



Activism or egotism? A critical view of the NIMBY phenomenon in cases of energy infrastructure in Israel

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Abstract The NIMBY (“not in my backyard”) phenomenon, in which stakeholders oppose new land uses and activities in their vicinity, has been a subject of discussion for several decades. For energy infrastructure, it results from the apparent juxtaposition between the desire to maintain resident well-being and a healthy environment on the one hand, and the demand for energy, and maintaining an energy-intensive standard of living, on the other. Based on a review of the literature on energy infrastructure NIMBY, interviews with key informants, documents, and media analysis, this article analyzes the NIMBY phenomenon in the context of two recent energy-infrastructure development projects in Israel. Specifically, it addresses cases relating to gas treatment facilities, which are rarely the focus of other existing literature in this context. The case analysis indicates that decision-makers and planners mainly regard NIMBYism as an unjustified obstacle to infrastructure development, whereas objecting residents consider it an articulation of their dissatisfaction with perceived environmental threats, and therefore a legitimate and effective means to ensure environmental and social

justice for themselves and for their community. The main insight is that expanding public consultation and engagement with planners and developers at earlier planning stages could reduce or modify NIMBY objections, as well as the perception of NIMBYism by developers and planners. We emphasize that understanding NIMBY narratives offers advantages to policymakers, energy companies, and planners and suggests potential strategies for all three.

Keywords NIMBY · Host community compensation · Energy infrastructure · Stakeholder engagement · Environmental planning

Introduction

...Decisions taken by the planning institutions, after in-depth discussions, should [not] be interfered with [...] This is one of those cases expressing the understandable interests of anyone who wants vital facilities, accompanied by environmental and security ramifications to be situated elsewhere, distanced, and ‘not in my back yard.’ However, these facilities need to be sited somewhere. [...] We sympathize with the petitioners but do not side with them.

-Response to Israeli Supreme Court petitions 7737/14, 8077/14, 8079/14. Dec 22, 2015

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Judge Dafna Barak-Erez is quoted above in response to a petition brought to Israel's Supreme Court by local authorities and NGOs opposing the construction of near-shore natural gas infrastructure close to coastal communities. She answers the petitioners' claims, which she views as part of an important trend in Israel (and elsewhere): the increasing prevalence of the "not in my backyard" or "NIMBY" phenomenon.

In this article, we contend that two messages are conveyed by the term "NIMBY," one implicit and the other explicit, translating respectively to residents claiming: (i) we agree that the project is legitimate and necessary, but (ii) we ask that it will not be located close to us. The contradiction between the two aspects of the NIMBY phenomenon (hereafter NIMBYism) contributes to the controversial nature of the phenomenon, leading to strong emotions among the public, planners, and developers. NIMBY positions have typical characteristics, certainly found in Israel, whereby a community *generally* supports the concept of a specific type of development or infrastructure and acknowledges the need for it, yet objects to its proposed location (Papazu, 2017; Uji et al., 2021; Wolsink, 1994; Zanocco et al., 2020).

Significant research on NIMBYism is found in the planning and environmental management literature, particularly related to the siting of power-plant infrastructure, wind farms, and waste management facilities (Fournis & Fortin, 2017; Wolsink, 2006). In some areas, it is common to the siting of a myriad of other land uses including public housing (Pendall, 1999) and various facilities for vulnerable populations such as those in rehab programs, the disabled, and the elderly (Takahashi, 1997; Wilton, 2000). Over the last few decades, NIMBYism has become widespread, particularly in response to siting energy infrastructures such as power plants, natural gas treatment, and distribution centers, wind turbines, and storage facilities for household gas (see, e.g., Benford et al., 1993; Devine-Wright, 2005; Chiou et al., 2011; Waldo, 2012; Papazu, 2017; Zheng & Liu, 2018). Research on NIMBYism in Israel has focused on political and social aspects of the phenomenon, describing cases of real estate and economy, social inequality, human services facilities, and housing policy, rather than energy infrastructure (de-Shalit 2003; Feinerman et al., 2004; Singer, 2014; Alster, 2022). The goals of the current study describe and investigate how the prevalence of NIMBYism shapes energy

infrastructure development, specifically two types of gas treatment facilities sites that usually have a very high negative image in public opinion (Furst & Portman, 2018). Also, this study adds an in-depth view to NIMBYism by bringing an empirical primary source of data, that contributes to a better understanding of the phenomenon in general, and to the unique Israeli case. In terms of energy infrastructure, Israel has a specific set of factors that exist simultaneously in a way that influences its propensity for NIMBY objections: Geographically, it is a small country relative to its population size. Demographically, it has shown a rapid and continuous increase in population size. Economically, it has expedited energy planning and construction in order to achieve energy security and self-reliance. Socially, an increasingly informed and litigious society (Lavie, 2020; Shmueli, 2008; Tal, 2016).

Background and definitions

NIMBYism is defined as local activism by residents or by organizations opposing development near their homes (Dear 1992; Wolsink, 1994). Among the more positive aspects of NIMBYism is the progress it has engendered in distributive and environmental justice (see Been, 1994; Shmueli, 2008).

However, this simplistic definition leads to the term's overuse. As we show below, other common characteristics flavor NIMBY-type objections. The term "NIMBY" entered the public discourse in a Christian Science Monitor article by the American journalist Emilie Livezey (1980). A similar term had been used previously in a paper on facility siting entitled "Not on my Block" (O'Hare 1977). In the former article, which addressed the treatment of hazardous waste from industrial plants, Livezey describes how community organizations asked for hazardous waste to be buried as far from residents as possible, contending that the area near the waste site would be irretrievably spoiled: "The very thought of having even a secure landfill anywhere near them is anathema to most Americans today. It's an attitude referred to in the trade as NIMBY— 'Not in my backyard.'" (Livezey 1980).

Early on, the term "NIMBY" was used in debates between supporters and opponents of nuclear energy. Walter Rodgers, a member of the American Nuclear Society, used the term to refer to a "protectionist

attitude.” Regarding a local community’s response to such seemingly undesirable nearby development, Rodgers explained that “residents usually concede that these ‘noxious’ facilities are necessary, but not near their homes” (Dear 1992). The term NIMBY became derogatory in the 1980s when Margaret Thatcher’s Environmental Secretary Nicholas Ridley derided objections to development in cases where farmers were protesting development plans near their neighborhoods and towns. Ridley hypocritically called the protestors’ opposition “crude NIMBYism”; it was discovered later that he himself had opposed similar developments near his home (see Saint et al., 2009).

