An "Insiteful" Comparison: Contentious Politics in Liquefied Natural Gas Facility Siting

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Abstract
Mobilization against proposals for industrial facilities has long puzzled researchers and planners. I focus on three factors drawn from the study of social movements – threat, political opportunity and resources – to explain opposition to thirteen proposals for liquefied natural gas facilities in the U.S. Findings indicate that low threat projects in communities with low political opportunity and limited resources attract little opposition and are approved. More threatening projects in communities with limited internal resources attract opposition from outsiders and result in failed projects. Finally, two pathways result in successful, widespread opposition: either the combination of a high threat project in a community with high political opportunity or a project proposed in a community with internal resources.

Keywords
citizen participation; energy; politics and society; facility siting; mobilization

Introduction

Mobilization against proposals for large industrial facilities or locally unwanted land uses (LULUs) – hazardous waste disposal sites, landfills, power plants, etc. – has long puzzled researchers, policy makers, planners, proponents and activists. Through an in-depth analysis of two proposals for liquefied natural gas (LNG) offload terminals[1] in California, Boudet and Ortolano (2010) showed that three factors, drawn largely from the study of social movements, could be used to explain mobilization against LULUs: (1) the potential risk posed by the proposal (i.e., threat) (2) the openness of the decision-making structure associated with the proposal (i.e., political opportunity) and (3) the affected community's resources.[2] The rush to site LNG in the early 2000s, which resulted in more than 50 proposals (of which only seven were built), provides an ideal laboratory to understand opposition to large-scale energy infrastructure. Companies propose projects to which regulators and communities respond, resulting in a race among companies to obtain permits and begin construction prior to market saturation (McAdam and Boudet 2012; Boudet 2011). Currently, the siting of shale extraction and LNG facilities in the U.S. is following a similar course to LNG. Thus, understanding the dynamics of opposition to LNG can provide important insights for similar races to site energy infrastructure.

I expand the analysis in Boudet and Ortolano (2010) in three ways. First, I more thoroughly investigate the role of external resources, in terms of both non-governmental organizations (NGOs) and state officials, in opposition efforts. Second, I examine mobilization against eleven additional LNG proposals from around the United States. Unlike in Boudet and Ortolano (2010), my sample contains examples of both successful and unsuccessful proposals, allowing for connections to be made between mobilization and project outcome. Third, I devise a methodology that allows for the study of a larger number of cases, while maintaining the richness of in-depth fieldwork. In doing so, I develop ways to measure the difficult concepts of threat, political opportunity, resources and mobilization using readily-available data sources validated by fieldwork in each community. Such an approach paves the way for future applications of this framework to studies containing a larger number of cases.

My examination of thirteen LNG proposals generates three major hypotheses that merit additional exploration in future research. First, low threat projects in communities with limited access to decision makers (low political opportunity) and limited resources attract little, mainly local, opposition and are approved and often built. Second, even in communities with relatively limited resources, more threatening projects attract opposition from outsiders. To the extent these projects are located in communities with better access to decision makers (higher political opportunity), opposition develops. The result is failed projects, either through rejection by regulatory officials

or withdrawal by the company. Third, high resource communities launch successful opposition efforts, regardless of threat or access to decision makers. These findings point to the important role played by external NGOs and state officials in opposition efforts against threatening projects, particularly in communities with limited internal resources.

The paper proceeds as follows. I first briefly summarize the relevant literature. Then, I provide information about my research methods and variable measurement. Finally, I discuss the community response exemplified by my cases and how the abovementioned factors relate to mobilization and project outcomes.

Relevant literature

I draw on two sets of literature for this analysis: (1) studies of facility siting and NIMBY response and (2) studies of social movements. Both of these literatures have been reviewed extensively elsewhere. The literature on facility siting and NIMBY response has been reviewed, for example, by Rabe (1994), Boholm (2004), Lesbirel and Shaw (2005), Schively (2007), Boudet (2010) and Boudet and Ortolano (2010). And the literature on social movements has been reviewed by McAdam et al. (2001), Caniglia and Carmin (2005), Buechler (2007), Boudet and Ortolano (2010), and McAdam and Boudet (2012). My analysis draws on the political process model of social movements, which, as shown by Boudet and Ortolano (2010), can serve as a unifying framework of the factors and processes at work in driving opposition to LULUs.

In developing the political process model, McAdam (1999[1982]) identified three factors which are necessary for movement emergence: (1) threat, (2) political opportunity and (3) resources. These factors map onto three key factors identified in the literature on facility siting and NIMBY response: (1) project risks, (2) decision-making processes and (3) community characteristics. For this reason, I draw on the political process model to structure my analysis of thirteen attempts to site LNG facilities.[3] I discuss each of these factors in more detail below.

Threat

The siting of an industrial facility presents the possibility of many different grievances or "threats" (e.g., to public safety, health, environment, quality of life) around which a community can mobilize. In the technical and planning literature, these aspects of a facility are often referred to as "risks" (Boholm 2004; Freudenburg 2004; Schively 2007). Following Almeida (2003), threat is defined as "...probability that existing benefits will be taken away or new harms inflicted if challenging groups fail to act collectively" (347). Local environmental action is often initiated in response to a perceived health risk or threat (Carmin 2003; Freudenburg 1984; Walsh and Warland 1983; Walsh, Warland, and Smith 1993). Moreover, the existence of a threat is particularly important "...in polities where there is some expectation of state respon-

siveness and few formal barriers to mobilization..." as in the U.S. (McAdam 1999[1982], xi).

Political opportunity

Social movement scholars also point to aspects of the broader political context, or "political opportunity structure," as important determinants of movement emergence (Eisinger 1973; Meyer 2004). Theorists in this tradition suggest that movements emerge when political elites become more receptive or vulnerable to movement demands (Eisinger 1973; Jenkins and Perrow 1977; Tarrow 1998; Tilly 1978). This receptivity may result from openness in the institutionalized political system, internal divisions among political elites, or increasing power associated with movement groups (McAdam 1996). Similarly, researchers on facility siting have highlighted the importance of fair procedures for decision-making and citizen input in determining attitudes toward proposals (Freudenburg 2004; Frey and Oberholzer-Gee 1996; Kunreuther, Fitzgerald, and Aarts 1993).

