



Social licence to operate: understanding how a concept has been translated into practice in energy industries



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ABSTRACT

The emergence of the 'social licence to operate' concept reflects increasing awareness by industries of the need to negotiate with communities and other stakeholders regarding the costs and benefits associated with industrial development. It has been assumed that all industries understand and apply the social licence to operate concept in a similar way, as previous research has tended to adopt a single-industry focus. This article is one of the first known cross-industry examinations of social licence to operate, comparing the use of this concept in four Australian energy industry contexts: mining, wind, carbon dioxide capture and storage, and geothermal. Semi-structured interviews with industry representatives were conducted to provide a comparison of views on the understanding and application of social licence to operate in these industries. The findings identified shared expectations of increasing stakeholder engagement in energy project development, and a view that a social licence to operate could guide this engagement. Yet the duration of use, the maturity of the industry, and the ways in which the industries related to the concept influenced the understanding and application of this concept. This research provides evidence of how the meaning and application of social licence to operate does vary between industries. Further exploration of community and government perspectives on social licence to operate is recommended in order to broaden the findings of this research. Such research will provide an emerging platform for encouraging discerning use of the concept by industries, and also practitioners who may be engaged across multiple industries.

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1. Introduction

Social licence to operate (SLO) is a concept that initially emerged from the mining industry in the late 1990s. Gunningham et al. (2004) detailed the development of SLO from corporate social responsibility (CSR) in the mining industry as the sector was increasing its focus on stakeholder views and social obligations. Now, some researchers consider that achieving an SLO is a 'key condition for successfully establishing and running a mining project' (Falck and Spangenberg, 2014:1). Over time, SLO has become more widespread, warranting closer scrutiny by researchers (Owen and Kemp, 2012; Prno and Slocombe, 2012; Thomson and Boutilier, 2011). SLO has been defined in research on engagement in the

mining industry as the level of ongoing approval or societal acceptance of the activities of an industry, described as:

... an acceptability [that] must be achieved on many levels, but ...must begin with, and be firmly grounded in, the social acceptance of the resource development by local communities (Joyce and Thomson, 2000: 52).

SLO has largely been developed out of the literature on CSR, and the key themes of corporate citizenship, social sustainability, reputation and legitimacy have been central to developing an understanding of an industry's position in its relationship with communities (Owen and Kemp, 2012). This has also included a strong focus on the role of stakeholder engagement in mediating and managing that relationship from the corporate perspective (Greenwood, 2007; Lawrence, 2002; Owen et al., 2001). For developers of projects with significant social and environmental impacts, SLO is relevant as it reflects the dynamic and changing quality and strength of the relationship and engagement between an industry and a community of stakeholders (Lacey et al., 2012;

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Parsons et al., 2014). This community can include those living or working near the site of development impacts, and also those who have the capacity to affect the profitability of industry development (Graafland, 2002). In this regard, Brown and Fraser (2006: 108) recognise the increasing importance of industry being responsive to the changing nature of societal approval and acceptance, arguing that “business must have regard for evolving social attitudes and expectations if it is to maintain its social licence”. Nelsen (2006: 161) also emphasises that “SLO must be flexible and be able to accommodate different social paradigms as cultures and society evolve”.

SLO is no longer limited to a focus on the localised nature of company–community interactions. Instead, these interactions are increasingly being examined within regional and national contexts in order to determine not only whether single operations hold a social licence with their community, but also whether entire industries have earned this social licence from the broader public (Lacey and Lamont, 2014). Within the mining industry in particular, there is increasing focus on the importance of understanding the cumulative impacts of multiple operations located within regions (Franks et al., 2010). This has been reflected in research that also seeks to document the SLO of mining operations at the regional scale by including both the upstream and downstream impacts of development (Moffat and Zhang, 2014). Further to this, research is also being conducted to better understand national perceptions of mining industry development and how SLO is formed and held at the national scale (CSIRO, 2013).

It has been widely argued that SLO is understood and applied universally across industries (e.g. Franks and Cohen, 2012; Nelsen, 2006). Although the relatively small literature on SLO has tended to draw from SLO experiences across a range of industries, there have been relatively few attempts to make this comparison explicit (Boutilier and Black, 2013). Therefore, there is a possibility that SLO may operate differently depending on the industry or project context. Indeed, Giurco et al. (2014) have highlighted a possible risk assumed when considering changes to the social licence from one sector to the other. For these reasons, this research seeks to provide an explicit cross-industry comparison of the understanding and application of SLO in four Australian energy industries. It presents findings based on a comparison of perspectives from a range of industry representatives in order to provide unique insights into how the four industries understand and apply the concept of SLO. This includes the mining industry, which sources fossil energy resources, and where the SLO concept originated; the wind and geothermal energy generation industries; and carbon dioxide capture and storage (CCS), an industry in development to mitigate the outputs from fossil-fuel energy generation and other industrial sources of carbon emissions. The Australian venue reflected the location of the researchers and their familiarity with these industries.