Wolsink has written extensively about NIMBYism in planning contexts (1994, 2006, 2012) and is one of the pioneers of what he refers to as “NIMBY theory” (Wolsink, 1994). He lays out six assumptions that form the basis of NIMBY-style thinking. One of the most salient of these is that, although everyone agrees about the importance of a particular development project, not everyone is prepared to make sacrifices that involve giving up benefits and suffering ills. Such projects often involve “macro” level (i.e., national, regional, or universal) interests rather than those of local populations (“micro” level).

The NIMBY phenomenon typically exists within either an environmental context or a social context (e.g., Davis & Bali, 2008), although frequently the two are considered together (see, e.g., Burningham, 2000). The environmental context involves environmental well-being and/or environmental (i.e., public) health. In a social or political context, the term NIMBY applies to a group of people refusing or averse to living in proximity to another group of a different race, nationality, class, language, religion, lifestyle, or ability level.

As the NIMBY phenomenon has become increasingly acknowledged over the past decades, additional variations of the term have come into being with nuanced differences between them, often involving an element of humor and criticism (see Table 1).

Approaches towards NIMBY

The literature has described and analyzed aspects of NIMBYism over the past four decades and two dominant perspectives have emerged: The first contends that objections by residents to the siting of development near their homes are often perceived by decision-makers as self-centered and egoistical (e.g., Burningham, 2000; Fish, 2004; Goedeke et al, 2019). Such objectors are seen as hypocritical because,

Table 1 Common NIMBY-related acronyms

Term	Meaning	Context	Source
LULU	Locally Undesirable Land Use	Types of land use seen as unsuitable for placement in an area	Freudenburg and Pastor (1992), Schively (2007)
NOOS	Not on Our Street	Local opposition to a development location	Dear (1992)
NIMTOO	Not in My Term of Office	Time-limited opposition on the part of decision-makers	Schively (2007), Greenberg (2009), Johnson and Scicchitano (2012)
CAVE	Citizens Against Virtually Everything	Persistent resistance to developments by residents	Dear (1992), Schively (2007)
NOPE	Not on Planet Earth	Opposition by environmentalist groups to the entire project and land use	Dear (1992), Schively (2007), Johnson and Scicchitano (2012), Du Vivier and Witt (2017)
BANANA	Build Absolutely Nothing, Absolutely Nowhere, anytime	Opposition (usually of environmentalist groups) to all development	Schively (2007), Greenberg (2009), Johnson and Scicchitano (2012)
YIMBY/ WIMBY/ PIMBY	Yes/Welcome/Please in My Backyard	Positive approach	Lake (1993), Smith and Marquez (2000), Aruninta (2009), Brinkman and Hirsh (2017), Brown and Glanz (2018), Zanocco et al. (2020)
YESS	Yes, Emphasis on Statewide Siting	Proposed as a solution that counteracts NIMBY	Du Vivier and Witt (2017)

although they wish to reap the benefits of progress and economic development, they want others to bear the brunt of the related environmental and/or social costs (Fish, 2004). This critical perspective views the actions of objectors to proposed development as based on subjective positions. While such positions may be justified, objectors often support their position by considering only the information that supports their own interests rather than those of the general public (Goedeke et al, 2019; Wolsink, 2012). The second perspective views NIMBYism as expressing aspirations for environmental justice, namely, securing the right to enjoy reasonable environmental conditions (Burningham, 2000). This viewpoint is particularly relevant for disadvantaged populations living in areas degraded by a concentration of environmental hazards (Fish, 2004). Yet, it is important to mention that Israeli NIMBY opposition tends to be a syndrome of mostly social elites or middle-class communities that fight potential pollution (de-Shalit, 2003), because due to Israel's small size and density, pollution and waste end up being placed near powerful and rich communities as well as poorer and politically or socially weaker communities. It is thus not a classic case of historically oppressed minorities necessarily being the sole or main potential victims of pollution or polluting energy infrastructure. To these two perceptions, we can add what is called the "NIMBY Syndrome", which describes situations where citizens and stakeholders object to the placement of infrastructure because they overestimate the risks that it might pose for them (Uji et al., 2021). However, different stakeholders and social or knowledge group may differ in their estimation of risk levels for the same infrastructure. In fact, studies found that in some cases, parts of the population welcome energy infrastructure or at least do not object to it (e.g., because it brings jobs, energy, or development to their region), thus offering evidence that NIMBY objection is not a given or even an automatic or natural response to energy infrastructure placement, even in cases of fossil fuel or nuclear energy facilities (Uji et al, 2021; Zanocco et al., 2020). Stronger or weaker objection to, or alternatively the support for, the placement of energy infrastructure in close proximity to a certain community could also be affected by factors such as geography, culture, political views, economic or employment status (Zanocco et al., 2020).

Despite its ubiquity and influence, Wolsink (2012) contends that NIMBY thinking is a part of institutionalized technocratic thinking that characterizes some relevant actors, and a part of a pattern of counterproductive thinking in policy, at least with regard to renewable energy sources. Wolsink documents the mainstream transition among scholars analyzing public objections to the development of renewable energy sources, which involves abandoning NIMBY arguments because they are "self-evident truths" as described by Ostrom (2000). With regard to renewable energy, particularly wind power, NIMBY is assumed to be at the heart of objections to yet other impediments, such as "institutional lock-in," which refers to a reluctance to adopt new technologies or ways of doing things (see, e.g., Teschner et al., 2012). These and other sometimes contradictory views reinforce the need for a better understanding of what motivates NIMBYism and what is, and is not, part of the phenomenon (see, e.g., Du Vivier & Witt, 2017).

Institutional responses to NIMBY phenomenon

Attitudes toward NIMBYism depend on the identity of the relevant players and stakeholders (Aruninta, 2009; Benford et al., 1993; Lake, 1993). From the perspective of decision-makers and of those promoting development, NIMBYism is often considered a troublesome and irrational impediment (see, e.g., Wolsink & Devilee, 2009). While social scientists maintain that the term "NIMBY" be avoided and the concept of NIMBYism be abandoned altogether, a theoretical framework for understanding public perceptions of controversial energy infrastructure projects is still needed (Petrova, 2016). Policy and social science researchers need a framework for organizing the factors that lead to acceptance, which includes guidelines for responding to powerful constituents wary of any compromise.

Various policy options have already been advanced to avoid NIMBY protests. One such policy strategy involves *Host Community Compensation* (HCC) schemes. HCC schemes are related to YIMBY (see Table 1) and offer communities significant compensation if they do not object to a development initiative. Although such schemes do not necessarily avoid environmental degradation, they at least aim to redistribute costs and benefits and allow communities to determine their fate since they must approve both the

development and the compensation. Furthermore, such schemes tend to defuse tension and conflict (Klein & Fischhendler, 2015). It should be emphasized that from the eye of the developer, their agreement to join the HCC scheme is voluntary, and it does not replace their levy to pay formal compensation if relevant or required by the Israeli Planning and Building Law.