In recent years, the concept of political opportunity structure has come under increasing criticism. On one hand, it is seen as too broad, subsuming many conceptually different ideas, mechanisms and measurements (Gamson and Meyer 1996; Goodwin and Jasper 1999; Meyer and Minkoff 2004). On the other, it is too narrow, focusing predominantly on state actors without regard for other important economic institutions – e.g., corporations, banks – who have increasingly become targets of activism (Schurman 2004; Pellow 2007). Here, I address the first criticism by limiting my definition of the concept to refer to how open the institutionalized political system is to the claims of movement actors. However, this decision limits my ability to address the second criticism. Future work should examine the role of "industry opportunity structures" (Schurman 2004) on community mobilization against siting proposals.

Resources

Resource mobilization theory within social movements' scholarship suggests that resources, both from within the community and outside the community, supply groups with the capability to organize and take action (Carmin 2003; McCarthy and Zald 1977). I consider each type of resources – internal and external – in turn.

Internal (local) resources

Both organizational capacity and past experience opposing industrial proposals proved to be important in the two in-depth case studies by Boudet and Ortolano (2010). Research on individual attitudes toward LULU proposals has shown that higher income, younger and more educated homeowners are more likely to oppose LULUs (Dear 1992; Hunter and Leyden 1995). Moreover, Freudenberg and Gramling (1993) found education level to be the only consistent determining factor of individual oppositional attitudes to LULUs. Education affords communities important internal resources (e.g.,

engineers and scientists, who understand technical issues, or lawyers, who are familiar with legal procedures). In sum, Carmin (2003) describes, "four types of resources...frequently associated with local action and responses to community threats: organizations, funding, information and experience" (45). I consider all four factors when measuring the internal resources available in each community.

External (nonlocal) resources

Making a distinction between internal and external resources, resource mobilization scholars argue that, particularly for groups with limited resources, external resources are critical for mobilization (McCarthy and Zald 1977). Moreover, many scholars view the social appropriation of existing organizations into movement activities as particularly important (McAdam, Tarrow, and Tilly 2001; Tarrow 1998; Walsh, Warland, and Smith 1997). Thus, I focus my measure of external resources on the appropriation of both nonlocal governmental officials and NGOs.

Research Approach

Case selection

I examined thirteen LNG proposals from across the country. The three California cases (Mare Island Energy Project, Long Beach LNG and Cabrillo Port) were included as easily accessible case studies for in-depth data collection and fieldwork. Newly proposed energy projects, other than the three California cases, were selected randomly from the CSA Illumina Digests of Environmental Impact Statements (EISs). This database catalogues announcements related to EISs from the Federal Register. Almost all LNG proposals have required an EIS.[4] The population of projects from which the sample was drawn included only projects that completed a FEIS between 2004 and 2007. Of course, this excluded projects like the Mare Island Energy Project that were announced but withdrawn before an EIS was started. These search criteria resulted in the selection of 49 proposals that constituted the population from which projects would be selected. I then randomly sampled 18 projects for inclusion in a larger research project on energy facility siting. Ten of the 18 projects were LNG proposals. For the analysis presented herein, I include these 10 LNG proposals and the 3 California proposals. Information about each of these cases is provided in Table 1.

Table 1: Selected cases

Proposal	*Proponent*	*Location*		*Projected cost (million $)*	*Timeframe*	
		Affected community	*On- or off-shore*		*start*	*end*
Cabrillo Port	BHP	Oxnard, CA Malibu, CA	Offshore (14 mi.)	550	Aug-03	May-07
Compass Port	ConocoPhillips	Mobile County, AL	Offshore (11 mi.)	500-800	Mar-04	Jun-06
Corpus Christi LNG	Cheniere Energy	San Patricio County, TX	Onshore	500	May-03	Apr-05
Creole Trail	Cheniere Energy	Cameron Parish, LA	Onshore	900	Jan-05	May-06
Crown Landing	BP	Gloucester County, NJ New Castle County, DE	Onshore	500	Dec-03	Mar-08
Freeport LNG	Freeport LNG	Brazoria County, TX	Onshore	300	Sep-01	Jun-04
Gulf Landing	Shell	Cameron Parish, LA	Offshore (38 mi.)	700	Oct-03	Mar-07
KeySpan	KeySpan	Providence, RI	Onshore	100	Oct-03	Jun-05
Long Beach LNG	Sound Energy Solutions	Long Beach, CA	Onshore	350	Mar-03	June-08
Mare Island Energy	Bechtel and Shell	Vallejo, CA	Onshore	1500	May-02	Feb-03
Northeast Gateway	Excelerate Energy	Gloucester, MA	Offshore (13 mi.)	200	Jun-04	May-07
Sabine Pass	Cheniere Energy	Cameron Parish, LA	Onshore	500	May-03	Dec-04
Vista del Sol	ExxonMobil	San Patricio County, TX	Onshore	600	Oct-03	Jun-05

Data collection

I employed a systematic process to collect data for each case, combining desktop research and on-the-ground fieldwork. The local newspaper of the community affected by the proposal was searched for relevant articles, editorials and letters-to-the editor concerning the proposal. Most of the local newspapers were available in a searchable format either via Newsbank's America's Newspapers database, LexisNexis or directly from the newspaper's website or editors. The newspapers were searched for terms relevant to each case. My research team read and catalogued the resultant articles, letters-to-the-editor and editorials to accomplish the following: (1) develop a narrative of each case to systematize our understanding of the events surrounding the LNG proposal and (2) identify active individuals and organizations for future interviews. In addition, the section of the Environmental Impact Statement (EIS) devoted to public comments and letters was also examined to confirm the results of the newspaper analysis and identify any additional actors for interviews. In addition to information from newspapers and EISs, we also collected relevant data from the Census Bureau and National Center for Charitable Statistics on socioeconomic information, education levels, and organizational capacity for each community prior to the proposal.

Armed with this information, I conducted site visits to each affected community from July 2006 to January 2010 to conduct 106 interviews with key participants identified in the newspapers and to collect organizational data from local groups active in the siting process.[5] On average, interviews lasted a little over an hour and were structured as a guided conversation. They focused on the (1) major issues and active groups in the community prior to

the LNG proposal, (2) major issues and active groups during the debate of the LNG proposal, and (3) activities undertaken by these groups to express opposition to the LNG proposal.[6]

In addition to validating and elaborating upon the information found in newspaper articles, these site visits provided local perspectives on the level of mobilization and controversy surrounding each proposal. The intent was to capture a "panel of informants" (Weiss 1994) representing different stakeholders in the debate – elected officials, decision makers, agency staff, project proponents, supporters and opponents. In addition, newspaper staff members who had closely followed the events surrounding the proposal were interviewed. Two communities – Cameron Parish, Louisiana and Corpus Christi, Texas – were the site of multiple proposals from my sample.