The four energy industries were chosen as comparative cases for both the similarities and differences they offer. Such similarities include how these industries often alter rural landscapes, thus impacting directly on geographically local stakeholders; many such developments have been questioned regarding the potential health impacts and risks associated with their operation; and there is also a growing potential for stakeholders to be involved in formal decision-making processes. Further, the politicised nature of decision-making around energy and resource extraction, including during energy transitions, is well-documented (Laird, 2013; Miller et al., 2013), and debates between local and distal communities of interest about sustainable development have a long history in Australia (Bandler, 1987; Hall et al., 2010; Hutchins and Lester, 2006). However, these industries also differ in the level of carbon emissions generated (or managed) from their operation of energy.

Further, they represent different levels of business maturity and contestation from the stakeholders associated with, and affected by, proposed local projects and industry-wide activities. This allows for consideration of how these differences may influence the applications and understandings of SLO across these four industry contexts.

The key research question addressed in this paper is: How do different industries construct and operationalise SLO? This examination is important for understanding the evolution and degree of consistency of how the concept is used by various industries. This research aims to initially investigate the perceptions of industry representatives who apply the term within an industry context in order to identify similarities and differences in their understandings and applications of SLO. Without such clarity, SLO risks not being a credible concept for the purposes for which it is most often used: understanding engagement, corporate communication or responsible development.

2. Background: SLO in Australian energy industries

The SLO concept has grown in pervasiveness within a number of industries beyond mining now utilising SLO to describe their interactions with and acceptance by the public (Huijts et al., 2012). For example, SLO has been used to describe societal acceptance of resource development in industries as diverse as forestry (Edwards and Lacey, 2014; Wang, 2005), pulp and paper manufacturing (Gunningham et al., 2004), agriculture (Williams and Martin, 2011), and alternative energy generation including wind and geothermal energy (Carr-Cornish and Romanach, 2012; Corvellec, 2007; Hall et al., 2013). Further to this, the actors engaging with and applying the term have now extended beyond practitioners in industry to include academics and research organisations (CSIRO, 2013; Gale, 2012), non-government organisations (The Wilderness Society, 2013) and consultants (Black, 2013; Thomson and Joyce, 2006; McGrail et al., 2013). Of particular interest to this research are the developments made in the Australian context and how industries understand and use the term within their own operations (Black, 2013; Moffat et al., 2011; Parsons and Moffat, 2014).

Previous research investigating the SLO concept has tended to adopt a single-industry focus (e.g. Bice, 2014; Prno and Slocumbe, 2013). This body of research has created the assumption that SLO is commonly understood and applied across all industries without any account for the variance in contexts (e.g. Williams and Martin, 2011). To test this assumption, this research examined four industries at different levels of maturity to comparatively explore the expanded use of the SLO term. Each industry is briefly summarised here.

The Australian mining industry is considered ‘mature’, with industrial development of mineral resources in Australia underway since the late eighteenth century (MCA, 1996). The industry also remains a significant contributor to the national economy. For the period 2009–10, the total contribution of mining to Australia's Gross Domestic Product (GDP) was AUD \$122 billion. This equated to 8.4 per cent of the total GDP and just over half the value of total exports from Australia for that period (ABS, 2012). The top two resource commodity exports from Australia are iron ore and coal; in the past decade production of iron ore has increased by 180 per cent, and coal by 47 per cent (Measham et al., 2013). However, in some cases, the concerns of society have been translated into direct action against mining projects at a local level. Such conflict and perceived loss of the SLO with communities has been shown to have high financial, opportunity, and personal costs to mining companies and their personnel (Davis and Franks, 2011). In the last decade, community expectations regarding the performance of the mining industry have increased, along with the direct involvement

of citizens in formal decision-making and planning of industry development (Harvey and Brereton, 2005). According to Pellegrino and Lodhia (2012), the mining industry became aware that an SLO could be potentially secured if their operation were perceived to be conducted under prevailing expectations and societal values. Indeed, the status of SLO can influence the investment and siting of minerals and energy technologies or facilities (Giurco et al., 2014). In response, community relations in the mining industry have become increasingly recognised as a strategic part of managing risk and opportunity (Humphreys, 2000). Consequently, as the mining industry continues to mature, community relations at a project level are being elevated in importance (Kemp, 2010).

Large-scale wind power has been generated for electricity in Australia for almost three decades. It is considered a proven technology with excellent potential resources in Australia, and is anticipated to be the earliest and majority contributor of new renewable energy generated for the Government's 20 percent Renewable Energy Target (ROAM Consulting, 2010). As at 2012, Australia's total operating wind capacity provides around 2.4 percent of Australia's total electricity generation at 2480 MW from 59 operating wind farms (CEC, 2012). A further 90 wind farms are proposed, with a total expected generation of 14,000 MW (CEC, 2012; SKM Consulting, 2012). Australian energy policy regulation favours large-scale wind farm development, making smaller wind farm projects (less than 30 MW) a less financially viable proposition for development (Ison, 2009). Despite the espoused potential of wind energy (Ashworth et al., 2009; Eurobarometer, 2011; Hobman et al., 2012), high levels of societal resistance are a challenge to achieving the Renewable Energy Target predominantly through wind power (Hall et al., 2013).