Critics claim that HCC is a form of bribery with significant ethical shortcomings and is used as a tool by wealthy developers to silence public dissent and oppress socio-economically weaker communities, which are often the victims of environmental injustice (Brown & Glanz, 2018). Although not described as such, similar schemes have been a component of regulatory programs for some time. Compensation is sometimes required for the private development and use of public trust resources, regardless of whether the development is expected to degrade the health of nearby residents, reduce the aesthetic value of the environment, or damage the ecosystem (Portman, 2006).

Klein and Fischhendler (2015) point out that HCC schemes are usually used for projects that provide public goods or services, citing examples of landfills, power plants, and prisons. They describe cases where HCC was used in Israel, with the first being in 1974 with the construction of the “Sharon” power station (today “Orot Rabin”). The developer, the Israel Electric Company, built Hadera Park for city residents where the power plant is located. Other examples of HCC include the Megiddo local authority, which distributed the equivalent of several hundred thousand US dollars to local residents as compensation from the Israel Electric Company for their agreement to expand the capacity of the “Hagit” power station. In another example, the Israel Electric Company built a bridge, public promenade, and cycle route to compensate local residents for the construction of a natural gas processing facility on the grounds of the Tel Aviv Reading Power Station.

Wolsink (2012) adds that the perspectives held by planners promoting development are often based on assumptions about the narrow interests of residents; however, these assumptions are not supported by empirical studies. Based on a large-scale survey used to investigate six decision-making processes for various types of waste facilities, Wolsink and Devilee (2009) showed that the crucial factors in perceived

risk are not based on the personality traits of the objectors (e.g., selfishness or economic rationality) but on perceived environmental injustice, and the perceived fairness of the process. Furthermore, numerous researchers have emphasized that, when a planning process is perceived as unfair, NIMBY claims are more likely (see, e.g., Matejczyk, 2001; Davis & Bali, 2008).

The remainder of this paper presents our analysis of two Israeli case studies involving two types of energy infrastructure. Although NIMBYism is not a completely new phenomenon in Israel, it is becoming increasingly common as the country becomes more crowded, as more infrastructure projects are needed, and as the energy companies and governmental agencies take a tougher stance toward what they perceive as NIMBYism. Significantly, the Israel Ministry of Infrastructure and Energy has established a special committee of experts to consider the economic effects of NIMBYism in the country (Furst 2018).

Israel's development trends

Since the 1990s, Israel has undergone unprecedented development and the country's population has more than doubled. Land use has changed from natural open space or agricultural to residential, energy, and transportation infrastructure uses. The average population density in the country grew from 250 to 392 inhabitants per km² from 1990 to 2019 (Hananel, 2010; Fischhendler & Nathan, 2014; Tal, 2016; CBS 2019). In 2014, the government unveiled a plan to build 600 000 new apartment units from 2015 to 2030 because the loss of open space has been keenly felt. Even marine space is being considered for intensive developments ranging from offshore artificial islands to energy production (Fischhendler & Nathan, 2014; Portman, 2019; Teff-Seker et al., 2018).

Israeli development proponents and government agencies have accorded high priority to infrastructure development, especially for natural gas energy use and production, mainly because of its high significance in geopolitical aspect: to reach for the first time energy independence and security (Portman, 2014).

A major development in recent years has been the confirmation of large gas reserves several kilometers off Israel's coast. Fast-tracking plans to develop this resource have been controversial, especially

considering the ambiguous regulatory regime due to the offshore location (Portman 2015).

In the following sections, we describe case studies of (i) a natural gas offshore processing facility, and (ii) a liquified petroleum gas (LPG) storage facility. Both cases involve energy sources that are non-renewable yet “cleaner” than oil or coal, which have been Israel’s main energy sources for many years. These two case studies were chosen due to the power and the impact of the public activism against their development, which represent the essence and the ambivalent nature of the NIMBY phenomenon in general, and in Israel specifically. It should be emphasized that strong public activism against energy infrastructure placement took place despite a mandatory Environmental Impact Assessment (EIA) was submitted by the developers, as well as public hearing of objections procedure that took place according the planning and building law (Carmon & Alterman, 2011). In addition, developers and governmental agencies held public participation events.

Additionally, the two cases have to do with two kinds of gas energy plants (natural gas and produced gas), which are a new and relatively unfamiliar type of infrastructure in Israel, and a type of infrastructure rarely described in Israeli academic research, especially not in connection to resident opposition. In The more recent studies regarding NIMBYism directed at energy infrastructure in Israel have focused predominantly on local objections to wind turbine farms (Peri et al, 2020; Techner and Alterman, 2018), even though the majority of opposition to wind turbines in Israel is derived mainly from biodiversity and landscape concerns, specifically pertaining to bird and bat mortality caused by impact injuries (Teff-Seker et al., 2022a, 2022b).

Specifically, case study 1, which is of natural gas and oil extracted at deep sea and processed on a platform at sea—is a unique and initial case in Israeli context. The second case study is an industrial (artificial) produced gas (“cooking gas”), and thus, again, differs much from the focus of main NIMBY literature on other “conventional” energy infrastructure such as power stations, wind turbines, fracking industry and even nuclear energy facilities.

While the NIMBY phenomenon often addresses energy infrastructure, much of it addresses either renewable energy facilities (e.g. Devine-Wright,

2005) or nuclear energy facilities (e.g. Uji, et al, 2021), the relevance of this study is on focusing infrastructure that is hardly researched, mainly regarding the offshore space.

Methods

This study aims to (1) identify the NIMBY characteristics relevant to the two case studies outlined above, (2) describe and explain the responses by developers and government agencies to NIMBY-style positions, and (3) determine the effectiveness of these responses. To achieve these aims, we qualitatively studied stakeholder positions based on in-depth interviews and surveys ($n=16$). We administered open questionnaires to nine key informants and interviewed (face-to-face) seven additional informants (see Appendix 1). The 16 informants included decision-makers, government representatives, environmentalists, community activists, professionals, academics, and media representatives (see Appendix 2). The in-depth interviews followed the qualitative research protocols with questions devised based on examples from the literature (see, e.g., Patton, 2015; Reed et al., 2009).

