**A town divided: Community values and attitudes towards coal seam gas development in Gloucester, Australia**

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**Abstract** The 2300-person community of Gloucester, New South Wales in Australia anticipated the prospect of coal seam gas (CSG) development, a form of unconventional natural gas, for nearly a decade before a 2016 decision to cancel the project. Gloucester has become well known for its extreme level of community division focused on coal seam gas development: residents report conflicts ranging from blocked access to services through death threats and active boycotts of businesses. We conducted open-ended interviews, participant observation, and mail surveys in Gloucester in late 2015 with the goal of understanding the deeper issues associated with CSG-related conflict in Gloucester. We argue that the long period of stagnant uncertainty associated with the potential development was a major contributor to the amplitude of the community divide. The major conflict focused on whether a coal seam gas development would threaten or accelerate progress toward shared goals of securing Gloucester's future and maintaining residents' quality of life. We posit that exacerbating factors include the existence of highly concrete visions of what Gloucester would be like in futures with or without gas and the sense that the community was not empowered to choose whether or not to pursue local gas development.

**Keywords:** coal seam gas; Australia; social impact; unconventional gas

## 1 Introduction

Gloucester is a small town in New South Wales, Australia (Figure 1) with a resource-based history founded on dairy and timber. More recently, the region has produced coal and beef cattle, with industrial transitions partly attributed to dairy deregulation and forest conservation efforts in the 1990s. Residents describe the town as "country," with good access to major coastal hubs like Sydney and Newcastle but a strong local identity due to cultural isolation from these hubs. Some residents' families have been in Gloucester for generations, while others are more recent arrivals attracted by the natural beauty of the area and the opportunity to retreat from urban life. Unemployment and wages relative to cost of living are similar to rates in Australia as a whole (Census 2011).

In 1992, Petroleum Exploration License (PEL) 285 was granted to Pacific Power, allowing for exploration of the region for natural gas found in the extensive coal seams in the valley. After limited activity, PEL 285 was sold to Lucas Energy and Molopo Australia in 2002, again with limited activity or impact in the Gloucester region. Amidst interest in natural gas resources due to rising oil prices and other market forces, the New South Wales Department of Planning

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declared the PEL 285 lease a 'Major Project' (NSW Department of Planning 2005) in May 2008, requiring an Environmental Assessment "to ensure community views were considered in the development of the project." Soon after, in December 2008, PEL 285 changed hands again and was sold to AGL Energy (a successor to the Australian Gas Light Company). AGL began community consultations in early 2009 (AGL 2013, AGL 2015, AGL 2016a). The proposed Gloucester Gas Project potentially comprised hundreds of coal seam gas wells that would provide large portions of New South Wales' natural gas after hydraulic fracturing. After four wells were drilled in 2012 (the Waukivory Pilot), AGL announced in February 2016 that the proposed project would not proceed (AGL 2016b, AGL 2016c). Between consultations and cancellation, Gloucester residents engaged the possibility of transitioning from an identity as a non-gas producing to a major gas producing community and became well known for extreme levels of community division over the project: this division, and the ethics of the processes that led to it, is the subject of this paper.

Against the backdrop of anti-gas activism in Queensland and other parts of New South Wales (Colvin et al. 2015) and across the world in the eastern United States (Smith and Ferguson 2013, Vasi et al. 2015), the town of Gloucester became noteworthy for the degree to which project proposals were creating community tension. Between 2013 and 2016, competing community groups espousing different visions for the town's future with or without gas became prominent. Meanwhile, very little activity proceeded on the CSG project itself, contributing to the challenging mixture of long periods of stagnant uncertainty, competing visions for the future, and limited local control over the fate of a project subject to major market shifts.

This work describes the results of research undertaken in Gloucester in late 2015, several months before the project was canceled. We add to the growing literature on anthropological approaches to analyzing transitions to fossil energy extraction (e.g. Eaton and Kinchy 2016, Fernando and Cooley 2016, Filteau 2015, Loder 2016, Perry 2012) with this case study of Gloucester, as well as to the social science literature on coal seam gas development in Australia (e.g. Cronshaw and Quentin 2016, de Rijke 2013, Espig and de Rijke 2016, Gillespie et al. 2016, Lloyd et al. 2013, Makki and van Vuuren 2016, Morgan et al. 2016, Sherval and Hardiman 2014, Trigger et al. 2014, Walton et al. 2013). Our work uses interviews, observation, and survey data to construct an explanation for the extreme community division caused by Gloucester residents' reactions to a proposed CSG project, positing that the timing, long duration, and pre-existing competing discourses in the community led to a situation where positions could easily harden and visions for the future could become highly tangible.

Even though CSG was not actually developed in Gloucester, we observe many of the same concerns identified among residents of developed areas. For example, prior work on the social setting of Australian CSG in regions that already have development, primarily in Queensland, has indicated that residents are concerned about water, community effects, and their ability to plan for the future under uncertain conditions (Phelan et al. 2017). Earlier work conducted in Gloucester in 2012 (Sherval and Hardiman 2014) emphasizes the emergence of competing discourses about Gloucester's future that threaten its community, something we observe at extreme levels in our work three years later.