CCS is an emerging industry which is anticipated to reach its full potential by 2050, but is awaiting significant investment and effort to launch new projects and progress current demonstration sites to commercial scale (GCCSI, 2012). The industry is based on a technology promoted as a climate change mitigation option for fossil-fuelled power plants and other large industries that are significant generators of carbon dioxide (CO₂) (Medvecky et al., 2013). The CCS process separates CO₂ from other exhaust gases and contaminants and, under high pressure, compresses the gas into a supercritical fluid, transported to a location, such as a geologic aquifer, and 'stored' permanently underground. The technology was developed as an alternative to the current practice of releasing the CO₂ into the atmosphere (GCCSI, 2011). Significant progress has been achieved with respect to technological understanding of CCS and the public engagement efforts associated with the technology have also progressed. In Australia, there are no coal-fired power stations with CCS technology currently installed. However, a \$100 m government-funded feasibility study is currently underway in Victoria's LaTrobe Valley (DSDBI, 2013).

The final industry examined in this research is geothermal energy generation, a relatively undeveloped industry in Australia, despite commercial generation in an estimated 24 countries in 2010 (Bertani, 2012). The largest producers of geothermal electricity are the United States of America, the Philippines, Indonesia, Mexico and Italy. Geothermal energy is also used through direct-use applications in 78 countries, which include geothermal heat-pumps for heating and cooling, water-heating in pools and spas and space-heating (Lund et al., 2011). Australia has a history of using direct-use geothermal applications to heat swimming pools, but has only one small geothermal plant that provides 80kiloWatt of electricity to the remote town of Birdsville in Queensland (Geoscience Australia and ABARES, 2010). It is estimated that use of geothermal resources for energy generation may increase to 8 per cent of total electricity generation in Australia by 2050 (BREE, 2013).

3. Theoretical framework of SLO

The SLO concept emerged in the lexicon of the mining industry's communication, community engagement and project management personnel, in part, as a result of the increasing scrutiny that industry was experiencing regarding its environmental and social performance. This occurred during a period where societal values and attitudes towards the natural environment and industries that impact negatively on it were also changing (Thomson and Joyce, 2006). The coining of the concept also signalled that communities of interest, including those in geographic proximity to an operation, were becoming more active in challenging the nature and fairness of the costs and benefits associated with industry development (ICMM, 2012).

This emergence of SLO can be understood as generating from key themes explored within the business management literature, which has variously documented how industry responds to the needs and pressures of society. This includes an increasing focus on stakeholder theory (Donaldson and Preston, 1995; Mitchell et al., 1997), which identifies those who can affect, or be affected by, an organisation's activities (Freeman, 1984). Stakeholder theory has included categorising stakeholders, such as primary or secondary stakeholders (Carroll and Buchholtz, 2006) with varying levels of salience (Mitchell et al., 1997). Many of these themes have coalesced in the theory and practice of CSR (Garriga and Melé, 2004; Hilson, 2012; Kemp et al., 2012), which reflects "the idea that there are incentives for business to proactively embrace environmental and community development concerns" (Hilson, 2012: 132). In addition, Pellegrino and Lodhia (2012) viewed SLO as similar to the social contract terminology associated with the literature on legitimacy theory.

Adopting CSR and the related framework of stakeholder theory privileges the industry perspective of SLO (Owen and Kemp, 2012). This is often accompanied by the suggestion that industry is "naturally concerned to protect their investments, and ensure their viability" (Crowson, 2009: 105). Researchers have examined the history and evolution of the meaning and application of CSR including the main users and the development of metrics to operationalise the CSR concept (Carroll, 1999; Lee, 2008). Such research found that CSR concepts have 'eras' and are comprehended differently in each period as they evolve (Carroll, 1999). This encouraged the authors of this paper to identify how SLO is currently defined, applied and likely to evolve.

In parallel to the emergence of CSR, there has been growing emphasis on the importance of involving communities from a very early stage in complex environmental decision making (Bloomfield et al., 1998). Public participation is a key principle of most environmental and social impact assessments (e.g. Barrow, 2010; Bond et al., 2012; Esteves et al., 2012; Morrison-Saunders and Early, 2008). It has been described as a significant part of building social capital between developers, organisations, communities and other stakeholders (Whelan and Oliver, 2005: 133). Indeed, centrality of public participation to environmental decision-making has now been often established as a democratic right (e.g. the Aarhus Convention, see UNECE, 1998). Thus, it appears that SLO is beginning to capture a unique blend of these private and public interests in resource development industries. It may perhaps also be introduced to prevent more binding approaches to public participation.