These and other sources of information, including documents and official meeting protocols pertaining to the NOP 37H and NOP 32 cases described above, were thematically analyzed, i.e., methodically extracting the main themes that appear in texts, either written or spoken. following the thematic analysis, in which, after the data was collected, we generated short descriptions (“codes”) for parts of the text relevant to the research question, then noted recurring themes or thematic patterns among the codes and explained their manifestations and connections with each other (Aronson, 1994; Braun & Clarke, 2006; Teff-Seker et al., 2022a, 2022b). The analysis process thus included a first phase, in which we identified repeating ideas, keywords, and terms in the texts, and a second phase in which we extrapolated the main themes and insights. All of the national-level planning committee and government agency meeting protocols related to the two gas infrastructure projects were reviewed, as well as 22 court rulings starting 2010 until 2019 related to case study 1 of NOP 37H (Case study 2 of NOP 32 was not under discussion at any court), policy statements, professional documents,

newspaper articles, advertisements, and local activist social media posts. Resident coalitions and NGO advertisements, editorials, and social media activity addressing the two energy infrastructure plans were analyzed using thematic analysis, noting the linguistic instruments and patterns used by individuals and groups addressing a specific topic or field of content (Fernandez Martinez, 2007) to identify perceptions of NIMBY-related issues and values.

Case study 1: NOP37H—offshore natural gas sites

Government decision no. 4748 of 2012 mandated government ministries “with establishing systems to extract, receive and process the recently discovered offshore natural gas by developing a national outline plan (NOP) with detailed instructions.” The government had initially considered granting planning and decision-making authority to the gas companies, and the companies had opted to construct an onshore facility for receiving and processing the offshore gas at the Dor Beach. This idea was met with court petitions and intense protests led by nearby residents and coined “The Dor Beach Protests” (Gutman, 2013). These protests lead to the above-mentioned decision to prepare a NOP according to the Planning and Building Law of 1965.

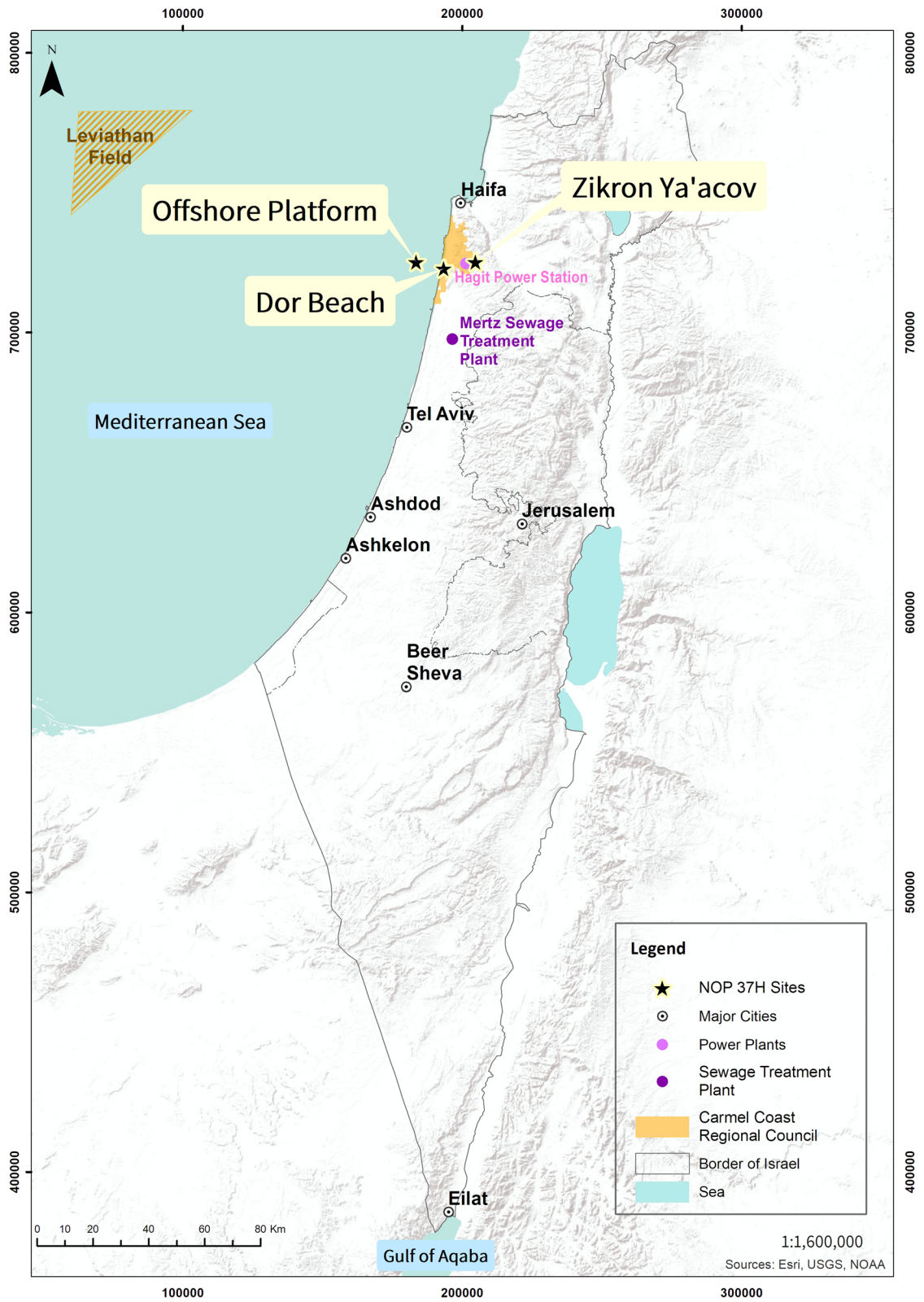
Following examination of dozens of alternative on- and off-shore locations and detailed environmental impact documents, the National Council for Planning and Building approved the NOP 37H plans in June 2014. The NOP stipulated that most of the gas drilled and pumped from the Leviathan field would be processed on platforms floating above the drill site head about 100 km west of the Israeli coastline. From the platforms, the gas would be pumped to an offshore station constructed 7.5–10 km from the coast (see Fig. 1), then to a small receiving terminal on Dor Beach, and from there distributed throughout the country. Once these details were approved by the government (Bar-Eli 2014), most objections of the Carmel Coast Regional Council residents and of the Dor Beach Protest campaign were subdued, suggesting that proximity was the issue. Activists considered the placement of most facilities offshore as a major achievement (Bar-Eli 2014).

The resident activists of the Dor Beach Protest relied on centrally coordinated leadership and legal and planning experts who assessed risks and

examined the plan’s environmental impact statement. The leadership concluded that natural gas processing must be “only at sea, and as distant as possible from the shore” to minimize impacts, which included inhabitants’ sea views from the shore (environmental impact statement prepared for NOP37H, delivered by the citizens’ coalition to the National Planning and Construction Council, Nov. 8 2013). Activists pointed out that, in most countries, similar facilities are situated far offshore. They proposed that the gas-processing facilities be built as floating production storage and offloading plant at the wells approximately 120 km from shore. Ultimately, the National Planning and Building Council (NPBC) decided to retain the designation of onshore areas for future (flexible) power infrastructure development but to locate the main natural gas reception facility offshore (NPBC Decision, June 11 2014).