For these proposals, the same informants provided information about the cases in the community.[7] Table 2 provides information about data collection for each case. The appendix provides additional information about interviewees cited in the text.

Table 2: Data collection for each case

Proposal	*Newspaper*	*Articles*	*Letters / Editorials*	*Interviews # (average length in minutes)*
Cabrillo Port	Ventura County Star Malibu Times	139 89	417 122	24 (78)
Compass Port	Mobile Press-Register	66	71	9 (57)
Corpus Christi LNG	Corpus Christi Caller-Times	64	4	8 (46)
Creole Trail	Cameron Parish Pilot	70	0	6 (38)
Crown Landing	Wilmington News Journal Gloucester County Times	130 110	12 28	10 (50)
Freeport LNG	Brazosport Facts	75	12	8 (64)
Gulf Landing	Cameron Parish Pilot New Orleans Times-Picayune	70 22	0 n/a	6 (68)
KeySpan	Providence Journal	108	40	6 (76)
Long Beach LNG	Long Beach Press-Telegram	154	101	8 (97)
Mare Island Energy	Vallejo Times-Herald	81	237	16 (68)
Northeast Gateway	Gloucester Daily Times	144	46	4 (46)
Sabine Pass	Cameron Parish Pilot Beaumont Enterprise	70 9	1 n/a	6 (38)
Vista del Sol	Corpus Christi Caller-Times	64	6	8 (46)

Note: For newspapers that cover more than one proposal in the sample, the count includes all articles written about any of the proposals in the sample in that newspaper, i.e., it is not divided out by proposal.

Variable measurement

I focus my analysis on the three causal conditions identified in the political process model – threat, political opportunity and resources – and the relevant outcomes – mobilization and project success or failure. Following the traditions of grounded theory and case study research, the operationalization of each variable was continuously refined throughout the research process. Variables for each case were scored as high, medium or low based on fieldwork and using criteria drawn from comparisons across cases. The goal of the measurement strategies described herein is to set up a structure to move from time-intensive qualitative data collection to readily-available data sources to pave the way for future application of this framework to studies containing a larger number of cases. The richness from the qualitative data is presented below in the results section to demonstrate the more detailed information used to validate these measurement strategies. See the technical appendix for data by case.

Threat

To measure the threat posed by the proposal, I constructed a metric based on the location and regasification technology of the facility – key factors highlighted in newspaper articles and interviews.[8] If the facility was to be located onshore, a distinction was made between those facilities located in populated areas (greater than 2009 people per square mile) and those located in unpopulated areas (less than 200 people per square mile).[9] Facilities located in populated areas pose more of a threat than those in unpopulated areas. If the facility was to be located offshore, a distinction was made among the several technologies available for regasification. These technologies can be divided into two categories: open-loop and closed-loop. Open-loop technologies use seawater to warm the LNG. Closed-loop technologies use air or burn a portion of the imported natural gas for warming. The National Marine Fisheries Service, state fisheries regulators, environmental organizations and fishing groups have expressed serious concerns about how the use and release of seawater by open-loop technologies may affect surrounding fish populations. Thus, many viewed open-loop technologies as more threatening than closed-loop.[10]

In light of these considerations, the operationalization of threat for facilities was as follows (see Table 3). The threat associated with the facility was scored as high if the proposal was located onshore in a populated area. The threat was scored as medium if the facility was located offshore with open-loop regasification. Finally, the threat was scored as low if the proposal was located onshore in an unpopulated area or offshore with closed-loop regasification.

Table 3: Levels of threat for LNG proposals

Score	*Criteria*	*Cases*
High (n=4)	Onshore, populated	Crown Landing KeySpan Long Beach LNG Mare Island Energy
Medium (n=2)	Offshore, open-loop	Compass Port Gulf Landing
Low (n=7)	Onshore, unpopulated *or* Offshore, closed-loop	Cabrillo Port Corpus Christi LNG Creole Trail Freeport LNG Northeast Gateway Sabine Pass Vista del Sol

Political opportunity

To measure the political opportunity for mobilization against the proposal, I constructed a metric based on the jurisdiction (i.e., local, state or federal) and process of selection (i.e., percent elected) of key decision makers influencing the fate of the proposal (see Table 4). If key decision makers were elected, information was included on whether they faced an upcoming election. This measure gives a sense of how accessible and responsive decision makers would be to concerns expressed by members of the affected communities. Political opportunity associated with the facility was scored as high if key decision makers were located at the local level and elected and facing an upcoming election. Political opportunity was scored as medium if key decision makers were located at the state or local level and elected but not facing an upcoming election. Finally, political opportunity was scored as low if all key decision makers were located at the federal level and none were elected.

Resources

Internal (local) resources

To measure the resources available in the affected community for mobilization, a metric was constructed based on education levels (to represent informational resources), income levels (to represent funding resources), organizational capacity and past experience (see Table 5). Education and income levels were drawn from U.S. Census data on the percent of the affected community's population with a bachelor's degree and median household income (U.S. Census Bureau 2000). Organizational capacity was measured based on the number of nonprofit organizations in the affected community.[11] This type of historical data is available from the National Center for Charitable Statistics maintained by the Urban Institute (National Center for Charitable Statistics 2002). Organizational capacity data was selected for the closest month and year available before the initial announcement of the relevant proposal

and normalized by population.[12] Data on past experience fighting industrial proposals (in the past 5 years) was gathered via interviews and newspapers.