It is worth noting how SLO also differs from Environmental and Social Impact Assessments. These assessments are formal and required processes that compare and contrast expert opinions against others. They are one-off processes, although they may trigger conditions that are then applicable to the life of the project and revisited (Jay et al., 2007). In contrast, the SLO process could provide broader and more ongoing participation in planning

processes in pursuit of a “positive, long-lasting relationship [being] established with a company” (Prno and Slocumbe, 2013: 8). The SLO process has the potential to, ideally, resource and support stakeholders to consider information and options in a more empowered context. This article and similar parallel research seeks to explore whether this voluntary process of engaging stakeholders beyond compliance can result in a genuine SLO. This appears to have been achieved in the developments documented in the literature (e.g. Corvellec, 2007; Franks et al., 2010, 2014; Giurco et al., 2014; Parsons et al., 2014). For example, Giurco et al. (2014) detail that, where public support for a project (demonstrated through an SLO or similar) has been withdrawn, minerals and energy companies have experienced unexpected costs, delays, costs, and withdrawal of regulatory approval. This is further confirmed an empirical analysis of 50 projects in the extractive industries undertaken by Franks et al. (2014), which details how conflict translates social and environmental risks into significant business costs.

A key aspect is how SLO mirrors the language of the legal licences used by many industries engaged in development activities that have environmental impacts. This was identified in the definition of the construct and which may explain its appeal within mining and other industries. However, in practice the two licences are distinct. A legal licence is issued by a governing authority, while a social licence is perceived as something that must be earned from the community (Lacey et al., 2012). Regulation may provide an indication of the minimum standard of behaviour that will be expected of an operation, yet regulatory approval does not necessarily equate to social approval of that same activity. In this way, while a legal licence is static, an SLO reflects the changing strength and quality of acceptance and approval afforded by a community of stakeholders. This changing definition and application of SLO has parallels with how the CSR concept has, and continues to, evolve and adapt over time (Carroll, 1999; Lee, 2008).

4. Methods

To explore whether SLO is understood and applied in a similar way in different industries, this research used a comparative design drawing upon the viewpoints of industry representatives working within the four energy industries of mining, wind, CCS and geothermal. Industry's role is central as they are both seeking an SLO and have direct influence over how that development takes place to respond to community input. This focus on industry perceptions of SLO was considered an appropriate starting point for understanding how industry is responding to, and interpreting, the rise in community power and interest in response to their activities. It is acknowledged, however, that only industry voices were included, and that alternative perspectives beyond this small group were absent. This privileges the industry perspective within a concept that is explicitly about redressing a power imbalance and allowing stakeholder voices to be heard. It is anticipated that additional voices will contribute other perspectives in further research.

Across the four energy industries, a wide variety of representatives with project and industry level experience in the selected industries were chosen as relevant participants. Those with responsibility for stakeholder relations and/or project management were selected as stakeholder engagement, and the potential for applying an SLO discourse, tends to occur through these personnel. In total, 56 industry representatives from 35 companies participated in the research (see Table 1 for details) and were recruited initially through existing contacts and email invitations, using a ‘snowballing’ technique until saturation of the industry perspectives was considered to have been achieved. Interviews were employed as the primary data-gathering method to gain new perspectives and more in-depth information (Hoepfl, 1997).

Table 1
Interview participants.

Industry	No. participants	Representatives
Mining	16	9 Mining company representatives 7 Mining advocacy representatives (industry associations, advocacy groups and consulting firm)
Wind	18	12 Commercial wind company representatives 5 Community-owned wind farm representatives
CCS	17	1 Industry body representative Individuals affiliated with the CCS technology and its implementation in Australian projects: 6 CCS industry representatives 4 Non-governmental organisations with affiliation to CCS 4 Academic representatives 3 Government representatives 3 Company representatives 2 Industry representatives
Geothermal	5	
Total	56	

Between 16 and 18 interviews were conducted for each of the mining, wind and CCS industries, as this enabled a larger number of companies to be interviewed to achieve diversity while ensuring sufficient data for themes to emerge. A smaller set of representatives ($n = 5$) were interviewed from the geothermal industry due to the smaller size of this emergent industry.

The interviews conducted were semi-structured in their approach, mostly via telephone, with some face-to-face. Rapport was first established with the interviewee with introductory conversation, and questions were asked in a relaxed, conversational manner. Open-ended questions based upon the research themes guided the conversation between the interviewer and interviewee, but with the flexibility to pose more probing questions to extract more detailed and elaborate responses (DiCicco-Bloom and Crabtree, 2006; Qu and Dumay, 2011). The interview questions covered participants' understanding of the SLO concept in the context of their industry, descriptions of SLO as applied in practice in their industry, how SLO is related to other concepts used within their industry such as sustainable development and corporate social responsibility, and how they saw the concept of SLO evolving into the future. Related tangents to these questions were explored when raised by the interviewee. Each interview took approximately 45 min. Each interview was recorded digitally and transcribed verbatim. Transcripts of the interviews were analysed by industry segmentation, rather than by representative type, to gain an emerging picture of the main themes elicited by the application of SLO in the selected industries.

