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Renewable energy, social disruption and formalising the social licence to operate in South Africa

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Abstract

A social licence to operate and corporate social responsibility are often applied voluntarily to ensure a positive relationship between businesses and communities. But South Africa's Renewable Energy Independent Power Producer Programme makes investment in local socio-economic development a contractual obligation. To assess the implications of this legalised approach to CSR and the social licence to operate, between September 2019 and January 2020 we conducted seven focus group discussions and 24 key informant interviews in two towns in South Africa's Northern Cape province. The data were analysed thematically and triangulated with data on crime, municipal finance and house prices. Our concerns about the legalised approach are that it does not require local consent; it reduces local development to a needs analysis; it does not require local collaborative planning, despite adverse consequences such as social disruption; it bypasses local organisation and accountability; it does not provide cheaper local electricity; and it offers no guidelines for decommissioning.

KEYWORDS
corporate social responsibility, crime, renewable energy, social disruption, social licence to operate

1 | INTRODUCTION

Large energy firms commonly use social responsibility programmes to ensure local acceptability or to mitigate the negative effects of their operations. In South Africa, all renewable energy providers that fall under the Renewable Independent Power Producer Programme (REIPPP) must implement socio-economic and enterprise development (ED) programmes as part of their licencing agreements, which means that the 'social licence to operate' has become a formal contract. This formalised approach to a social licence to operate and corporate social responsibility (CSR) differs from global practice. A social licence to operate is usually not a formal agreement and has an element of local consent (Owen & Kemp, 2012), while most CSR is also voluntary. In this paper, we critically assess South Africa's atypical approach.

South Africa has historically been dependent on coal for energy and is today the most coal-dependent of the G20 countries, with coal generating 89% of its electricity. India is in second place at 74%, and the average is 41% (Climate Transparency, 2019). South Africa's coal-fired electricity plants are located mainly in the Mpumalanga province, east of the country's economic heartland, Gauteng (see Figure 1). Global climate agreements require South Africa to reduce its dependence on coal by closing most of its coal-fired stations. In practice, this means that the sites of energy provision are shifting away from

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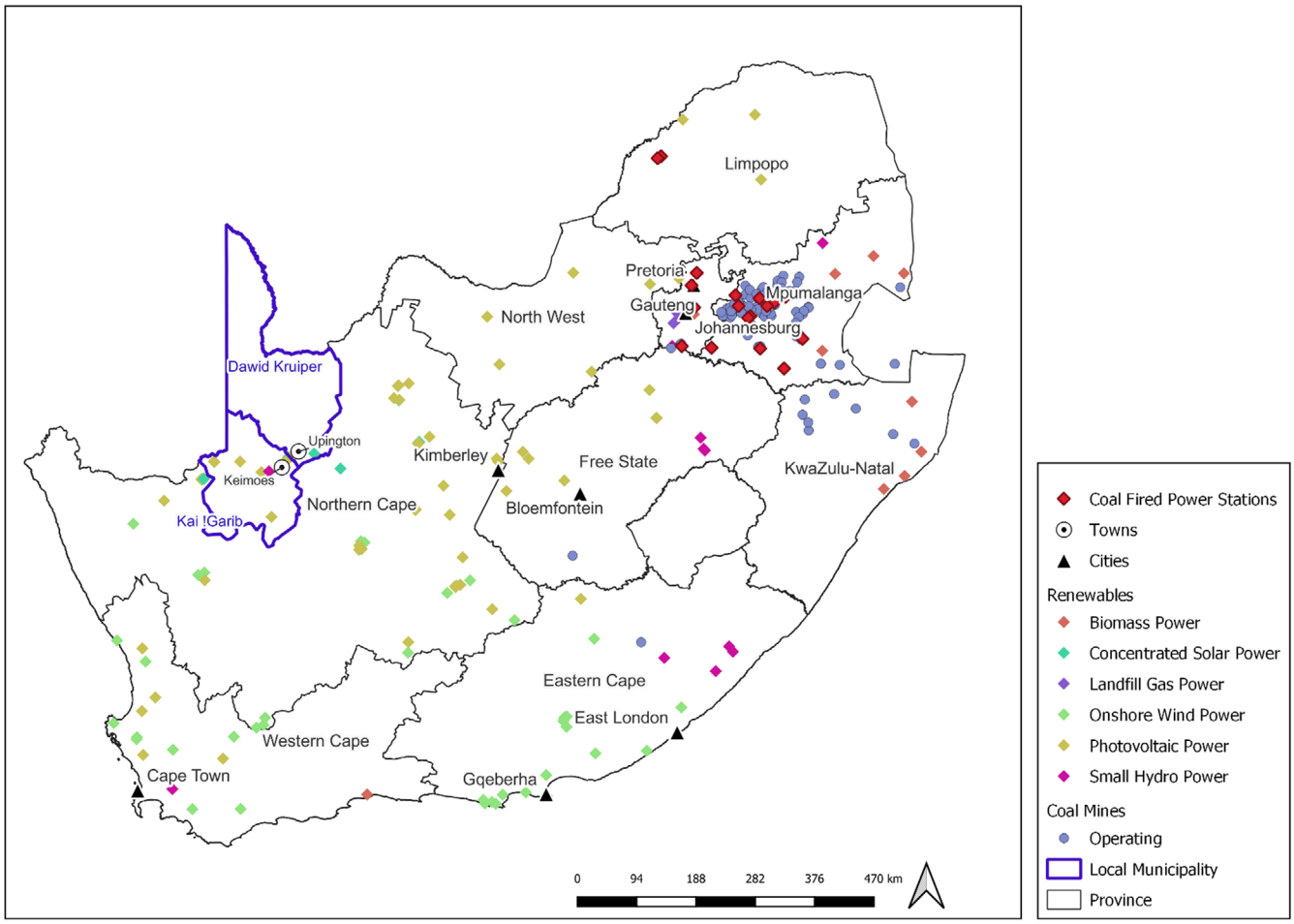


FIGURE 1 Location of coal-fired stations, coal mines, renewable projects and the location of the case studies.

the Mpumalanga province to the Northern Cape, Eastern Cape and Western Cape provinces (see Figure 1).

