

LAND, RACE AND THE ENVIRONMENT: FRACKING IN SOUTH AFRICA

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INTRODUCTION

In the small Karoo town of Merweville, Edgar Marthinus established an advice office for farmworkers in 2010. Since then, the advice office has helped many farmworkers to understand their rights, resulting in the majority of farmworkers becoming permanent employees earning R126 a day.

Yet Edgar, as a veteran of the African National Congress (ANC) and the United Democratic Front and now Chairperson of the recently formed Karoo Environmental Justice Movement, is worried that fracking will undermine even these limited gains:

Where is the water [for fracking] going to come from? If there is no water, where is the livestock going to live...?

Not only is Edgar worried about negative impacts on the agricultural sector, he is concerned that farmers will sell their land to Shell:

Farming community is close to my heart...that farmworker is illiterate because he left school at, for instance, maybe say at Grade 7. If this farmer sells his land to Shell? He is illiterate, he can't get a job outside.... At the end of the day, we are going to sit with massive, massive unemployment in our town.

While the national argument against fracking often comes from the perspective of white farmers and liberal urban elites, the struggle against fracking has to be won on the ground, primarily by farmworkers and communities. The anti-fracking campaign may require at least a weak coalition between farmers, urban elites, local organisations and communities. However, to achieve a bridge between the various actors, the struggle against fracking needs to be rooted in social justice issues: unemployment, the underdevelopment of the Karoo, disparities in economic power and education, transformation and race.

In effect, the struggle against fracking is a social justice issue first and an environmental issue second.

This briefing paper will focus primarily on these social issues and possible campaigning interventions and strategies. But first, the paper will briefly provide the context of fracking in the Karoo and the environmental impacts that will hit local communities the hardest.

Furthermore, and at this initial juncture, it is worth highlighting that, in the author's informed opinion, fracking in South Africa should not occur: the risks of fracking far outweigh any possible benefits. The key issue regarding fracking is not if it should

population decline. The economy of the Karoo can be described as either static or retrogressive.²

As a semi-desert with an annual average precipitation between 50-250mm, the Karoo is heavily reliant on underground water resources.³

Until 2016, the debate on fracking occurred in a context of poor and scant information about the size of the potential gas reserve and the likely social, economic and environmental impacts. The most significant test well to date (pre-1970s) was Cranemere CR 1/68. While the Cranemere test well discovered shale gas, the well depleted within twenty-four hours.⁴ Shell commissioned Econometrix (in 2012) to conduct a study on the benefits of fracking, which remains the only study on Shell's South African website. The conclusions of Econometrix study are:⁵

- fracking will create between 290,000 and 700,000 jobs
- fracking will provide an added annual value to the South Africa economy of between R80bn to R201bn, and
- the economically viable reserve of shale gas will last for 25 years.

In November 2016, South Africa's Council for Scientific and Industrial Research (CSIR) published a detailed report <https://seasgd.csir.co.za/scientific-assessment-chapters/> on fracking: the report is a technical analysis for the Department of Environmental Affairs' Strategic Environmental Assessment on fracking. The CSIR studied the scientific, economic and environmental impacts of

fracking and thus provides a solid empirical basis to underline the campaign against fracking.

While the CSIR report starts from the position that government has made high-level commitments to the exploration of shale gas, it removes much of the factual fog surround fracking in South Africa. The report moves the anti-fracking arguments beyond emotion, and examines fracking in the South African context from a technical perspective. Furthermore, the CSIR is a credible source acceptable to government.

The headline conclusions of the CSIR report are that fracking comes with high risks to the environment, agriculture, tourism and hunting through water, air and noise pollution. Karoo towns would experience significant migration (job-seekers) and social ills. The risks would have to be mitigated through government regulation and enforcement. And the benefits in terms of job creation are very limited, especially for local populations within the Karoo. The report considers two scenarios for shale gas development (Small and Big Gas). The two tables below summarise the report's conclusions:⁶

² Nel, E. and Hill, T. 2008. "Marginalisation and demographic change in the semi-arid Karoo, South Africa", *Journal of Arid Environments* 72, pg. 2270

³ "Karoo", Wikipedia, <https://en.wikipedia.org/wiki/Karoo>, accessed Jan. 2017

⁴ U.S. Energy Information Administration. 2015. Technically Recoverable Shale Oil and Shale Gas Resources: South Africa, EIA, pg. 9

