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'Just environmental governance for shale gas? Transitioning towards sustainable local regulation of fracking in Spain'

Abstract

Fracking affects a range of communities in different ways and thus requires a holistic approach to its policy formation. There are a multitude of reactions to fracking, and in this perspective article, we argue that all require representation. Whilst Spain, as a state with dominant central authority, has devolved some responsibilities the local level, these communities remain powerless in legislative terms. Nevertheless, various platforms, NGOs, and autonomous communities have expressed strong opposition to fracking and as a result have had a certain amount of success in halting the development of unconventional gas. Despite this progress in their activism, it is evident that public opinion requires more robust and complete representation. Labelling these movements as cases of NIMBYism seeks to detract legitimacy from their concerns. To achieve a representative and legitimate democratic outcome in relation to fracking governance in Spain, distributive and procedural deficiencies must be addressed. Local communities are more likely to feel the negative effects of fracking, and these concerns, instead of being labelled as selfish, are valid and require representation. This is an area of descriptive and normative research that has drawn attention to the value of local governance in multiple nations, but little social scientific work of any type has taken place in Spain. As Spain contemplates its fracking future, within its currently precarious political context, it would do well to learn from the regulatory and governmental failures in other jurisdictions and seek to develop a robust framework that solicits and accommodates the range of valid and informed perspectives held on this topic. There is some indication of movement in this direction; offering some optimism that such approaches could be systematised.

Keywords: hydraulic fracturing; NIMBY; local governance; energy ethics

1 Introduction

Much social science on the contentious process of hydraulic fracturing has explored public perceptions of the impacts associated with its potential and realised development (Boudet 2019, Evensen 2018b, Sovacool 2014, Jacquet 2014). Regulation has also been examined, with this scholarship being both descriptive – reflecting on the ways in which, and often the governmental level at which, hydraulic fracturing is regulated (Davis 2014, Minor 2013, Warner and Shapiro 2013) – and prescriptive – mostly asserting that regulation within a given jurisdiction is not fit to purpose (Bomberg 2017, Briggles 2015, Cotton 2017, Evensen 2018a, Rawlins 2013). Within this latter, normative, strand of research on regulation, we find studies of discursive framing used by members of the public to argue for certain types of regulation (Bomberg 2017, Cotton et al. 2014, Hilson 2015, Measham et al. 2016, van de Graaf et al. 2018). We also observe moral arguments for regulating hydraulic fracturing in a certain way (Clough 2018, Cotton 2017, de Melo-Martín et al. 2014, Evensen 2015, 2016, 2017, Finkel et al. 2013, Fry et al. 2015).

One of the moral arguments emerging increasingly frequently in scholarship on regulation of hydraulic fracturing is the need for meaningful involvement from the local level (e.g., people in a community, municipal governments, local planning boards) in contributing to the creation and implementation of regulation (Bomberg 2017, Briggles 2015, Church of England

2016, Cotton 2017, Evensen 2018a). Particularly in the UK – where the central government (Parliament in Westminster) is increasingly centralising governance of hydraulic fracturing for England – media coverage, public discourse, and even members of parliament in the governing Conservative party from constituencies with shale gas resources, have vehemently pushed back against the decline of opportunities for local say in regulation (Bomberg, Evensen 2018a). The Anglican Church in England identified local voice as its leading consideration for whether regulation on fracking is theologically just and moral (Church of England 2016).

Beyond the UK, other nations have also considered this question of local governance. It has played out on a state versus local level in the United States, with the New York State Supreme Court ruling in favour of local authority to govern development (Dokshin 2016, Simonelli 2014), whilst other states such as Colorado, Pennsylvania, and Texas have shown much more reticence to cede authority to municipal governments (Briggle 2015, Davis 2014, Fry et al. 2015, Mayer and Malin 2018, Minor 2013, Rawlins 2013, Warner and Shapiro 2013). In Australia, we see similar differences arising at the state level, with New South Wales most welcoming of local governance (Luke et al. 2018).

In the Netherlands, attempts to involve the broad public in governance backfired on the central government when the public critiqued being only asked how to regulate shale gas development, and not whether to allow it or not (Köhne and Rasch 2018, Metze 2018a, 2018b). In Poland, similar to the UK, scholars have decried the systematic exclusion of certain populations, including local communities, from meaningful ability to influence decision making and have pointed to the need for and value of novel means of engagement (Lis 2018, Lis and Stasik 2017, 2018, Stasik 2018). South Africa has recently afforded far more governance capacity to local authorities after the lead regulator at the national level changed to the environment agency, which is friendlier to local governance (Atkinson 2018).

In this perspective article, we contextualise the history and debate over governance of hydraulic fracturing in Spain – a nation in which little has been written about the social scientific aspects of this energy issue. Conflicts over the scale at which governance, in general, occurs are particularly heated and relevant in Spain (Matti et al. 2017, Zamorano 2017). We use the foregoing descriptive and normative scholarship on local governance of hydraulic fracturing, along with arguments against simplified NIMBY dismissal of local opposition, to advocate for a policy shift to more localised governance of hydraulic fracturing in Spain. Because so little has entered the academic literature on shale gas development in Spain, we first synthesise the background on governance and public perceptions.

2. Attention to hydraulic fracturing in Spain

Declared in 1978, Spain is a unitary state, with 17 autonomous communities that are composed of smaller municipalities. Most power is held at the central level; however, various functions are carried out at the regional level (Lin 2014). Regulation of gas and oil lies primarily in the authority of the central government; nevertheless, other policy areas that fracking raises, such as water quality, fall under the responsibility of autonomous communities (Buono et al., 2018).