Members of the planning establishment initially viewed the protestors as typical “NIMBYists,” i.e., residents vehemently opposed to infrastructure development in their vicinity without being cognizant of the broader national interests. Consequently, in order to calm the protests, the planning authorities acted with transparency and immediately posted the environmental impact report on the internet upon its completion. This is beyond the requirements stipulated in Israeli law. They held public meetings and met with local authorities, residents, and their professional advisors. Subsequently, the conflict developed into a dialogue, although the dialogue was accompanied by demonstrations and legal actions (see Results below). According to the head of the planning department at the Ministry of Environmental Protection at the time the NPO was prepared, the final decision represented a balance between local public interests and the national need for gas processing infrastructure (Bar-Eli 2014).

The government approved NOP 37H in April 2016. The plan indicated that structures would be situated approximately 10 km offshore. In 2018, the construction of marine and coastal infrastructure began. Twenty-two pleas to stop the project were submitted to the Supreme Court (Government Decision 1406 14.4.16) but all were dismissed. By the end of 2019 natural gas began flowing from the Leviathan well (Koren, 2019).



◀**Fig. 1** Map of controversial offshore natural gas facilities proposed as part of NOP 37H

Case study 2: NOP32—LPG storage facilities

NOP 32 designates potential sites for new facilities required to store sufficient LPG to meet the rising needs of industry, communal institutions (hospitals, large army bases, hotels), and households, mainly in the center and northern regions of Israel. The demand for LPG will continue to grow regardless of offshore natural gas developments. Natural gas and LPG have different characteristics and purposes and thus require separate distribution and storage facilities (Planning Authority, NOP 32/1, 3.8.14). Currently, storage is required for Israeli-produced LPG from the Haifa and Ashdod refineries and LPG imported by the Eilat-Ashkelon Pipeline Company in Ashkelon. NOP 32 proposes six new LPG storage sites located throughout the country with a total capacity of 60 000 tons of LPG. While NOP 32 was being prepared (2012–2015), all proposed sites met with fierce opposition from nearby residents, local organizations, and local authorities.

The NOP 32 government planning team held public consultation meetings with residents, discussed with local authorities, and provided data on distance requirements and obligatory safety precautions for the new facilities. Activists demanded that the storage sites not be built in their vicinity. Upon the completion of NOP 32 in early 2015, the National Planning and Building Council approved the new sites, which were also reviewed and approved by the Home Front Security Command and by hazardous material experts from the Israel Ministry of Environment. Finally, NOP 32 was unanimously approved by the government in December 2017 (Government decision 3231, 2017).

The plan determined potential locations for LPG storage: two in the north of Israel, the “Yavor” and “Northern Lands” sites; two in the central district of Israel, the “Nesher” and “Shafdan” sites; and two in the southern district of Israel, in Ashkelon and Ashdod (see Fig. 2). The Ministry of Energy published bids in December 2019 for developers to erect and develop these storage sites according to the approved plan (Public Bid 91/2019).

Results

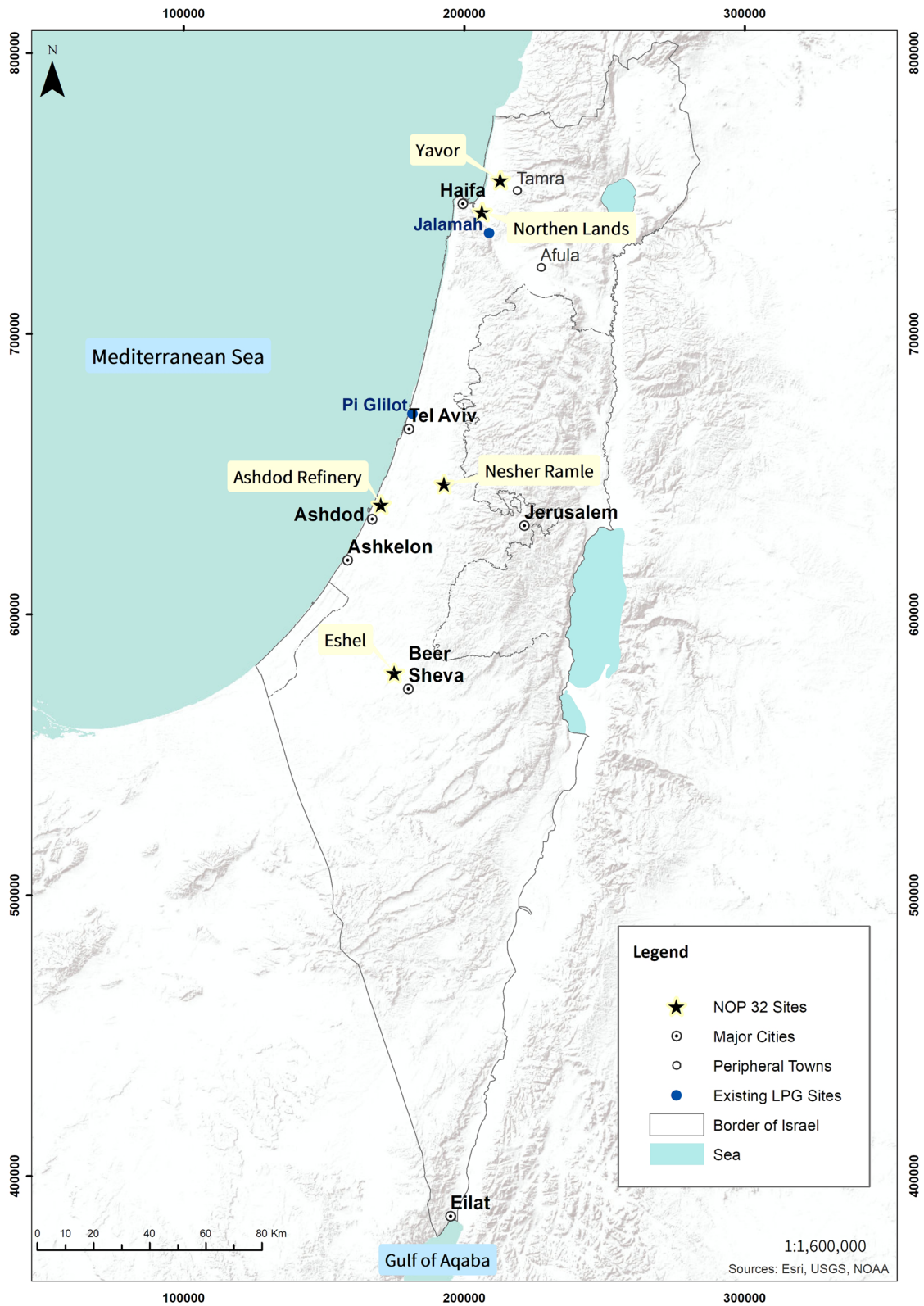
This section first presents the general results pertaining to the expression of NIMBY objections to development and reactions to such objections. We then present results based on media and government sources. We describe the main actors, rationale, risks, fears, and demands, from which we learn about the positions of the various stakeholders. In the surveys and interviews, all of the informants ($n=16$) indicated (as a reply to question 3 in the questionnaire, see Appendix 1) that opposition to energy infrastructure placement considered NIMBYism by the government and the media has been a growing trend in Israel in the past few years. A chief official at the Planning Administration at the Ministry of Interior stated:

I see it strengthening for two reasons: one, growing economic gaps in Israel leading to both richer and poorer communities (the former have more power to resist siting undesirable infrastructures close to their homes or they can physically move themselves away from existing infrastructures), and two—increasing population size and density make it harder and harder to separate between residential areas and harmful infrastructures.

Seven informants claimed that NIMBY-type campaigns were typically led and supported by the upper and middle classes, for example, as one senior freelance planning expert said:

The drivers are similar to the way they are elsewhere – a tendency to site environmentally harmful infrastructures where it is most expedient to do so – which is more often easier closer to communities with less political clout than to those who can successfully lobby against it. I don’t see it as a particularly devious phenomenon, but I do believe that planners and government policy-makers need to intervene to ensure just, equitable solutions that don’t bias against politically weaker communities.

Most of the informants expressed the view that whereas NIMBY opposition usually comes from a sincere concern for environmental, community, and familial health and wellbeing, at the core of some NIMBY-style opposition is economic concern of energy infrastructure decreasing adjacent property



◀**Fig. 2** Controversial LPG facilities proposed as part of NOP 32

values, as described well in one of the informants' (young social–environmental activist) words:

No one wants to live next door to an environmental hazard... It is perfectly reasonable for people to want to protect their quality of life and their property. I agree with the claim that this is one of the most powerful forces that can be harnessed by environmental organizations to ensure that the environment is considered in policy and planning.

The interviewees and survey respondents attributed the causes of the increase in NIMBY attitudes to the following categorial aspects:

Spatial aspect: A decreased availability of open spaces, resulting from increased development and population size.

Social and cultural aspect: An increased public awareness and access to information about planned and ongoing projects. Precedents of success of (perceived) NIMBY environmental campaigns. lack of trust in the government, in the planning process and in the developers due to past cases of non-compliance with environmental regulations. A sense that relationships between entrepreneurs and government officials influence the placement and permissions granted for potentially hazardous energy infrastructure. Increased awareness of social and environmental campaigns through social media with large support from environmental NGOs. An improved quality of life and expectations to maintain current standards of living.

Economic aspect: Increased awareness of the impact of environmental hazards and landscape eyesores on real-estate and business values.

Security aspect: Fear of military and terrorist attacks is “used” to justify fear of environmental risks and hazards, due to the damage an attack would cause in terms of energy security, property or loss of lives.

Administrative aspect: An easier appeal process and an increasingly litigious culture norm.

All key informants emphasized transparency and active stakeholder involvement at all stages of

planning to counter or respond to NIMBY opposition. Others suggested (1) constructing long-term plans and comprehensive master plans for energy development; (2) ensuring transparency in the planning process and the evaluation of alternatives, including the zero alternative (i.e., project cancellation) and switching to “greener” methods of energy production; (3) applying mitigation practices (“best practices”) and technologies; (4) standing behind a planning decision, despite NIMBY opposition, if an informed decision is made and is deemed justified. An environmental planning expert at the Ministry of Environmental Protection put it this way:

The only proper way of dealing with [NIMBY] is to take it seriously and address residents' concerns. Planners and policymakers must be able to make the case that their siting decisions represent the most efficient development scenario. They must consider compensation for environmental harm and most importantly, every effort must be made to mitigate environmental impact.... All of this must be done in a transparent, democratic, and equitable way.

Informants were pessimistic or reserved about the idea of compensation for the potential damage caused by the placement of energy facilities. Some argued that it was not suitable for Israel and would be perceived by some as a bribe or as a perk for wealthier and more powerful sectors of society who would benefit at the expense of weaker or poorer communities. Others suggested that compensation would need to be in cooperation with the local population and should sincerely address resident needs. One informant, a chief official at the planning department at the Ministry of Energy responded as follows:

This [HCC-type] practice has already been used in Israel, with partial success. You need to “feel” the community and its leading elements to know if it will indeed solve the problem.... Some see it as a bribe or kickback for the authorities or communities. As the NIMBY phenomenon expands, I think it would be more difficult to apply HCC.

Environmental impact assessments, which should inventory and address environmental degradations expected from new development, were not considered

very helpful by informants. Furthermore, the public does not always trust environmental assessments or the regulator that reviews them because, by regulation, they are financed and prepared by the developer (Mandelik et al., 2005).

Case study analysis: official documents, press, and social media

Whereas the previous section focused on general trends in NIMBY opposition to energy

infrastructure, this section addresses the results of document analysis (Table 2) and of the discourse analysis of press releases, op-eds, and social media communications published by residents.

Salient features of Case 1

The residents' opposition to NOP 37H derived from several unique characteristics of the project and the plan itself: First, no venture of this type had yet been undertaken in Israel in terms of either engineering

Table 2 Comparison of the characteristics of the two case studies

	CASE 1: NOP37H (natural gas)	CASE 2: NOP32 (LPG)
Energy Infrastructure	National natural gas infrastructure	National infrastructure for LPG
Features and location (See map)	Marine pipelines and distillation platform for the treatment of natural gas (coastal and inland constructions)	Construction of six new storage and distribution sites for LPG
Distance from residential areas	10 km	2–5 km
Time frame	2009–2019	2013–2017
Environmental aspects and potential threats	Air pollution, hazardous materials risks, marine and coastal pollution, visibility from residential and touristic areas	Air pollution, hazardous materials risks, downgrading of area's image
Developer	Noble Energy	Various entrepreneurs (currently at bidding stage)
Protesters and activists	NGOs "Home guardians" and "Zalul," residents from Yoqneam, Zichron Yaakov, and Carmel Coast areas	Tamra, Acre, Ashdod, and Afula residents
Main positions of protesters	The treatment facility should be placed elsewhere, preferably along industrialized coastlines, or as far out to sea as possible, with the preferred option being to place it near the well, 120 km from shore, by using a large floating facility Protesters also claimed that the decision was unjustified because the government is biased toward developers	The LPG sites should be placed in the Negev desert or at sea; revised planning is needed due to the findings of natural gas, which makes LPG storage less vital in the future
Petitions to the courts	10 to the Supreme Court, 12 to Haifa District Court	None
Media coverage	Very high coverage from 2016 involving national media websites and social networks	Minimal, high only in local newspapers and social networks
Other stakeholders	Ministry of Environmental Protection, Society for Protection of Nature in Israel	National company of Petroleum & Energy Infrastructures, IDF Home Front Command
Transparency of information and planning process	Minimal at the beginning, but gradually improved	Very high from the beginning
Public participation	Started only after four years, and improved toward the end of the process	Very high: special expert was nominated at the beginning of the process, and public hearings were held in each location
NGO involvement	Most environmental and social NGOs supported the plan	National & local NGOs were not involved, only local residents