⁵ Twine, T. (ed.). 2012. Karoo Shale Gas Report, Econometrix, pg. 11

⁶ Scholes, R., Lochner, P., Schreiner, G., Snyman-Van der Walt, L. and de Jager, M.(eds.). 2016. Shale Gas Development in the Central Karoo: A Scientific Assessment of the Opportunities and Risks, CSIR, pg. 52, 80

Unit	Exploration Only	Small Gas	Big Gas
Trillion cubic feet (Tcf)	-	5	20
Production block/s [30 x 30 km well field]	-	1	4
Combined cycle gas turbine [1 000 MW]	-	1	-
Combined cycle gas turbine [2 000 MW]	-	-	2
Gas-to-liquid plant [65 000 bbl]	-	-	1
Number of wellpads [2 ha each]	30	55	410
New roads (km) [unpaved, 5 m wide]	30	58	235
Total area of wellpads and new roads (ha)	75	199	998
Percentage spatial coverage of study area	< 0.0001	0.0002	0.0009
Total number of truck visits	45 000	365 000	2 177 000
Industry water needs (m ³) [assuming no re-use of fluids]	*488 250	**9 212 625	***65 524 500
Industry water needs (m ³) [assuming re-use of 50% drill fluid + 30% frack fluid]	*319 110	**6 056 160	***43 087 235
Flowback waste (m ³) [sludge + brine + water]	*101 400	**5 573 900	***40 356 400
Other hazardous waste (t) e.g. oil, grease	*85	**635	***4 185
* For five exploration drilling campaigns, each with six exploration wells = total 30 wells over lifetime of Exploration Only			
** For 55 wellpads, each with 10 wells, total 550 wells over lifetime of a Small Gas			
*** For 410 wellpads, each with 10 wells, total 4 100 wells over lifetime of a Big Gas			
Note: gas production pipelines assumed to be located within the road reserves			
Note: data extracted from Burns et al. 2016 [§1.4, §1.5 and §1.6]			

	Seismic exploration	Exploration and appraisal drilling	Small Gas	Big Gas
Size or recoverable reserve (tcf)	N/A	1	5	20
Use of gas resource	N/A	Potential movable modular power plants (1-2 MW each)	One 1 000 MW CCGT power station in the study area	Two 2 000 MW CCGT power stations in the study area and a 65 000 bpd GTL plant at the coast
Duration of activity (years)	1	5 to 10	35 minimum	35 minimum
Number of rigs/areas	5	5	3	20
Jobs per rig/area	100 to 150	100	100	100
Exploration and drilling jobs*	500 to 750	500	300	2 000
Transport/trucking jobs**	N/A	20	40	275
Power station jobs (by 2050)***	0	0	80	300
Total eventual jobs (regardless of where employees are from)	500 to 750	520	420	2 575
Initial percentage of employees from within the study area	20%	15% to 35%	15% to 35%	15% to 35%
Initial number of employees from within the study area	100 to 150	80 to 180	60 to 145	390 to 900
* Total exploration and drilling jobs were estimated in Burns et al. (2016)				
** Transport/trucking jobs based on truck trip numbers in Burns et al. (2016) (these are substantially greater for the Big Gas scenario given the larger number of wells), assuming two drivers per truck and two return trips per eight-hour shift.				
*** Power station jobs based on current jobs at larger Eskom power stations which are gas-fired or could be gas-fired such as Ankerlig and Gourikwa.				

Given government's commitment to exploration for shale gas, why hasn't exploration started? Why hasn't there been investment in the necessary infrastructure? A partial answer is that the size of the economically recoverable reserve remains unknown. However, the primary reason is that the oil and gas prices are too low, noting that the gas price tracks the oil price.

return. Moreover, as illustrated in the CSIR report, the plan is to have dedicated off-takes for shale gas in South Africa: gas-fired power plants and PetroSA's gas-to-liquids plant.

Both the Renewable Energy Independent Power Producer Procurement and the Coal Baseload Independent Power Producer Procurement Programme have shown government's appetite for

With the decline of oil and gas prices from 2008, oil and gas companies have cut costs, merged and endured smaller profit margins. With potential natural gas reserves elsewhere (for example, Shell's interest in the Arctic) and low gas prices, fracking is not economically attractive in South Africa at the moment.

Civil society groups have not won the battle for fracking. Rather, market forces are delaying its arrival.

THE IMPACTS OF FRACKING AND COMMUNITY RESISTANCE

The current pause in the push for fracking in the Karoo can lead to a dangerous complacency: activists will start to believe that market forces will prevent fracking. Negative market forces are only temporary, provided an economically viable reserve is found.

