

# PANAFRICAN

## ENERGY TANZANIA

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CORPORATE BROCHURE







# A brighter future

Against a background of accounts that Iran is oil-rich but petrol-poor, Alan Swaby looks at Tanzania, which is gas-rich and electricity-poor



“

We have 37 customers ranging from cement and glass manufacturers to one of Dar es Salaam's premier hotels buying gas directly from us

”

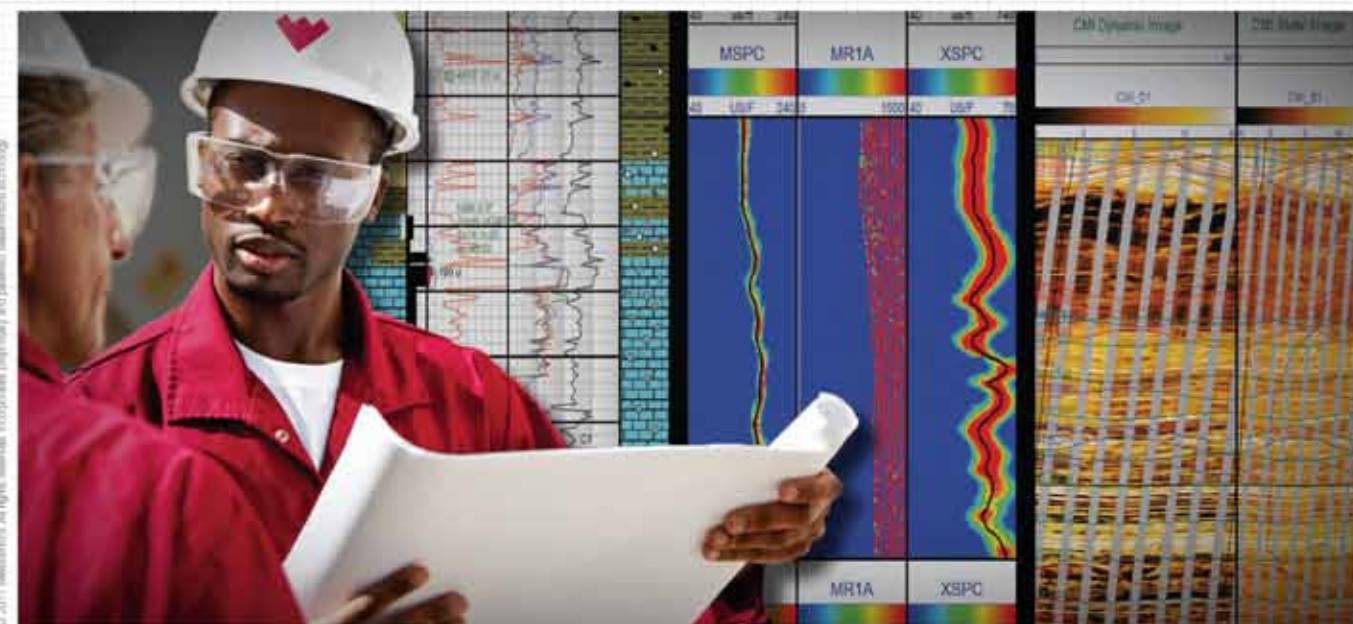
It's all very well wanting to be green with a sustainable energy policy; but if nature doesn't play ball, then as the Scottish poet Robert Burns tells us: the best laid plans of mice and men oft go astray.





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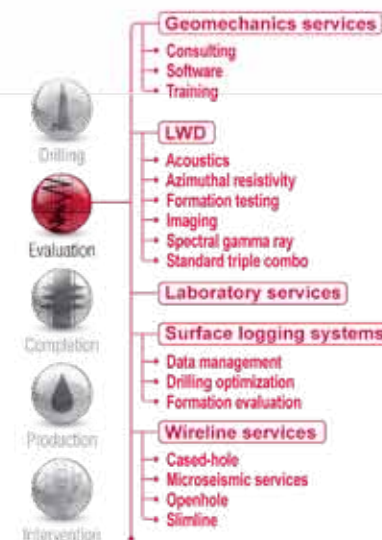
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## Weatherford Tanzania

As one of the largest oilfield services companies, Weatherford operates in more than 100 countries and employs approximately 55,000 people worldwide. With offerings that span the life cycle of a well—drilling, evaluation, completion, production and intervention—and a robust research and development effort, we are well positioned to meet the ever-evolving needs of the oil and gas industry. We support operations in Tanzania through a network of permanent offices in countries throughout the region, including Kenya and South Africa. PanAfrican Energy is among the local clients we proudly serve.