The world requires a shift towards renewable energy, but the shift comes with new social and environmental problems. Owen et al. (2022), for example, say 'the social and environmental crisis associated with climate change tends to overshadow the fact that climate mitigation solutions will introduce new impacts'. There is a risk that the solutions and the related policies could exacerbate the current problems. Recent literature has already noted the 'dark side' of renewable energy (Kaartemo & Conzalez-Perez, 2020; Kramarz et al., 2021), and our evidence shows that the local effects of renewables in South Africa are a matter for concern and require attention.

The REIPPP fosters the local benefits of renewable energy projects by requiring companies to implement socio-economic development (SED) and ED programmes. These requirements form part of the bidding process, accounting for 30% of the bidding points. They are part of the licencing agreement and the renewable energy companies must spend 2.5% of their turnover on these programmes. Some research has been done on the SED and ED requirements (Baker & Wlokas, 2015; Wlokas et al., 2017), but it has not considered the concept of a social licence or collaborative planning principles or the adverse local consequences.

South Africa's formal approach to SED and ED in South Africa can be classified as legalised CSR based on the idea of a social licence. But despite the well-meaning intent to make SED and ED part of the formal agreement, there are two problems: the SED and ED investments could be unrelated to a renewable energy company's negative effects on the local community, and the formalisation does not require the company to dovetail these plans with the local government's plans. Collaborative planning is necessary to mitigate the local effects of new developments. In the mining industry, it is a requirement, though poorly operationalised (Van der Watt & Marais, 2021). The risk of a legalised social licence to operate or CSR approach is that it may fail to obtain local consent, ignore 'ongoing consent' (i.e., consent obtained throughout a project, from the start to the end) and ignore adverse local consequences despite these requirements being entrenched in the idea of a social licence.

This paper contributes to the existing literature by assessing the consequences of formalising a social licence to operate or CSR and the inability of companies and local authorities to address adverse local socio-economic and environmental consequences. We investigate these consequences in the case of large-scale renewable energy projects in Upington and Keimoes, two remote small towns in the Northern Cape province of South Africa (see Figure 1).

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2 | THE LITERATURE

2.1 | Impact mitigation

The social consequences of large investments have been a common research theme in the mining and energy sector. Impact mitigation is also central to planning large investments (Franks & Vanclay, 2013). Finsterbusch and Freudenburg (2002) identified four phases of social impact assessments. Jones and Mayzer (2021) suggested a fifth phase of what they termed 'boomtown research' and Marais et al. (2022) suggest that busts should constitute the sixth phase of this research. Boomtowns are defined as communities that are growing rapidly, often as a result of energy or mining investments, and characterised by a dominant masculine culture (usually driven by young men), fast population growth, a housing supply that cannot keep up with demand and the outmigration of some of the original residents (Jones & Mayzer, 2021).

Up to the 1970s (Phase 1, according to Finsterbusch & Freudenburg, 2002), impact assessments disregarded negative social consequences and only emphasised positive local effects. Large investments created jobs and economic growth and communities had to accept them. Phase 2 started in the early 1970s when research pointed to the negative effects of these investments in rural areas and small towns (Freudenberg, 1984; Wilkinson et al., 1982). This research used the concept of 'social disruption', borrowed from Shaw and McKay (1942), who used the term 'social disorganisation' to describe youth delinquency in Chicago in the 1940s. This concept helped to sum up the large-scale negative effects like increases in crime, divorce rates and school dropouts in boomtowns. A substantial body of work explored the effect of mining on crime (Stretesky & Grimmer, 2020).

However, in the mid-1980s (Phase 3), Wilkinson (1984) warned against this overly negative approach. The research in this phase identified several methodological flaws, such as shortage of data and simplistic assumptions about causality. For example, researchers often used data from a single year, did not use comparatives, and could not do longer-term analysis because they lacked longitudinal data. Phase 4 entailed an increasing understanding of the complexities of social disruption and booms. For example, Smith et al. (2001) found that social disruption follows large mining investments but subsequently diminishes. Other researchers pointed to the consequences of boom towns for women (Ryser & Halseth, 2011). Research in Phase 5 is more critical. It focuses on indigenous communities and the role of colonialism (Carrington & Pereira, 2011). Marais and Westoby (2021) suggestion that the sixth phase of boomtown research should focus on the social disruption associated with busts is based on evidence that mine closure in the South Africa contributes to social disruption.

2.2 | From CSR to a social licence to operate and collaborative planning

From the early 1970s, companies came increasingly under pressure to mitigate negative social and environmental consequences and this led to the concept of a social licence to operate. But the history of CSR goes back much further. Carroll (1999) provides an excellent overview of its development from the 1950s: Phase 1 (1950s), the beginning of the modern era of CSR; Phase 2 (1960s), expansion of the literature; Phase 3 (1970s), a proliferation of definitions; Phase 4 (1980s), fewer definitions, more research and alternative themes; Phase 5 (1990s), alternative themes (social performance, stakeholder theory and business ethics theory). Carroll (1999, p. 292) notes that definitions of CSR have changed over the past five decades but that the concept at its core 'addresses and captures the most important concerns of the public regarding business and society relationships'.

The ISO 26000:2010 standard gives guidelines for CSR. This standard 'helps clarify what social responsibility is, helps businesses and organizations translate principles into effective actions and shares best practices relating to social responsibility, globally' (ISO, 2010). ISO 26000 defines social responsibility as 'the responsibility of an organisation in relation to the impact of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development; including the health and well-being of the society; takes into account the expectations of stakeholders; complies with applicable law while being consistent with international standards of behaviour; is integrated throughout the organisation and implemented in its relationships' (BlueKanGo, 2022).

