

# SRK outlines environmental considerations for Brulpadda gas extraction

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SRK Consulting environmental assessment practitioner **Sue Reuther** says although news of the large Brulpadda gas find off South Africa's southern coast holds economic potential, the project could take ten years to reach production and all environmental risks would first need to be considered for the extraction of these resources.

Fortunately, South Africa has access to considerable environmental expertise and experience in this field. Should the project come to fruition, it could contribute hugely to national efforts to reduce carbon emissions, as natural gas emits about 50% less carbon dioxide when combusted, compared to coal.

Prospective oil and gas explorers and developers in South Africa generally begin with acquiring a technical cooperation permit or a reconnaissance permit, according to SRK senior environmental consultant **Scott Masson**. Environmental Management Programmes must be compiled and approved at this stage.

"A subsequent exploration right allows the holder to carry out the entire value chain of petroleum exploration, and an environmental impact assessment (EIA) is required in terms of the National Environmental Management Act."

During this phase, new geological and geophysical data is gathered using seismic surveys and/or exploration drilling. The new data is processed, along with existing data, to define the oil and/or gas resource. The production right, which allows the holder to conduct operations relating to the development and production of oil or gas, also requires an EIA, explains Masson.

Among the environmental impacts that need to be studied and mitigated during (seismic) exploration are the effects of airguns, which are used to generate sound waves for seismic surveys.

Masson says this underwater noise can have impacts on marine fauna, including pathological injury and behavioural responses that may affect feeding and breeding success. Marine fauna can also be injured in collisions with the seismic survey vessel or support vessel, or when they become entangled with towed equipment.

Well drilling generates drill cuttings – essentially broken up pieces of rock removed from the drill hole by pumping drilling fluids into the well – often accumulate on the sea bed close to the well. Drilling fluids – which comprise water, clays, polymers, emulsifiers or other

additives – can have an impact too.


Temporary discharge plumes would disperse rapidly into the environment, but may impact on the marine environment in the immediate vicinity. This could affect both the water quality in the water column and the benthic or sea-bed environment, as benthic organisms could be smothered. Well-drilling also generates underwater noise, which is a concern due to its potential impact, particularly on marine fauna.

Accidental events – such as a well blow-out, a fuel line rupture or a vessel collision at sea – also pose environmental risks. Although, Reuther noted, gas leaks at sea cause less pollution than oil, chemicals stored on drilling units could be a hazard.

“To minimise the chance of accidents, the oil and gas industry has developed and routinely implements protocols, such as airgun soft-start procedures and the use of blow-out preventers and water-based drilling muds. These inform mitigation measures included in EIAs conducted for such projects in South Africa,” says Reuther.

She emphasises that an EIA would also concern itself with socioeconomic impacts – such as the effects on local fishermen when a safety exclusion zone is implemented around a seismic vessel or drilling rig. Excluding other users from this zone can have direct economic consequences for fishing vessels, and also indirect implications if the seismic survey or drilling alters the behaviour and location of fish stocks in the area.

Among SRK’s projects have been EIAs for proposed production off the country’s south coast for PetroSA and seismic surveys in the Orange Deep basin off the west coast for Total and Impact Africa.

The company has also conducted environmental assessments for many offshore concession blocks in Angola and Mozambique and a macroeconomic assessment of the East Africa Crude Oil Pipeline in Uganda and Tanzania. 

Edited by: Creamer Media Reporter

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