

Using Concepts from the Study of Social Movements to Understand Community Response to Liquefied Natural Gas Development in Clatsop County, Oregon

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ABSTRACT Shifts in natural gas supply and demand since the early 2000s have triggered proposals for import and export terminals in coastal locations around the United States. Demand for such facilities is likely to grow with increasing rates of natural gas exports. Clatsop County, Oregon, is one such location that experienced over 10 years of debate surrounding the development of these facilities. The first liquefied natural gas (LNG) facility was proposed in this area in 2004; the final was withdrawn in 2016. While residents expressed both support and opposition early on, opposition dominated by the end. Drawing on insights from the literature on social movements, we conduct a case study of community response to LNG proposals in Clatsop County. We show how opponents were able to successfully frame the potential risks of LNG in a manner that had strong community salience, allowing them to appropriate resources and create political opportunities to advance their cause and influence local and state decisions. Engaging with this case provides an opportunity to observe the behavior and decisions of both opponents and supporters over time, and how they affected project outcomes. LNG proposals in Oregon have been among the most controversial cases of LNG development in the United States. As shale gas development continues to grow, understanding the conflicts involved with its associated infrastructure is critical to creating a more just and equitable energy system.

INTRODUCTION

Natural gas plays a key role in the U.S. energy system. In 2017, some 31.7% of US electricity was produced by burning natural gas [1]. To ease its transport in tankers overseas, natural gas can be liquefied at cryogenic temperatures into LNG. Since the early 2000s, companies have repeatedly tried and failed to site LNG terminals on the U.S. West Coast, first to import gas when supplies were thought to be short and now to export domestic shale gas. In October 2018, the Energy Information Administration [2] observed that U.S. gas exports in the first half of 2018 were more than double the average number of exports in 2017, pointing to continued growth. Yet, we know very little about the public perceptions of natural gas exports [3]. The siting of LNG terminals is sometimes

controversial and always subject to public comment via the National Environmental Policy Act [4–7]. These deliberations often attract various organized interests and advocates, who attempt to mobilize support or opposition and affect the ultimate outcome of the proposals. As exports of natural gas continue to grow, it is critical to understand potential conflicts surrounding its associated infrastructure—including LNG facilities.

We conducted a case study of the community response to LNG proposals in Clatsop County, Oregon, where the first terminals were proposed in 2004. When the final proposal was withdrawn in 2016, the local newspaper commented: “If you lived in Clatsop County, it was hard to avoid the LNG debate. Opposition went from being a lonely business to becoming the majority opinion” [8]. To

better understand this case, we first systematically coded 2,790 local news articles and letters-to-the-editor containing the terms “liquefied natural gas” or “LNG,” as well as transcripts of 10 public hearings held by the Federal Energy Regulatory Commission (FERC) on LNG proposals in Clatsop County, to identify active citizens, organizations, events, frames, and stances on LNG. Out of 48 people identified in these documents and contacted for interviews, 22 accepted (Supplementary Materials), 3 declined, and 23 did not respond to the invitation. Using concepts from the study of social movements, we show how actions by LNG opponents—to effectively frame their opposition, appropriate resources, and create local political opportunities through recall elections—contributed to the withdrawal of the proposal.

Existing research on facility siting focuses heavily on the role played by public participation processes and trust between citizens, decision-makers, and project proponents on attitudes towards proposed projects [9]. The literature on social movements provides concepts that can augment our understanding of such processes. Which often involve political mobilization. The political process model of movement emergence highlights the role of threat identification and framing, resource appropriation, and political opportunity in shaping how and when social movements develop [10].

Social movement scholars define threat as the chance that either harm will occur or current benefits will be reduced if a certain change occurs [11]. Political actors utilize framing when they assign meaning to threats with the intent to mobilize supporters and de-mobilize opponents [12]. Through the process of “frame alignment,” organizations attempt to connect their objectives with the values and interests of the community to gain traction with a broader population [13].