Table 4: Levels of political opportunity for LNG proposals

Score	*Criteria*	*Cases*
High (n=2)	Local officials among key decision makers *and* Some of decisions makers elected *and* Elected decision makers facing upcoming election	Long Beach LNG Mare Island Energy
Medium (n=6)	State or local officials among key decision makers *and* Some of decision makers elected	Cabrillo Port Compass Port Crown Landing Freeport LNG Gulf Landing Northeast Gateway
Low (n=5)	Only federal officials among key decision makers *and* No decision makers elected	Corpus Christi LNG Creole Trail KeySpan Sabine Pass Vista del Sol

Table 5: Levels of internal resources for LNG proposals

Score	*Criteria*	*Cases*
High (n=2)	Previous experience successfully defeating a similar proposal	Cabrillo Port Compass Port
Medium (n=6)	No experience successfully defeating a similar proposal *and* ▪ 15% of population college educated *and* ▪ $35,000 median household income *and* ▪ 3.5 nonprofits per 1000 people	Crown Landing Freeport LNG KeySpan Long Beach LNG Mare Island Energy Northeast Gateway
Low (n=5)	No experience successfully defeating a similar proposal *and* <15% of population college educated *and* <$35,000 median household income *and* <3.5 nonprofits per 1000 people	Corpus Christi LNG Creole Trail Gulf Landing Sabine Pass Vista del Sol

A community's internal resources were scored as high if the community had successfully opposed a LNG facility in the previous 5 years. According to interviews, this type of experience created important connections among community members and made subsequent mobilization easier. For communities without this sort of experience, I relied on secondary data sources for scoring, determining the following breakpoints based on my knowledge of the cases.

A community's internal resources were scored as medium if at least fifteen percent of the population was college educated and income levels were thirty-five thousand or more and the community had at least 3.5 nonprofits per thousand people. A community's internal resources were scored as low if less than fifteen percent of the population was college educated and income levels were less than thirty-five thousand and the community had less than 3.5 nonprofits per thousand people.[13]

External (nonlocal) resources

Although not measured prior to mobilization, I include a scoring of the external resources involved in each proposal because of the critical role outside groups play in the narratives below. External resources were scored as high if I found evidence of involvement by external governmental and non-governmental organizations; medium with evidence of involvement by external governmental organizations only; low with evidence of involvement by external NGOs only; and otherwise none (see Table 6).[14]

Table 6: Level of external resources for LNG proposal

Score	***Criteria***	***Cases***
High (n=6)	Evidence of involvement by external governmental *and* non-governmental organizations	Cabrillo Port Compass Port Crown Landing Gulf Landing KeySpan Long Beach LNG
Medium (n=0)	Evidence of involvement by external governmental organizations only	
Low (n=4)	Evidence of involvement by external non-governmental organizations only	Freeport LNG Mare Island Energy Northeast Gateway Vista del Sol
None (n=3)	No evidence of involvement by external organizations	Corpus Christi LNG Creole Trail Sabine Pass

Mobilization

Social movement scholars divide measurements of mobilization into institutionalized actions, or those that occur within the structures provided by both the governing body and project proponent for public feedback, and contentious actions, or those that occur outside of these structures. However, the siting of an industrial facility provides opportunities for both types of activities, and I wanted a measure of opposition that would include both. Thus,

determinations about the level of mobilization were based on letters-to-the-editor, maximum number of speakers at a single EIS hearing, coordinated appearances at meetings (other than EIS hearings) organized by others, public meetings planned by opponents, protest events and lawsuits.

Mobilization was scored as high if many letters and speakers voiced concern about the proposal (<50 combined) and opponents organized more than two events (coordinated appearance, public meeting or protest event). Mobilization was scored as medium if few letters and speakers voiced concern about the proposal (<50 combined) and opponents organized more than two events. Mobilization was scored as low if few letters and speakers voiced concern about the proposal (<50 combined) and opponents organized one or two events. Cases with fewer than 50 letters and speakers combined and no organized events exhibited almost no mobilization. See Table 7 for the scoring of each case.

Table 7: Levels of mobilization for LNG proposals

Score	***Criteria***	***Cases***
High (n=4)	Many letters and speakers (>50 combined) *and* More than two organized events	Cabrillo Port Compass Port Long Beach LNG Mare Island Energy
Medium (n=2)	Few letters and speakers (<50 combined) *and* More than two organized events	Crown Landing Gulf Landing
Low (n=3)	Few letters and speakers (<50 combined) *and* One or two organized events	Freeport LNG KeySpan Northeast Gateway
Almost None (n=4)	Few letters and speakers (<50 combined) *and* No organized events	Corpus Christi LNG Creole Trail Sabine Pass Vista del Sol

Results

Table 8 displays the results of my analysis of threat, political opportunity, resources and mobilization across all thirteen LNG proposals. Four types of response are represented: (1) federal and local acceptance, (2) local opposition, (3) non-local opposition, (4) widespread opposition. I discuss each in turn below.

Federal and local acceptance

All of the proposals that fall in the "federal and local acceptance" category (i.e., those projects that experienced no opposition) were onshore facilities located in unpopulated areas on private property in the Gulf Coast (Sabine Pass, Creole Trail, Vista del Sol and Corpus Christi LNG). This choice of location by the proposing companies created the ideal conditions for community acceptance: low threat (because the surrounding area was unpopulated), low political opportunity (because the land for the facility was privately owned and there was no separate state-level environmental review, so the only governmental review was federal) and low resources (because of a rural location in the Gulf Coast).

The Gulf Coast (with the exception of Florida) has a long history of accepting and encouraging oil and gas development on and near its shores (Gramling and Freudenburg 1996). Indeed, each of these four LNG proposals were sought out by the local community, via advertisements by local economic development corporations, and accepted with open arms. For example, when Cheniere Energy first proposed the Sabine Pass LNG facility in Cameron Parish, Louisiana, a local police juror (the equivalent of a county commissioner) was quoted in the local newspaper as saying to Cheniere representatives at a public meeting, "All of Cameron Parish is behind your project. When you called, I thought we had got a call from heaven" (Wise 2003). Several interviewees in Louisiana and Texas spoke about the importance of the oil and gas industry to the Gulf Coast economy and their comfort with these types of developments (interviews 1-4). Kristi Darby, of Louisiana State University, commented in a Mobile Press-Register article that, "People in Louisiana are used to having the petroleum industry around. The oil industry has been in Louisiana for decades. The communities are not afraid" of LNG (James 2005).