or technological complexity; Leviathan is one of the first offshore wells operating. Second, the extraction of gas from the seabed and its refinement requires information that is not fully available before production begins. Third, the residents were concerned about the foreign company running the project (Noble Energy). They lacked faith in the company from the moment the government attempted to grant it development rights. Further concerns followed the disastrous oil spill caused by British Petroleum in the Gulf of Mexico that occurred at about this time (Cornwall, 2015). Protests by the residents living near the proposed near-shore site ensued, opposing the original plan in the strongest possible way with an unequivocal demand of “not at the proposed site” (see Fig. 1).

The protestors’ language was exhibited in campaign documents, ads, and media posts:

- (a) “... The government will hand over responsibility for our future to the tycoons ... with criminal negligence, the government is transferring power from the cabinet to the plutocrats ... [Those] who prioritize monetary self-interest and profits will be given the right to build a polluting onshore gas refinery, which, as a terror target will threaten the safety of thousands of Israelis ...” (Advertisement placed by the Citizens’ Coalition, print media, 4.11.2013).
- (b) “Onshore gas processing plant—over our dead bodies” [The slogan had a macabre photograph of a woman buried in sand wrapped in the Israeli flag, with the words beside her: "Margalit Ya’acov, (50), of Emeq Hefer. Injured by the explosion of the gas pipeline leading to the refinery”]. (Advertisement placed by the Citizens’ Coalition, www.gaslayam.co.il).

Salient features of Case 2

As in Case 1, campaigning against the proposals of NOP 32 seemed to be a case of NIMBYism, albeit with a significant difference: although the relatively new offshore natural gas resources benefit from being characterized as “modern” energy options, differentiating this technology from “old-fashioned” coal, there is outright opposition to LPG sites. The language used in printed materials was designed to nurture

objections to the siting of LPG facilities in Afula and Ashdod. The following epitomizes these views:

Say no to the LPG monster. The gas storage is planned above ground, exposed to missile attacks, which, as we know, threaten our region. The explosion of only one tank ... would undoubtedly cause serious physical damage to the buildings in Kibbutz Yassur and burns to the population ... Who knows what may happen if there is a chain reaction causing the explosion of the remaining tanks? This happened in Mexico, wiping out a whole town ... Hundreds of LPG-filled tankers will drive... near the kibbutz, like a ticking time bomb. An accident in Spain in 1978 involving a tanker carrying only 20 tons of LPG left 200 dead and 40 seriously injured. (Press release, published by the protestors, June 5th 2013).

While evident in both cases, one of the notable features of Case Study 2 is the knowledge gap between the protestors and the promoters of the plan. As opposed to doomsday predictions, government documents and information did not portray LPG, already widely used in Israel, as a threat to nearby populations. Results of scientific risk assessments that were prepared to each of the planned LPG storage sites, showed that the safety distance from each site is 359 m, while the distance to residential areas is more the 1 km (summary of risk assessment no’ 384-12-003, submitted by engineer Yossi Weber to the planning committee of NOP32, July 2012). This knowledge gap stems from the complexity of the infrastructure plans and is mainly due to the negative image of high-risk level associated with gas and fuel sites. The opinion of an environmental risk consultant was reassuring:

LPG is [already] found in every inhabited corner and along the distribution routes to them ... Proper planning of LPG reservoirs, mostly using underground storage units, entirely rules out any grave scenario involving explosions which could cause large scale damage. (Gafni, 2015)

Discussion and conclusions

The following analysis of the results can aid in addressing the knowledge and perception gaps between different stakeholders in NIMBY cases. We later suggest tools that stem from this analysis for bridging potential gaps for government, planning authorities, and residents in cases perceived as NIMBY opposition. First, the results of the study lead to three broad explanations for the increased prevalence of NIMBYism in Israel, particularly with regard to the construction of new energy infrastructure facilities. The first is *spatial*: significant and growing constraints are being placed on the land available for the increasing infrastructure and development needs of Israel. Population density, urban sprawl, and the depletion of vacant “distant” spaces make it difficult for planners and decision-makers to locate sites for infrastructure far from residential areas, military areas, and ecologically vulnerable areas (separately and simultaneously). This means that any energy infrastructure in Israel or in any densely populated region around the world will therefore always be in someone’s “backyard.”

The second explanation is *socio-psychological*, relating to the rising expectations and demands for a higher standard of living in a progressive society. In Israel, this requires the construction of new and expanded infrastructure: power stations, roads, industrial plants, and communications antennae, with each installation requiring land. Installations are often located in or near cities or villages, both for economic reasons, such as proximity to an input or output point, and due to the shortage of land. This explanation reflects the paradoxical characteristics of the NIMBY syndrome—the demand to enjoy the benefits of development and modern life and the reluctance to pay the inherent environmental costs (Fish, 2004).

The third explanation is *political*. The recent empowerment of Israel’s civil society, coupled with a raised awareness among the public of planning and environmental issues, has led to increased public involvement in planning (Fischhendler & Nathan, 2014; Furst, 2014; Hananel, 2010). Meanwhile, public discourse in Israel is typified by impatience and distrust of government and of developers, with the two often linked when it comes to energy development (Portman, 2014).

In such a social climate people feel a need to take more of an aggressive, non-compromising stance to protect their interests and prevent what they perceive as environmental and social injustice. Importantly, a lack of transparency and a failure of planning authorities and proponents to seek deeper and earlier stakeholder involvement have contributed to this lack of trust. Note that informants interviewed for this study and who represent or advise governmental agencies expressed frustration with the lack of authentic and open dialogue these agencies have with the public, pointing to this as the key to addressing NIMBYism. If the current situation continues, the gap between the two sides may widen, which would decrease the potential for compromise and mediation.