Social mobilization also requires resources, such as organizational structure, funding, information, and experience [14]. Resources provide mobilizing groups with the ability to take action [15]. The presence of an existing organization that can be called upon to provide resources to a nascent mobilization effort has been shown to be particularly important in local political action [16, 17].

Political opportunity refers to the opportunities for social action that are present in the existing political environment [17]. Political institutions that are more open to change provide greater opportunities to promote engagement, while those that are closed to such change provide

fewer opportunities [17]. Highly open systems, however, are likely to lead to greater use of institutional tactics (e.g., petitions, letter writing, etc.) due to increased access. Contentious social mobilization (e.g., protest, rallies, violence, etc.) is most likely to occur when there is a moderate degree of political opportunity—enough that meaningful engagement is possible but not so much that institutional change is an available option [14].

CASE EXAMINATION

Clatsop County is located near the mouth of the Columbia River in Northwest Oregon and is served by the deep-water Port of Astoria. With the loss of commercial air service and critical log exporting contracts, the Port of Astoria was searching for new revenue streams in the early 2000s [18]; LNG seemed like a good fit. Astoria, the county seat (population 9,477; 2010 Census), was historically an economic hub for fishing and logging but faced a continuing downturn with the loss of major employers. The city had experienced some success as a tourist and retirement destination [19].

We focus on two projects that went furthest in the review process—Oregon LNG and Bradwood Landing. Calpine, a California-based power company, originally proposed Oregon LNG as an import facility, for which the Port of Astoria signed a controversial lease in November 2004 after a single day of public notice. In 2005, NorthernStar Natural Gas proposed the Bradwood Landing LNG import facility and initiated the pre-filing process with FERC. The company completed scoping for the project’s environmental review in late 2005.

While work began on the Draft Environmental Impact Statement (EIS) for Bradwood Landing, Oregon LNG’s Calpine went bankrupt and sold its lease in early 2007. As NorthernStar moved forward with its Draft EIS and associated comment period, the final EIS for Bradwood Landing was released in June 2008, and the project was approved soon after, making Bradwood Landing the first such facility approved on the U.S. West Coast. This decision was appealed by both Washington and Oregon, and in May 2010 NorthernStar declared bankruptcy and suspended the Bradwood Landing project, citing permitting delays and financial challenges.

In mid-2011, citing changing market conditions, Oregon LNG announced plans to retrofit its proposal as an export rather than import facility. FERC issued a new Draft EIS for the export facility in August 2015, followed