The definition emphasises going beyond legal requirements by integrating CSR into the business approach. The focus is on social responsibility, sustainability, complying with and going beyond legal obligations, transparency, ethical behaviour and ensuring that these aspects are integrated into the company culture.

The concept of a social licence to operate emerged in the 1970s but became important in mining and energy only in the 1990s (Wang, 2019). There have been problems in defining the concept appropriately. Moffat and Zhang (2014, p. 61) define it as 'the ongoing acceptance and approval of a [project] by local community members and other stakeholders that can affect its profitability'. The primary value of the concept lies in the fact that '"communities have as much authority as governments in granting permissions or "licences"' (Boutilier, 2014, p. 263). The concept is often related to diverse notions like trust, prior and informed consent, legitimacy, acceptance, approval expectations, local demands and credibility (Parsons et al., 2014). By the 2000s, researchers were linking the social licence to operate to CSR (Bice & Moffat, 2014; Gunningham et al., 2004; Williams et al., 2011) and to risk and company reputation (Boutilier, 2014). CSR practices and the local communities' expectations contribute to a social licence (Lähtinen et al., 2016). In 2002, the mining industry policy responses highlighted for the first time the importance of a social licence (IIED, 2002). Overall, a social licence became a way for companies seek legitimacy to deal with the softer issues associated with company-community relations (Bice & Moffat, 2014). Gunningham et al. (2004) describe it as 'going beyond compliance', to emphasise the value of non-formal mechanisms to ensure local acceptance and participation (see also Boutilier, 2014).

Bice and Moffat (2014) linked the social licence and impact assessment literature in four ways. First, the social licence to operate provides the language to align impact prevention and operational

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matters in companies. Second, it could help mitigate local impacts. Third, it could provide communities with tools to keep companies accountable. Finally, governments are keen to integrate the concept of a social licence to operate into plans associated with impact assessments. This assumes that a social licence to operate provides an opportunity to integrate the complex nature of social impact assessment (see Section 2.1) into a management system.

But the social licence has been criticised for being a 'reference to a variety of miscellaneous concepts' (Wang, 2019), for not being a formal licence (Demuijnck & Fasterling, 2016), and for not fostering long-term collaboration between companies and communities (Owen & Kemp, 2012). Another problem is that it is often not a single licence but in practice needs to be obtained from several diverse local organisations, which can cause conflict (Wang, 2019). Bice and Moffat (2014, pp. 259–260) warn that 'the utility of Impact Assessment and Project Appraisal formalising SLO for communities is less clear' and that it 'may come at the expense of relational capacity, trust and goodwill between the parties'. In this paper, we criticise this type of formalisation of the social licence to operate, not necessarily the concept of a social licence to operate per se.

In addition to the social licence, the idea of collaborative planning and governance has gained momentum in the mining and energy sectors over the past two decades. Like the social licence, collaborative planning emphasised involvement of various organisations in planning, and dialogue and communication between different organisations. Once consent has been obtained, collaborative planning provides a road map ahead. The concept of collaborative planning emphasises deliberation as the most important planning process, normative advice and adopting Habermas's ideas about communicative rationality (Goodspeed, 2016). Healey (1997) includes broader social, economic and environmental aspects of planning, while Innes and Booher (2010) emphasise the role of stakeholder groups in developing new solutions through deliberations. Emerson et al. (2011) identify three drivers of collaborative planning: principled engagement, shared motivation, and the capacity for joint action. Breaking New Ground (IIED, 2002), the document that mainstreamed a social licence to operate, also emphasises the importance of collaborative planning in the mining industry. To a large extent, collaborative planning entails the idea of a social licence to operate. However, as our case study shows, formalising the social licence could negate some of the processes involved in either collaborative planning or a social licence to operate. There is also a difference in emphasis: collaborative planning emphasises local governance and planning or the need for a local response beyond needs assessments. Stated differently: local governance structures and communities should be able to develop their own plans in responding to renewable energy developments.

Despite substantial success in some parts of the world, collaborative planning has also received criticism. One problem is that power relations are seldom equal. This is a problem in mining and energy projects where investing companies are far better capacitated and resourced than local communities. Another is that, as with a social licence to operate, collaboration is often voluntary. Furthermore, historical cooperation or antagonism, levels of respect and resources could assist or discourage cooperation (Ansell & Gash, 2008).

3 | POLICY DEVELOPMENT IN SOUTH AFRICA

Nearly 90% of South Africa's energy still comes from coal. For South Africa to comply with the international treaties on global warming, most of its coal-fired stations would have to close. Consequently, in 2011 South Africa introduced the REIPPP. Three elements of this programme are relevant to this paper.

First, the programme opened South Africa to the global renewable energy industry. The REIPPP invited bids from local and international firms and by 2022 projects were already providing just over 5% of South Africa's energy. Projects in the REIPPP must provide electricity to the national grid. From 2021, municipalities could develop separate agreements with service providers outside the REIPPP. Second, many of these projects were in peripheral areas in South Africa, with 45% being in the arid areas of the Northern Cape province (Davies et al., 2018; see Figure 1). These remote locations will reap the benefits of large renewable energy projects but also have to deal with the negative consequences. Third, the REIPPP has developed a specific form of social investment. The producers' plans for community engagement, local job creation, and community investment count for 30% in the bid process. Renewable energy companies have to spend 2.5% of their turnover on socio-economic and ED.