Overall, we observe that residents have many of the same goals for their community, and most feel a very strong sense of connection to the place as their home. Residents' opinions about what to do are grounded in personal ethical practice, evidenced in particular by descriptions of their desire to protect and provide social and environmental well-being for the future. This ethical grounding both uncovers and intensifies conflict, as the potential for CSG in Gloucester forces individuals and groups to explicitly state and argue for different sociotechnical imaginaries, or senses of how to achieve success in securing a "good" future for the town (see e.g. Jasanoff and Kim 2009, Smith and Tidwell 2016). A competing opinion is not seen simply as an alternative, but as an unethical desire for something harmful. That is, highly personal and tangible expectations for Gloucester's future—with gas for some and without gas for others—contribute to residents' perception that the opposing perspective is actively harming them by destroying their futures and those of their families and community. This perception is amplified by a general sense among residents that they personally have no control over the result and thus cannot actively protect themselves. This conflation of the gas project with high stakes visions for the future are the root of Gloucester's high conflict situation. We suggest that the potential for serious social harm even absent project implementation creates an ethical imperative for companies to consider the potential for such conflict carefully before a project is built, especially if the time between proposal and implementation is long.

## 2 Methods

This in-depth qualitative case study is part of a larger mixed methods project investigating social and environmental priorities in communities experiencing energy development in the United States and Australia (including the Powder River Basin, a coal- and coalbed methane region in Wyoming, US; Grubert in prep.). Our goal in focusing attention on Gloucester is to reveal the extent to which energy can become embedded into community culture, then to explore the ethical implications of this finding. To accomplish this goal, we apply anthropological methods like in-depth open-ended interviews and short-term participant observation that enable rich examination of cultures, motivations, and relationships in this energy community. In keeping with the idea that qualitative research can explain why an outcome occurs and how it comes to be, while quantitative research explains the extent to which this outcome is observed (Glaeser and Laudel 2013), we use relevant quantitative data from our survey sparingly to illustrate our qualitative conclusions.

### 2.1 Interviews

We recorded, transcribed, and analyzed eight formal semi-structured interviews with 10 informants in Gloucester, including farmers, business owners, tourism proponents, industry proponents, retirees, and students. Two interviews included two participants each (a married couple and a pair of close friends), based on their preference. We also recorded, transcribed, and analyzed an eleventh formal interview with a state regulator. Additionally, we conducted 24 informal interviews in or about Gloucester. Most informants for both formal and informal interviews were approached either directly during one of two meetings we attended (see section 2.2) or through snowball sampling based on either informants' or meeting organizers' recommendations. For all interviews, we prioritized diversity of opinions on CSG, though we quickly discovered that finding potential participants with no opinion was unrealistic. For formal interviews, we prioritized diversity of background, age, and length of residence in the area. Five formal Gloucester-based informants identified as anti-CSG, four identified as pro-CSG, and one

identified as neutral. Informal interviews included 11 broadly anti-CSG participants, 10 broadly pro-CSG participants, and three academics outside the community but with knowledge of it. These informal interviews were captured with notes but were not recorded. In almost all cases, both authors were present, with one focused on note taking and one focused on the conversation to improve data quality.

We used a semi-structured interview approach with the goal of making interviews open ended and conversational. Questions focused broadly on informants' backgrounds, history with Gloucester, attitudes toward and experience with CSG, and experiences with or impressions of the community's reaction to CSG. The goal of using a semi-structured approach was to ensure a general focus on CSG in Gloucester while allowing for emergent topics and enabling us as interviewers to explore specific themes more closely. For example, the semi-structured approach allowed us to go into detail on certain informants' experiences of personal safety concerns, prior experience with industrial development, and interpretations of how Gloucester's history influences the present. Transcripts and notes were managed and coded using thematic coding techniques in NVivo 10, focusing on issues of community relations, attitudes about the gas project, and visions of the future. These themes are explored and synthesized in the discussion.

## 2.2 Participant Observation

In addition to our formal and informal interviews, we spent four days in Gloucester and participated in two major events for a very short term but high intensity observation of the place. We attempted to engage in life in Gloucester by renting a room outside the town center, shopping at the grocery store, patronizing restaurants, cafes, and parks, and otherwise being visible while maintaining sociability. Our two main activities over our four days in Gloucester were attending meetings associated with both the pro- and anti-gas communities. Our participation in these two relatively large meetings (one broadly pro-gas, and one broadly anti-gas) enabled us to observe the nature of agendas in such meetings, the discussion topics, and the way participants interacted. We acted as observers-as-participants, with our role made clear to other participants both by our obvious position as outsiders (not only because people did not recognize us, but also because our American and Canadian accents revealed our status fairly immediately) and by introduction to the groups as academic researchers. We were clear about our goals of understanding the community as a whole, and we believe we benefited from our short-term engagement in that people generally appeared to accept our role as outsiders without connections to either side of the gas debate. Based on our experience over those four days, we believe that much more engagement would have resulted in our appearing to take sides in the debate and might have lost us the ability to engage the broader community. We attempted to establish reciprocity by offering to share the results of our work, which many people expressed interest in receiving.

We do not claim to have performed a full participant observation, let alone ethnography, during our short stay in Gloucester. Rather, we draw on ethnographic methods to extend our understanding of the place, establish rapport with informants, and observe life in Gloucester. Our interest in the focused topic of "the nature of Gloucester residents' divided reaction to CSG" rather than a more traditional anthropological focus on "Gloucester" as a community is one mitigating factor for the short duration of our engagement. Similarly, we enhanced our ability to interpret what we saw through extensive pre- and post-engagement analysis of written data from

sources like social media, newspaper articles, and others.  Triangulating data from our two-person collaboration occurred during long debriefs each day and multiple times post-engagement.

