituency 100 miles away, and it's doing all the impact in a completely different county and community that will not receive the benefits. It's an unnecessary approach, and that's the bigger issue" (Bowles 2008, The Press Enterprise).

**Impact on quality of life:** While the comparatively politically powerful community of Palm Springs was content with setbacks and tax revenues, the small rural communities outside of the city limits were not satisfied with the zoning laws. One concern that interviewees had was
public misconception about the desert which holds that if large scale renewable energy projects must damage a landscape, it should be the desert landscape, as the outside public feel it is mostly lifeless and unappealing. Those who live in desert communities strongly disagree with this sentiment. They see a stark beauty in the desert, with its unique plants, animals, and hidden oases. There is a sense of identity and pride associated with a landscape that few have a close relationship with. Residents of the reclusive communities of Snow Creek and the Painted Hills area outside of Palm Spring valued the silence, solitude, and open space the desert provided. Dr. Tasha La Doux (interview 1). Comments “Largely, there is a misconception about the desert. That it is fairly lifeless barren place. Even though it’s a very diverse place with very long lived species.”

Figure 10: Observed distribution of procedural justice concerns

**Poor science:** One concern that multiple interviewees voiced (both those with a background in science and those without), was a lack of trust in the scientific processes involved in siting (interviews 1, 2, 3, 4, 6, 11, 13). The idea of poor science came from a both a lack of trust in scientists and a belief that they were only working for wind development companies, and
the idea that there was no place for science in the decision making process. One example is from local homeowner Michele McNeill: "You are relying on studies done by scientists and biologists employed by the windmill company, how impartial can they be?" (Glick 2007, the Press Enterprise).

**Perceived corruption:** The idea of corruption came from a perceived wrong when politicians took money from wind developers. Regardless of the actual legality of this practice, opponents felt that it was wrong for local officials to take developers money when they would also make the final decision on development of the wind farm was built. “The fox is guarding the hen house” came up in more than one interview (interviews 1, 2).

**Lack of access to the decision making process:** One concern that many interviewees had concerned the lack of access to information; either regarding the impacts of wind development or the siting process and opportunities for public comments. The lack of access to the decision making process included the lack of financial resources to compete with supporters, the feeling that the decision had already been made prior to the public meetings, and the idea that they lacked the political connections and power needed to have their voices heard. There was also widespread concern with the amount of information they had access to, whether it was factual information about the wind farms costs and benefits or basic information about when and where public meeting would be held. For example, “People initially thought that the wind turbines weren’t there for energy production, they thought they were there to blow the smog back to L.A.”- Dr. Cameron Barrows (interview 10). Opponents were also concerned with timing conflicts with public meetings. If they were held on weekdays there were conflicts with work and finding child sitters, and individuals resented this lack of consideration (interviews 3,4,11)
**Personally threatened:** Opponents also told stories of feeling humiliated and scorned when they tried to voice their concerns. Threats to individuals, such as the threat to sue, were also mentioned. Mr. Starks, a local Snow Creek homeowner, said he heard one developer at a meeting say “If he gets up there one more time I’m going to sue him!” (interviews 1, 2, 3).

**Lack of trust:** Almost all opponents mentioned a lack of trust in local officials and the information that was given to them. This lack of trust was a complex issue that resulted from perceived corruption. Changes in local zoning ordinances of the years (11 times between 1985 and 1995) also led to a lack of trust in city and county officials (interviews 1, 2, 3, 4, 6, 7, 11,).

![Figure 11: Compares the distributional and procedural justice concerns of non-local and local opposition.](image)

Regarding procedural justice, both the non-locals who were concerned with primarily ecocentric values and locals who were primarily concerned with anthropocentric values shared the same procedural justice trepidations, such as a lack of trust in a fair process of siting review and the information communicated to them by officials. Distributional justice concerns were not shared by non-local opposition, who were mostly biologists studying desert ecosystems. Whereas the local opposition lived in close proximity to the wind farm developments, non-local
did not have to deal with the impact of wind turbines close to where they lived. Joyce Manley, a local homeowner (interview 4), stated: “Yeah, it has to do with noise and view. People would tell me oh those are pretty windmills, and I would say: Yeah why don’t you go out there and sit under them for about six hours. Then tell me how nice they are.” The small portion of distributional concerns mentioned by non-locals concerned worry about the impact development would have on the local ecosystem and the wildlife that lived in the area. Most of this concern was framed by non-local interviewees in terms of procedural justice (as these concerns were not taken into account in the siting process).