Under the Partido Popular (PP), a conservative party in power from 2011 until 2018, the Spanish government showed strong support for hydraulic fracturing. Motivation to explore fracking largely stems from concern to gain greater energy security for Spain (Costa et al.

2017b, Lin, 2014). Indeed, Spain has a high dependency on international imports of natural gas; 97% of Spain's natural gas is sourced internationally (Costa et al. 2017b). Moreover, Spain has one of the highest levels of fuel poverty in Europe (32%) (Paylor 2017). Hydraulic fracturing for domestic gas could offer a solution to this accentuated energy dependency; it has been estimated (by an industry report) that exploitation of shale gas could allow Spain to be independent of imports by 2030 and even become an exporter by the year 2050 (Deloitte and Aciep 2014).

Beyond its desire to reduce reliance on imports, the state is also keen to create income and employment (Costa et al. 2017b). Fracking could offer Spain economic rewards (Lin 2014), appealing in the current economic crisis where unemployment is high, with 15.3% of the labour force unemployed in 2018 (OECD, 2019). Development of shale gas could create jobs and promote business opportunities (Munasib and Rickman, 2015). These desires are reflected in the words of the president of the Spanish Oil Exploration Association, Antonion Martín; “when we talk about exploration and production of hydrocarbons in Spain, we are talking about creating employment (and) wealth for the country and improving our commercial standing in the world” (Burgen 2014).

To push for fracking, the PP (conservative) government took various legal moves to promote it. Subsurface resources are owned by the national government; thus, extraction requires authorisation from the state (Lin, 2015). Under the national Hydrocarbons Law, the national government has sole authority to extract resources (Lin, 2014). In 2013, to clarify confusion, the law was changed explicitly to include hydraulic fracturing. This enactment stated the requirement for an assessment of environmental impacts of fracking; however, it limited the review to six months (Lin, 2014, 1048). In an attempt to incentivise development of shale gas, a new law passed in 2015 called for financial compensation for property owners and municipalities affected by fracking activity. Moreover, the Spanish government under PP limited the exploration of other, renewable energy alternatives, which could reduce its dependency on imports. The government's push for fracking occurred at the same time as the abolition of subsidies for renewable energies in Decree Law 1/2012 (Lopera-Pareja, 2015).

Priorities at a local level differ substantially from PP's motivations for development nationally. Concern for environmental and public health dominates. Shale gas development comes with serious environmental risks, potentially causing local water contamination, air pollution, chemical spills and at a global level, climate change (Costa et al. 2017a, Lin, 2014). Many Spaniards are concerned about negative environmental and social impacts/effects of fracking, and, therefore, have expressed opposition. A survey, carried out by Costa et al. (2017b), targeted two populations: inhabitants of Spain and inhabitants of Burgos, a region where the most investigation permits had been granted. The results show that half of the general Spanish population, 50.2%, oppose shale gas extraction; this opposition increased to 70.8% in Burgos (Costa et al., 2017b). Lack of support or optimism for fracking is also reflected in Spanish media coverage, where the tone of the discourse on fracking has been largely pessimistic or neutral (Lopera Pareja et al., 2015).

The government's attitude to fracking, however, has changed notably since Mariano Rajoy, leader of the PP, lost a vote of confidence, following a corruption trial, in May/June 2018. The Partido Popular was forced out of power and Pedro Sanchez, leader of the Social-Democratic Political Party (PSOE) took over as prime minister (Aronoff 2019). PSOE have shown greater willingness to phase out fossil fuels, outlining a Green New Deal, advocating ecological transition through the development of new technologies that are less polluting and

the creation of a new green sector (Sauer 2019). After taking office, Teresa Ribera, minister for ecological transition, repealed an anti-solar levy, previously bought in by the PP. The Green New Deal would also ban fracking nationwide (Aronoff 2019); notably, this is part of environmental legislation and not necessarily targeted at addressing local concerns. Nevertheless, as outlined in their manifesto, the goal of the New Green Deal is to mobilise participation from civil society and local communities to create opportunities by de-carbonising the economy. The PSOE certainly seems more open to listening to local concerns. The PSOE gained high percentages of votes in the April 2019 general election in coal mining regions after establishing a deal to close the industry, agreeing with trade unions to invest €220 into those regions to promote retraining and retirement plans (Sauer 2019).

Despite signs of advances in favour of environmental goals and local representation, the political landscape in Spain remains fairly unstable. The PSOE were forced to call snap elections after the agreement allowing Sanchez to be prime minister fell apart over budget negotiations (Aronoff 2019). PSOE took 29% of the vote, a victory without a majority, and has since been unable to form working coalitions with other parties (González 2019, Sauer 2019). Negotiations between PSOE and Podemos, a left-wing party, have been unsuccessful, full of mistrust and tension (Garcia Valdiva 2019). Without a deal by September 23rd 2019, a new election will have to be called, the fourth in four years (Vizoso and Barbero 2019). Some political analysis speculates that a new election could favour the established parties (PSOE and PP), which might make a coalition government still difficult to form, as PSOE's 123 seats in parliament is still far shy of the 176-seat majority (González 2019). In essence, although movement against fracking and towards local voice has been manifest recently, there is little certainty in the future political direction in Spain.

This essay will explore the conflict between the national and local level, commenting on the way in which, to some extent, local opposition to fracking has halted the exploration of fracking in Spain. Whilst it could be argued that in the years of the PP, local concerns were begrudgingly listened to, the PSOE shows stronger motivation to include local voices in debate. However, political instability in Spain means that there is no certainty that local voices will be heard; furthermore, PSOE's short and politically-fraught time in power means that no systematic governance principles have emerged in terms of local governance and representation. Despite the lack of fracking in Spain, we propose a more robust means of local inclusion.