**2.3 Surveys**
Mixed qualitative/quantitative surveys were distributed anonymously to 381 addresses in Gloucester using Unaddressed Mail, with the goal of communicating and upholding an extreme commitment to privacy while contacting a large number of people in our geographic area of interest. Advantages, disadvantages, and cost analysis of Unaddressed Mail as opposed to more conventional survey techniques will be reported separately based on experience and methodological experiments from the broader study of community perspectives on energy development associated with this project, comprising over 12,000 contacted households in the US and Australia (Grubert in prep.). Households were contacted three times, with an introductory postcard delivered approximately one week before the questionnaire and cover letter, then a follow-up postcard containing a link to an online version of the questionnaire and a thank you to those who already had participated delivered approximately two weeks later. No attempt to recruit participants through e.g. message boards, events, groups, or means other than the three-contact mail survey was made, in an effort to reduce risk of biasing the results based on recruitment location. An online version of the American instrument is available at survey.emilygrubert.org (very similar to the Australian instrument, with minor changes in spelling, demographic options, and wording of terms like "zip code" versus "postcode"). Mail-formatted versions of the Australian pre-mailers, instrument, and post-mailers are available from the corresponding author on request.

Survey response rate was about 17% (64 complete responses), which was much higher than observed in other regions of Australia where we distributed surveys at the same time. Our average response rate across these other communities, selected for their proximity to coal or coal seam gas projects, was 5%. As the survey is generic, focused on social and environmental priorities without reference to specific resources or projects (e.g., CSG), this relatively high Gloucester response rate suggests high salience of social and environmental issues in the community. Despite the comparatively large response rate, we have insufficient data to make claims of representativeness, and we treat survey data as indicative but not statistically extrapolatable to the entire community.

One goal of the survey was to elicit high salience issues through open-ended questions. Respondents were asked to provide qualitative responses to questions about the first positive or negative things that come to mind about their local environment and local communities. Local beauty was frequently mentioned as a positive environmental issue, while feeling safe in the community was frequently mentioned as a positive community issue. By contrast, CSG, divisiveness and lack of opportunity for young people were frequently mentioned as negative issues. While the open-ended format of these questions is not well suited to detecting support for coal and CSG (in part because any benefits do not yet exist), many respondents indicated opposition to extractive industries by referencing concern about pollution or social impacts associated with the industries. Twenty respondents—about one third—referenced CSG and/or coal as socially problematic in these open-ended responses, while 31—about half—referenced CSG and/or coal as environmentally problematic (10 noted both social and environmental

problems). Among the 64 respondents, 37 expressed explicitly anti-CSG and/or coal views in open-ended questions.

In addition to these brief qualitative responses, we were interested in certain demographic data that are challenging to elicit during conversational, open-ended interviews and discussions. For example, we were interested in respondents' education level, financial security, employment, happiness, identification of Gloucester as home, and self-identification as environmentalists. Our descriptive sample generally corroborated anecdotal evidence we heard during our time in Gloucester, with environmentalists, more highly educated people, more financially secure people, and less happy people more likely to volunteer explicitly anti-CSG/coal views than their counterparts. One result that moderately contradicts anecdotal evidence we heard, however, is that those opposing CSG and/or coal were more likely to be employed, while those with unknown views were more likely to be retired. As we do not have full insight on respondents' views on CSG if they were not volunteered, all survey observations should be interpreted with caution.

Finally, a major goal of our survey work was to establish an understanding of how residents view their community. Strikingly, every respondent who answered the question (63 of 64 total responses), noted that they consider the place they currently live (in this case, Gloucester) to be their home. This result is particularly interesting given that 25 respondents note that they do not consider themselves to be from the area. Identification of Gloucester as 'home,' even among residents who came to the area later in life, indicates a strong place attachment (see e.g. Moore 2000, Scannell and Gifford 2010, and, on the relationship between attachment and identity, particularly related to length of residence, Hernández et al. 2007). Place attachment has previously been identified as a mediator of place-protective behaviors and attitudes towards infrastructural changes (see e.g. Devine-Wright 2009, Lukacs and Ardoin 2014, Lukacs et al. 2016, Stedman 2002, Vaske and Kobrin 2010, Vorkin and Riese 2001). While we again caution that our response rate was too low to statistically extrapolate results, the finding that respondents feel a 'home' connection to Gloucester—affirmed by our interview work—is notable in the context of the extreme protective reaction from the community. About half of respondents who identified as being from the area, and about three quarters of those identifying as not being from the area, explicitly expressed anti-CSG/coal views.

## 3 Results and Discussion
### 3.1 Why Was Community Division So Extreme in Gloucester?
Communities undergoing major transitions often experience social division in response to project proposals and development (e.g. Gross 2007, Schafft et al. 2013, Willow and Wylie 2014), but effects on the community fabric as severe and as visible as those observed in Gloucester are unusual. Many informants were quick to acknowledge the damage to Gloucester's social fabric associated with gas development. Some expressed their intention to move away in the near future, either because of a possible gas decision or because the town had become too divided to live in. Similarly, multiple informants described fear of expressing their true opinions, in part because of uncertainty about how others would react:

> And you don't know what side everyone's on so you don't, if, you know, if you say something wrong to someone how they're going to react, and that's the scary part.

Perhaps unsurprisingly given these allusions to community division, people frequently used "us versus them" language and often appealed to outside authority and their own sophistication. Those for gas tended to reference expertise within the company, state, or regulatory body, expressing trust that these authorities are good actors. Those against gas, by contrast, tended to refer to their own expertise. People on both sides of the issue referred to the many retired professionals who came to Gloucester and are seen as largely opposing gas.

Based on our research, we propose that there are three major reasons for the nature of the response in Gloucester. First, the time between initial discussions of gas development and the ultimate decision on the project was unusually long. Second, visions of the future held by the pro- and against-gas factions were ethically grounded, different, and placed in opposition to one another. Third, Gloucester residents developed highly personal, concrete visions of the future. The following discussion explores these three reasons in context of our experience in Gloucester in late 2015.