This specific corporate social investment differs in three ways from the usual approaches to corporate social investment and the social licence to operate. First, the REIPPP social investment forms part of the formal licencing agreement, which a social licence does not. Although the guidelines require appropriate consultation with local communities (including assessing local needs), the company need not show that it has obtained local consent. One of the consequences of this approach is that it can easily become a technical exercise with a list of projects. Second, the REIPPP social investment does not qualify as collaborative planning as the renewable energy companies need not develop their plans with the local governments, which is a requirement in the mining industry (Van der Watt & Marais, 2021). Overall, there is no need for a conversation between developers, local communities and the local or provincial government. Although this approach in the mining sector has received criticism (CALS, 2016; Van der Watt & Marais, 2021), collaborative planning is not, per se, inappropriate. The third difference is that the renewable energy companies have no obligation to mitigate their negative local consequences. The SED and ED programmes can be developed without considering the negative effects of new developments.

4 | METHODS

We followed a qualitative research approach with a case study design involving two municipalities in the Northern Cape province:

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TABLE 1 Renewable energy projects in Dawid Kruiper and Kai!Garib, 2020.

Bid	Project name	Bidder name	Town	Local municipality	Technology	Megawatt	Construction date	Operation date
1	Khi Solar One	Khi Solar One (RF)	Upington	Dawid Kruiper	CSP	50.00	November 2012	February 2016
2	Upington Airport	ACSA	Upington	Dawid Kruiper	PV	8.90	September 2015	April 2016
3	Ilanga CSP	Karoshoek Solar One (RF)	Upington	Dawid Kruiper	CSP	100.00	November 2015	December 2018
4	Sirius Solar PV Project One	Scatec	Keimoes	Kai!Garib	PV	75.00	December 2018	February 2020
5	Dyason's Klip 1	Scatec	Keimoes	Kai!Garib	PV	75.00	September 2018	February 2020
6	Dyason's Klip 2	Scatec	Keimoes	Kai!Garib	PV	75.00	October 2018	April 2020
Total megawatts						383.90		

Abbreviations: CSP, concentrated solar power; PV, photovoltaic.

Dawid Kruiper and Kai! Garib between September 2019 and January 2020. Dawid Kruiper has about 110,000 people and covers 44,000 km^2. Kai! Garib is home to 69,000 people and is about 26,000 km^2 in size. Over the past 10 years, these two municipalities have been home to six renewable energy projects (see Figure 1 and Table 1). When we did the interviews in September 2019, three of the six projects were operational and three were still under construction. We had a particular interest in focusing on CSP technology, which two of the four projects used. Our respondents, however, did not necessarily distinguish between CSP (concentrated solar power) and PV (photovoltaic). This was not, however, a serious problem, as some consequences are broader than the CSP-specific issues and apply to both technologies. Construction of these projects since 2012 has made Upington a good example of an energy boomtown. Large numbers of male contract workers (many from Spain) settled in the area and housing became scarce and expensive for locals. The boom is likely to continue with more projects planned in the area.

We obtained our data from seven focus group discussions, totalling 47 participants, and semi-structured interviews with 24 key informants (three groups in Keimoes and four in Upington). To recruit participants we used a snowball sampling method. The research aim was to get a picture of renewable energy projects' positive and negative effects. Although the main focus was on CSP, our participants often reflected on wider issues associated with renewables. We made sure to get a diverse racial spread of people involved in the groups, to avoid research based on a single-race group. Only one of the seven focus groups (in Upington) had predominantly white participants.[1] Two groups consisted of coloured participants in Raaswater (a semi-urban settlement near Upington and the CSP plant), and the other groups were in Keimoes (a prosperous small town) and Louisvale and Kalksloot (two former coloured suburbs of Upington). Figure 2 shows the occupations of the focus group participants.

Key informant interviews followed the focus group discussions. We interviewed nine business persons (including an estate agent), six government officials (including one from the local government), two representatives from NGOs (one representing the farming community), one local government councillor, one engineer, one social worker, two farmers, one representative from the Industrial Development Corporation and one representative from one of the renewable energy companies.

To categorise the effects identified during the interviews and discussions, all the data were analysed using thematic analysis. Where possible, we triangulated the interview responses with available data on crime, municipal finance and house prices. We guaranteed confidentiality and anonymity and the research received ethical clearance from the General Human Rsesearch Ethics Committee at the University of the Free State.

5 | FINDINGS

5.1 | Economic benefits

Many respondents mentioned local job creation during construction. They estimated that the construction of the CSP plant created 3500 jobs and the PV plant 2000, and they said that most construction workers were locals. There was much appreciation for renewable energy companies employing 'children lying around at home' who 'could not find work'. Some respondents referred to this as, in the words of one of them, 'a significant relief'. But many of them raised concerns about the lack of long-term employment. They estimated that renewable energy companies permanently employ only about 20–70 people per plant, and many of these are not local as the companies need specialised skills like engineering. They were concerned that people from poor neighbourhoods only get employed as general workers and the highly paid jobs go

[1]Despite the repeal of the 1950 Population Registration Act in 1991, the South African census still uses much the same race terminology: black, coloured, white and Indian/Asian, in order to monitor programmes that address the historical legacy of apartheid.