2.1. Fight between local and national

Diverging interests regarding fracking have played out in power struggles between the national and local level in Spain. Most power is held in the central government, but limited competencies are devolved to regional levels. Fracking affects a wide range of environmental issues; thus, like in areas of the United States and South Africa (see above) it is often unclear which level has the power to legislate on the matter. Whilst primary responsibility for the regulation of oil and gas is held by the state, other aspects of fracking fall under regional power, for example water quality (Buono et al. 2018). Indeed, allegations have been made that granting hydraulic fracturing permits infringes upon local water resource legislation (Costa et al. 2017b). Similarly, Briggles (2013) commented, from a perspective on fracking in the US, on the way in which fracking as energy policy is a state matter, but as a land policy it is a local matter. However, Spain's new 2013 'Hydrocarbons Law' grants ultimate authority over processes associated with hydraulic fracturing to the state.

Whilst at a national level the conservative party, Partido Popular (PP), has shown strong support for fracking, the story differs at the local level, with many PP politicians expressing disapproval (Lin, 2014) – a situation akin to the UK Tory members of parliament opposing shale gas development who live in constituencies with resources. In several regional assemblies, Cantabria and the Basque country included, PP politicians supported anti-fracking laws (Planelles, 2017). This bifurcation reveals a high level of confrontation between regional and national party politics (Lopera-Pareja et al. 2017).

Various municipalities have attempted to ban fracking. In 2013, three regions in Spain, La Rioja, Navarra, and Cantabria adopted laws to ban hydraulic fracturing; however, in 2014, these were annulled by the State, which claimed that the autonomous communities had outstepped their responsibilities. Spain rested on the position that energy planning is a matter of state policy (Planelles 2018). Similarly, when both the Basque country and Cataluña passed various laws to make hydraulic fracturing unviable, the constitutional court too rejected these attempts (Planelles 2018). This trend is common across Europe; Cotton (2017) clearly delineates the ways in which the UK Government too has over-ridden local community decisions on shale gas extraction.

2.2. Success of activism in Spain

Whilst the Spanish state wields great power over hydraulic fracturing policy, it has not been straightforward to implement shale gas development. As mentioned, the conservative PP Spanish government was met with notable opposition from the local level. Strong anti-fracking movements, intensifying from 2013 onwards, have had success at halting development in Spain (Herranz de la Casa et al. 2018). Van de Graaf et al. (2018), in a study of sixteen European nations including Spain, found that public opinion is vital in explaining regulatory bans. With regards to Spain, Planelles (2017) argues that, a group of five companies called Shale Gas España, involved in pro-fracking lobbying, ‘have given up on fracking altogether’.

Growing activism against fracking has taken two forms in Spain: (1) local movements in the form of platforms against fracking and (2) campaigns led by national NGOs. Whilst NGO’s tend to be general in their objectives and have higher levels of institutionalisation, local antifracking platforms are more sporadic and more embedded in local opinion and concern (Herranz de la Casa et al. 2018). Whilst local communities stress the damaging and visible effects of fracking at a local level, international NGO’s tend to focus on the way in which developing fracking will hinder the development of renewable energy and will contribute to the already pressing issue of global climate change (Lewiński 2016). Both have played a key role in the fight to prevent fracking in Spain (Herranz de la Casa et al. 2018). An example of a success story for activism is that opposition in Ibiza has created a united front against fracking across the entire political spectrum (Burgen 2014).

Citizen platforms have been powerful enough to motivate regional governments to support their demands (Herranz de la Casa et al. 2018). Due to a local initiative that collected over 100,000 signatures, the Basque country passed legislation that places high environmental demands on hydraulic fracturing procedures, making it an almost unviable option (Planelles 2017). Whilst not an outright ban, this effectively bans hydraulic fracturing due to the inability to realistically and economically meet the demands of the regulation. The case of Spain reflects a trend occurring in other European countries; even with governments pushing

strongly for fracking, opposition movements have been able to hinder development (Friends of the Earth Scotland 2017, Van de Graaf et al. 2018, Evensen 2018a). One outright success story for activism is found in France, where a ban on unconventional gas development came into place in 2011 following different scales of collective public action, and because opposition was not only rooted in local concern, but was a global critique (Chailleux et al, 2018).

However, it is important to recognise other factors that have halted shale gas development in Spain, notably economic reasons. Whilst we can attribute the practically ceased activity of fracking in Spain, in part, to the success of civic movement, the high costs of fracking have greatly limited its progress. A spokesperson for Hunosa, a coal mining company, part of a fracking project called Llábana, stated that the organisation has been forced to stop exploration of fracking due to its high costs. Moreover, more than half of the applications for permission to investigate fracking have been closed, a large proportion of these at the company level due to the lack of profitability of the activity and the long administrative processes (Sevillano, E. 2019). Thus, whilst there is minimal fracking activity in Spain and local movements have helped forefront the risks associated with the activity, there is no clear evidence that the government has listened to local concerns. In fact, under the PP, various aggressive moves were taken to ignore local opinion. We advocate stronger means of local level inclusion in policy formation.

3. Regulation in Spain: Advocating for local governance

The environmental concerns associated with shale gas development show how difficult it is to manage juristically (Lin, 2014, 1064). To allow democratic establishment of energy policies, all interests must be represented and all concerns addressed. The importance of public opinion and local level knowledge is being increasingly acknowledged (Costa et al. 2017b). Political leaders are influenced by public opinion, and in turn, public perspectives guide policy choices (Van de Graaf et al. 2018). This was manifest very concretely when PSOE achieved huge gains in the April 2019 vote share in mining regions by listening to local concerns and representing them in its party manifesto. Whilst regional-level administration has certain responsibilities in Spain, their veto power is greatly limited. Lin (2014) validly questions the appropriateness of policymaking processes in Spain. Despite the PSOE's recent policy statements, little has actually changed in legislative terms in relation to local representation in decision making. Furthermore, PSOE's proposed ban on fracking, whilst it would negate the need for a conversation about representation of local concerns, still does not address the larger issue of local governance in siting and build-out of extractive industries.