Community members saw these projects as a potential source of revenue and jobs. At the Federal Energy Regulatory Commission hearing about the Draft EIS for the Sabine Pass project, Bobby Conner, the local tax assessor, asserted that:

> *Cheniere Energy...would be a great help to our tax base, which is dwindling...because... everybody's everybody's going deeper and deeper offshore to drill for oil and gas these days. And the LNG facility, it would be real welcome...Since 1999, Louisiana has lost 4,000 jobs in the petrochemical industry and is on track to lose another 18,000 in 2004-2005. Nowhere have they been stinged [sic] more sharply than the ammonia fertilizer industry where natural gas makes up 90 percent of the process. Four years ago there were nine aluminum plants in Louisiana. Today we have three. This has made the LNG project a top priority in our state and in our nation (Draft EIS Hearing on Sabine Pass LNG and Pipeline Project 2004, 22).*

At ExxonMobil's press conference announcing the Vista del Sol LNG proposal in San Patricio County, Texas, Governor Rick Perry stressed that:

> *Texas and the United States need secure supplies of natural gas to attract industries, assure development and to continue the strong economic growth we are experiencing in our state and throughout the nation. This project will bring jobs and other economic benefits to San Patricio County and the greater Corpus Christi area and will provide long-term supplies of natural gas for our industries, power plants and homes (quoted in Powell 2004).*

Table 8: Mobilization against LNG proposals

Response category	*Case*	*Threat*	*Political opportunity*	*Internal resources*	*External resources*	*Mobilization*	*Outcome*	*Implication*
Federal and local acceptance	Sabine Pass	Low	Low	Low	None	None	Built	Low threat projects in communities with limited political opportunity and resources attract little opposition and are approved and often built.
	Creole Trail	Low	Low	Low	None	None	Approved	
	Vista del Sol	Low	Low	Low	Low	None	Approved	
	Corpus Christi LNG	Low	Low	Low	None	None	Approved	
Local opposition	Freeport LNG	Low	Medium	Medium	Low	Low	Built	
	Northeast Gateway	Low	Medium	Medium	Low	Low	Built	
Non-local opposition	Gulf Landing	Medium	Medium	Low	High	Medium	Withdrawn	More threatening projects in communities with limited political opportunity and internal resources attract opposition from outside groups, resulting in failed projects.
	Crown Landing	High	Medium	Medium	High	Medium	Rejected	
	KeySpan	High	Low	Medium	High	Low	Rejected	
Widespread opposition	Long Beach LNG	High	High	Medium	High	High	Rejected	Two pathways result in widespread opposition: the combination of a threatening project in a community with access to decision makers or projects proposed in communities with internal resources.
	Mare Island Energy	High	High	Medium	Low	High	Withdrawn	
	Compass Port	Medium	Medium	High	High	High	Withdrawn	
	Cabrillo Port	Low	Medium	High	High	High	Rejected	

Thus, in many ways, the LNG proposals in this category were not merely "accepted" but actively campaigned for as a way to spur local economic development. Any mobilization in these cases was in support of the proposed facilities. All of these facilities were approved and one was built.

Local opposition

The next set of proposals (Freeport LNG and Northeast Gateway) experienced little, mainly localized opposition. These two proposals – one onshore in an unpopulated area and the other offshore, closed-loop – had low levels

of threat associated with them. Thus, despite having medium levels of political opportunity and resources, opponents struggled to foster opposition beyond the locally-affected community. As exemplified by the Freeport LNG project, in both cases local opponents confronted larger regional- and state-level forces that favored LNG development.

Freeport LNG is located on Quintana Island, Texas – an island surrounded by industrial development but home to about fifty residents and a prime birding destination. Dow Texas Operations – Dow's largest integrated site – is located just across the ship channel in Freeport. It is the city's largest employer. As a large user of natural gas, Dow was supportive of the Freeport LNG proposal and signed a purchasing agreement for 500 million cubic feet of gas per day upon completion of the facility (Antosh 2003). Although several Quintana residents were strident opponents of the facility and eventually partnered with birding groups from nearby Lake Jackson and Houston, Dow's support made it difficult for this opposition to spread elsewhere in the region. In fact, local opposition was quickly dismissed by other residents: "The Texas Gulf coast has been in the center of the petrochemical industry for generations. To say that the area can't accommodate a LNG operation would be like choking on a gnat after swallowing a camel" (Hawes 2004). As a result, opponents of the Freeport LNG facility focused efforts on securing mitigation (interview 5). These efforts resulted in the relocation of a popular birding park on Quintana Island and the purchase of 78 acres in nearby Surfside for wetlands mitigation.

Similarly, opponents of the Northeast Gateway facility proposed for offshore Gloucester, Massachusetts, also confronted a wall of regional support. As one of the few offshore proposals along the East Coast, Northeast Gateway was seen by many politicians, including Governor Mitt Romney, as the preferred option for a much-needed LNG facility in Massachusetts. The offshore proposal avoided the public safety concerns associated with strongly-opposed onshore proposals in other locations like Fall River, Massachusetts. Thus, despite strong opposition from local fishing groups in Gloucester, the mobilization never spread to others within the community or to environmental groups at the regional- or state-level. For example, despite numerous appeals from Gloucester's Mayor (an opponent), Fall River's Mayor repeatedly voiced his support for the offshore Gloucester option as the preferred site (interview 6). In addition, the Conservation Law Foundation, a powerful environmental group and frequent opponent of offshore development in the Northeast, never took on the Northeast Gateway proposal directly, despite requests from local Gloucester opponents. Angela Sanfilippo of the Gloucester Fishermen's Wives Association (another opponent) lamented the fact that, after so many years spent quarreling with regional environmental groups and government regulators over fisheries protection, when it came time that they could have all been on the same side, "we lost fishing ground in the name of clean energy" (interview 7). Once it became clear that the Northeast Gateway proposal would be approved, opponents of the Northeast

Gateway, like those on Quintana Island, focused their efforts on mitigation. Coordinating an "eleventh hour" effort, they successfully secured $24 million from the proposing company (interview 6).

In both locations, the facilities were eventually built, but relations between the company and community remain strained. For example, because of the lack of support company officials encountered in Gloucester, they chose to locate the headquarters for Northeast Gateway in nearby Salem (interview 8). In sum, the low-threat proposals in medium-opportunity environments and medium-resourced communities tended to experience low levels of mainly localized opposition. And, while these projects were approved, when built, companies continued to experience local resistance and hostility.

Non-local opposition

The next set of proposals (Gulf Landing, Crown Landing and KeySpan) were higher threat facilities located either onshore in populated areas of the Northeast of offshore in the Gulf with open-loop regasification. Political opportunities for opponents in these cases were medium or low because key decision makers were mostly located at the national level and non-elected, and internal resources for mobilization in all three locations were modest. As a result, these projects experienced low- to medium-levels of opposition from the community. Unlike in the locally opposed cases, however, state-level bureaucrats and external NGOs took an active role in opposing these facilities, often using legal means to block approval.