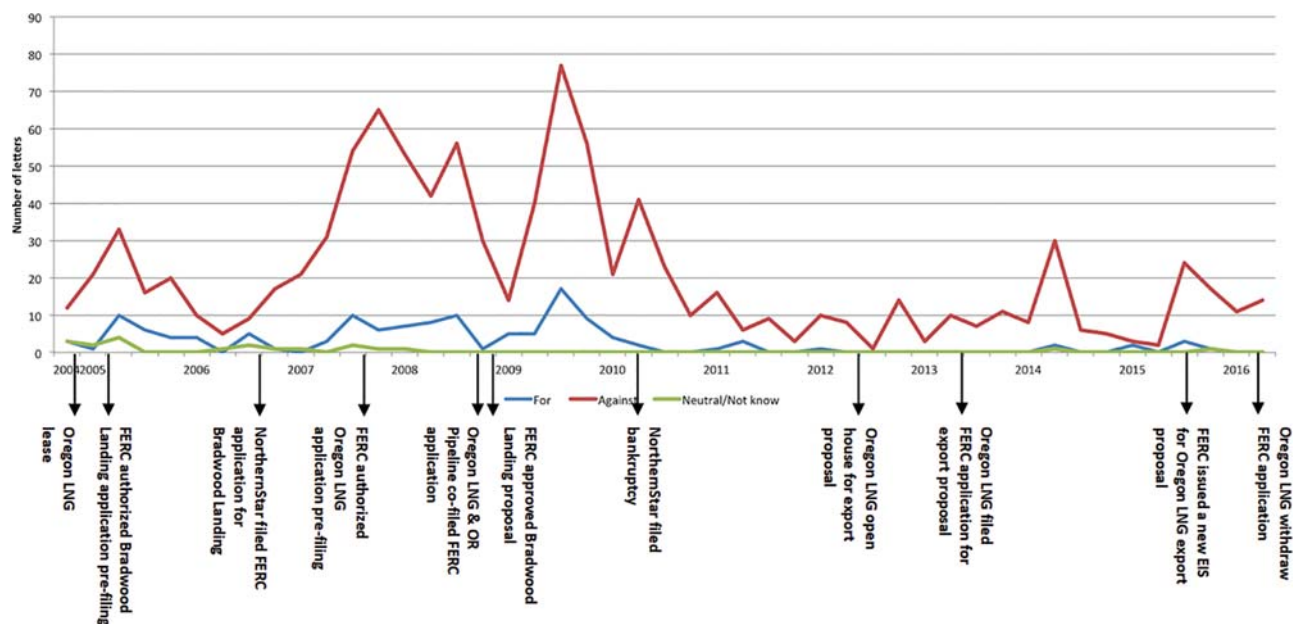


FIGURE 1. Stances on LNG in letters-to-the-editor in *The Daily Astorian* over time.

by public comment and hearings. As controversies grew surrounding the company’s site lease, Oregon LNG was officially withdrawn in April 2016.

Our analysis of letters-to-the-editor in the local newspaper and testimony at EIS public hearings shows how opposition to LNG proposals grew and sustained over time, while support dwindled (Figures 1 and 2). Between 2004 and 2009, in which the majority of public participation and decision-making took place on LNG import proposals, a nearly sevenfold increase occurred in the number of letters-to-the-editor written in opposition to LNG. The number of letters in support in the same time period was nowhere near as great and disappeared during consideration of the export proposal, beginning in 2011. Similarly, in testimony at hearings on the Draft EISs (Figure 2), opponents dominated supporters, particularly later on during consideration of the export proposal, when opposing comments outnumbered supporters 111 to 9. How did this happen?

Choosing the Right Frames

Local debates about major energy projects are often framed in terms of economics vs. the environment. In Clatsop County, opponents instead confronted traditional economic arguments head on by asserting that LNG would damage the area’s developing tourism industry. They also shifted their emphasis to different risks over

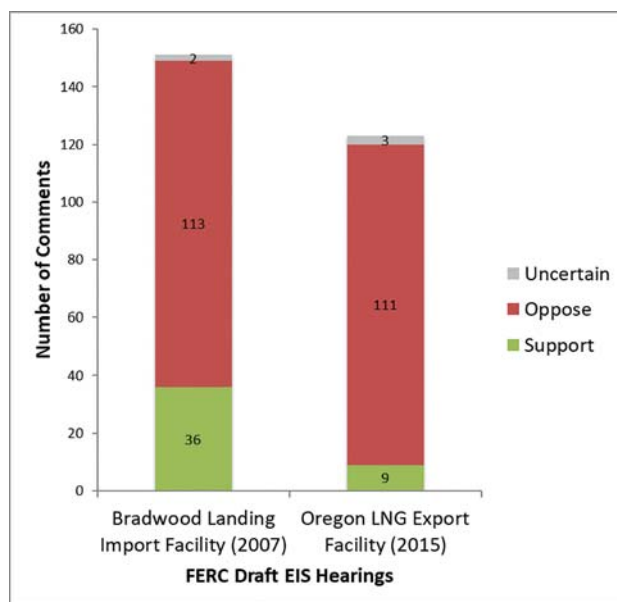


FIGURE 2. Stances in testimony at Draft EIS public hearings, first at hearings on the Bradwood Landing import facility and then on Oregon LNG export facility.

time to align with larger, more salient public issues. In this way, LNG opponents situated themselves as forward thinking and focused on the future of Clatsop County. LNG supporters, on the other hand, appeared focused on the past—trying to recreate the resource-dominated industries of a bygone era.