A key critique of opponents to fracking, not in relation to Spain specifically but generally across all areas where fracking occurs, is that these detractors are motivated by NIMBY concerns (Christopherson and Rightor 2014). Both Herranz de la Casa et al. (2018) and Costa et al. (2017b) connect the NIMBY critique to activism in Spain. Not in My Back Yard (NIMBY) is a pejorative term that describes local rejection of unwanted land use (Neville and Weinthal 2016). It describes rejection of the siting of a project, not the project itself, and thus manifests as opposition to the impacts of the development on the local community (Neville and Weinthal 2016). Anti-fracking movements have often been labelled as NIMBY (Christopherson and Rightor 2014, Devine-Wright 2013). From this perspective, opposition is a selfish act and detrimental to national interest. It is claimed that those who oppose are

only objecting to the siting of the project, that their only concern is for the environmental and public health effects on their local community (Cotton 2013). However, the appropriateness of NIMBYism has been questioned by academics, due to its immediate dismissal of concerns as invalid and its failure to recognise underlying rationales for local opposition. Academics have criticised the NIMBY concept as being both unwarranted and unhelpful (DevineWright, 2013; Cotton, 2013). It is largely project developers who employ the term NIMBY, as a means of undermining opposition (Cotton 2013). We argue that dismissing these movements as NIMBY both fails to consider the reasons for concern and ignores the relevance of local residents' knowledge in policymaking processes.

3.1. Participatory and distributive justice

Public acceptance plays a key role in developing energy technologies; negative public opinion can halt projects. Public trust and political legitimacy could be enhanced through participatory decision-making procedures (Devine-Wright, 2013). Dismissing local campaigns as NIMBYism fails to give the public a voice, which, in many cases, is exactly what they are fighting for. Indeed, rejection of fracking is deeply rooted in a desire to have control over local communities (Cotton 2013, 2017). Briggie (2013) states that 'it is not so much about saying no to fracking but simply having an opinion'. Lin (2014) argues that there are strong reasons to question whether the policy making process in Spain is suited to accounting for local and regional concerns. Interestingly, Bomberg (2017) attributes part of the success of the anti-shale coalition in the UK to the expansion of the debate beyond environmental concerns, by raising issues of local power and democracy (see also Evensen 2018a).

Therefore, as Costa et al. (2017b, 551) argue, 'shale gas development in Europe calls for new strategies for risk analysis and governance in which public perception is an important factor to support the beginning of operations'. Participatory justice, defined as 'institutional and procedural norms that guarantee all people equal opportunity for consideration in decision-making' (Shrader-Frechette, 2002, 7) is necessary to address imbalances of power. A democratic policy process needs to be transparent, offering the public greater access to knowledge and allowing greater involvement in decision making procedures, with a focus on 're-localising' (Cotton 2017).

Some approaches to institutionalising such engagement, as a means to move beyond the PSOE's current useful but *ad hoc* acknowledgement of local concerns, can be found in literature on participation and engagement in environmental decision making. Foundational research by Chess and Purcell (1999) establishes that there is no 'one size fits all' solution, and that multiple approaches to inclusive governance can be effective in representing local voices. Webler and Tuler (2006) also acknowledge this diversity of mechanisms for inclusion whilst identifying some broad maxims: reaching all stakeholders, open information sharing, meaningful engagement, and incorporation of multiple perspectives.

Chilvers and Kearnes (2015) caution the need to recognise that different 'publics' exist and that not all will be reached through the same mechanism of engagement (e.g., survey, focus group, consultation response, town hall meetings, etc.). They also assert that some forms of participation, such as protest, that might not be readily thought of as formal participation in decision making, should be accounted for as meaningful engagement and expression of stakeholder views (Chilvers and Kearnes 2015). Reed *et al.* (2018) point to the express need to be aware of power dynamics manifest in the sphere of engagement and to start with an

explicit account of the values and epistemologies (i.e., perspectives on what counts as valid knowledge) held by the various parties. Renn (2015) offers a lucid assessment of varying approaches to structuring and organising public participation in risk governance based on a typology of degrees to which complexity, uncertainty, and ambiguity are present in the problem being addressed.

Scholars have highlighted the need for inclusivity of local concerns and consultation on fracking, specifically analysis of how different regions will be affected (Christopherson and Rightor, 2014, Neville and Weinthal 2016). Cotton (2013) argues for the need to make public engagement more institutionalised and defined, bringing more clarity to public involvement and providing legal rights. Similarly, Evensen and Stedman (2016, 20), with reference to fracking in the United States, recommend a “systematic investigation” of how populations in areas both proximate to and farther away from potential development will be affected, pointing to clear differences in how shale gas development is perceived across the areas.

The prospect of fracking also raises questions of the uneven distribution of the benefits and drawbacks. Cotton (2017) highlights the need for distributive justice, defined as ‘morally proper apportionment of benefits and burdens’ (Shrader-Frechette 2002, 3). Fracking affected communities may be economically marginalised due to the social and environmental repercussions (Cotton 2017). Indeed, the local level is more likely to withstand the worst negative effects of fracking (Jacquet 2014), whilst the benefits, such as of energy security, are gained at a national level (Van de Graaf et al. 2018). The national government in Spain owns subsurface resources; it is at this level that financial gain also would be made (Lin 2014). It is essential, for example, that policy planning considers the detrimental effects that fracking could have on tourism at a local level, as it is an industry on which Spain relies heavily. Therefore, concern over distributive justice calls for greater emphasis placed on the local voice in decision-making (Evensen, 2016, 2018b). Lastly, distributive fairness, like participatory fairness, also influences public acceptance (Clough 2018, Evensen 2015, Fry et al. 2015).