In the case of Crown Landing, the facility became part of a larger jurisdictional dispute between Delaware and New Jersey. BP proposed the facility in Logan Township, New Jersey, on the Delaware River. This location placed the pier of the facility inside Delaware's border and in direct violation of Delaware's Coastal Zone Act, which prohibits the construction of certain types of industrial facilities within the coastal zone. Delaware regulators rejected the proposal, with support from Delaware environmental groups, who were long-time defenders of the Coastal Zone Act. New Jersey, with support from BP, filed suit against Delaware. The U.S. Supreme Court eventually decided in favor of Delaware, and BP withdrew the project. Because the state of Delaware took such an active role in opposing the project to defend its jurisdiction, mobilization was somewhat muted and legalistic in nature. For example, Delaware environment groups immediately partnered with the Environmental Law Clinic at Widener University to develop legal briefs on the issue. New Jersey residents, with a few notable exceptions, and elected officials were largely supportive of the proposal because of the jobs and revenue it would bring to the area.

Similarly, most of the opposition to KeySpan was driven by the Rhode Island Attorney General and his staff (interviews 9-11). They researched the impacts of the facility, gathered expert witness testimony, distributed information and advocated on behalf of the people of Rhode Island. They did

not, however, incite mobilization. Interviewees noted that the response from the community was somewhat subdued compared to past events (interviews 10-11). In contrast, the community reaction in nearby Fall River, Massachusetts, to defeat the Weaver's Cove LNG proposal was much more organized and impassioned. Indeed, Assistant Attorney General Paul Roberti admitted that his strategy was not to garner support from the general public, whom he thought FERC would ignore, but from expert witnesses (interview 11). Unlike in Fall River, the population surrounding the KeySpan location was very diverse and majority minority. For example, one Providence resident told The Providence Journal that many residents do not speak English and "I seriously doubt their views will be heard" (Reynolds 2004). Thus, the opposition's strategy was to rely on legalistic arguments against the proposal. This strategy proved successful. FERC rejected the proposal due to safety concerns in June 2005.

The Gulf Landing proposal, located in southwest Louisiana, drew much of its opposition from regional- and state-level fisheries regulators and environmental and fishing organizations located across the state in New Orleans. This project, located offshore Louisiana, was the third offshore, open loop proposal in the Gulf of Mexico. The previous two offshore, open loop proposals in the Gulf had sailed through the approval process with no community opposition. Those two projects had, however, caught the attention of federal and state fisheries regulators who were concerned about the potential impacts to the fishery from the open loop regasification system. Agency officials began to alert environmental and fishing organizations to the potential dangers posed by this technology (interviews 12-14). These groups, mainly based out of New Orleans (on the other side of the state from the Gulf Landing proposal), began to get involved with the release of the Gulf Landing Final EIS in early December 2004 (interview 15). This document was the first to include a standardized methodology to assess potential fisheries impacts from open loop regasification. The range of potential impacts to fish populations was large and the upper limit caught the public's attention (interview 16). As a result, in addition to eliciting the same negative comments from fisheries regulators, the Gulf Landing Final EIS also drew negative comments from the Sierra Club's Louisiana Chapter and the Gulf Restoration Network. Fishing organizations were also becoming concerned as fishermen began to swamp message boards on a popular fishing website, RodNReel.com, and inundate regulators with calls about the issue. The Louisiana Charter Boats Association decided to take on the cause and eventually joined forces with environmental groups to form the Gumbo Alliance against open loop LNG in Louisiana. Despite this opposition, the Gulf Landing facility was approved in February 2005, and the Governor of Louisiana elected not to use her veto power against the proposal, despite extensive lobbying by opponents because she provided the likely political avenue for rejection of the proposal.

This setback did not faze the growing opposition movement against the proposal and open loop LNG more generally. Instead, the Sierra Club, Gulf Res-

toration Network and Louisiana Charter Boats Association, with the help of the Tulane Environmental Center, sued the federal government for approving the Gulf Landing facility. The lawsuit against Gulf Landing failed, but the company eventually withdrew the approved facility in March 2007.

In all three cases, non-local opposition from state-level officials and/or external NGOs replaced local mobilization as the means for defeating the proposal. Thus, despite weak levels of local mobilization, the proposals were still defeated.

Widespread opposition

The fourth set of cases (Long Beach, Mare Island, Compass Port and Cabrillo Port) resulted in widespread mobilization but via two different paths. In the cases of Long Beach and Mare Island, mobilization was driven by a combination of high threat and high political opportunity. In the cases of Compass Port and Cabrillo Port, it was driven by strong internal resources. I discuss each path in turn.

Because internal resources were lower, opposition to the Mare Island and Long Beach proposals was unexpected. For example, the Mare Island Energy Project was proposed in Vallejo, California – a city that had recently lost a major economic engine with the decommissioning of the Mare Island Naval Shipyard and was desperately seeking a source of additional revenue and jobs for its flagging economy. As a result, city officials were initially supportive of the proposal. It was not until new residents to Vallejo started protesting due to the potential threats posed by the facility that city leaders changed their mind about the proposal. See Boudet and Ortolano (2010) for a more on this case.

Like Vallejo, Long Beach was experiencing a budgetary crisis just before it received its LNG proposal, slated for the city's port, in early 2003. Consequently, the Long Beach LNG proposal and its potential to increase city revenue appealed to many city leaders. Moreover, city residents had suffered a quadrupling of natural gas prices during California's 2001 energy crisis. The potential for a steady supply of natural gas from the proposal was also attractive to city leaders. Like Vallejo, Long Beach also did not have many internal resources for mobilization against the proposal. In the late 1990s, Long Beach experienced the loss of two major sources of employment – the Navy and McDonnell Douglas. As a result, many long-term residents moved away. Moreover, many of its residents, especially those who live closest to the Port, are "poor and brown...To be an activist and speak up at meetings, you have to believe that government works and your voice will be heard. Many Latinos don't" (interview 17).