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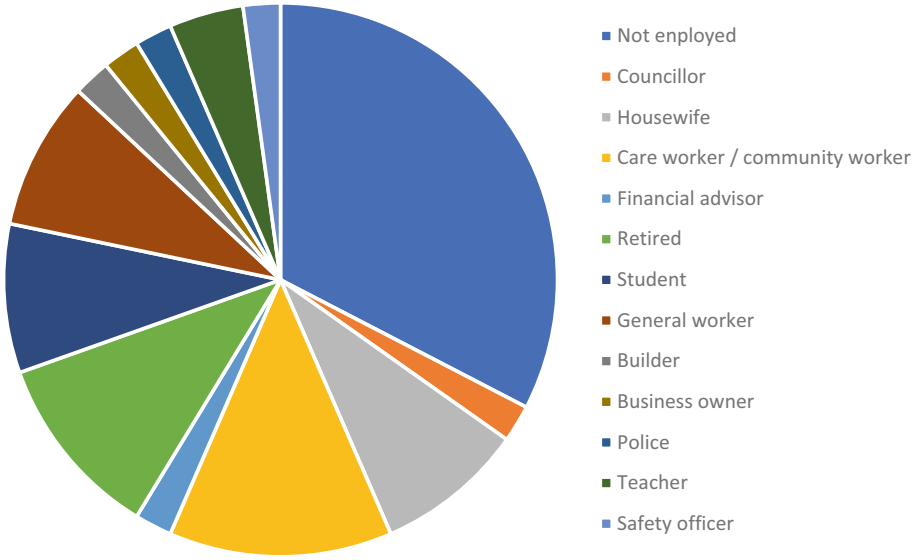


FIGURE 2 Profile of participants in the focus groups ($n = 47$).

to people from elsewhere. This is very likely the case, as the skills needed for technical work are not available locally. Perceptions of 'them and us' could affect local stability.

A representative of the business chamber said there are stumbling blocks to getting highly skilled people to the area, such as the remote location, the limited flight connections and the lack of an English medium high school (which for some people is a prerequisite for relocating). The respondents believed that neither the provincial government nor the renewable energy companies wanted to address this problem.

The respondents believed that the renewable energy projects had been beneficial for local economic development, especially during construction. They said businesses such as retail stores, restaurants, hotels, housing (ownership and rentals), transport and the aviation industry benefited. They highlighted renewable energy procurement opportunities for the small, medium and micro enterprises (including catering, security and cleaning services).But many respondents mentioned how short the boom had been. For example, one interviewee said:

> At one point there were about 7000 extra people in town, which impacted the town's economy. They get salaries and spend money. Everyone that comes in buys a toaster and a fan, and other appliances, so they increase our economy. (Interviewee 1)

One interviewee said that the guest houses and rental car businesses had done well, but there was a problem now that the construction phase had ended. This interviewee said the rental car companies had had to sell some of their cars, guesthouses and hotels had fewer bookings, and businesses were begging for more renewable energy projects.

It was apparent that the construction phase had supported local industries and business that the economy had returned to its previous level when the short-term boom ended.

5.2 | Population growth

Our respondents mentioned the effects of increased population on traffic, schools and municipal services. There was general agreement that the road infrastructure and maintenance was inadequate to cope with the increased traffic volumes. One respondent said:

> The negative influence is that the construction of this solar farm has caused much traffic. Our roads are not built for that. If you cannot negotiate to maintain some of the original roads, we will have much worse gravel roads after construction. (Interviewee 20)

Respondents felt that the schools could not accommodate the influx of people. Some respondents mentioned in particular the Spaniards who had come with a multinational company to build a solar energy plant. As a result, some locals were struggling to get their children admitted to English medium schools. One respondent said:

> A lot more people live and work here now. They have families, which influences the schools. My children are in an English medium school. They do not plan schools according to all the children here anymore. I struggled to find spots in an English school for my children. Many Spaniards came with their children, but our schools were not planned accordingly. So, the other kids might have a school place, but your local kid cannot find a spot. (Focus group 1: Interviewee 3)

Despite knowing the construction period would attract migrants, the towns had not planned to avoid strain on roads and schools. As the renewable energy licencing agreement does not require local collaborative planning, renewable energy companies need not engage with the stakeholders when registering their plans on the

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municipality's integrated development plan and get involved in building infrastructure like roads and schools.

Respondents also mentioned increased pressure on municipal services. One respondent said that local people migrated to neighbouring towns outside Upington to avoid high municipal services tax rates:

> People run away from Upington for tax reasons and live in smaller towns. Many people working in Upington live in Keimoes, so we have lines and lines of traffic in the afternoons when people come off from work. (Focus group 1: Interviewee 5)

However, another respondent said:

> I have not seen it [the rates] go up that much. We saw it [pressure on services] only during construction because of this project's nature. Any big project attracts lots of people. There is more population exposure around that area because people who work there need specific services. (Interviewee 23)

To see whether respondents were right that high population growth increases municipal income at the expense of people who pay rates and taxes, we compared municipal finance data for Dawid Kruiper for 10 years (2009–2018). Municipal income from electricity increased by 11.6% per annum and water by 7.1% per annum over this period. The average increase in total municipal (services and taxes) income for this period was 9%, while the country's average inflation was 4.75% per annum. These figures suggest that the municipality benefited from the renewable energy developments and raised the prices more than inflation.

5.3 | Housing

The increase in the population of Upington and Keimoes, largely in the form of migrant labour, affected the housing market. House prices and rentals escalated during the construction period. Existing homeowners benefited, but the locals who rent suffered as they could not compete with the newcomers:

> When foreign workers arrived in the town, many things changed. For example, the price of houses went sky high, and the accommodation cost increased. (Interviewee 6)

Prices dropped in the post-construction phase and many agents then had substantial rental stock available at a lower rate:

> The foreign workers are gone, and now they have to lower the value of the houses when it comes to renting. (Interviewee 1)

Most of the respondents mentioned escalating house prices and rental costs. We compared property rates in Dawid Kruiper over 10 years (2009–2018). Over this period, property rates increased by 13.5% per annum. The average inflation for the same period was 4.75% per annum. These figures show that the municipality indeed benefited from the boom. However, for local people the benefit was only temporary and came to an end when construction ended. Rising house prices also made houses less affordable for local people.

5.4 | Social disruption

We heard several stories that seemed to be evidence of social disruption related to renewable energy investments in the two municipalities. Most respondents believed there had been an increase in crime and they mentioned some specific crimes.