3.2. Legitimacy of local perspectives

Another rationale to increase local-level voice is because of the unique knowledge held at this level (Devine-Wright 2009). Local opinion is likely to be more defined on the matter; this is reflected in the study reported by Costa et al. (2017b). In their survey of the general population of Spain, 38% of respondents did not express opinion on whether fracking should be allowed, however, in Burgos, opinion was more defined, and rejection was markedly higher. Construal-level theory may help explain the way in which proximity and knowledge seem to positively correlate; those who are closer to the exploration sites perceive closer connection to shale gas development spatially, socially, and temporally, due to the fact that more information and experiences associated with development are available at a regional level (Clarke et al. 2016, Costa et al. 2017b, Craig et al. 2019, Evensen and Stedman 2016, Zanocco et al. 2019). For Costa et al. (2017b), the Spanish national versus regional data show a growing need to understand, and give relevance to, public attitudes to fracking.

Cotton (2013, 2017) furthers the ethical critique of increasingly centralised governance by describing how it is unethical to subject people to the risks of fracking without full, informed consent without coercion. In a similar vein, multiple scholars have recently pointed to the need to look beyond physical and material impacts of shale gas development to impacts on human well-being and human flourishing (Evensen and Stedman 2018, Hirsch et al. 2018,

Willow 2016). Evensen and Stedman (2018) suggest that policy makers should consider the meaning of well-being in different communities when evaluating fracking projects, calling for the recognition of more nuanced, abstract social impacts, beyond simply economic and environmental effects. Likewise, Devine-Wright offers a framework, through the lens of place attachment, which also criticises the pejorative term NIMBY and contradicts claims that public opposition is irrational or ignorant. Place-attachment, defined as ‘both the process of attaching oneself to a place and a product of this process’ (Devine-Wright, 2009, 427) can help explain local reactions to fracking and offers an analysis that justifies local reaction based on place-attachment (Davidson 2018, Evensen 2016, Griffiths 2019, Sangaramoorthy et al. 2016).

3.3. Scaling up and global relevance, NIABY

People who opposed shale gas development locally did not just want shale gas out of their community; they commonly did not want it anywhere. Seventy-one percent of respondents in the Burgos sample of the aforementioned Spain survey objected to fracking in the whole of Spain as well (Costa et al. 2017b). Moreover, the involvement of national Spanish nongovernmental organisations shows that concern is not just felt at a local level. Their focus has been to convince governments to look beyond the immediate benefits and consider spill over effects in terms of climate change. Thus, a democratic policy process must consider both short term and long-term costs and benefits (Griffiths 2019).

A spokesperson for one NGO called *Ecologistas en Acción* called for ‘a change in energy model’ stating that ‘the way forward is not the extraction of gas; we can’t allow the continued burning of fossil fuels’ (Martín-Sosa, cited in Benitez, 2015). Including the multitude of voices in policy making processes will ensure that the full range of relevant considerations are at least brought to the table. Indeed, whilst there is strong anti-fracking discourses present in many European countries, governments still have the power to disregard these responses, as noted in the UK (Cotton 2017, Evensen 2018a, Hilson 2015).

Research on NIMBYism has led to the exploration of the term ‘not-in-anyone’s-back yard’ (NIABY) (Lober and Green, 1994), used to explain how local movements, through various tools, scale up their campaign to a national or global level, see figure 1 (Neville and Weinthal, 2016 574). Therefore, local level campaigns are essential to develop wider movements. They may be ‘strategically used to drive broader, more encompassing activism and participation’ (Neville and Weinthal, 2016, 587). In a study carried out by Neville and Weinthal in Whitehorse, Yukon, local campaigners against liquid natural gas (LNG) continually brought the discussion back to global environmental concerns like climate change (Neville and Weinthal, 2016, 587). Similarly, Chailleux et al. (2018) show how combining different scales of anti-fracking discourse helped to pass a ban on unconventional shale gas development in 2011 in France. Furthermore, the comments made by the aforementioned Spanish NGO show the desire to see structural change (Martín-Sosa, cited in Benitez, 2015).

Conclusion

Fracking affects a range of communities in different ways and thus requires a holistic approach to its policy formation. There are a multitude of reactions to fracking, and in this perspective article, we have argued that all require representation. Whilst Spain, as a state with dominant central authority, has devolved some responsibilities the local level, these

communities remain powerless in legislative terms (Lin 2014), even at present with the more sympathetic policy approach of the PSOE (whose government may collapse at any time). Nevertheless, various platforms, NGOs, and autonomous communities have expressed strong opposition to fracking and as a result have had a certain amount of success in halting the development of unconventional gas. Despite this progress in their activism, it is evident that public opinion requires more robust, complete, and systematically guaranteed representation. Labelling these movements as cases of NIMBYism seeks to detract legitimacy from their concerns (Cotton 2013).

To achieve a representative and legitimate democratic outcome in relation to fracking governance in Spain, distributive and procedural deficiencies must be addressed. Local communities are more likely to feel the negative effects of fracking, and these concerns, instead of being labelled as selfish, are valid and require representation. It is unfair to submit communities to an activity without obtaining informed consent, and also providing fora for consideration of the unique knowledge that these communities hold. As Spain contemplates its fracking future, it would do well to learn from the regulatory and governmental failures in other jurisdictions, such as the aforementioned ineffective approach to public consultation in the Netherlands (Köhne and Rasch 2018, Metze 2018a, 2018b) and the exclusion of relevant stakeholder groups in Poland from decision making processes (Lis 2018, Lis and Stasik 2017, 2018, Stasik 2018). In line with the previously cited literature on public participation and engagement, the Spanish Government should seek to develop a robust framework that solicits and accommodates the range of valid and informed perspectives held on this topic. In PSOE remains in power, with a sole majority after new elections or in a coalition, we are optimistic that such an approach to governance could be consonant with their ideological positions and policy preferences.