It is acknowledged that relying solely on qualitative interviews could pose a risk to validity of results which can be managed through a mixed methods approach of triangulation, and to the generalisability of findings, which can be more reliable if quantitative data is used (Bryman, 2007). However, the authors considered that the qualitative approach actually afforded validity, by offering the deep examination of ‘why’ questions, rather than a more quantitative approach of ‘what’ questions.

The analysis employed descriptive analysis informed by grounded theory (Charmaz, 2006; Corbin and Strauss, 2008). Grounded theory, used in its purest form, draws themes from transcripts or other data and seeks to generate a theory from such themes rather than merely testing an existing theory (Corbin and Strauss, 2008). NVivo, a form of Computer Assisted Qualitative Data Analysis Software (CAQDAS), was used to extract the recurring themes. CAQDAS provided distance from the detailed transcript to

code the themes, sort and link data segments, and allow comparison of viewpoints (van Hoven and Poelman, 2003). It assisted the researchers to “remain attuned to our subjects’ views of their realities”, rather than assume “that we share the same views and worlds” (Charmaz, 2000: 515). To still ensure validation of the emerging themes and inter-coder reliability, the emerging interpretations were checked against the data from which they were being formed (Devine-Wright and Devine-Wright, 2009; Fleming and Vanclay, 2009). At each stage, this analysis occurred with a strong understanding of the company and projects within which the interviewees were engaged.

5. Findings and discussion

Examining the understanding and application of SLO by four energy industries allowed a close comparison due to their common relation to energy, the potential for their developments to alter rural landscapes and affect geographically local stakeholders, the decision-making challenges during energy transitions, and the growing potential for stakeholders to be involved in formal decision-making. The results are described in three main areas: the definition of SLO, the measurement of SLO, and the future of SLO. Relevant literature is cited that supports or contrasts with the findings to enable a discussion of these findings.

5.1. Defining the SLO concept

The majority of the interviewees were familiar with the concept of SLO, although there was variation both within and across industries. The mining industry representatives, from where the term emerged, used multiple terms to describe what they understood by SLO. They showed a clear preference for terms such as approval, acceptance and support. To a lesser extent, terms such as permission and consent were also used by these mining representatives to describe an SLO. In the wind industry, the core of most definitions of SLO was based on majority acceptance held by community and other stakeholders – in regards to the use of the land, visual changes to the view, presence of the wind developer, and the project in general. Some interviewees added further aspects to acceptance including the level of measurable support from stakeholders. In the CCS industry, participants defined SLO in four related ways that encompassed scenarios including community acceptance of industry, community desire for industry, community and mutual benefits. In contrast to the mining, CCS and wind industries, representatives of the younger geothermal industry did not use the term explicitly; rather they related meaning and practices were implied. Like the mining, wind and CCS representatives, geothermal interviewees did not hold a single definition of the concept.

The mining and wind industry representatives outlined a common view that an SLO exists on a continuum. They considered that the process of earning an SLO can be very dynamic and affected by the different stages of the project life cycle, different stakeholder groups, and how well emergent issues or concerns are managed. Representatives of these two industries emphasised that trust developed across time and, with it, an SLO. Once secured, all interviewees agreed that maintaining an SLO was dynamic:

‘You’re renewing that licence every day and I think when you understand that, it becomes a lot easier to practice it’ (Mining 5);

‘[The SLO is] something to be constantly adjusted and measured and maintained’ (Wind 3)

All four energy industry representatives noted some similarities and linkages between the SLO concept and other concepts, notably

CSR, sustainability and sustainable development, and triple bottom line reporting:

‘The concept is the same; it is how you phrase it. If you are doing the right thing by ... the community then you have a social licence to operate and you are acting sustainably’ (CCS 1).

Similarly, the wind and geothermal representatives considered SLO to be new words for existing and well-known concepts. However, both mining and geothermal representatives identified that the relational aspects of an SLO were its key differentiating feature to CSR (which was viewed as a largely organisational and transactional construct) within the wider industry goal of sustainable development:

‘...it’s certainly more than the legal licence which is created by government. It’s a licence earned by companies from the stakeholders’ (Mining 13)

This is supported in recent research on SLO that provides evidence for the core importance of relational elements: quality engagement as well as a sense of participation in decision-making (Moffat and Zhang, 2014). Mining representatives also noted the potential intersections between the social and legal licences to operate, similar to that documented by Parsons et al. (2014). Some responses articulated this interconnection as SLO being more akin to a company operating beyond compliance, reflecting previously-documented commitment to operate beyond legislative requirements (Bice, 2014).

