

Paper Number: 5479

## Strategic Environmental Assessment for shale gas development in South Africa

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The potential future economic and energy security benefits of a large resource of natural gas in South Africa could be substantial; as are both the positive and negative social and environmental issues of a domestic gas industry. This dichotomy has been presented to the South African populace as a trade-off between economic opportunity and environmental protection. As such, shale gas development has already become a highly divisive topic, one which is poorly informed by publically available evidence.

The purpose of the government commissioned Strategic Environmental Assessment (SEA) is twofold. Firstly, the SEA will use a *scientific assessment* approach [1] to gather and evaluate the evidence spread across a range of plausible development scenarios to present the full suite of potential risks and opportunities through the entire shale gas development lifecycle.

Secondly, in manner underpinned by the South African SEA principles [2], the SEA will convert the scientific evidence base into an integrated *decision making framework* that can guide project planning and site specific impact assessments, and facilitate coordinated decision-making amongst mandated authorities.

The critical success factors for the SEA include: *saliency* – the topic must be widely viewed as an important one and address all the important issues raised by stakeholders; *legitimacy* – the SEA must be mandated by the ultimate decision makers and be characterised by transparent and participatory processes; and *credibility* – it must be conducted by recognised experts working with a defensible methodology and including rigorous peer review.

Approximately 150 authors (experts) and peer reviewers from around the world are currently participating in the shale gas development SEA which covers seventeen strategic issues ranging from water resources, to Karoo ‘sense of place’, to land-use planning, to the risks of shale gas development on the Square Kilometre Array radio-telescope and many more. The SEA is a 24 month process that commenced in early 2015 and will produce draft results from mid-2016.

The purpose of this keynote address to the 35<sup>th</sup> International Geological Congress is to introduce the delegates to the SEA principles and the scientific, participatory and governance processes for this SEA. The risk assessment and scenario development methodologies will be discussed along with an overview of the strategic topics being addressed in the scientific assessment phase of the SEA.

### References:

[1] Ash N et al. (Eds) (2010). Ecosystem and human well-being: A Manual for Assessment Practitioners. Island Press, United States of America.

[2] DEAT and CSIR (2007). Strategic Environmental Assessment Guideline, Integrated Environmental Guidelines Series 4, Department of Environmental Affairs and Tourism, Pretoria.