Bibliography

- Aronoff, K (2019, 27 April). Spanish socialists running for re-election Sunday on a “Green New Deal de España”. *The Intercept* (online). Available at: <https://theintercept.com/2019/04/27/spain-elections-green-new-deal/>. (Accessed 16 August 2019).
- Atkinson, D. (2018). Fracking in a fractured environment: Shale gas mining and institutional dynamics in South Africa’s young democracy. *The Extractive Industries and Society*, 5, 441-452.
- Benitez, I (2015). Growing Mobilisation Against Introduction of Fracking in Spain. *Global Issues* (Online). Available at: <http://www.globalissues.org/news/2015/06/02/21058>. (Accessed 15 April 2019)
- Bomberg, E. (2017). Shale we drill? Discourse dynamics in UK fracking debates. *Journal of Environmental Policy & Planning*, 19(1), 72-88.
- Boudet, H. S. (2019). Public perceptions of and responses to new energy technologies. *Nature Energy*, 1.
- Boudet, H., Clarke, C., Bugden, D., Maibach, E., Roser-Renouf, C., and Leiserowitz, A. (2014). “Fracking” controversy and communication: Using national survey data to understand public perceptions of hydraulic fracturing. *Energy Policy*, 65, 57-67.
- Briggle, A. (2015). *A field philosopher's guide to fracking: How one Texas town stood up to big oil and gas*. WW Norton & Company.
- Briggle, A (2013). Fracking? Not in my back yard (or yours). *The Conversation* (online). Available from: <https://theconversation.com/fracking-not-in-my-back-yard-or-yours-13185>. (Accessed 15 April 2019).
- Burgen, S (2014). Spain’s oil deposits and fracking sites trigger energy gold rush. *The Guardian* (online). Available at: <https://www.theguardian.com/world/2014/mar/26/spain-oil-deposit-fracking-sites-energy-offshore-gas>. (Accessed 15 April 2019).
- Buono, M.R, Mayor, B, López-Gunn, E (2018). A comparative study of water-related issues in the context of hydraulic fracturing in Texas and Spain. *Environmental Science and Policy*. 90, 193-200.
- Chailleux, S, Merlin, J, Gunzburger, Y (2018). Unconventional oil and gas in France: from popular distrust to politicization of the underground. *The Extractive Industries and Society*. 5, 682-690.
- Chess, C., & Purcell, K. (1999). Public participation and the environment: Do we know what works?. *Environmental Science and Technology*, 33, 2685-2692.
- Christopherson, S and Rightor, N (2014). NIMBYs or Concerned Citizens? Responding to Shale Oil and Gas Development. *Progressive Planning*. 198, 32-35.

Church of England. (2016). Shale Gas and Fracking: A Briefing Paper from the Mission and Public Affairs Council and the Environment Working Group of the Church of England. Available from: <https://www.churchofengland.org/more/media-centre/news/new-shale-gas-and-fracking-briefing-paper-released>. (Accessed 8 June 2019).

Clarke, C. E., Bugden, D., Hart, P. S., Stedman, R. C., Jacquet, J. B., Evensen, D. T., and Boudet, H. S. (2016). How geographic distance and political ideology interact to influence public perception of unconventional oil/natural gas development. *Energy Policy*, *97*, 301-309.

Clough, E. (2018). Environmental justice and fracking: A review. *Current Opinion in Environmental Science & Health*, *3*, 14-18.

Costa, D., Jesus, J., Branco, D., Danko, A., & Fiúza, A. (2017a). Extensive review of shale gas environmental impacts from scientific literature (2010–2015). *Environmental Science and Pollution Research*, *24*, 14579-14594.

Costa, D, Pereira, V, Góis, J, Danko, A and Fiúza, A (2017b). Understanding public perception on hydraulic fracturing in Spain. *Journal of Environmental Management*. *204*, 551-562.

Cotton, M. (2013). Shale gas—community relations: NIMBY or not? Integrating social factors into shale gas community engagements. *Natural Gas & Electricity*, *29*(9), 8-12.

Cotton, M. (2017). Fair fracking? Ethics and environmental justice in United Kingdom shale gas policy and planning. *Local Environment*, *22* (2), 185-202.

Cotton, M., Rattle, I., and Van Alstine, J. (2014). Shale gas policy in the United Kingdom: An argumentative discourse analysis. *Energy Policy*, *73*, 427-438.

Craig, K., Evensen, D., & Van Der Horst, D. (2019). How distance influences dislike: Responses to proposed fracking in Fermanagh, Northern Ireland. *Moravian Geographical Reports*, *27*(2), 92-107.

Davidson, D. J. (2018). Evaluating the effects of living with contamination from the lens of trauma: a case study of fracking development in Alberta, Canada. *Environmental Sociology*, *4*(2), 196-209.

Davis, C. (2014). Substate federalism and fracking policies: does state regulatory authority trump local land use autonomy? *Environmental science & technology*, *48*, 8397-8403.

de Melo-Martín, I., Hays, J., & Finkel, M. L. (2014). The role of ethics in shale gas policies. *Science of the Total Environment*, *470*, 1114-1119.

Deloitte and Aciep (2014). Análisis del impacto del desarrollo de la exploración y producción de hidrocarburos en la economía Española. 10-11.