FOCUSING ON THE FUTURE ECONOMY Supporters of the proposals focused on economic decline caused by loss of industry and the need to secure full-time industrial jobs as opposed to the seasonal employment provided by the tourist industry. For example, a supporter at one of FERC's public meetings on Bradwood Landing's Draft EIS in November 2007 stated: "I am telling you this community is losing timber revenues . . . Our communities . . . are going to benefit from the tax revenues that come in [from a LNG facility]. We must have industry. We can't survive with just tourists and things like that" [20].

By contrast, opponents diagnosed the LNG terminals as posing a risk to tourism and recreation, lamenting a future in which large LNG tankers would adversely affect these burgeoning businesses. The prospect of 190-foot-tall storage tanks jutting into the river and the movement of LNG vessels were repeatedly portrayed as pertinent threats to these industries and fishing. As one opponent said: "The damage to the Columbia River first drew us to this issue . . . It [the LNG proposal] will kill the tourism industry. A big industrial site that would lead to more industrial sites . . . It would be a danger to the fisherman from the passing zone. It really scared me with the thought of this Oregon site being industrialized" (Interview 1).

Opponents of the LNG terminal also argued that extensive dredging, together with the use of massive amounts of energy and freshwater to produce LNG, would pose serious threats to the Columbia River. Opponents questioned the certainty of economic benefits promoted by the proposing companies. A letter-to-the-editor highlights these concerns: "Are there really jobs? With the LNG tank construction and strict regulations, do you not believe Calpine will use Bechtel employees from Texas and California to construct the site and pipeline? There may be work for petroleum and electrical engineers and some certified employees, but how many local people do we believe will have a permanent job?" [21]. The opponents clearly had doubts about the economic benefits of hosting such a facility.

SAFETY: FROM TERRORISM TO EARTHQUAKES Throughout the debate, opponents highlighted safety concerns related to a possible explosion at the proposed facilities. One participant explained: "There is a vulnerable population in this safety area and nobody takes it seriously . . . Within one mile [of the facility] is Warrenton Fire Department. Warrenton Grade School and Astoria Airport are . . . within two miles, and here are Warrenton

High, Gray Elementary and Astoria High. Highway 101 is within 2 miles and would have to be shut down if there is an accident" (Interview 2).

Early on, in the aftermath of the September 11th attacks, such concerns were framed in the context of terrorism. As one local resident noted, "Natural gas is dangerous, flat out, whether liquid or gas, it's deadly. A terrorist target for sure because our towns are sleepy and we don't get the federal money for terrorism that the big cities do" [22]. In the aftermath of the Fukushima Daiichi Accident and a widely read *New Yorker* article on seismicity in the Pacific Northwest [23], opponents focused more of their attention on growing local concerns regarding the Cascadia subduction zone, earthquakes, and tsunamis. Opponents began to cite concerns about the impact of a large earthquake and/or tsunami on these coastal facilities: "We have plans being presented for evacuation and survival in case of an earthquake and possible tsunami. If an LNG depot were built, the results of a quake would be catastrophic. And the experts say that the expectations for a quake are not if but when" [24]. In particular, Oregon LNG's proposed location on the Skipanon Peninsula was regarded by both opponents and supporters as a poor site to build an industrial facility because it was busy, populated, and geologically unstable.

Social movement scholars have repeatedly shown, across a wide variety of movements, how activists shift frames (by topic and scale) to align with salient concerns to engage members of the broader public [13]. In this case, we observed opponents shifting between local (e.g., impacts to tourism), regional (e.g., Cascadia subduction zone), and national/geopolitical (e.g., terrorism) concerns, as interest in these issues fluctuated with current events and media coverage in the larger public sphere.