Mobilization Framework in Terms of Policy Implications

This study grouped findings into two main themes. The first theme notes that the opposition primarily hold two types of environmental values: Ecocentric and anthropocentric. The second theme notes that opposition was also concerned about two categories of justice in the siting process: Distributional justice and procedural justice. These finding are important factors to consider for utility scale wind development. In the case of the San Gorgonio Pass, initial community involvement was triggered by concern about the local environment, both for its value to local residents and its value for ecological purposes. This initial concern turned to mobilization in opposition when individuals felt that they had suffered an injustice; either regarding procedural justice or distributional justice at some point in the siting process. This two part framework outlines how different environmental and justice values observed in the San Gorgonio Pass in order to provide policy makers with a clear picture of the factors that must be taken into consideration when siting utility scale wind projects.
Figure 12: Conceptual framework of community mobilization against utility scale wind development in the San Gorgonio Pass, California.

Policy makers must focus on addressing the procedural and distributional justice values local community members hold in order to prevent community involvement over environmental concerns from turning into direct opposition where channels of communication breakdown. It is important for policy makers to minimize any community perceived injustice. While initial concerns about the environment may lead to community involvement in the siting process, perceived injustice will trigger direct community opposition. Community members must be given clear information and a means to communicate their concerns, it is also important for developers and elected officials to determine a general plan for the development in the early stages, and adhere to that plan as much as possible in order to avoid the appearance that they are untrustworthy.

When attempting to site utility scale wind developments, it is important to understand why some communities mobilize in opposition. Wind energy has the potential to increase the amount of renewable energy capacity in the United States, but to achieve the desired expansion developers, local city and county officials, and local residents must work together to address the
public concerns about wind development. Initial concerns about projects stem from environmental values, both those focused on anthropocentric and ecocentric concerns. Homeowners clearly value their surrounding environment and take pride in what they perceive to be the quiet beauty of the desert landscape. The treats to wildlife must also be addressed in a way that makes the science behind the decision make process transparent to those who are concerned about the impacts and resulting mitigation actions.

5. Conclusions and Policy recommendations

There is a critical need to reduce the United States dependence on fossil fuels and lower greenhouse gas emissions. Global warming is one of the greatest challenges facing policy makers today, and using renewable energy sources is one way this threat can be addressed. In the case of the San Gorgonio Pass, initial community involvement was triggered by concern about the local environment, both for its value to local residents and its value for ecological purposes. This initial concern turned to opposition mobilization when individuals felt that they had suffered an injustice; either regarding procedural justice or distributional justice at some point in the siting process. It is critical for policy makers to address concerns about environmental impacts, both in the context of anthropocentric and ecocentric values. Community members must be given clear information that is easy to access. In addition to this, developers must avoid perceived injustice. If the local community members believe they are not being given fair access to the siting process, or feel that they are being forced to bear unfair costs associated with development there is a risk of damaging future relationships and breaking down channels of communication. The two sections below outline policy recommendations for addressing concerns about the environment and injustice.

Addressing environmental concerns
Ecocentric values:

It is critical to maintain the pro environmental image of wind and solar energy in order to establish public support. The harm to wildlife that is a result of poor siting policy has the potential to damage this image. There is already siting policy in place to protect wildlife, however the scientific knowledge of the impacts of utility scale solar and wind on wildlife is lacking and these policies may not be enough to prevent harm. In order to minimize the effects more research is required to establish the full extent of these impacts and best practices must be created and implemented.

Anthropocentric values:

It is important for policy makers and developers to not disregard the value locals place on their surrounding environment. Developers need to respect the impacts wind turbines can have on individual’s sense of place, regardless of if they share that value. Sharing the benefits of wind energy generation with the local community, either through financial incentives or providing local opportunities through mitigation practices, such as a local desert community garden, will help ameliorate the impacts. Local residents lamented the fact that a local area, called the Devil’s Garden, had been lost to them in the construction process. Designating space for a new garden and funding its development is one example of an easy solution to this

Addressing concerns about injustice

Procedural justice:

1) Scientific studies on environmental impacts must be made transparent and easy to access by all those involved in the siting process. All information regarding the siting process, including available avenues of communication, must be distributed fairly to all those impacted by the development.
2) Developers and local officials should avoid perceived corruption when it comes to the siting process. Campaign contributions made by developers to local elected should be made clear and steps should be taken to assure impacted community members of a fair siting process where their concerns are taken into account.