Devine-Wright, P. (2013). Explaining “NIMBY” objections to a power line: The role of personal, place attachment and project-related factors. *Environment and behavior*, *45*(6), 761-781.

Devine-Wright, P. (2009). Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action. *Journal of Community & Applied Social Psychology*, 19, 426-441.

Dokshin, F. A. (2016). Whose backyard and what's at issue? Spatial and ideological dynamics of local opposition to fracking in New York State, 2010 to 2013. *American Sociological Review*, 81, 921-948.

Evensen, D. (2018a). Review of shale gas social science in the United Kingdom, 2013–2018. *Extractive Industries and Society*, 5, 691-698.

Evensen, D. (2018b). Yet more 'fracking' social science: An overview of unconventional hydrocarbon development globally. *The Extractive Industries and Society*, 5, 417-421

Evensen, D. (2017). On the complexity of ethical claims related to shale gas policy. *Local Environment*, 22, 1290-1297.

Evensen, D. (2016). Ethics and 'fracking': a review of (the limited) moral thought on shale gas development. *Wiley Interdisciplinary Reviews: Water*, 3, 575-586.

Evensen, D. (2015). Policy decisions on shale gas development ('fracking'): the insufficiency of science and necessity of moral thought. *Environmental Values*, 24, 511-534.

Evensen, D & Stedman, R (2018). 'Fracking': Promoter and destroyer of 'the good life'. *Journal of Rural Studies*, 59, 142-152.

Evensen, D., Stedman, R., O'Hara, S., Humphrey, M., and Andersson-Hudson, J. (2017). Scale matters: Variation in beliefs about 'fracking' between the UK and US. *Environmental Research Letters*, 12(12), 124004, 1-10.

Finkel, M. L., Hays, J., and Law, A. (2013). Modern natural gas development and harm to health: The need for proactive public health policies. *ISRN Public Health*, 2013.

Fry, M., Briggles, A., & Kincaid, J. (2015). Fracking and environmental (in) justice in a Texas city. *Ecological Economics*, 117, 97-107.

Garcia Valdivia, A. (2019, 26 July). Still No Government In Spain: Pedro Sánchez Fails To Form A Progressive Coalition With Podemos. *Forbes* (online). Available at: <https://www.forbes.com/sites/anagarciavaldivia/2019/07/26/still-no-government-in-spain-pedro-sanchez-fails-to-form-a-progressive-coalition-with-podemos/#15c788f5c61c>. (Accessed 16 August 2019).

González, M. (2019, 29 July). In wake of failed investiture bid, Socialists rule out coalition government. *El País* (online). Available at: https://elpais.com/elpais/2019/07/29/inenglish/1564384957_267040.html. (Accessed 16 August 2019).

Griffiths, J. (2019). Fracking in the UK: expanding the application of an environmental justice frame. *Local Environment*, 24, 295-309.

- Herranz de la Casa, J. M., Álvarez-Villa, À., and Mercado-Sáez, M. T. (2018). Communication and effectiveness of the protest: Anti-fracking movements in Spain. *Zer: Revista de estudios de comunicación= Komunikazio ikasketen aldizkaria*, 23(45), 35-56.
- Hilson, C. (2015). Framing fracking: which frames are heard in English planning and environmental policy and practice? *Journal of Environmental Law*, 27(2), 177-202.
- Hirsch, J. K., Smalley, K. B., Selby-Nelson, E. M., Hamel-Lambert, J. M., Rosmann, M. R., Barnes, T. A., ... and LaFromboise, T. (2018). Psychosocial impact of fracking: a review of the literature on the mental health consequences of hydraulic fracturing. *International Journal of Mental Health and Addiction*, 16(1), 1-15.
- Jacquet, J. B. (2014). Review of risks to communities from shale energy development. *Environmental science & technology*, 48, 8321-8333.
- Köhne, M., & Rasch, E. D. (2018). Belonging to and in the Shale Gas Fields. A Case-Study of the Noordoostpolder, the Netherlands. *Sociologia ruralis*, 58(3), 604-624.
- Lewiński, M. (2016). Shale gas debate in Europe: Pro-and-con dialectics and argumentative polylogues. *Discourse and Communication*. 10, 553-575.
- Lin, A. (2014). Fracking and Federalism: A Comparative Approach to Reconciling National and Subnational Interests in the United States and Spain. *Environmental Law*. 44 (4), 1039-1078.
- Lis, A. (2018). Co-production of the shale gas publics in Poland and the negotiation of the state citizens relations. *The Extractive Industries and Society*, 5, 673-681.
- Lis, A., and Stasik, A. (2018). Chapter 8: Unlikely allies against fracking. *Governing Shale Gas: Development, Citizen Participation and Decision Making in the US, Canada, Australia and Europe*.
- Lis, A., and Stasik, A. (2017). Hybrid forums, knowledge deficits and the multiple uncertainties of resource extraction: Negotiating the local governance of shale gas in Poland. *Energy Research & Social Science*, 28, 29-36.
- Lober, D. and Green, D. (1994). NIMBY or NIABY: a logit model of opposition to solid-waste-disposal facility siting. *Journal of Environmental Management*, 40(1), 33-50.
- Lopera-Pareja, E.H, García-Laso, A and Martín-Sánchez, D.A (2015). Discourse and values underpin public debate on fracking in Spain: a case study at the crossroad. *European Geosciences Union General Assembly 2015 Session EOS8: general aspects and case studies in geosciences*. Vienna, Austria, 12-17 April.
- Lopera-Pareja, E.H, García-Laso, A and Martín-Sánchez, D.A (2017). Public policies, social perception and media content on fracking: An analysis in the Spanish context. *Analysis of Geophysics*. 60(7), 1-7.