Appropriating Resources

Building off an existing network of politically active and experienced individuals in the community, opponents optimized outreach strategies to spread their message. After learning about the Oregon LNG proposal, opponents quickly understood the decision-making process would be complex and challenging for average citizens (Interviews 2–6). They contacted multiple environmental organizations in the Northwest. Columbia Riverkeeper, a powerful advocacy group working to protect the Columbia River and surrounding communities, quickly joined the cause (Interview 2). Multiple

opponents acknowledged Riverkeeper as their greatest resource, citing this organization's key role in sustaining opposition and victory against the proposing companies. The nonprofit helped local groups win major legal victories when they appealed Clatsop County's decisions favoring Bradwood Landing (between March and July 2008) and Oregon LNG (2010) to Oregon's Land Use Board of Appeals (LUBA). The September 2008 referendum, which overturned the county's aforementioned land-use approval for Bradwood Landing, was prepared with the assistance of Riverkeeper and a half dozen other community groups. Opponents recognized the organization's leadership in helping to bring together a grassroots coalition of tribes, farmers, foresters, fishermen, and active community members to oppose the projects. Additionally, local opponents lauded Riverkeeper's training efforts, which assisted the local grassroots coalition in planning and implementing appropriate tactics and strategies (Interviews 1–4 and 7).

Another important resource emerged from the local communities themselves. At first, concerns about the potential risks posed by the LNG terminals brought together small groups of individuals to learn about LNG more generally (Interviews 3, 5, 8, and 9). People for Responsible Prosperity (Warrenton-based) and RiverVision (Astoria-based) were the first local groups to form, allowing opponents to “get together, read articles, and learn as much as [they] could” (Interview 3). During these early years, opponents organized occasional fundraising events and protests, invited guest speakers to give speeches, and testified at public hearings (Interview 3). These groups faded out after a few years. In 2012, however, with the revival of the Oregon LNG proposal as an export facility, their members gathered and revitalized these organizations under a new name, Columbia Pacific Common Sense, which then served as the most active and well-organized local group (Interviews 2 and 7). With help from Columbia Riverkeeper, “the group members were able to focus on specific goals, foster more community education activities”; and, with coordination with regional coalitions and community groups, “people had the sense that [they] were a part of a bigger movement” (Interview 4).

The majority of local opponents were retired (Interviews 2 and 8), and many had extensive experience with political engagement, including some with experience specifically responding to energy proposals (Interviews 1–5 and 7–10). Some had played active roles in local

community groups before the announcement of the LNG proposals (Interviews 1–4 and 7). Thus, local residents' preexisting knowledge and skills served as an important resource. Opponents maintained a well-organized communication network throughout the LNG debate to “keep the group informed about events, and when to testify and write letters” (Interviews 2, 5, 6, 8, and 9). Participants repeatedly mentioned how their prior experience in public education, coordination, election campaigns, fundraising, technical research, etc. proved relevant in effectively dealing with the issues related to LNG.

Establishing Favorable Local Political Opportunities

LNG opponents were able to marshal their resources to create favorable political opportunities on multiple occasions. In particular, they took advantage of opportunities to appeal local decisions favorable to LNG, rallied public opinion against the facilities, and used elections to replace local pro-LNG officials.

In March 2008, the Clatsop County Board of Commissioners voted 4-1 to allow NorthernStar to locate pipelines for the Bradwood Landing project in lands zoned for open space and recreation. Opponents contested the decision in two ways. First, they filed 21 challenges to LUBA, arguing that this approval violated both county and state zoning laws. Second, they began collecting signatures to force a public vote on the matter. In the resulting referendum, 67% voted to overturn the decision and deny NorthernStar approval for the pipeline route.

In January 2009, LUBA agreed to some of the opponents' challenges and sent the application back to the county. Clatsop County commissioners again voted 4-1 to adopt NorthernStar's findings of full compliance a few days later. Opponents latched on to the resulting public frustration and began campaigning to force a recall election of pro-LNG commissioners. One county commissioner was recalled, while two others survived. In the following election, however, the opposition highlighted these incumbents' support of LNG and peppered the local newspaper with endorsements for new commissioners. The two remaining commissioners lost their seats and were replaced by LNG opponents.