As in Vallejo, what Long Beach opponents lacked in resources, they made up for by exploiting the high levels of threat and political opportunity. The Long Beach Terminal was to be located less than two miles from city hall in the

Port of Long Beach, one of the country's busiest ports. Local opponents and state officials were concerned about the potential impacts to both human health and commerce of placing a potentially explosive LNG facility in such a busy location where many dangerous chemicals were already transported and stored (interview 18). According to comments filed by state officials on the Draft EIS, the LONG Beach LNG facility "...could pose a risk to the health and safety of the approximately 130,000 people living, working or visiting in the area within approximately three miles of the proposed site" (California Public Utilities Commission 2005, 2). Along with other onshore LNG facilities around the country, the Long Beach project also became the subject of a jurisdictional dispute between federal and state regulators. When the proposing company filed an application only with federal regulators, state regulators sued. As a result, Long Beach opponents could piggyback off of the efforts of state officials in terms of developing technical and legal arguments against the facility.

However, in addition to the opposition provided by the state, which in many respects is similar to what happened among the cases of non-local opposition described above, Long Beach opponents were afforded a local political opportunity provided by a provision of the California Environmental Quality Act (CEQA). The lead agency for the California Environmental Impact Report (EIR) on the project was the Port of Long Beach, a non-elected body. In the case of EIR certification by a non-elected body, CEQA permits an appeal of this certification to the next highest elected body – in this case the Long Beach City Council (State of California 2003). Thus, some of the mobilization efforts by opponents went toward lobbying city council members and organizing coordinated appearances at council meetings. Myown also ran for an open council seat in April 2006, in part "to ensure that every candidate, even those in the mayor's race, would be forced to take a position on the proposal" (interview 17). Although she did not win the election, Myown ensured that the LNG issue was prominent during the campaign with both of the key contenders in mayoral race expressing opposition to the proposal in favor of offshore alternatives.

Soon after the election of a new mayor who was opposed to the proposal, Port of Long Beach Commissioners voted to abandon the EIR process and end negotiations with the proposing company about the LNG facility.[15] Most interviewees seemed to think the project's demise was related to a combination of community opposition, state agency opposition and the mayoral election (interviews 17, 18-21). These two cases provide important evidence that opposition can successfully derail projects despite a lack of internal resources.

In contrast, Cabrillo Port and Compass Port followed a path to mobilization driven by internal resources, as opposed to threat and political opportunity. Oxnard had successfully defeated an onshore LNG proposal on its shores prior to the Cabrillo Port proposal. Thus, the community was home to a

plethora of local environmental and community organizations that were familiar with LNG and viewed opposing such projects as part of their mission. In addition, the project was located in Southern California, an area known for its environmental activism, particularly against industrial development on the coast. These organizational resources supported the opposition effort against the proposal, with opponents relying on both institutional and contentious means to express their point of view that LNG was not needed in California. Of all the proposals considered in this study, Cabrillo Port provoked by far the most opposition, mobilizing somewhere between two and three thousand people first for a paddle out protest in Malibu and then for a rally at the hearing on the project's Final EIS in Oxnard. This fierce resistance came despite the fact that the project posed little threat as an offshore, closed-loop proposal and opponents only had a medium level of opportunity in the form of a gubernatorial veto.

In many ways, the Compass Port proposal is strikingly similar to the Cabrillo Port proposal. The Compass Port facility was to be located offshore Mobile, Alabama, which was one of the few Gulf Coast communities to oppose and defeat two previous onshore LNG proposals by ExxonMobil and Cheniere Energy, respectively. This experience meant that community members were organized, aware and somewhat distrustful of LNG proposals. Although initially supportive of ConocoPhillips's offshore Compass Port proposal because it lessened potential safety impacts, opponents of the previous onshore proposals in Mobile quickly became aware of the open-loop regasification issue through a local newspaper reporter at the Mobile Press-Register (interviews 22-23). The newspaper had become an important source of information for LNG opponents around the country on both the safety and environmental impacts of LNG receiving terminals (interviews 17, 23). Once aware, much of the momentum, garnered from the defeat of the onshore LNG proposals, was successfully transferred to oppose the Compass Port facility through the hard work and dedication of Mobile BayKeeper. Mobile BayKeeper's executive director, Casi Callaway, also served on the Board of the Gulf Restoration Network, a regional environmental organization, and could thus learn from the experiences of LNG opponents in Louisiana. Following a pattern that had proven successful in Louisiana, the opposition in Alabama brought together an "unlikely alliance" of commercial fishermen, recreational fishermen and environmentalists (interviews 22, 24). The improbability of such an alliance was demonstrated by the fact that the commercial and recreational fishing groups so hated working together that their representatives requested to be placed on opposite sides of the podium during joint press conferences. The last event organized by opponents in Mobile drew over 400 participants to a town hall meeting with Governor Riley on Compass Port (Raines 2006, interview 24). This turnout indicated fervent opposition to open-loop LNG, and Governor Riley threatened a veto of Compass Port. As in the case of the Cabrillo Port proposal, existing organizations in Mobile organized fierce resistance to Compass Port, despite the fact that the project posed only a medium level of threat as an offshore, open-loop proposal and opponents

only had a medium level of opportunity in the form of a gubernatorial veto.

In these two cases, energy companies, recognizing the difficulty of siting an onshore LNG facility in a given community due to safety concerns, proposed what they thought would be considered a more palatable offshore proposal. While this move lessened the threat posed by a facility and changed political opportunity structures for mobilization, it did not affect the underlying internal resources for mobilization against LNG, which were primed and ready given past experiences. Thus, the timing of these proposals, in terms of the community's experience with previous LNG proposals, was extremely important in cultivating resources and influencing mobilization levels.

Discussion and Conclusions

My examination of thirteen LNG proposals generates three main hypotheses that should be tested with additional case study work. First, low threat projects in communities with limited access to decision makers (low political opportunity) and limited resources attract little, mainly local, opposition and are approved and often built. Second, even in communities with relatively limited resources, more threatening projects attract opposition from outside groups. The result is failed projects, either through rejection by regulatory officials or withdrawal by the company. Third, two pathways result in successful, widespread opposition: either the combination of a high threat project in a community with access to decision makers (high political opportunity) or a project proposed in a community with internal resources.

For both social movement theory and the literature on facility siting, my research highlights the importance of configurational thinking; i.e., the idea that different combinations of causal conditions can come together to produce the outcome of interest, in this case mobilization against LULU proposals. A comparison between the thirteen cases suggests that it is not just the magnitude of each individual factor presented in the conceptual framework (i.e., threat, political opportunity and resources) but also their combination that is important in determining mobilization outcomes. High levels of mobilization can take place with some factors at very low levels, provided other factors have high levels.