Oil and gas prices are unlikely to stay at their post-2008 lows. Due to long-term demand increases and depletion of current resources, prices will rise and a serious interest in fracking will

private electricity generation and provide a viable method for procuring such. On one level, fracking would have to compete with Liquefied Natural Gas and a possible pipeline from Mozambique in terms of cost. On another level, this is not the case.

South Africa's official policy is to prioritise energy security, which means local production. This is even the case in terms of the nuclear programme: the ultimate aim is to produce fuel via a complete nuclear fuel cycle, even though the importation of nuclear fuel is and will be considerably cheaper. Additionally, using local sources of gas via long-term supply contracts avoids negative impacts on South Africa's balance of trade, protects against currency fluctuations and variations of the international gas price.

In order for fracking to be profitable, companies like Shell will need favourable supply contracts with gas-fired power stations and PetroSA. In the case of gas-fired power stations, this will be ultimately determined via the power stations' Power Purchase Agreements (PPA) with Eskom, as set by the Department of Energy and approved by the National Energy Regulator of South Africa. It is worth noting that government went ahead with PPAs with independent coal producers even though the purchased electricity will be at a higher price than that procured from renewable energy providers.

PetroSA urgently needs a supply of gas to replace depleting Mossel Bay reserves. Because of import price parity, PetroSA's revenue is dependent on the oil price. When the oil price rises, the feasibility of natural gas from fracking increases.

Perhaps, the main reason to suspect that fracking will ultimately be approved (given an adequate reserve) is worrying vested interests. After upping its stake in 2015, the ANC now owns 28% of Shell

South Africa's shares via Thebe Investments.⁷

PetroSA is owned 100% by the state, reports to the Department of Energy, and has historically been a cash cow for the state, notwithstanding its current mismanagement. Unfortunately, self-interest often trumps the rational interests of the collective whole.

Given that the future of fracking in South Africa will be a matter of politics, opposition to fracking must also be political and all politics are fundamentally local. What then is the view from communities in the Karoo?

Unemployment is one of the primary concerns of people in the Karoo. In interviews with activists, the issue of increasing employment was also accompanied with a strong recognition that existing jobs need to be protected. In other words, fracking could be seen either as a creator or destroyer of jobs.

The CSIR report clearly shows that the number of potential jobs from fracking is limited. Furthermore, only 10% to 35% of jobs from fracking will be filled by local people, and those jobs will be low-skilled labour.

As Edgar Marthinus puts it:

What kind of jobs for the local communities is there? For instance to transport gas, I've got [to have] a driver's license for 20 years. I won't be able to drive that gas. Needs...qualified and experienced people to do those jobs. So they need to bring someone from overseas...it is not a job creation thing.

Amongst NGOs, donors and middle-class activists there is sometimes a blind spot in discussions about jobs. In other campaigns on environmental

⁷ 702. 17 February 2015. "ANC ups stake in Shell ahead of shale gas exploration", <http://www.702.co.za/articles/1761/anc-ups-stake-in-shell-ahead-of-shale-gas-exploration>, accessed January 2017

issues (such as anti-coal and anti-nuclear campaigning), NGOs spoke negatively about the temporary and low-wage nature of jobs in the development of coalfields and power stations. Their argument is that people should resist temporary gains because of the detrimental long-term consequences: for example, pollution, influx of job-seekers, and destruction of existing economic activities such as agriculture and fishing.

Such an argument leads to a dangerous conclusion: when people opt for environmentally unfriendly development, they are either irrationally ignoring their self-interest or are uninformed about their real self-interest. This kind of thinking misses the point.

What has been discovered through other environmental campaigns in South Africa is that for marginalised communities the simple hope of a possible job is better than no job, and a temporary employment contract for five years is seen as a permanent job. Moreover, campaigns such as anti-fracking struggles often overlook that the *status quo* (i.e. the situation before resource development) is not working for local people, who are, to put it mildly, interested in advancing their economic welfare.

Interviewees spoke of local municipalities not giving temporary work opportunities to anti-fracking activists in the Karoo. In effect, the message from some parts of the ANC to communities seems to be that if you oppose fracking, the ANC will not support you. In the depressed economic context of the Karoo, this is a significant threat.