All interviewees considered that an SLO could exist at multiple scales. These were identified as the local project level (involving the local community) and the industry level (involving a number of companies operating regionally, nationally or even internationally, but also invoking state and federal legislation). International impacts of the energy industries, and the potential for an international-level SLO, was not raised by interviewees. Both mining and wind industry representatives considered that an SLO could potentially be held at several levels concurrently and not necessarily with the same status (attained, at risk, withheld etc). All representatives considered that an SLO successfully maintained at a local project level may positively influence the industry, potentially resulting in an SLO for the industry as a whole. It is presumed that the reverse may also hold true; that the public loss of SLO at the project level would also have negative implications for how the industry is perceived more broadly. Mining representatives outlined how they continually sought to secure a local level SLO, emphasising their focus on relations with communities and stakeholders directly affected by their operations as being their highest priority:

‘...the most important people, as far as social licence to operate, are the people who live near our operation, and are potentially impacted from an environmental or social perspective’ (Mining 4).

Mining representatives did recognise that SLO was also important at the regional, national and, potentially, international scales. However, sentiments about the concerns of distal communities taking precedence over those of local communities were also raised by mining representatives, thus rearing concerns about the legitimacy of differential stakeholder views, similar to that documented by Mitchell et al. (1997). Almost half of the wind representatives considered that they held a current SLO with the Australian public at the industry and distal community levels. However, at a local level an SLO was less assured, as this was where the rhetoric

became locally-focused on impacts. This level elicited responses around impacts *'in my backyard'* and responses about *'city elites imposing [developments] on country people'* (Wind 9). Most CCS representatives considered that they had not yet secured an SLO at an industry level from the Australian public, although they were actively pursuing one. Geothermal representatives reflected that responses to the both the industry and specific projects had, to date, been predominately positive.

5.2. Securing, maintaining and measuring an SLO

Interviewees shared a range of views on how an SLO could be secured, maintained and measured, a theme identified in the literature (e.g. Owen and Kemp, 2012). The main theme for securing and maintaining an SLO held by all four energy industries revolved around methods of community engagement and creating a dialogue with communities. The importance of listening, engaging and participation was frequently emphasised as contributing to a workable, long-term relationship, seen also in research publications (Prno and Slocombe, 2012). The role of trust in this dynamic set of relationships was emphasised by mining representatives. This issue is reflected in the literature, where Falck and Spangenberg (2014) identified that an SLO requires trust, and that trust originates through sufficient information that can then contribute to meaningful interaction between developers and other stakeholders. Mining and CCS representatives also expressed the importance of being responsive to shifting community expectations of an operation across time in order to identify and deliver outcomes that are realistic and avoid negative 'surprises'. CCS representatives described a need to engage in dialogue early with the local community, and to maintain respect by not dismissing concerns. Wind industry interviewees described their most effective communication strategies as one-on-one home visits, which they felt developed relationships faster and with greater trust than other interactions. However, in some cases this also reflected the nature of some wind developments requiring individual contracting arrangements with members of communities. The challenge of converting individual landholder agreements to broad-based social acceptance has also been explored in SLO research on the Australian coal seam gas industry (Lacey and Lamont, 2014). Wind and mining representatives also found that having locally-based staff was valued by the local stakeholders, rather than having external consultants who visit intermittently and cannot establish ongoing relationships. Geothermal industry representatives outlined the importance of honesty and the acknowledgement of uncertainties, as stated by one representative:

'Communicate what you're doing, be honest with what you're doing and also be humble enough to say in certain instances, 'we don't necessarily know all the answers'' (Geothermal 2).

Representatives outlined the need to provide clear information, to demonstrate the project and to outline the benefits of the proposed development in engagement practices, particularly at the local geographic scale. CCS representatives outlined the importance of providing a consistent message, giving complete information, and ensuring openness and transparency to hear all aspects of a CCS project from the project proponents directly. One stated:

'It would be impossible to get the social licence from people who are not informed or ... don't have enough information' (CCS 3).

CCS representatives recommended that to address the uncertainty and negative perceptions of the technology and gain an SLO,

their industry should demonstrate that their operations can be done safely without impacting community resources. However, some of these representatives acknowledged that public resistance still emphasised the 'unproven' aspects of CCS despite demonstration projects affirming the safety and feasibility of CCS. Wind representatives outlined the range of local economic gains, the possibility of ownership by the community, and the environmental gains from their developments. Similarly, geothermal representatives acknowledged that an SLO requires the perceptions of benefits, with one stating:

'If it's not perceived as being beneficial, then I don't see how you will really get that engagement and encouragement' (Geothermal 3).

CCS and wind representatives both commented on the benefits of development sites with small populations or where development has occurred recently. They implied that it might be easier for industries to establish an SLO where little negotiation is required at the site of impact:

'In a couple of our projects, we were quite delighted when we found good disposal geology where there was absolutely no-one living' (CCS 2).

'[we try to identify areas where the community] seems more used to things changing a bit more rapidly' (Wind 6).