5.4.1 | Drugs, alcohol and commercial sex

Respondents mentioned a substantial rise in drug-related crimes. They said that although Upington and Keimoes had had drug problems previously, the situation had worsened. Some felt that this compromised people's safety. They felt that more money circulating and people coming from outside because of the renewable energy developments contributed to the increased use of *tik* (the South African street name for crystal methamphetamine) and other drugs. They also mentioned more drug peddlers coming into the area and targeting young people.

Another kind of disruption they mentioned was driving under the influence of alcohol and speeding. They said things like 'many accidents happened', 'people drive on the wrong side of the road' and 'they speed like maniacs'. One respondent even said, 'it was like hooligans were let loose amongst the normal people'. It was plain that this behaviour came as a shock in a sparsely populated remote location. The respondents felt that the new developments led to an increase in road accidents and more motorists not obeying the traffic rules.

Most interviewees said there was an increase in prostitution. The construction processes had resulted in an influx of males (especially from Spain). We heard remarks like these:

> Many people came from outside, from abroad and from other provinces, to work here, and some stayed in our communities. Which automatically means they were a bunch of strangers. Social problems will develop, such as drug and alcohol abuse, and there was also an issue in some communities with prostitution. (Interviewee 6: municipal official)

> People know there is more money because more people are employed. So, whoever sees a business opportunity comes here, including those bringing social ills. It is like Joburg before the gold discovery. Once gold was

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> discovered, you had all sorts of social ills—prostitution and all that. (Interviewee 11)

The comparison with Johannesburg probably points to a large amount of money circulating in the study areas. The respondents may be right about the increase in prostitution, as this would be a likely result of an influx of single young men. The respondents' claims that 'strangers' were responsible for the social ills indicates the tension that the developments brought to the area.

5.4.2 | Teenage pregnancy

The masculine culture because of an influx of men appeared to the respondents to have resulted in an increase in local teenage pregnancies. We heard numerous claims about the role of foreigners impregnating local teenagers. Respondents said there had been an increase in the number of births because of the male-dominated construction process and the fact that the workers did not have their wives or girlfriends with them. A community worker summarised the overall feeling thus:

> It is more than just something in our community. I know Pofadder [a tiny Northern Cape town] also had a massive problem with the Spaniards, and they made many girls pregnant (not that they were unwilling) [laughs], and those children are here now! The Spaniards are gone now; they work in different countries now. So, that legacy—I must say, I have developed a bitter feeling towards Spaniards in general. I am biased, which I know is wrong, but that is my experience with them. (Upington: Interviewee 1)

We think the above is probably an overstatement, but this feeling was common during the interviews. Many respondents said that local families are left carrying the burden as the construction workers have gone. Local women and the government are now responsible for the children, with the fathers not contributing. The government's social grant programme will carry a substantial cost. Statistics not being available, we treat claims like the above with caution, and cite such views only to illustrate the fact of social tension in the area as a result of the developments.

5.4.3 | Health problems

Many respondents believed there had been an increase in the prevalence of HIV/AIDS in the area (we could not find statistics corroborating this claim). They also mentioned health problems resulting from drug and alcohol abuse, such as foetal alcohol syndrome, and other sexually transmitted diseases. The masculine culture of the contract workers was seen as having health implications, with concerns about HIV being very prominent. One respondent said several foreigners had been sent home because of contracting HIV (we could not verify this claim).

TABLE 2 Crime categories and definitions.

Crime category	Main category	Definition	Motivation
Murder	Contact crimes	Crimes where people are injured or harmed or threatened with injury or harm during the commission of the crime.	The police cannot manipulate murder cases (it is common practice at police stations to manipulate the reporting of crimes to suit performance management criteria).
Sexual offences Rape			Sexual offences and the effect on women are often prominent examples of social disruption.
Burglaries at residential premises Theft out of motor vehicles	Property-related crimes	Crimes in the absence of a victim or where the victim is unaware of the crime, i.e., where no person is directly or immediately harmed or threatened during the commission of the crime.	These crimes are often associated with drug abuse.
Shoplifting	Other serious crimes	Commercial and financial crimes, ranging from small-scale incidents like shoplifting to large-scale fraud and corruption.	This crime is often associated with drug abuse.
Drug-related crimes Driving under the influence of alcohol and drugs	Crimes detected by police action	Increases in the latter two categories can be attributed to intensified police activity rather than an actual increase.	These crimes were included because a respondent said they had increased.
Sexual offences	Sexual offences	Any case of a sexual nature—including rape	Often related to social disruption

Note: Definitions adapted from Burger et al. (2010), SAPS (2012) and Brodie (2015). SAPS (2012) provides detailed definitions of the main categories and the many subcategories not shown here.

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FIGURE 3 Selected crime categories in David Kruiper, Kai!Garib and the Northern Cape province, cases per 100,000 of the population, 2009–2018. We used official data from Stats SA to calculate annual population figures. *Source*: Stats (2011, 2016).

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5.4.4 | Crime

We used crime data to triangulate the respondents' claims about social disruption. Table 2 shows crime definitions in South Africa (SAPS, 2012). We picked these particular crimes because they are common consequences of social disruption, particularly the crimes against women, and most were mentioned by our respondents.

Crime data in South Africa are notoriously difficult to analyse (Burger et al., 2010). Definitions change and police stations can manipulate data. The data represent cases reported to police stations, not convictions. Categories like drug-related offences, prostitution and driving under the influence depend on how the police in a particular area deal with these problems. We analysed eight crimes whose increase might be related to social disruption caused by the renewable energy developments in the two municipalities (see Figure 3).

Figure 3 shows that contact-related crimes have declined, despite an upsurge in 2018 in Kai!Garib. There is thus no statistical evidence that renewable energy projects increased murder, sexual offences and rape. However, since underreporting of sexual offences (including prostitution) is high and has increased over the past decade (Burger et al., 2010), there may be some basis for respondents' perception of an increase.