3) All participants should be given a platform to voice their concerns and should feel that these concerns are valued by those making the final decision in the siting process.

4) When promises are made by local officials they should be implemented. This means that zoning policies should be established early on in the siting process and should not be changed.

**Distributional justice:**

1) Property devaluation should be addressed in the siting process. Simply telling homeowners that their homes will retain their value is not enough.

2) The lack of direct benefits in terms of job creation, electricity generation, and revenue should be addressed. Paying local homeowners some portion of revenue is one option for mitigating this concern. Along the same lines, wind turbines impact the quality of life local homeowners have comes to expect of their community. This impact must be addressed in the siting process, dismissing anthropocentric concerns as NIMBYism is not sufficient.

The Desert Renewable Energy Conservation Plan (DRECP), which was developed for the expansion of renewables in the Southern California deserts, takes some of these factors into account. Riverside County realized that residents needed to be given a say in the multi-agency effort to designate parts of the California deserts for renewable energy develop and set other part
aside for wildlife and natural resources. The plan involves the collaboration of San Bernardino, Riverside, Imperial, Inyo, Kern, Los Angeles and San Diego counties, as well as the California Energy Commission, California Department of Fish and Wildlife, the U.S. Bureau of Land Management and the U.S. Fish and Wildlife Service. It is clear that the siting process of large-scale renewable energy sources has come a long way since its inception in the late 1970’s and early 1980’s. The DRECP received over 12,000 public comments.

Areas for further research

1) This study primarily focused on past wind development in the San Gorgonio Pass. Much of the opposition was the result of past actions by wind developers and did not adequately address the changes that developers have taken in recent years to address these issues. Solar development in Riverside County, and in the surrounding southern California areas may be a more current case study of opposition to utility scale renewable energy.

2) In addition to the community concerns discussed in this report, utility scale wind development faces other challenges. Vast stretches of the desert in southern California and Nevada have been declared as off limits to wind development by the US Department of Defense die to the ability of wind turbines to interfere with flight radar used in military training exercises.

3) Another area this paper did not address is the development of renewable resources on land that is of cultural significance to native lands.
References:


Glick, J. (2007). Wind-energy plan passes // Palm Springs: Residents are concerned that the turbines will kill birds and hurt home values. The Press Enterprise


Van der Horst, Dan, & Toke, David. (2010). Exploring the landscape of wind farm developments; local area characteristics and planning process outcomes in rural England. Land Use Policy, 27(2), 214-221.


Appendix A: Interviewees

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<tr>
<th>Number</th>
<th>Date</th>
<th>Individual's name</th>
<th>Title</th>
<th>Type of interview</th>
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<tr>
<td>1</td>
<td>7/28/2014</td>
<td>Dr. T. La Doux</td>
<td>Scientist</td>
<td>In person</td>
</tr>
<tr>
<td>2</td>
<td>7/28/2014</td>
<td>Dr. J. Andre</td>
<td>Scientist</td>
<td>In person</td>
</tr>
<tr>
<td>3</td>
<td>7/22/2014</td>
<td>Mr. L. Starks</td>
<td>Local homeowner</td>
<td>In person</td>
</tr>
<tr>
<td>4</td>
<td>7/26/2014</td>
<td>Mrs. J Manley</td>
<td>Local homeowner</td>
<td>In person</td>
</tr>
<tr>
<td>5</td>
<td>12/17/2014</td>
<td>Mr. M. Massar</td>
<td>Bureau of Land Manageent</td>
<td>In person</td>
</tr>
<tr>
<td>6</td>
<td>12/19/2014</td>
<td>SGP002</td>
<td>Fish and Wildlife Service</td>
<td>Phone</td>
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<td>7</td>
<td>7/22/2014</td>
<td>Ms. T. Weiner</td>
<td>Environmental advocate</td>
<td>Phone</td>
</tr>
<tr>
<td>8</td>
<td>7/28/2014</td>
<td>Mr. S. Hernandez</td>
<td>County official</td>
<td>In person</td>
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<tr>
<td>9</td>
<td>7/25/2014</td>
<td>Mr. G Miller</td>
<td>Bureau of Land Manageent</td>
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<td>Scientist</td>
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<td>11</td>
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<td>Bureau of Land Manageent</td>
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<td>Mr. J. Morgan</td>
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<td>Mrs. R. Nolan</td>
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<td>18</td>
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<td>Ms. A. Richmond</td>
<td>California Wind Energy Association</td>
<td>In person</td>
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</tbody>
</table>

Appendix B: Interview Questions

Questions for agency staff / city planners / county officials

1. Please tell me about the issues that have historically driven politics in your community, prior to the announcement of any particular renewable energy (“wind”) projects (education, land use, employment, etc.).
   a. Please list the community groups that were most active prior to the announcement of any particular renewable energy (“wind”) projects.
   b. What were the specific interests and concerns of each of these groups?
   c. How responsive have elected representatives / decision makers been to community groups in the past? Can you provide specific examples?