A characteristic of NIMBYism in Israel seems to be related to expanded-conflict theory (Singer, 2014). This theory characterizes residents’ activism as a way of expressing latent and profound social dissatisfaction that is not always associated with the proposed development. NIMBY campaigns present an opportunity for expressing grievances and are sometimes linked to a lack of knowledge or an inability to deepen understanding or even acknowledge that technological solutions could be required to protect against potential environmental or public health impacts. In NIMBY situations, factors underlying conflict theory may also be augmented by elements taken from resource-mobilization theory (see Jenkins, 1983; Singer, 2014). In other words, NIMBY protests may be an exercise through which individuals, local organizations, or elected officials raise their own profile and promote their own political agenda.

Finally, the location chosen for the natural gas treatment facility in Case Study 1 proposes a new type of NIMBYism, or rather a NIMBYist solution, for a situation in which infrastructure on land would always be near something or someone: placing the infrastructure at sea (perhaps coining it PIAS, “Place It at Sea” or NOL, “Not on Land”). The 10 km distance from shore was deemed insufficient by many coastal residents, who were concerned that air pollution would reach the shore and that the natural landscape was at risk of damage. They may also have been anticipating, in case of an accident or malfunction, damage to the marine and coastal ecosystem, and its cultural ecosystem services (e.g., recreation).

As a result, decision-makers and planners should be aware of the rising trends in which, as available

land decreases, residents' quality-of-life expectations increase, and as blue (marine) technology develops, such demands will probably increase. However, planners need to act responsibly to avoid impacting ocean and coastal ecosystem services and functions. Positioning infrastructure facilities at sea have mostly been discussed to date in the context of wind turbines (see, e.g., Haggett, 2011; Devine-Wright & Wiersma, 2020), but the repercussions of placing other forms of offshore energy infrastructure at sea should be addressed by scholars and planners. Further research is required to better understand residents' or public objections to proposed offshore natural gas extraction and processing infrastructure, as well as how to address such opposition, given that they involve the extraction of fossil fuels, as opposed to more commonly researched renewable energy infrastructure, which arguably constitutes less of an environmental threat, both actual and perceived.

An inspection of the case studies and an analysis of the interviews show that the degree to which decision-makers accept opposition as legitimate depends upon two parameters: the frequency of protests and how far the objectors live from the proposed site(s). As the distance to the site increases, the suspicion of NIMBYism decreases. Simultaneously, the credibility of the protestors and the attention devoted to them decreases as objections and protests become increasingly commonplace (see Fig. 3).

While these insights can contribute to the existing literature on NIMBY pertaining to resident objections to energy infrastructure, it is important to acknowledge that these stem from only two case studies in a

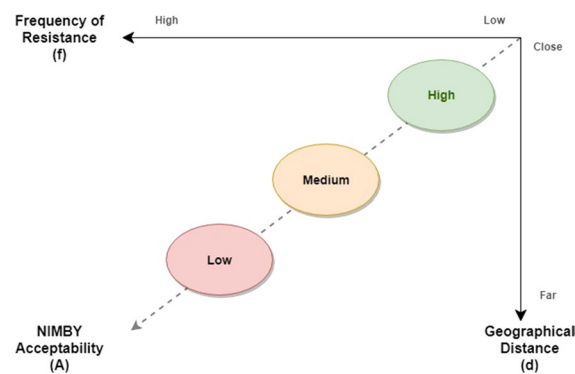


Fig. 3 model of acceptability: schematic diagram to illustrate the parameters that influence the acceptability of public objections

specific country. Thus, further research is required to determine whether these insights are applicable to other countries and cases around the world.

To conclude, the increase of NIMBY conflicts is justified by those who see it as a call for local environmental or social justice but is viewed as a negative trend by those who see it as a barrier to siting needed national infrastructure. Either way, NIMBYism is a growing phenomenon that requires the attention of policymakers and planners. In Israel, NIMBYism has increased due to a growing mistrust of government and developers, a decrease in open space or environmentally sensitive areas, and a simultaneous rise in socio-economic status over the past decades. These trends have led to a more informed and aware public, with more to lose in terms of quality of living. The current low level of credibility felt by the government and developers, particularly regarding energy infrastructure, is not the only factor but could further support the goals and aims of NIMBY protests, which reflect legitimate aspirations for empowerment and change.

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Appendix 1: Survey and interview questions

1. How would you define or describe the NIMBY phenomenon in Israel (related to infrastructure in general and specifically to energy projects)?
2. What, in your opinion, are the reasons or the explanation for the NIMBY phenomenon in Israel?
3. What do you think is the direction of this phenomenon? Is it weakening or strengthening? What is your explanation for that?
4. In your opinion, is the NIMBY phenomenon more common among certain groups of the population? Or certain, organizations, geographic areas, or socioeconomic status?
5. What is your standing regarding the following two phrases:

- a. NIMBY objections are honest and stem from an understandable and legitimate need of residents to maintain their quality of life and protect their environment.
 - b. NIMBY objections stem from external motivations that are not directly related to the proposed project, such as political or economic interests.
6. In your opinion, in what ways or methods can or should the state manage the NIMBY phenomenon?
 7. In certain Western countries, there is the notion of the host community compensation, a mechanism that relies on a dialogue that leads to an agreement over economic or spatial compensation given to a local community or municipality, which agree to host the project that was the source of NIMBY opposition on their grounds. Do you feel that this kind of practice is applicable in Israel?
 8. Do you have any other comments or insights regarding the NIMBY phenomenon?

Appendix 2: Detailed data sources

Informants: Researchers approached 35 actors, from them 9 replied to the questionnaire (see Appendix 1) and 7 were interviewed personally by the corresponding author (n=16). The interviews, lasting ~50 to 60 min, were recorded and transcribed. The informants represent professional fields of urban planning, decision makers at the national and local levels (Ministry of Energy, Planning Administration, municipality of a big city in central district) (6), academic researchers and (3) environmental activists (3) environmental and urban planning free-lance consultants (2), law (1) and media (1). The full list and names are kept by the corresponding author and are discreet, according to the ethical instructions approved by the ethics committee of the Technion.

Gender male—10, female—6.

Time of the survey July–October 2017.

Ethics the research and the questionnaire have been approved by the behavioral sciences research ethics committee of the Technion on July 18, 2017 (Approval Number 2017—49). Each one of the informants submitted an informed consent form.

Media For each case study, the corresponding author browsed all of the six Israeli on-line prime newspapers covering economics, infrastructures development and social news that are relevant: The Marker, Globes, Calcalist, Haaretz, Ynet and Maariv. Also, the social media (Facebook and web sites) of the main actors who are mentioned in the research and related to the case studies were visited continuously from July 2017 until January 2020 (the beginning of research until end of the public protest related to both case studies).

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