Company failures also aided opponents. When NorthernStar declared bankruptcy, it left unpaid debts to the local government [25]. This event, coupled with the previous Calpine bankruptcy, made community members

skeptical about the companies' long-term investment in the local area and provided opponents political ammunition to criticize the intentions and credibility of LNG developers. Oregon LNG's subsequent shift from an import to an export facility—after previous denials about this prospect—furthered the opponents' case.

In contrast to NorthernStar, Oregon LNG took a different approach to community relations. Instead of widespread engagement, Oregon LNG chose to rely on federal preemption over local and state authority in the context of LNG facility siting. This strategy to rely on a federal permit to preempt adverse decisions made by the city, county, and state boards not only exacerbated opponents' aversion to the company but also made it difficult for support to grow. One long-time LNG-supporter noted: “[Oregon LNG] is clearly off base, because local land use reviews do matter to state and federal decision makers” [26].

CONCLUSION

Over the course of 10 years, local opinions about LNG facilities in Clatsop County consolidated into general community opposition. We utilized concepts from the literature on social movements to explain how LNG opponents were able to build support for their cause over time, including framing strategies, resource appropriation, and the creation of favorable political opportunities.

LNG opponents gained early momentum over supporters by countering economic arguments in support of the proposed facilities. By framing LNG as a threat to the future of Clatsop County's budding tourist economy, opponents seemed more in tune with the existing local community than LNG supporters, who envisioned a return to an industrial past. Opponents then capitalized on larger national and regional concerns—specifically related to terrorism and later to the potential impacts of future earthquakes and tsunamis—to align concerns about LNG to salient public issues. As the debate in Clatsop County progressed, opponents, many of whom had been engaged in previous political activity, were experienced enough to recognize that they would need to expand both their resources and political capacity to act. They partnered with Columbia Riverkeeper, an active regional environmental nonprofit, whose campaign training, resources, and networks enabled scattered local opponents to build connections with other stakeholders, to effectively identify and carry out political strategies, and sustain opposition over many years. Simultaneously, LNG

opponents began transforming their effective framing strategies and expanded resources into favorable political opportunities. Engagement in local elections provided opponents with a larger stage on which to rally public support for their arguments. As established local leaders began losing elections to LNG opponents, the opposition could then count on local decisions to turn in their favor.

As major shifts continue in how we use energy resources, local communities often find themselves on the frontline of such debates. Given the potential risks and benefits of such development, conflicts about these decisions are unlikely to disappear. Concepts from the study of social movements can provide important insights to help untangle the arguments and strategies used by active community groups.

CASE STUDY QUESTIONS

1. What types of resources (i.e., people, knowledge, and financial) are important for running a local political campaign? Are some more or less important?
2. How might the events in Clatsop County have turned out differently if played out in a different location or with different types of communities involved?
3. What kinds of things do you need to know to make effective use of framing strategies? Using your imagination, how else could LNG supporters or opponents have framed their arguments? How might those frames change under different conditions?
4. Besides the topics of focus here (framing, resource appropriation, and political opportunities), what other political, social, or economic elements might be important to consider in making decisions about local industrial development?
5. LNG opponents, in this case, succeeded in turning public opinion against the proposed LNG facilities in part because of their ability to create favorable political opportunities for themselves. How did they do this? Imagine a local issue that you care about—can you think of strategies for creating similar political opportunities in the context of your issue?

AUTHOR CONTRIBUTIONS

TT conducted fieldwork and analyzed data with assistance from HP. HB and KB provided project supervision and guidance. CT edited and revised the manuscript, with input from all authors.

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COMPETING INTERESTS

The authors have declared that no competing interests exist.

SUPPLEMENTARY MATERIALS

Interview participants.

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