2. What can you tell me about the individuals and groups that have been active during the siting of the recent renewable energy (“wind”) projects (environmental groups, businesses, neighborhood associations, unions, etc.)? [Provide list of proposed projects and dates if needed.]
   a. What were the specific interests and concerns of each of these groups?
   b. How did these groups come together / form in response to the proposal(s)?
   c. How would you characterize the response of elected representatives / decision makers to each group’s interests? Can you provide specific examples?
   d. How would you characterize the response of the proponent(s) of the project(s) to each group’s interests to particular groups’ interests? Can you provide specific examples?
   e. How would you characterize the resources available to opponents of the project(s)? supporters of the project(s)?
f. Have community groups been receiving support, monetary or otherwise, from outside the community?

g. What were the stances of political and business leaders in the community about the project? Did they change over time? Why?

3. What forms of public participation did elected officials, proponents, and decision makers use during the process of siting the project(s)?
   a. What was the nature of public involvement in the planning process?
   b. What role did you play in this process?
   c. What forms of public participation were used by the elected representatives / decision makers during the process? By the proponent(s)?
   d. When were these participation processes implemented?
   e. Did you attend or facilitate any of these processes?
   f. Were all interested parties fully able to express their concerns?
   g. In your opinion, were there any groups that were left out of or marginalized from these processes? Why or why not?
   h. What role did experts or expert knowledge play in providing comments on the project(s)? Can you provide specific examples?
   i. Were you or others concerned about possible conflicts between the expansion of renewable energy and existing state and federal environmental regulations (e.g. Endangered Species Act)? Can you provide specific examples?
   j. What role did the comments play in the decision making process? Can you provide specific examples of changes made to the plan as a result of comments received?

4. How have community members and groups made their voices heard outside of these processes for participation in decision-making (ballot initiatives, letter-writing campaigns, protests, social media, etc.)?
   a. Have you been surprised by the community’s reaction to these proposal(s)? Why or why not?
   b. Did you anticipate lawsuits as a result of the siting process(es)? If so, around which issues?
   c. Have particular events or actions galvanized community involvement or action regarding the siting proposal(s)? Probe here.
   d. [If multiple projects were proposed in the county] Were any projects more controversial than others? If so, why?

5. Are there any important issues related to the project(s) that we haven’t covered yet?
Questions for Active Community Members

1. I would first like to ask you some questions about your political involvement prior to the announcement of the proposed facility.
   a. Did you attend city/county/agency meetings prior to the announcement of renewable energy (“wind”) projects? If so, which ones/dates? If so, please tell me about the types of political issues that you were most interested in.
   b. Prior to the announcement, were you involved in any community groups?
   c. Did you participate in any other political activities, outside of official meetings/hearings, prior to the the announcement of renewable energy (“wind”) projects?
   d. Have you run for political office?
   e. How responsive have elected representatives and business leaders been to community groups in the past? Can you provide specific examples?
   f. What issues have historically driven politics in the community (education, land use, employment, etc.)?

2. Did you attend city/county/agency meetings about the renewable energy (“wind”) projects?
   a. If so, what was it about the (“wind”) issue that got you interested in attending? If not, why not?
   b. Did you get involved as part of a community group? Which one and why that group?
   c. What are your specific interests and concerns about the (“wind”) proposal(s)?
   d. Do you feel your voice has been heard during the process?
   e. How would you characterize the resources available to supporters and opponents the renewable energy (“wind”) projects?
   f. Have you (or your community group) been receiving support, monetary or otherwise, from outside the community?
   g. What role did experts or expert knowledge play in providing comments on the project(s)? Can you provide specific examples?
   h. Were you or others concerned about possible conflicts between the expansion of renewable energy and existing state and federal environmental regulations (e.g. Endangered Species Act)? Can you provide specific examples?
   i. What are the stances of political and business leaders in the community about the project? Have they changed over time? Why?