Three primary fears exist about the destruction of jobs, as expressed by local activists and organisations: 1) Farmers will sell their land and move elsewhere. Farmworkers, who are unable to move like farm owners, will then lose their jobs and there will be negative knock-on effects on

households and communities. 2) Water pollution will cause a decline in agricultural activity and may reduce the “Karoo Lamb” brand. 3) Land prices, pushed upwards from the development of fracking, will bar emerging farmers from entering the agricultural sector.

The primary way that the impacts and risks of shale gas development will be mitigated, according to the CSIR, is through regulatory oversight. Local, provincial and national governments would have to monitor fracking companies and make sure of stringent compliance with the relevant regulations and policies: for example, the correct methods of hazardous waste disposal and proper casing of wells. Practically speaking, and given the history of regulation in South Africa’s mining, energy and industrial sectors, this is unlikely to happen. As an experienced environmental law practitioner once pointed out, the state has been hollowed out, primarily through corruption.

However, having a policy of mitigating the risks does have a significant impact on legal actions against fracking. If government has a coherent and scientifically based strategy to mitigate the potential risks and consequences of fracking, courts are not likely to oppose shale gas development. Courts are very hesitant to overturn policy and will only examine fracking in light of adherence to procedural law: a mitigation strategy based on the enforcement of environmental and other regulations would be very likely to satisfy the courts.

The other issue that seems to be important for local campaigners is race. The racial divisions in the Karoo, like in most parts of South Africa, are stark. For a very long time, white farmers have treated the Karoo as a feudal enterprise with the non-white population fitting the role of exploited serfs. The past twenty years have not seen the kind of substantial transformation of economic and power dynamics necessary to redress the long-

term social, economic and psychological consequences of the past. The underdevelopment of the Karoo and the lack of a Karoo development agency haven't helped in changing unjust social relations, which are often identifiable by race.

Although local fracking activists and communities sometimes speak of a symbiosis between farmers and farmworkers - if fracking pollutes groundwater, both farmers and farmworkers will suffer, as will the local economy - the issues of race, the actions of some NGOs and technical experts, and the narrow focus of the fracking struggle (casting it primarily as an environmental issue) to date have created a difficult campaigning context. Fracking is seen as a difficult struggle for local activists, if for no other reason than anti-fracking activists are sometimes labelled as 'anti-job' and 'pro-white'.

If this label sticks and pro-fracking forces make race and jobs the primary issues regarding fracking, then the likelihood of a successful campaign is dramatically reduced. South African politicians are unlikely to support policy decisions that are seen to be pro-white and anti-job: such a characterisation is a gift to Shell.

The wider struggle against fracking has made some critical errors to date that have, probably inadvertently, strengthened this stereotype. As fracking can be a very technical subject - for example, understanding the chemicals used in fracking is incredibly complex and requires very specialist knowledge - technical expertise in fracking campaigns is a necessity. However, the underdeveloped nature of the Karoo means that technical expertise has to be imported, either via someone going to live in the Karoo or providing support from an urban area. Given educational imbalances inside and outside South Africa, this has generally meant white technical experts.

In and of itself, this should not pose a problem. However, it has been reported that the style of

technical support tends to be very top down and has an unequal power dynamic (those with knowledge have power over those who don't and this power can be used without sensitivity). When this occurs, the perception of fracking as a white dominated issue is strengthened and the difficulty of local campaigning increases.

Perhaps the greatest blow to a unified opposition to fracking occurred in 2012 when the Treasure Karoo Action Group (TKAG) made an alliance with AfriForum, which is a conservative, Afrikaner-based and politically orientated organisation. TKAG is one of the leading anti-fracking organisations within the county and has received considerable media attention both locally and internationally. The founder and leader of TKAG, Jonathan Deal, is the 2013 recipient of the Goldman Environmental Prize (Africa) and a self-declared global campaigner against shale gas mining.

The formal alliance between TKAG and AfriForum sent shock waves through the wider anti-fracking community and has needlessly created divisions, which, unfortunately, follow racial fault lines. As AfriForum often represents the interests of white farmers, the alliance seems to fail to resonate with local communities and organisations: local activists say things like we can no longer work with TKAG. In effect, the political context of the alliance is counter-productive to eradicating the stereotype that fracking is a white person's issue.

Moreover and given AfriForum's deeply conflictual relationship with government, the danger is that fracking becomes subsumed into the national conflict between the ANC and other political parties. The future of fracking in South Africa will depend upon a political decision within the ANC. If fracking becomes an issue deeply associated with the Democratic Alliance and/or the Freedom Front Plus and their supporters, then anti-fracking elements within the ANC will have less political space to manoeuvre.