The mining industry interviewees, who were most familiar with the SLO concept, expressed the view that there was the potential to lose an SLO quite rapidly. This was echoed by the other industry representatives. Three elements were identified as contributing to the failure to earn or retain an SLO. Firstly, wind industry representatives noted that engagement approaches were critical and if mishandled could lead to a failure to establish an SLO. Specific challenges were expressed in terms of using appropriate styles of communication, and the management of community expectations. Interviewees cautioned against 'town hall'-style meetings, as they can prevent a broad range of opinions being expressed as:

'Opponents take over and it just defeats the whole purpose of having a consultation process. It's not a consultation, it's a shouting match' (Wind 1).

Commonly, such dynamics are then described in the media, negatively affecting the wind farm's SLO at a scale beyond the local community to shareholders and policymakers.

Secondly, a number of interviewees emphasised the importance of following through with commitments to avoid undermining any SLO. A mining interviewee observed that while an SLO took years to gain, it *'can be lost almost instantly'* (Mining 11). Similarly, a wind interviewee noted that once a promise had been broken and 'outrage' created that *'it's very hard to come back from that position'* (Wind 4), and that subsequent wind energy developers in that area would have their SLO negatively affected as a consequence.

Finally, both CCS and wind representatives emphasised the need to clarify where stakeholder input can be most influential in the life of a project in order to manage expectations. Wind interviewees emphasised that the concept phase is where stakeholders can really *'have any true influence over the project'* (Wind 5). A challenge to the notion of 'licence' as something that the public is able to withhold was raised by CCS representatives who noted that influence in CCS projects may in fact be less 'optional' for community members than the concept of SLO implies if economic necessity drives people towards accepting a project. This was echoed by a mining representative who noted that SLO did not provide a

mechanism for communities to refuse development but rather demanded that industry worked harder to mitigate the impact of their development:

'...there's not a formal consent point from a community perspective. But if there's a process to ensure that any concerns they have or major impacts are managed well then that's as far as we've gotten in terms of formalising the influence around that licence to operate' (Mining 9).

Representatives were asked how an SLO could be measured to identify the status. Mining and wind representatives contributed the main responses. They outlined their view that the intangible and impermanent nature of the SLO made it difficult to measure and monitor. Mining representatives detailed that any SLO metric would require flexibility to adapt to the needs of specific communities or contexts. Despite the difficulty of measuring an ongoing and negotiated process, the wind and mining representatives considered that an SLO is dynamic, and that continual monitoring of changes and fluctuations in the relationship with community is required. The mining representatives noted that a community objection to one element of a project does not necessarily mean that full support is being threatened or withdrawn by the wider community. Notably, however, none of the interviewees raised the potential for SLO to be used to lower standards of engagement.

5.3. Future of SLO

Although the CCS representatives did not provide an opinion, the mining, wind and geothermal industry representatives all clearly stated that they anticipated SLO concept would continue to be important into the future in two ways. Firstly, they considered that the emphasis on local community stakeholders was increasingly influential on local operations securing formal development approval, and that local stakeholders increasingly expected to be consulted on proposed operations. The mining industry representatives considered SLO as potentially transformative in the way that companies and communities might relate to each other as it is based on dialogue and participation, and is people-centred rather than business-focused and paternalistic. Representatives from the wind industry saw SLO becoming more embedded in project development. Similarly, geothermal representatives considered community support as intrinsic to the successful continuation of the geothermal industry.

Secondly, these three industries considered that SLO was likely to become central to business practice for developers, and perhaps even a condition of formal legal approval. For example, as SLO becomes more clearly understood and commonly defined across the wind industry, interviewees predicted that:

'...a more prescribed and comprehensive...checklist of things [will] raise the bar for everyone...and the process will probably be more rigorous than [it is currently]' (Wind 1).

In becoming more formalised, geothermal representatives anticipated an:

'...objective-based framework rather than a belief-based framework...[to] test are we meeting the objectives with our current methods and technologies to deliver the outcome that communities accept' (Geothermal 1).

Others saw a role for social licence in transforming the way industry and communities currently interact:

'...maybe we'll see the social licence becoming a new type of governance in relations between companies and communities, formalised through different kinds of community agreements' (Mining 10).

All four industries expressed the key features for gaining an SLO, including long-term and deep community engagement, development of trust through honesty in personal interactions, and providing clear benefits as a result of the development. The lack of a common understanding and application of SLO could potentially lead to differences in the approach, but also in the consequences of these. This lack of commonality perhaps reflects the level of experience and success with the expectation of stakeholder engagement in industry development. This may be related to the duration of applying SLO in that industry. The mining industry, which has applied SLO and thus has a longer duration on which to reflect, considered SLO to be explicit and a core part of doing business. Similarly, the wind industry recognised the quality of their interactions with communities influenced acceptance of their wind farms. For the emerging CCS industry, which has had less time to apply CSR and SLO concepts, there seemed to be a preference to operate in sites where less direct negotiation was required; and for the much newer geothermal industry, reference to SLO was more implicit in their engagement. The importance of studying the applied concept at this early point in time and across contexts enables industries which have yet to apply SLO to learn from the experience of those that have.