**3.1.1 Duration of Debate** Coal Seam Gas (CSG) development in Gloucester was initially publicly conceptualized with the granting of an exploration lease in 1992, 24 years before AGL's decision to cancel the project. More than one of our informants discussed hearing about gas development in the Gloucester region at that time. Most informants noted becoming generally aware of the CSG proposal around 2008, the year AGL purchased the exploration lease. Between the time AGL first formally engaged the community in 2009 and made its 2016 decision not to proceed with the project, seven years of engagement took place (AGL 2013, AGL 2015, AGL 2016a, AGL 2016b, AGL 2016c). This active seven-year process without much project activity is unusually long. In Gloucester's case, we posit that the lengthy but stagnant engagement process contributed to the formation and reinforcement of public opinion (see Ulibarri et al. 2017 for an analysis of how delays affect project implementation, including by fostering divergent interests).

Many of our informants noted that for the first 12 to 24 months of formal engagement, openness, curiosity, and willingness to engage characterized community response. During that time, public meetings attracted many community members, and boycotts and other forms of refusal to engage based on the position of an individual or organization were not observed. As one person noted,

> When [AGL] had a sort of pilot, to see what they've got out here, and they had an open day across the weekend, and I think they met with like 1800 people across two days. And it was, if AGL tried to do that now, it just couldn't happen. There'd be protests, there'd be everything.

Over time, however, informants told us they and others made up their minds, and the divisiveness that came to characterize the debate became more pronounced. Starting around 2013, after the 2012 drilling of four pilot wells at Waukivory, organizations like Advance Gloucester (widely seen as pro-gas) and Groundswell Gloucester (widely seen as anti-gas) became more active and visible. While members of both groups expressed a goal of being inclusive, it seems tacitly understood that the groups are polarized and topically aligned. We suggest that this group formation and attendant strengthening of social networks based on shared

attitudes (see e.g. Ingram et al. 2014) contributed to the shift in community attitude from an open curiosity to a deeply entrenched division. We also note that more than one person told us that Gloucester had a reputation for conflict even before the CSG debate, though CSG instigated a more intense reaction:

> I've lived in many towns, and this one has always had an element of people polarizing on something, where in other towns you can have a difference of opinion but you get together on the things you agree on. This town has always polarized on the differences, but it's actually got malicious and nasty, where people are actually saying nasty things to each other, taking a stand and not listening to anything that anyone has to say.

We believe that the length of the process in itself is important in contextualizing Gloucester residents' reactions to CSG, especially because phenomena like confirmation bias and reframing discussions to reinforce one's existing opinions (e.g. Nickerson 1998, Friesen et al. 2015) contribute to polarization over time. Once an opinion is formed, simply providing additional information is unlikely to change people's minds—a finding that has contributed to the demise of the deficit model of communication, despite its persistence (e.g. Simis et al. 2016, and see Barry 2013 for a discussion of how public information can be deployed in controversial energy project contexts).

In Gloucester's case, it is not only the duration but also the timing of this period of opinion formation and engagement process that is relevant. Three major events contributing to the CSG reaction in Gloucester are 1) the advent and subsequent rapid increase in CSG production in the neighboring state of Queensland (~1996-present, with fastest growth between about 2005 and 2010), 2) the rise of Facebook as a social network open to anyone with an email address (late 2006), and 3) the development of a multinational, organized movement against hydraulic fracturing and unconventional gas, characterized in particular by the 2010 release of the American anti-hydraulic fracturing documentary *Gasland* and 2010 formation of Australia's Lock the Gate Alliance (LTGA). The combination of these factors meant that Gloucester residents likely both paid and received more attention related to CSG than would otherwise have been true. Multiple people on either side of the debate spoke with us about experiences with all these factors, including visits to Queensland gas fields, being bullied by local residents or coordinating with locals and those further afield on Facebook, and having their children watch *Gasland* in school. As one informant noted when asked what sustained the conversation given limited company activity during the seven-year period,

> Social media. Big, that's the big one. Social media. And going back probably even that five, six years, it probably wasn't a big player in the scheme of things...And it's really been a major game changer... And yeah, we get snippets from, you know, stuff from Queensland, stuff from the US, you know, stuff from here, stuff from there.

We thus posit that the timing of CSG project development in Gloucester increased the stakes of the project, which in turn made choosing a side more socially important and prompted more organized investigation of the project by community members and others than might have been expected absent this context. These high stakes and long time period in turn prompted more investigation of what gas would mean in Gloucester, the topic of the next two subsections.

**3.1.2 Vision of Future** Over the years of discussion of CSG development in Gloucester, one major topic that emerged as important to community members is what residents could expect from the project. Those who spoke with us seemed relatively united in their interest in providing a positive future for Gloucester and their love for the place itself. Terms and titles chosen by community organizations, like Advance Gloucester and the Sustainable Futures Convention, indicate a focus on the future that permeated discussions of what CSG might be. As one informant told us,

> Whether they're for or against gas, no one wants to see Gloucester damaged by any process of resource extraction. We all love the place. That's the problem. We all have the same like of Gloucester, it's just we have different opinions of how it should be used.

As discussion and analysis proceeded during the project development and consultation process, different and competing visions of Gloucester's future began to emerge. In particular, community members' expectations of what the future would look like with or without gas tended to focus on land use and economic development, likely because of the town's history of providing for itself (a common point emphasized by informants) in a beautiful but somewhat challenging setting:

> Here's a community that's been very independent, slightly isolated, looked after itself, worked hard, provided milk and timber to the state for a very long time, had those pulled from underneath it. And then this other industry comes up, coal and coal seam gas, offers some hope to those that have a long history in the town that we may finally have a stable economic base to move into the future, and then all the new people who come into the town of course are aghast that this has moved here because it's beautiful and there's timber and dairy cows, and suddenly we're going to have a gas field and a coal mine.