In some places in the world, bringing opposition parties on board is a valid strategy. Opposition parties may become the ruling party at the next election. This is not the case in South Africa. The ANC's electoral dominance, despite the recent losses of the Tshwane, Johannesburg and Port Elizabeth municipalities, will continue in the medium term.

The issue of fracking is situated in the complex matrix of the Karoo's historical and current social and political conditions, which can be confusing or not even apparent to outsiders. Significant practical challenges for local campaigning and mobilisation exist: local activists and organisations are physically isolated (large distances between towns and low-population densities) and lack financial and technical resources.

The voices of local communities and organisations often struggle to project onto the national stage. Resourced NGOs and organisations, urban elites and technical experts do have access to media, the resources to travel and a wide network international and domestic funders. The result is that media narrative often 'misses' local opposition to fracking in places like Merweville and the subsequent social justice issues.

Most worryingly, there is a distinct danger of existing unjust social relationships in the Karoo being replicated within the wider anti-fracking campaign. Not recognising this danger will lead local, national and international actors to diminish the possibilities of a successful campaign: essentially, the anti-fracking movement could score an own goal.

By and large, the CSIR report provides technical evidence for the potential negative impacts of fracking, which often come with negligible positives such as minimal job creation. Because the negative impacts are local, national and international (for example, increased carbon

emissions from fracking) in scope, there is an exciting opportunity to create a wider front against fracking within South Africa, similar to the local and national opposition to procuring Russian nuclear power, e-tolls and corruption: once an issue becomes part of the general consciousness, when it transcends class, racial and social barriers, then substantial political pressure develops.

The greatest impediment to such a united front will not be from either Shell or the Department of Energy: it will come from a failure on the part of civil society to integrate the wider social issues of people living in the Karoo into the anti-fracking struggle.

INTERVENTIONS

Apart from hoping that there isn't an economically viable reserve of shale gas within the Karoo, the primary campaigning strategy seems to be to oppose environmental impact assessments and the Strategic Environmental Assessment through the courts. This strategy is limited in scope. As mentioned before, the CSIR report strongly recommends mitigation measures—such as government oversight and exclusion zones around the sensitive Square Kilometre Array to reduce the impact of fracking. Mitigation measures will probably be sufficient for the courts.

The probable benefit from legal actions is delay in securing the necessary authorisations for exploration of shale gas. Further delays could be achieved through legal challenges to the necessary infrastructure. Delay is particularly valuable in campaigns like fracking. What delay provides is time and space for a successful political struggle.

The internal structure of the ANC is often overlooked in environmental campaigns. The ANC is not a monolithic organisation. It has competing factions, provincial structures, various committees and local branches. If the anti-fracking campaign can influence elements within the ANC, then a

political victory is a definite possibility. Two possible strategies to achieve this end are:

- on the ground mobilisation of the residents of the Karoo. Key constituents are farmworkers, emerging farmers and black-owned businesses, and
- influencing public opinion on a broad spectrum.

Informants and organisations state that education is key to mobilising local communities. Not only is the content of education important, the method of education is vital. Small-scale and repeated education sessions are required. In effect, the aim is to, for example, educate scholars who then convert their parents. As stressed above, the issue of fracking needs to be placed in the context of economic development, social justice, environmental justice and land transformation.

A concerted and diverse media campaign is needed to influence public opinion. Anti-fracking points of view need to be presented repeatedly on radio, TV, print and social media. To do so requires constant and substantial engagements with journalists. Clear and consistent messaging is required: the content of such messaging should include environment risks, the undermining of economic activities and future developments, and corrupt practices.

Three significant challenges to a successful media campaign are:

- As South Africa is a multi-ethnic and multicultural country with gross inequalities and varying levels of education, messaging must be appropriate for different population groups. This requires media content to be propagated in many different languages and have a diverse set of messengers.
- Messaging needs to come from diverse sources including, but not limited to, local

activists, farmers, environmentalists, academics and businesses but without being contradictory and decisive.

- Media houses are underfunded and overwhelmingly located in the major urban centres. As a distant and rural area, the press often overlooks the Karoo.

The standard civil society response to challenges like the above is to create a formal network. When they work, formal networks provide clear messaging, support to members and a single focal point for individuals, external organisations, media and government to interact with. However, formal networks are prone to factionalism, egos, gatekeeping and political disagreements. They also require significant financial investments from both donors and member organisations.