3. Have you participated in any other political activities, outside of official meetings/hearings organized by the city, in response to the siting proposal, including ballot initiatives, letter-writing campaigns, protests, etc?
   a. Have you been surprised by the community’s reaction to the siting proposal? Why or why not?
   b. Have particular events are actions galvanized your involvement regarding the siting proposal? Probe here.
   c. [If multiple projects were proposed in the county] Were any projects more controversial than others? If so, why?

4. Are there any important issues related to the project(s) that we haven’t covered yet?
Questions for Project Representatives

1. What are the main criteria your company uses for selecting the site of a renewable energy (“wind”) project?
   a. How did this site(s) match up with those criteria?
   b. What sort of background information did you collect on the community prior to the announcement of the siting proposal?
   c. What was the initial response of influential individuals in the community to your proposal? Has this changed over time?
   d. What was the initial response of local citizens or groups to your proposal? Has this changed over time?

2. What forms of public participation did your company use during the siting process?
   a. When were these participation processes implemented?
   b. Did you attend or facilitate any of these processes?
   c. Were all interested parties fully able to express their concerns?
   d. Would you characterize the public input process associated with the project as fair? Why or why not?
   e. What role did experts or expert knowledge play in providing comments on the project(s)? Can you provide specific examples?
   f. Were you or others concerned about possible conflicts between the expansion of renewable energy and existing state and federal environmental regulations (e.g. Endangered Species Act)? Can you provide specific examples?
   g. What role did the comments play in the decision making process? Can you provide specific examples of changes made to your plans as a result of comments received?

3. How have community members and groups made their voices heard outside of these processes for participation in decision making, including ballot initiatives, letter-writing campaigns, protests, etc?
   a. Have you been surprised by the community’s reaction to your siting proposal(s)? Why or why not?
   b. Do you anticipate lawsuits as a result of this siting process(es)? If so, around which issues?
   c. Have particular events or actions galvanized community involvement or action regarding your siting proposal(s)?
   d. [If multiple projects were proposed in the county] Were any projects more controversial than others? If so, why?

4. Are there any important issues related to the project(s) that we haven’t covered yet?

Appendix C: Newsbank article coding protocol

Instructions for Coders

For each article:

1. Read article in full, highlighting any mentions of specific groups or individuals AND events or activities. Proper nouns are good indicators. See examples below. In our examples,
groups and individuals are highlighted in red (every time they are mentioned by name); events and activities should be underlined. If other energy/infrastructure projects are mentioned, bold them.

2. **UPDATE!** Projects have now been added as an option as a type of group. Please highlight and keep track of the number of times each renewable energy project (wind farm, solar array, biomass facility) is mentioned, then code the same as you would an individual or organization.

<table>
<thead>
<tr>
<th>Table 1. Groups/Individuals</th>
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<tbody>
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<td><strong>Type of group/individual</strong></td>
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| Non-elected government official(s) | -- state / federal agencies (e.g., Environmental Protection Agency, California Coastal Commission, Department of Energy, Federal Energy Regulatory Commission)  
-- city manager / planner  
-- water district engineer |
| Elected government official(s) | -- local city council / city council member  
-- local county board of supervisor(s)  
-- U.S. congressional representative(s)  
-- State assembly member(s) |
| Advocacy groups | -- local / state / national environmental organizations (e.g., Sierra Club, Natural Resources Defense Council, Vallejo Citizens for Planned Renewal)  
-- local / state / national labor unions  
-- chambers of commerce |
| Research institution | -- University professor  
-- National Laboratory |
| Company | -- energy companies (e.g., Zilkha, EnXco)  
-- construction companies |
| Project | -- wind farm (e.g., Wild Horse Wind Farm)  
-- solar array |

If no groups or individuals are mentioned in the article, simply fill out one line in the excel spreadsheet entitled “articles” with the relevant information about the article (publication date, author(s), article title, page, section) and move on to the next one.
2. Make a list of every unique group or individual (or renewable energy project) mentioned. (See Table 1)

3. Complete one line in the provided Excel spreadsheet entitled “articles” for each unique group or individual mentioned.

For each group or individual, complete all the columns with information provided in the article. Leave cells blank if the information is not provided by the article. Use drop down buttons to fill cells when provided.

4. Make a list of every unique event or activity mentioned. Only include events which are attached to a specific date within 2 weeks of the date of publication of the article, letter or editorial (before or after). Use a calendar to match mentions of days of the week to specific dates. (See Table 2)

If the same event is mentioned in more than one article, letter or editorial, use the same “description of event” for all instances mentioned.