We add that, as in the above quote, many people whom we interviewed provided quick summaries of their understanding of both sides of the issue, regardless of their point of view. In most cases, these summaries were consistent with each other across demographics and viewpoints, suggesting that the long-term discussion points about CSG are relatively well worn.

The sociotechnical imaginaries described by those for gas versus those against gas both focused heavily on the community's future, particularly its economic viability. Those for gas tended to speak of a future where the gas project's presence brought other industries to the town, resulting in a diversified economy that would provide jobs and allow the town's children to stay and raise their families in the region:

> There's not one individual industry or anything that can claim to provide all the support for the community...The generational people in the main have seen things ebb and flow and change...I think back on my lifetime to when there was two or three years of drought, and you know, the old man was looking at which wall we're going to eat the paint off next, those sorts of things. So you need lots of opportunities for a community to thrive. And I just see this industry as one of those opportunities. Because currently there are 152 local government areas in New South Wales. All of them...have a tourist officer, they're

all chasing tourism...But what does Gloucester have that is unique, that a lot of the others don't? And resources is one of them.

In this future, land use enabled farmers to continue farming, with extra income from land access potentially sustaining the farms through tough economic periods (like almost every country except the United States, Australia does not have private mineral ownership, with few exceptions—while landowners are not compensated for minerals, they are usually compensated for land access).

Those against gas, by contrast, tended to speak of a future where gas' presence would harm the town's tourism prospects and ability to sell agricultural products, giving the town a reputation as an industrial area with contamination and potential severe health impacts. In this future, the town's children would not be able to stay because it would be too dangerous, in addition to a lack of jobs. The land would be irreparably harmed and no longer fit for agriculture or tourism, thus effectively destroying the town's future:

> When I became aware of the groundwater impacts and the health impacts, were the two things that really got me fired up. And I just got to the point where I felt like I don't want my kids to say to me, what did you do to stop this, and the answer be nothing. I felt like I had to do something, I had to try and leave them something. Something of this beautiful world that we've got and we're destroying, as a race.

The act of future evaluation is an example of personal ethical practice in this context, particularly given frequent and explicit reference to the future of the town's children and how gas might affect that future. A notable difference between groups is that while many of those against gas development spoke of future generations somewhat abstractly, often referring generally to the environment and community sustainability, those for gas development tended rather to speak of their descendants specifically. For example, these informants spoke of their children's degrees, school opportunities, and ability to stay in Gloucester or not. This observation is consistent with our hypothesis that support or opposition for CSG in Gloucester is largely based on personal cost-benefit analyses. Those supporting gas do so largely as a means to an end rather than due to a specific desire for gas development—they see the benefits as outweighing the costs. By contrast, those opposing gas do so largely based on a conviction that the perceived costs are much greater than the perceived benefits, environmentally, economically, or otherwise. An intensifying factor based is that descriptions of such a future had the opportunity to become highly concrete over the years of engagement. We next describe the effects of this concreteness on Gloucester's discourse.

**3.1.3 Concreteness of Future** The final element of our hypothesis as to why Gloucester experienced more substantial community division in response to a proposed gas project is that, in addition to having a long time to discuss competing images of the town's future, those competing images were highly concrete and realistic. In part, this concreteness is due to the fact that residents had experienced both gas development and major industrial transitions within living memory, either vicariously or personally. Gas development in both the United States and Queensland—near enough to enable residents to visit and talk with residents of those areas— provided indications of what large-scale gas development might look like in Gloucester, with

social media and organized activism providing opportunities to engage that future on both the "for" and "against" sides. Similarly, Gloucester itself lost a significant portion of its dairy and timber industries and gained a coal industry in the 1990s, so longer term residents had experience with economic transitions in Gloucester.

This accessibility of exemplars is not the only form of concrete visioning observed in Gloucester, however. In describing Gloucester's future with or without gas, residents placed themselves in intimate, specific visions of their own future in their town. We argue that these visions contributed to the vitriolic and highly personal discourse that emerged as discussion and engagement continued even as activity on the gas project itself stalled. That is, the theoretical was able to become tangible for residents without corresponding changes to the real-world situation. This theoretical-to-tangible transition happened for both those for and against gas, and each group had a long time to add color to their visions. As the gap between the visions widened, so too did the sense on either side that the other group's disagreement with their position on gas was a direct attack on a concrete future they wished to protect. As time passed, the disagreement became less about the gas project itself and more about individuals' visions for a community that people widely agree is well worth protecting.

Notably, anger over perceived threats to a cherished potential future extended not only to other residents but also to the company at times, reinforcing our suggestion that the pro-gas residents were interested in the benefits gas might bring rather than the gas itself. One person described their reaction when AGL (the company) downsized its local office and stopped a pastoral program on its land:

> And they said, "You know, as a result of [the downsizing] we've relinquished our farming interests at the property," and we just went, "You dickheads. You know, we've just, you've just been the prime example of what we're aspiring industry to do, and you've just walked away from it."

As this quote suggests, much of the pro-gas vision for the future involved coexistence of agriculture and gas on specific parcels of land, made tangible with maps and discussion, alongside the potential for more demand for products, more jobs, and more community growth from development of heavy industry that could benefit from having gas. One example of a theoretical vision for the future made highly tangible is the prospect of a milk powder plant that would bring back dairies by reducing the burden of costly shipments of fresh milk. This potential project was made extremely real, to the point where local dairy farmers had negotiated an "in-principle" agreement with AGL and had begun scoping market opportunities in China. Opposition by other Gloucester residents was seen as an attack on the dairy industry and, by extension, the community, as our informant continues:

> Basically the day that press release went out, the antis had a counter press release saying, "Ah, you know, it's never going to happen, if it did it'd be contaminated, all that sort of crap"...They're trying to sully the marketing opportunities...Like, if you're going to knock the shit out of that, please put something else on the table that this community can run with. Because if that disappears, we've got nothing.