A formal network should be subjected to a rigorous cost benefit analysis. A loose and decentralised approach may be an alternative, with the primary aim being to avoid strengthening racial and social divides. This will require urban and conservative fracking organisations to incorporate elements of social and environmental justice into their worldviews.

RECOMMENDATIONS FOR CIVIL SOCIETY

1. Organisations need to 'own' the national narrative through a media campaign, noting the challenges outlined above. In order to sway public opinion, media messaging should seek to combine land and social justice issues with environmental risks.
2. Organisations need to dedicate human and financial resources to media operations. In particular, organisations should organise media tours to communities under threat from fracking. There is also the option of obtaining regular slots on community radio stations.

3. The issue of fracking in the Karoo has unfortunately become mired in racial and social divisions. No amount of outside intervention will untangle this complicated situation: only civil society within the Karoo can do this. While a loose informal network may be an effective way to approach the problem, the solution has to come from within the Karoo.
4. Campaigns against issues like fracking have four essential elements: legal, research, advocacy and media. All of these are, in one way or another, based on grassroots support and mobilisation. Organisations should either develop or increase systematic programmes to 'agitate, educate and organise' residents of the Karoo against fracking. Once mobilised, grassroots organisations and community members need to engage political parties and local, provincial and national government.
5. Like grassroots education and mobilisation, advocacy needs to be sustained over a long period of time. Unfortunately, advocacy opportunities tend to be located in Pretoria, Johannesburg and Cape Town. Local organisations may have to form a strong alliance with policy orientated organisations and/or dedicate significant budget and time towards travel. Advocacy entails, for example, policy engagements, regulatory processes (such as Environmental Impact Assessments), approaching both houses of Parliament, etc.
6. Campaigns have many different angles, such as land, finance, and environmental risks. The corruption angle is a golden opportunity for anti-fracking campaigners. Besides the obvious benefit from removing or reducing corruption within South Africa, anti-corruption efforts have widespread support across the body politic. Given the alleged financial ties between the ANC and Shell, corruption provides a reasonable narrative as to why fracking is being

pushed instead of alternative energy developments.

RECOMMENDATIONS FOR THE DONOR COMMUNITY

1. Increased support for community education, mobilisation and advocacy. Community education might also include community visits to places with negative environmental conditions, such as Witbank.
2. Support for a human resource who can deal with the many different and difficult technical issues regarding fracking: for example, the exact nature and impacts of water pollution. Such a person should be able to communicate with local communities, have good relationships with local organisations and, ideally, live in or around the Karoo. Further noting that additional training of such a person may be necessary, either inside or outside South Africa, given the wide scope of scientific issues associated with fracking.
3. Support for media training for local activists. Donors could also fund experienced journalists to become media officers dedicated to bringing the issues of the Karoo to the national consciousness.
4. Develop and fund a specific campaign to investigate vested interests and corruption within the fracking sphere. Corruption also has the potential of internationalising the issue of fracking in the Karoo: a domestic campaign will need partners outside South Africa to put international pressure on fracking companies such as Shell.
5. Support initial meetings between local activists, urban anti-fracking activists and farmers. This will help to create understanding between organisations and individuals, especially on social justice issues, and, perhaps, work

towards creating a united front. This might be a particularly difficult activity.

6. Fund the creation of a sound and realistic plan for the development of the Karoo, possibly highlighting key sectors such as tourism, increased branding of Karoo Lamb on an international scale, and an expansion of renewable energy (wind and solar).

However, these recommendations are just suggestions based upon research and the author's substantial experience in campaigning on environmental and social justice issues. It is a view from the outside looking in. Fracking will be won or lost on what activists do in the Karoo: therefore, the strategies and tactics of local activists are the foundations of victory.

CONCLUSION

Shale gas development poses a host of economic, social and environmental risks for the residents of the Karoo. The CSIR's technical report has reduced much of the scientific uncertainty around fracking - highlighting significant risks and limited benefits - and procedurally opens the door for government to make a political decision about proceeding with exploration.

Unfavourable market conditions and the technical and legal opposition to fracking and the associated infrastructure will only delay shale gas

exploration and development. This delay allows the social mobilisation to apply political pressure on government to ban fracking, which will require a broadening of the campaign against fracking to include social and environmental justice issues. A successful political campaign will also have to address racial and economic disparities within the Karoo and bridge the urban and rural divide. While difficult, this can be achieved if activists within the Karoo define and lead the campaign.

Highlighting and investigating possible corruption in the shale gas development may be a productive campaigning strategy.

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