6. Conclusions and future research

Although the SLO concept has been applied and adopted most extensively in the mining industry, it is gaining increasing usage in the lexicons of representatives of the wind, CCS and geothermal industries. This research explored how four different industries construct and operationalise SLO. Common across the four industries was the centrality of stakeholders' perceptions to the local operations, with terms such as 'acceptance', 'benefits' and 'impacts' featuring prominently in the interviewees' descriptions. SLO was considered to be dynamic, and to exist across a continuum of support. Acceptability was a central definition for the mining, wind and geothermal representatives and was expressed as pertaining to community views, similar to that identified in earlier literature. However, the CCS representatives preferred 'tolerance' to 'acceptance', suggesting that SLO application in this industry may be more rhetorical than applied, where tolerance is when stakeholders are broadly in favour but do not take any oppositional action against a proposed development. These differing views may also reflect the different duration of application of the SLO concept of industry maturity, and different history of engagement to secure both a legal and social licence. In the mining and wind industries, with a longer history of working with stakeholders around project acceptance, there was greater acknowledgement of the need to negotiate acceptable outcomes with stakeholders from a very early stage. This suggests they have experienced that the commonly-held expectations of delivering 'ready-made projects' to the public are misguided.

SLO was not considered by any industry as a radical departure from existing CSR and sustainability concepts but with a stronger focus on the relational interactions with stakeholders near local operations. In practice, SLO offers to extend stakeholder theory and the literature and practice of corporate social responsibility by providing a shared goal for both industry and community/citizen stakeholders in negotiating development proposals. The target audience was consistently identified as being mainly focused on

local community members in the site of development impact. This also supports earlier observations that an SLO can only be granted by the local community and their associated stakeholders. It may also reflect an industry preference to privilege the relationships and localities over which they are likely to have the most direct influence and control but also where they feel most responsibility for mitigating the impacts of their development. For example, mining representatives described that the preferences of local communities should be weighted more heavily in considering the SLO as these stakeholders would experience the most impacts. In short, what was beneficial for the local community would translate into benefits for the company operating in that locality. The mining, wind and geothermal representatives saw an increasing local stakeholder influence on projects and more embedded community input to project planning. However, incongruence between the views of local and distal communities gives rise to questions of whose voice has the most legitimacy in debates about development- and this can potentially challenge industry projects. This also reveals that the relationship between project-level and industry-level SLO may be more complex than first imagined.

Metrics to identify the status of an SLO were only raised by the mining and wind industries, again suggesting that these two industries have the longest duration of application of the SLO concept. These industries both expressed the importance of flexible metrics to measure the status of this dynamic concept. Research is only now emerging with proposed metrics for the mining industry on how to measure the status of an SLO, and what might trigger a review of that SLO (e.g. Falck and Spangenberg, 2014). From these findings, it is recommended that SLO is carefully investigated when used and applied, noting that the application ('how') is likely to change with each application, even though the substance ('what') may hold stable. SLO is ideally contextualised within a framework that articulates the elements that are important to gaining and holding an SLO. Furthermore, additional research is recommended to develop metrics to evaluate the status of a project's SLO, and the application of such metrics from one project to another be carefully adapted.

This research provides an original contribution on the diverse understandings and different applications of the emerging concept of SLO to the fields of stakeholder engagement. It also identifies areas where the source of decision-making power and centre of governance is challenged as it shifts from the developer to the community and other stakeholders. However, limitations exist for the transferability of the SLO concept. The understandings of SLO were different for each selected industry, and even within industries. The implications for communicators and community engagement staff are that SLO is a term that requires clarification in each context to avoid misinterpretation by another industry with different implicit assumptions. For other practitioners and policy-makers, this research provides a comparison and guidance on assessing the status of an SLO. Based on this foundational paper, it is now possible for researchers to examine the SLO concept in a similar way to how the definitional construct of CSR has been examined in a range of cross-industry settings and from non-industry stakeholders. This expanded perspective will be useful to ensure that the non-industrial perspectives are identified and compared to those held by industry.

To extend the value of this study, the research question applied in this exploration of four energy industries could be extended to other industries starting to use and apply the SLO concept. Furthermore, and crucial to the intention of SLO, would be a consideration of the scale at which SLO is applied – and why. This discussion has cited many mentions of geographically local communities, despite these companies working across scales with distal communities and holding concerns for whether they have

earned an industry-level SLO. The application of SLO at this local level may enable these industries to maintain their sphere of influence over the application of this concept. Given this potential, future research could also examine non-business and non-local perspectives on SLO to identify the social perspective beyond the industries' view of its application and support. Finally, additional causal factors that may explain differences in SLO applications between industries could be explored, including the specific source of energy, the extraction impacts, public perception for an energy source, and the type of impact on local communities.

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