Those against gas similarly envision a highly concrete future with workers moving to Gloucester from cities based on its unspoiled natural beauty and rural character, bringing their assets and telecommuting while remaining engaged local citizens and raising families in the area. The extractive industry threatens that future of social sustainability for Gloucester, with confirmation found in the accounts of people who moved to Gloucester prior to coal mining that suggest they might not have come had they known about extraction:

> I started looking around...and picked on Gloucester and found a beautiful block of land in a lovely valley...So my wife and I built our house there and settled in...When we bought the land, nobody mentioned to us anything about coal mining in the area...For several years we were troubled day and night by the sounds of heavy trucks coming up out of a big pit.

Extraction presents a further threat to economic sustainability, in that tourism opportunities and markets local produce, crafts, and other products might be lost when the town's reputation as a pristine, rural community is lost to industrialization. Finally, extraction poses an existential threat to the environment in the area, with possible impacts on water and the ability to be healthy in the region:

> Because if [AGL] leave here and leave everything in a mess, somebody's got to pick up the tabs to clean it up. And I don't know how viable the country is, to be honest, after they have been through. [Health, water, and economic viability] would be the things [I'm most worried about], because we have to feed ourselves. We have to have clean air, clean water, and food, they're the requisites for life. And after that then income, and to me, they're all linked together.

Framed this way, it becomes more evident that divisiveness in Gloucester is less about the gas project itself and more about genuinely held and ethically grounded beliefs about the future of the community. Anti-gas sentiments are seen as destroying the potential for agriculture to survive in the region, among other issues; similarly, pro-gas sentiments are seen as actively supporting the destruction of water and physical safety from toxicity in the region. These much deeper issues explain the severity of the divide observed in Gloucester. As one person put it,

> And that does generate...enormous tension within the community. Because it's not just about this issue. It's about: are you loyal to your family? Are you loyal to the place you grew up in? You know, are you going to side with these blow-ins? Those sorts of things. And a lot of those conversations, they can take place, you know, essentially underground, and an enormous number of sort of quite, I guess, quite sophisticated and really powerful things can be brought to bear in just a few words in those sorts of conversations. And all sorts of roles can be ignited.

The community is dearly loved by many of its residents, who also often see the town's economic and social struggles with clear eyes. The prospect of a large change like the development of CSG resources is thus tested against a litany of anticipated effects on the community that are complex and deeply intertwined.

**3.2 The Ethics of Project Development**

The example of Gloucester, NSW demonstrates that substantial social harm can result from a project even if the project is not ultimately developed. Residents agree that the social costs of even considering the project are quite high, with some expecting to move away on the assumption that the town's friendly livability might not recover:

> [The CSG discussion has] brought out a really ugly side to the town. And that's not something that we want to be part of.

The types of interactions people described to us included death threats, having vehicle wheelnuts loosened, boycotts, yelling in the streets, online bullying, and fear of expressing opinions. One particularly striking anecdote occurred in our presence, when a local employee was observed making efforts to conceal that a business was providing services for an event associated with a particular organization, knowing that the business was subject to boycott by proponents of the other position if this activity was known. As one business owner told us,

> So it's a catch-22, you've got to try and stay on the fence, because if you don't, you will lose trade either way...I've got...staff members, and they all need to be paid. They have mortgages and cars and things they need to pay off as well. So, you don't want to go necessarily upsetting too many people, because you'd like them to still have a roof over their head.

The ethics of energy thus rest on the anthropology of energy, noting that people can experience severe harm from uncertainty and tension associated with potential projects even before those projects exist. In one tragic example, during our visit to Gloucester, a farmer opposing CSG in Queensland committed suicide that his widow links to stress over CSG (Robertson 2015). Local health professionals spoke of people seeking mental health services due to stress about the prospect of extraction, noting that while physical health issues might be more prevalent during extraction, mental health issues likely start earlier, especially when division in the community means people's support networks are weakened (and see Lai et al. 2017 on psychological effects of unconventional gas development). Those we spoke to often described feelings of depression and hopelessness in the face of a long-term engagement, even based on the preceding two years of high-intensity discussions:

> I'd say the majority of me and the people I associate with are all suffering from varying levels of depression at the moment...to the extent of one of my friends I'm really, really worried about at the moment, and he's talking about suicide and that sort of thing...It's just been exhausting. I think that's the main thing is that it's been going on for nearly two years. And you know, that constant barrage of people you know, judging and putting you down and attacking you. And as much as you say, "Ah, I don't care," everybody wants to be liked at the end of the day. And it's tiring. We were out at [other location with an uncertain project] on the weekend and one of the ladies was saying, "This has been going on for nine years. For nine years we've had this uncertainty, not knowing whether we need to pick up and leave. Not knowing whether our kids have a future here." And I thought, "Oh my God, we're all exhausted after two!"

We hear other evidence that the duration of the project coupled with inactivity has had a substantial negative effect on the community fabric, including from a supporter:

> Not much else has happened in that five to six year time frame, from the proponent's [AGL's] part...It's—the whole landscape, the whole emotional landscape has changed. Just in that time. And that's probably...the biggest thing that...the bloody communities have to deal with...And I actually said to this fellow...potentially the exit of AGL from this region will be more critical than their entry. Because potentially, you know, everything that's been put out can just about break like that.

We suggest based on this Gloucester case study that the ethics of energy include not only the personal ethics of future evaluation, but also ethical considerations about project development, with major issues including control, uncertainty, and trust. Social impact assessments of projects should consider not only the social effects of project implementation, but also the social effects of proposing, planning, and consulting about a project within a community.