Luke, H., Brueckner, M., and Emmanouil, N. (2018). Unconventional gas development in Australia: A critical review of its social license. *The Extractive Industries and Society*, 5, 648-662.

Matti, C., Consoli, D., and Uyarra, E. (2017). Multi level policy mixes and industry emergence: The case of wind energy in Spain. *Environment and Planning C: Politics and Space*, 35(4), 661-683.

Mayer, A., and Malin, S. (2018). Keep it local? Preferences for federal, state, or local unconventional oil and gas regulations. *Energy Research & Social Science*, 44, 336-345.

Measham, T. G., Fleming, D. A., and Schandl, H. (2016). A conceptual model of the socioeconomic impacts of unconventional fossil fuel extraction. *Global Environmental Change*, 36, 101-110.

Metze, T. (2018a). Framing the future of fracking: Discursive lock-in or energy degrowth in the Netherlands?. *Journal of cleaner production*, 197, 1737-1745.

Metze, T. (2018b). Fuel to the fire: Risk governance and framing of shale gas in the Netherlands. *The Extractive Industries and Society*, 5(4), 663-672.

McJeon, H., Edmonds, J., Bauer, N., Clarke, L., Fisher, B., Flannery, B. P., ... & Riahi, K. (2014). Limited impact on decadal-scale climate change from increased use of natural gas. *Nature*, 514(7523), 482-504.

Minor, J. (2013). Local government fracking regulations: A Colorado case study. *Stan. Envtl. LJ*, 33, 59.

Munasib, A, Rickman, D.S (2015). Regional economic impacts of the shale gas and tight oil boom: a synthetic control analysis. *Regional Science and Urban Economics*. 50(C), 1-17.

Neville, K.J and Weinthal, E (2016). Scaling up site disputes: strategies to redefine 'local' in the fight against fracking. *Environmental Politics*. 25 (4), 569-592.

OECD (2019), Unemployment rate (indicator). doi: 10.1787/997c8750-en (Accessed on 18 April 2019)

Paylor, A (2017). The social-economic impact of shale gas extraction: a global perspective. *Third World Quarterly*. 38(2), 340-355.

Planelles, M (2018). El Constitucional abre la puerta a que las comunidades declaren zonas libres de 'fracking'. *El País* (online). Available at: https://elpais.com/politica/2018/06/20/actualidad/1529490690_716047.html. (Accessed 15 April 2019).

Planelles, M. (2017). Spain's fracking bubble bursts. *El País* (online). Available at: https://elpais.com/elpais/2017/03/14/inenglish/1489505343_720028.html. (Accessed 20 April).

Rawlins, R. (2013). Planning for fracking on the Barnett shale: Urban air pollution, improving health based regulation, and the role of local governments. *Va. Envtl. LJ*, 31, 226.

Sangaramoorthy, T., Jamison, A. M., Boyle, M. D., Payne-Sturges, D. C., Sapkota, A., Milton, D. K., and Wilson, S. M. (2016). Place-based perceptions of the impacts of fracking along the Marcellus Shale. *Social Science & Medicine*, 151, 27-37.

Sauer, N (2019, 29 April). Spain's socialists win election with Green New Deal platform. Climate Home News (online). Available at: <https://www.climatechangenews.com/2019/04/29/spains-socialists-win-election-green-new-deal-platform/>. (Accessed 16 August 2019).

Sevillano, E (2019). Ya nadie busca petróleo ni gas en España. El País (online). Available at: https://elpais.com/economia/2019/04/26/actualidad/1556300916_182695.html.(Accessed 18 August 2019).

Shrader-Frechette, K. (2002). Distributive Justice, Participative Justice, and the Principle of Prima Facie Political Equality. *Environmental Justice: Creating Equality, Reclaiming Democracy*. Oxford University Press Scholarship Online, 1-47. Available at: <http://www.oxfordscholarship.com/view/10.1093/0195152034.001.0001/acprof-9780195152036-chapter-2?print=pdf>. (Accessed 20 April 2019).

Simonelli, J. (2014). Home rule and natural gas development in New York: civil fracking rights. *Journal of Political Ecology*, 21(1), 258-78.

Sovacool, B. K. (2014). Cornucopia or curse? Reviewing the costs and benefits of shale gas hydraulic fracturing (fracking). *Renewable and Sustainable Energy Reviews*, 37, 249-264.

Stasik, A. (2018). Global controversies in local settings: anti-fracking activism in the era of Web 2.0. *Journal of Risk Research*, 21, 1562-1578.

Van de Graaf, T., Haesebrouck, T., & Debaere, P. (2018). Fractured politics? The comparative regulation of shale gas in Europe. *Journal of European public policy*, 25, 1276-1293.

Vizoso, S, and Barbero, L (2019, 13 August). Spanish regions forced to make budget cuts as political deadlock continues. El País (online). Available at: https://elpais.com/elpais/2019/08/13/inenglish/1565681206_252351.html. (Accessed 16 August 2019).

Warner, B., & Shapiro, J. (2013). Fractured, fragmented federalism: A study in fracking regulatory policy. *Publius: The Journal of Federalism*, 43(3), 474-496.

Webler, T., & Tuler, S. (2006). Four perspectives on public participation process in environmental assessment and decision making: Combined results from 10 case studies. *Policy Studies Journal*, 34(4), 699-722.

Zamorano, M. (2017). Cultural policy governance, sub-state actors, and nationalism: a comparative analysis based on the Spanish case. *Special Issue Plurinationality, Federalism and Sovereignty in Spain: at the Crossroads*, 79.

Zanocco, C., Boudet, H., Clarke, C. E., and Howe, P. D. (2019). Spatial Discontinuities in Support for Hydraulic Fracturing: Searching for a “Goldilocks Zone”. *Society & Natural Resources*, 1-8.