Dawid Kruiper experienced an increase in burglaries at residential premises from 2012. However, by 2018 the cases per 100,000 of the population were the same as at the provincial level. Except for a spike in Kai!Garib in 2016, the figures for shoplifting in the two municipalities declined. Theft out of motor vehicles increased in Kai!Garib but not in Upington. Drug-related crimes in the two study areas rose substantially higher than in the rest of the province. Yet the evidence on the crimes related to increased drug abuse shows no clear trend.

5.5 | Environment and climate change mitigation

The main drive behind the renewable energy projects is to minimise CO_2 emissions and comply with international treaties. Respondents recognised the value of minimising CO_2 emissions and noted local environmental concerns.

Local understanding was that renewable energy plants contribute to green energy and reduce CO_2 emissions. We often heard comments like 'solar power is green energy', 'it is not like coal' and 'it is the cleanest type of energy'. The respondents regarded renewable energy as a sustainable clean energy production mechanism to replace coal. There was even some pride that these two municipalities were instrumental in contributing to clean energy.

Some respondents, however, also noted negative local environmental impacts. We heard that the concentrated solar power (CSP) developments did not consider all the environmental consequences before installing the plant. Respondents from the provincial government said they were not given a chance to comment fully on the environmental impact assessments—a clear indication of a lack of collaborative planning. Most respondents had heard that CSP technology kills birds. There was a reference to birds getting 'scorched quite quickly'. Another concern was the impact on meerkats and reptiles that lost their habitat during construction. Increased heat might also affect the reproduction of reptiles. It was also believed that the intense heat from the CSP plant prevents rain. For example, one respondent said that 'since the CSP plant was built, we don't see that rain anymore'.

Because the licencing agreement is with national departments, very little is known and reported locally. One respondent from the provincial government complained about being bypassed:

> When we get complaints or people from the provincial department try to get in there [into the renewable energy plants] they say we do not have authorisation. If people from the national department get in there, they don't necessarily know what to look for, or they don't tell us when they are going, and then they sign it off as if everything is okay. (Upington: Interviewee 6)

We also heard concerns about the motorists or pedestrians being dazzled by the lights reflecting from the mirrors. It was thought that the lack of designated areas for the disposal of damaged mirrors could harm the environment. For example, respondents mentioned that broken mirrors were used as building materials. A final concern was that no guidelines on decommissioning the plants were made available. Although our local respondents did not raise this concern, it was a concern for provincial government officials.

6 | DISCUSSION

As happens with most large-scale capital investment projects, we found both positive and negative local consequences. The renewable energy projects generated temporary economic growth, local employment and local business turnover, but also, according to our respondents, social disruption in the form of increased alcohol and drug abuse, prostitution, and teenage pregnancies. However, our concern in this paper is not these impacts per se. We are more concerned about how the existing system for creating local benefits bypasses local organisations and apparently ignores the adverse consequences. Below we make five main points from our research findings. Overall, we are critical of problems associated with a centralised system and a formal contract to replace the informal social licence to operate.

First, there are two ways in which the current arrangements do not comply with the principle of obtaining local consent entrenched in a social licence to operate: renewable energy companies do not require local consent, and the national licencing process underplays the local nature of such a licence. Local consent is reduced to, at best, understanding local social needs. The fact that most respondents were critical about what the renewable energy companies do with their social investment plans shows how difficult it is to use needs assessments and that these assessments do not create local consent. The approval of licences, which includes these social development plans, only by a national government department raises serious questions

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about local acceptability and consent. This process is in direct contrast to voluntary local consent and ensuring local acceptability, both of which are entrenched in the ideas of a social licence to operate and collaborative planning. Furthermore, providing a formal licence is counter-productive to 'ongoing consent'. It simply assumes that if the licencing agreement is in place, the social investment programme and company operations can proceed as planned.

Second, the licencing agreement for renewable energy companies requires a needs analysis by consulting with local communities and a social investments plan. The social investment plan can be developed and approved even though it bypasses local and provincial governments and local NGOs or CBOs. This approach is in direct contrast to the requirements for the mining industry, where the social and labour plans of mining companies need to dovetail with local strategic plans, called integrated development plans. Renewable energy companies only need to register their projects locally. Companies need not integrate these plans with local development plans. Focusing on a needs analysis and writing it into a five-year contract with the national government is also an inflexible response with little local oversight. It also negates the principle of going beyond compliance, as once these plans are in place they only require compliance.

Research has pointed to concerns about the mines' social and labour plans, essentially a social licence to operate (CALS, 2016), though the requirement to link these plans with local strategic plans is valid. One problem with these plans is that they overemphasise local needs analysis over asset-based approaches (Westoby & Botes, 2020). A needs assessment helps a mining or renewable energy company develop a social investment plan. The problems start at implementation as the needs analysis often assumes that local assets and capacities are absent. Furthermore, these needs analyses often assume homogeneous communities: one needs analysis for one community. The problem is that a social licence to operate entails reaching an agreement with more than one organisation or community. The potentially diverse nature of a social licence to operate is largely ignored when these national contracts are signed on the basis of a single needs analysis.

Third, many problems stem from bypassing local and provincial governments. It negates local governance. The lack of collaborative planning resulting from formalising the social licence to operate has several adverse implications. For example, it means there is no local accountability or transparency. When our respondents asked questions about birds being killed, there was no local reporting system informing them about the nature and scale of this problem. The same applies to the problem of broken mirrors possibly damaging the environment. Companies simply reported these findings to the National Department of Environmental Affairs. One of the consequences is local speculation and conspiracy theories. We heard many theories about what the company did with the mirrors. The lack of transparency and local reporting (which should form part of local consent agreement) lies at the heart of the problem. Although there is no guarantee that a non-legalised social licence and collaborative planning will solve these problems, it should allow for more local governance responsibility. Local strategies and plans focusing on both the adverse and beneficial local effects of renewable companies are central to the future of renewable energy provision.