**3.2.1 Locus of Control and "How Versus Whether" Consultation** The single most salient issue we observed related to stress, personal efficacy, and uncertainty in Gloucester was the noticeable lack of opportunity for community members to say "no" to the project. While AGL ultimately decided not to go ahead with the project, and while some might argue that a diminished social license contributed to the decision, the official reasons for the February 2016 decision are "the fall in global oil prices with consequent effect on long-term Queensland gas prices and Waukivory Pilot well data indicating lower than expected production volumes for the Gloucester Gas Project" (AGL 2016b). AGL's press release does not reference the Gloucester community other than to mention AGL's significant investment and commitment to providing benefit to the region. This outcome is consistent with observations of earlier stages in the process, where the general assumption is that communities may provide input as to "how" a project will be implemented, but not "whether" a project will be implemented. The "whether" is entirely up to someone else. We heard this perspective from supporters, opponents, and regulators: none of our informants believed that the community ultimately had a real choice over whether gas development would proceed or not. Those for gas tacitly acknowledged this situation and spoke of both appreciating AGL's efforts to keep them informed and their own efforts to secure community enhancement projects in exchange. Those against gas were less positive about the same tacit understanding, often referencing efforts to appeal to the state with scientific evidence that gas development would be harmful.

In general, the understanding that the community did not ultimately have control was a unifying opinion. As one person noted of results from a community attitude poll, "I got the sense mostly that people were quite resigned to the fact that it was happening, and didn't feel that they had much to do with that decision." In response to our question about whether the community had had the opportunity to approve the project, another informant replied, "I'm not aware of it ever being a question. Really. A genuine question that was put to this community." Another indicated that a better process would have been "where the company listened to the people and acknowledged that they had a point of view, which might end up in them packing up and going home."

Even community members with direct stakes in the project outcome due to property ownership noted a lack of control. Landowners—including those supporting the project—described consultation about infrastructure as a conversation where they are informed that their property will be affected and they have the opportunity to work with companies to determine specific routes of roads or pipelines, but they are not able to say no. A regulator provides some insight as to why this happens:

> My job is to make sure [hydrocarbon development] happens, and it happens in a safe protective manner. No different to my, air traffic, air safety authority people, colleagues, whose job it is to stop airplanes falling out of the sky. No different! It's a risk, but there's benefits associated with flying, just like there is to developing hydrocarbons. Now if you don't want the hydrocarbon industry to happen, don't argue at this level, you've got to go and argue in Canberra [Australia's national capital].

Hydrocarbons are property of the government in Australia in almost all situations: questions about "whether" hydrocarbon development should proceed are matters of national, not local, control. However, many of the social and environmental outcomes associated with the development are local, not national, and many community members feel they should have some say as to whether projects proceed. This regulator-supported attitude is evident in other parts of Australia as well. As Walton et al. write of 2012 research in Chinchilla, Queensland, where gas development preceded that in New South Wales (2013):

> For some community members, the size of the companies and the CSG industry more generally, acting with apparent government support, appeared to give rise to perceptions that CSG activity was 'a fait accompli' and a sense of powerlessness to slow or reverse change. The best way forward for some was viewed as "we just need to get on with it."

We note that this observation about "how versus whether" consultation is consistent with research in the United States suggesting that those who own mineral rights and therefore have the ability to refuse development are often more comfortable with the development than those who do not have that right of refusal (see e.g. Theodori 2012, Willow and Wylie 2014). In particular, mineral owners are able to weigh their concern about risks against direct compensation for their minerals and thus retain a great deal of control over their lives and identities. By contrast, those who live near development but do not themselves own minerals are subjected to impacts (like noise, lights, and fear of contamination) but do not receive compensation (see e.g. Andrews and McCarthy 2013, Collins and Nkansah 2015, Malin and DeMaster 2016, Schafft et al. 2013). In Australia, where landowners might be compensated for land access but ultimately do not have a property right that allows them to oppose extraction, the Lock the Gate movement has focused on the element that landowners do control—land access via private roads—and returned some control in that way (e.g. Colvin et al. 2013, Lacey and Lamont 2014).

### 3.3 Value Systems and Community Cohesion

Based on our work in Gloucester, we note that most of the people we interviewed, spoke with informally, and surveyed indicated a commitment to the community and an interest in working for a positive future for Gloucester. Despite those shared high-level values, however, we observe

some specific divides among Gloucester residents. While several people explained community division in Gloucester with reference to people's particular societal positions, the division we observed was not as simple as something like "farmers versus non-farmers" or "retirees versus working people." Rather, the division appears to be based on people's more fundamental values. Indeed, some note that the division within the community as a whole has allowed them to find a community of like-minded people they did not know existed before:

> I suppose before, the only thing that I really had in common with...a lot of people that I associated with was kids. And now, you know, there's people that care strongly about, you know, the environment and the planet and our future and the future of our kids, as I do, and that's, that forms stronger relationships when you're on the same page ethically, I think.

While our observations suggest that axes of division identified by many of our participants are not bright lines, there are several demographic characteristics that tend to be associated with either the for- or against-gas perspectives. Assuming that divisions are largely based on value systems, we suggest that cultural factors likely explain some of these trends. For example, informants on both the for- and against- sides believed that many of the people opposing the gas development were originally from outside Gloucester and frequently had more education or professional experience—an observation corroborated by our survey results. We suggest that this divide is largely due to cultural differences between urban and rural communities, as many of the so-called "blow-ins" and "tree-changers" (Australian terms for people who move into rural inland communities like Gloucester) originated in coastal cities. This observation is also consistent with the idea of one's position on gas being based on personal cost-benefit analysis, as residents who moved to Gloucester might be more comfortable with the idea that one can and perhaps should move for work and economic opportunity, preserving beautiful landscapes where they exist, than residents whose families have been in Gloucester for generations and are less culturally inclined to see moving as a good option.