This finding is similar to the conclusion reached by Gamson, Fireman et al. (1982) in an experimental study of collective rebellions. They concluded that a combination of five distinct factors had to be present for rebellion. Each factor individually was necessary but not sufficient for an uprising. Significantly, deficiencies in one factor could be compensated for by high values in another. This configurational thinking is typical of comparative case study work, where investigators tend to think in terms of the "causal recipes" or "the causally relevant conditions [independent variables] that combine to produce a given outcome [dependent variable]" (Ragin 2008, 6-1). However,

as Rihoux and Ragin (2009) point out, this conception of causality is contrary to many of the assumptions underlying mainstream statistical techniques. In statistical analysis, "...the impact of a given independent variable on the dependent variable is assumed to be the same regardless of the values of the other independent variables" (Ragin 2008, 112). The results of my work suggest that, in comparison to mainstream statistical reasoning, configurational thinking may be more appropriate for understanding mobilization efforts against proposals for LNG facilities and LULUs more generally.

In practice, these findings point to the important role played by non-local governmental officials and NGOs in opposition efforts against threatening projects, particularly in communities where political opportunities and internal resources are limited. For example, with the exception of the Mare Island Energy Project[16], external groups played key roles in dismantling all the failed projects in communities with low to medium internal resources. Conversely, local opposition alone appears ineffective in disabling projects, as shown in both the Freeport and Northeast Gateway cases. In essence, state and regional players compare the risks posed by multiple proposals, and, if the infrastructure is deemed necessary, the least risky proposal often garners support (or at least avoids opposition) from state and regional leaders. For example, Northeast Gateway, with its offshore location, was seen as the less risky alternative for LNG development in Massachusetts. Thus, local officials and community members must continually assess a proposal in their own community in comparison to other similar proposals in the state and region. Facility proponents do, and, as a result, often propose facilities in multiple locations to hedge risks and win the race to approval. For example, ExxonMobil proposed LNG facilities near Corpus Christi, Texas; Mobile, Alabama; and offshore in the Gulf of Mexico. Excelerate Energy proposed facilities offshore in the Gulf of Mexico and Massachusetts. NorthernStar Natural Gas proposed facilities in California and Oregon. Each company therefore had multiple irons in the fire and could abandon a proposal that experienced opposition. This idea of a "race to site" is not uncommon in the energy sector and suggests that opposition from state or regional leaders and delaying tactics by opponents may be just as effective in disabling a project as tactics aimed at outright rejection.

Notes

1. LNG is natural gas that has been cooled to cryogenic temperatures for transportation in tankers. Offload terminals receive these tankers and vaporize the LNG for distribution. An LNG facility represents a classic example of a LULU, imposing negative impacts on a local community but wider benefits to the region.

2. Breaks in trust were another causal factor identified by Boudet and Ortolano (2010). However, my interviews did not indicate that breaks in trust played an important role in the mobilization efforts in the additional cases.

3. While some efforts have been made to analyze LULU responses using theories from the study of social movements (Devlin and Yap 2008; Diani and Van der Heijden 1994; Flam 1994; Kitschelt 1986; Sherman 2011; Walsh, Warland, and Smith 1997), only Boudet and Ortolano (2010) explicitly make use the political process model.

4. The Gulf Gateway Energy Bridge, the second offshore LNG proposal in the Gulf of Mexico, was subjected only to an Environmental Assessment, a lesser version of an Environmental Impact Statement (EIS). This decision came despite protests from the National Marine Fisheries Service that an EIS should be required. All other offshore LNG proposals in the U.S. were subjected to an EIS.

5. The author conducted all site visits except for one to Providence, Rhode Island, to collect information about the KeySpan proposal. This site visit was conducted by R. Wright.

6. Interview protocols are available from the author upon request.

7. For the Gulf Landing project, additional interviews were conducted in New Orleans because there was mobilization against the project there. The number of interviews for the Gulf Landing proposals reported in Table 2 includes only these additional interviews conducted in New Orleans.

8. My measure of threat is, to some extent, independent of public perceptions of the risk posed by the facility but is consistent with the literature on facility siting, which assesses the risks posed by a facility in terms of distance and technical factors. Moreover, perceptions can easily be manipulated by mobilization efforts, meaning they are not necessarily independent of the outcome of mobilization.

9. I selected 200 people per square mile as the threshold between low and high population density by comparing population densities to my knowledge of each affected community. Based on site visits, the onshore Gulf Coast projects were located in low population density areas when compared to the other locations in our sample. Indeed, with the exception of Brazoria County, all Gulf Coast projects are located in counties with less than 100 people per square mile. I chose to include Brazoria County as low population density because the higher population density of this county is mainly driven by development in other parts of the county, particularly those areas close to Houston. In fact, given the stark divisions in population density between those proposals located in the Gulf Coast and elsewhere, I could have selected the cutoff anywhere between 174 (Brazoria County, TX) and 784 (Gloucester County, NJ).

10. Although a few onshore facilities were initially proposed as open-loop systems, such proposals were quickly switched to closed-loop due to negative reactions from regulators who were concerned about the potential risk to biological resources in near-shore estuaries.

11. This data is only available at the county level. Thus, for the cases where the affected community was a city, county level data was utilized.

12. As an example, for the Mare Island Energy Project, which was announced in May 2002, data on nonprofits in Solano County was taken from July 2001. The next dataset on Solano County was only available for July 2002, which falls after the announcement of the proposal.

13. Scoring was validated by examining the number of internal organizations appropriated into the opposition, as indicated via newspaper data and interviews. Results, shown in the technical appendix, corroborate scores, particular the difference between low and medium / high resource communities.

14. Note that external governmental involvement carried more weight than NGO involvement in my scoring scheme, based on interviewee responses. However, because no cases in my sample involved government organizations without NGOs, this weighting deserves additional study.

15. Sound Energy Solutions, the proposing company, sued to try to force the Port to complete its review but lost when a judge dismissed the case in March 2008.

16. The Mare Island proposal is the only one in the sample that did not go through an EIS process because it was withdrawn at the stage of leasing the land before the company submitted an official application for governmental review. However, given the amount of local opposition and the fact that local opponents were already contacting state officials, I would argue that, had the company continued with the proposal, it would have also attracted opposition from external governmental officials.

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