Another problem with the lack of collaborative planning and the formalising of the social licence to operate is that the renewable energy companies' plans seldom consider the negative consequences of their projects. The original idea of a social licence to operate and collaborative planning can help to address many of these problems. If drug and alcohol abuse increases, companies could do more to mitigate these negative consequences. For example, in some cases companies fund programmes to prevent foetal alcohol syndrome. Another example is that construction vehicles often damage local roads. Yet the companies' social development plans do not oblige them to address this problem. The need for an English medium high school is further evidence of the problem. Because a needs assessment focuses only on micro-needs (providing sports facilities or school uniforms), the negative effects that require collaborative planning or applying a social licence to operate in its original form do not receive attention. The literature review for this paper showed a potential link between a social licence to operate and impact assessment. The evidence from the present paper shows that formalising the social licence to operate delinks social assessments from company spending.

Fourth, the current REIPPP fails to provide a particularly important local benefit: cheaper local electricity. Our respondents expected cheaper electricity and a buffer against load shedding.[2] Marais and Westoby (2021) quote a respondent in a study in De Aar (a Northern Cape town) who joked that a renewable energy project in one's neighbourhood is like having a Porsche but only driving a Corolla—an indication of the disappointment at finding how little benefit accrues to the local community. Since the time of our study, local municipalities have been allowed some leeway and new development could assist. Many negative local consequences could be mitigated by providing cheaper electricity. It would provide immediate local benefit to residents and reduce negative perceptions. It would enable local governments to raise their profit margins on selling electricity and deal with the consequences of failure to plan collaboratively, such as road damage because of the construction process. Once again, the evidence shows how renewable energy companies' potential local benefits are bypassed by national government systems and how the system avoids local governance and planning.

We contrasted the current legalised approach for renewable energy companies with the legalised approach for mining companies. We have two arguments in this respect. First, as the paper shows, we are critical of legalising these arrangements. Second, we think that once these legal processes are followed, they require a local governance response. Mining companies' plans and local development plans must dovetail. For renewable energy companies, however, there is no such requirement. The legalised approach further delinks communities from companies, does not help to build trust, and stands in contrast to the basic principles of a social licence to operate and collaborative planning.

[2]Load shedding is the South African utility's way of reducing electricity usage by cutting electricity in a predetermined roster when the grid comes under pressure.

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Finally, project closure is seldom considered in the planning process. The contracts are for 20 years and nobody wants to consider closure. Admittedly, the closure of a renewable energy project would cause less disturbance than the closure of a mine, since such projects create very few local jobs (compared to mining). Nevertheless, we think there should be a local plan for decommissioning. Decommissioning would have some effect on local economies and raise environmental concerns about land rehabilitation and waste. Although we do not know what closure of a renewable project would bring, the uncertainty highlights the lack of consideration at the local level. The legal requirement for social investment only applies to the period of operation. Once again, a more flexible approach through a non-legalised social licence to operate and collaborative planning might help in thinking about closure.

7 | CONCLUSIONS

The South African government's renewable energy programme, the REIPPP, has shifted the country's energy geography from the coalfields in Mpumalanga to remote locations like Dawid Kruiper and Kai!Garib in the Northern Cape. The government wants the renewable energy companies to contribute to local socio-economic and ED. But the approach differs from the mines' social licence to operate because it forms part of a formal contract. Unlike mining companies, renewable energy companies are not contractually obliged to dovetail their plans with the municipality's integrated development plan or get involved in collaborative planning to build infrastructure like roads and schools. Furthermore, despite the adequate links between a social licence to operate and impact assessment described in the literature, the evidence in this paper suggests that formalising the social licence incurs the risk of not linking local impact assessment to the formal agreement. Although part of the risk stems from being caught up in a bureaucratic process, the real problem is that compliance narrows down the concept of a social licence to operate. Formalisation contrasts starkly with the original idea of 'going beyond compliance'. This is a typical example of how legal agreements can narrow down socio-economic and economic development (SED and ED) projects. We argue that keeping the social licence to operate in its original non-legal form is better than legalising it. However, if it does become legalised, a far more structured approach to collaborative planning will then be required (a situation that is not unfamiliar in the case of a social licence).

Our concerns about South Africa's system of integrating the social licence to operate into a legal requirement are that it means renewable energy companies do not require local consent; it reduces local development to a needs analysis; it does not require local collaborative planning (despite, as we found, evidence pointing to several adverse consequences of the investments); it bypasses local organisations and also local accountability; it does not provide cheaper local electricity; and there are no guidelines for decommissioning. Overall, it becomes compliance-driven and inflexible. Given our findings about the local effects of renewable energy projects, we argue that these companies' current approach to SED and ED requires a careful rethink.

Although we suggest a return to the basic principles in collaborative planning, collaborative planning and a social licence to operate can only function when embedded in local governance. Like our case of a social licence to operate, collaborative planning too, can easily be negated to a simple recipe to recreate modernity without local processes and inputs. Historical context and histories are important in understanding local governance—especially where there are booms and busts (Van Assche et al., 2020). Overall, there is a need for policy learning (Howlett, 2012), taking into account local governance—something this paper provides a basis for.

Finally, our paper challenges the assumption that renewables are, per se, a positive concept and the dark side needs to be acknowledged. More care is needed to understand renewable energy's adverse social and environmental aspects in remote locations with limited local capacities. Our evidence shows that trying to regulate the social responses might be counterproductive and that more can be done to return to the original concepts of a social licence to operate and long-term collaborative planning.

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Renewable energy, social disruption and formalising the social licence to operate in South Africa

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