On the topic of education in particular, we note that many of our participants in both interviews and surveys appealed to markers of sophistication by referring to their time abroad, the number of places they had lived, cities they had seen, degrees they held, and other indicators. In some cases, such references were somewhat derogatory. Survey respondents discussing the first negative social issue in their community that comes to mind wrote:

> A lack of education means alot [sic] of farmers / people have not learnt how to critically analyse information for themselves and therefore are too trusting of corporations and are naive and sometimes ignorant on many levels, especially about mining.

and

> Many locals lack a broader knowledge of the global world around them, which thereby affects their judgement and decision making.

Similarly, more than one person appealed to their higher level of education as evidence that they deserve to be heard, as with an interviewee's statement that

> But that's part of some of the derogatory language—because you're a blow in, you have no right to have an opinion. You know, considering the scientific background that we've got, you know, I find that quite insulting.

Overall, appealing to education and professionalism seemed more common among those against gas, while appealing to a family history and/or future in Gloucester seemed more common among those for gas. These different focus areas are consistent with each group's focus on using science to oppose the project or using place-based authority to support the project, respectively. We did not observe widespread opposition or reference to opposition to CSG among farmers in Gloucester, despite earlier work indicating that farmers are frequently opposed (Colvin et al. 2015, Lloyd et al. 2013).

### 3.4 Limitations of the Study

Our case study is limited by several factors, including access, our personal backgrounds, and our choice of Gloucester for study. Given the short duration of our engagement in the community (see e.g. Brockmann 2011 for a description of very short term ethnographic engagements) and our relatively low survey response rate, we cannot and do not claim to present a full ethnographic study of Gloucester or a representative sample of the community's perspectives. We believe our short engagement was necessary given the extreme divide in the community and potential for aligning with a particular group, but we acknowledge this limitation. As Jenkins et al. (2015) note, researchers require a social license to operate that can be more complicated at sites of resource extraction. Further, research during dynamic periods in an energy community's history, as with our engagement in Gloucester a few months prior to project cancellation, suffers from challenges associated with data saturation (Jenkins et al. 2015). Our personal backgrounds as researchers also impose limitations, as both of us can be characterized as outsiders with insider connections to both sides of the debate. That is, at the time of our research, we were both North American students working towards environmentally oriented degrees, and we both have professional and personal connections to the oil and gas industry. While this duality allowed us to access far more perspectives than we believe we would otherwise have been able to—notably, we experienced moments when contacts transitioned from skepticism to acceptance in both the against gas and for gas communities when we provided details on our backgrounds—we are aware that we likely did not gain the full trust of participants on either side of the debate. Finally, we decided to focus attention on Gloucester as a particular qualitative case study among several communities we studied in Eastern Australia for our broader project because we had heard that the town experienced strong division as a result of potential CSG development. That is, we expected to find evidence of division, and our interpretation of what we saw is likely colored by that expectation.

### 4 Conclusions

The Gloucester example richly illustrates a situation where community members largely share values and agree on desired outcomes for the community, but some members' ethically grounded visions of the future include a place for resource extraction and others' do not. We observe that substantial social harm can result from a project that is never implemented, which suggests a need to consider the nature of ethical engagement beyond the operations-focused concepts of corporate social responsibility and social license to operate (see e.g. Lindgreen and Swaen 2010,

Prno and Slocombe 2012). Specifically, we suggest that severe social ramifications can result from both long periods of stagnant uncertainty and a failure to clearly delineate appropriate avenues for questions of "whether" versus "how" a project will proceed.

One challenge we observe in Gloucester is that long periods of stagnant uncertainty can lead to the construction of detailed social narratives and visions for the future. Over time, particularly when there are few forums for collaborative thinking and little signaling about what an outcome might be, these increasingly concrete visions can tend to become tangible to the extent that opposition to the project is perceived as opposition to one's future and, by extension, to one's self and one's view of what is right. Here, an ethical actor might make efforts to preserve opportunities to engage the entire community (rather than actively encouraging and supporting specific local supporters) and to clearly and transparently communicate boundaries of what is realistic to expect. Collaboratively building scenarios that build on input from both communities and companies, within legal and regulatory contexts, could be one way to ethically engage a community in a highly uncertain situation.

A second challenge is how a company might ethically approach a community engagement in the context of its legal right to proceed with a project. A central source of conflict in Gloucester is that the community did not have a genuine opportunity to decide whether a project proceeds. While this raises interesting questions about the ethical role of a government or regulatory body in creating legal structures for permitting (and see Curran 2016 on Australian communities' perceptions of the government as a non-neutral body with respect to permitting gas projects), an immediate question regards a company's ethical responsibility to a host community when it has a legal right and clear incentive to proceed with a project. The concept of social license to operate suggests that companies are increasingly willing to accept that a community might not accept their activities even when they have a legal right to act, but a company-mediated engagement will rarely be outcome-agnostic. In this question of how much power a community truly has to decide "whether" a project will proceed, then, the boundary of a company's ethical responsibility versus a government's ethical responsibility is likely worth probing as concepts of corporate social responsibility continue to mature. The Gloucester example shows that engagement and disengagement from a community are not ethically neutral. Questions of how companies can best manage this interaction, and of their continued responsibility to a community when pre-operational social impacts occur, are likely fruitful topics for further investigation.

## 5 Acknowledgments

## 6 References

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**7 Figures**
**Figure 1**. Gloucester, NSW (blue star) and active CSG fields (green circles). Map data (c) 2017 GBRMPA, Google.