### All your formation evaluation data, from a single source.

With an extensive formation evaluation portfolio, Weatherford is uniquely positioned to acquire, integrate and interpret datasets that inform critical reservoir management decisions. In addition to conventional openhole wireline logging tools, we have small-diameter Compact™ tools, which offer several conveyance options to ensure data delivery, even in challenging environments. Our surface logging capabilities range from basic mud logging to advanced wellsite geochemical analysis. Vital to real-time data acquisition, our LWD systems have set multiple performance records and our global network of laboratories—Weatherford Laboratories—provides various evaluation services, including core sample analysis.

If all goes well, Tanzania should be able to produce a little more than half its 900MW energy needs from hydro-electricity. In fact, prior to 2004, when the Songo Songo Gas-to-Electricity Project came on-stream, hydro and a collection of heavy fuels were the only source of electricity. The trouble is, though, that when it doesn't rain, the hydropower turbines don't turn. As a result, the Songas gas processing plant (operated by PanAfrican Energy Tanzania) on Songo Songo Island, 230 kilometres south of the major commercial centre of Dar es Salaam, is already working above design capacity to meet the ever rising demand for energy. The plant has been temporarily re-rated to try and alleviate the problem.

“Through a production sharing agreement (PSA) with the Tanzania Petroleum Development Corporation (TPDC), PanAfrican Energy Tanzania explores, produces and markets additional gas from the Songo Songo gas field,” says PanAfrican Energy Tanzania’s deputy general manager William Chiume. “The PSA is an internationally-recognised contract that governs

our relationship with TPDC.”

Gas was found in the seas around Songo Songo Island as long ago as 1974; but at the time there was no infrastructure in place to get the gas from the Indian Ocean to where it was really needed in the former capital city and principal industrial heartland. But in October 2001, agreements were signed that led to the development of the Songo Songo Gas-To-Electricity Project, comprising three major parts: processing facilities in Songo Songo Island, a 230 kilometre pipeline from Songo Songo to Dar es Salaam, and the Songas Ubungo Power Plant in Dar es Salaam. PanAfrican Energy—a subsidiary of Orca Exploration—is part of the original upstream partnership, responsible for extracting the gas and operating the processing plant on Songo Songo Island.

The demand for electricity in Tanzania is such that there is already load shedding. To



Trenching, Excavation & Pipeline laying



Mobilization / Rig & well site Preparations for gas exploration



Marine logistics



Camp Management



Rig move



Official contractors for the PanAfrican Energy Tanzania Ltd in the Songo Songo gas-to-electricity project.

Combined force leading to Tanzania's growing electrical demand with domestic energy resources.

alleviate the problem, Songas is developing a project to expand the gas supply system by installing two new gas processing trains and a compressor in the pipeline that will bring total throughput capacity to 140 million standard cubic feet per day (MMscfd). "Concurrently, we are drilling a new production well which will come on-stream in January," says Chiume, "and will recomplete one of the production wells with a larger tubing in order to produce more gas. We are also undertaking further exploration in Songo Songo West (SSW) so that we are prepared to use additional capacity that we hope will be

developed."

All of which is good news for PanAfrican Energy Tanzania, as it will allow more additional gas to be delivered to Dar es Salaam, and potentially other markets. "Currently about 80 per cent of the gas produced," explains Chiume, "goes into electricity generation; but the remainder is sold to industries. We have 37 customers ranging from cement and glass manufacturers to one of Dar es Salaam's premier hotels buying gas directly from us and we want to be able to expand





Songo Songo field and is planning to drill and test the prospect during the first half of next year. It could have been earlier but there is a scarcity of jack-up drilling rigs suitable for working in the 18 to 35 metre waters—or at least a scarcity of rigs willing to make the journey to Tanzania for relatively little work and still charge a reasonable rate. However PanAfrican Energy Tanzania has found another local exploration company needing a similar rig and together, the two of them are sufficiently appealing to have now attracted

serious interest from a drilling contractor.

In 2008, McDaniel & Associates conducted an independent assessment of natural gas resources in the SSW prospect and interpreted the data to be low-risk, with a 52 per cent chance of success—exceptionally high for an exploration prospect.

Orca is planning to drill an initial exploration well towards the south of the SSW structure, approximately 2.5 kilometres west of the main field. If it is successful and can flow at commercial rates, the plan is to tie the well back to the existing processing plant and let it flow for a period of time to prove up the long term deliverability of the gas.

If hopes are realised, SSW would represent a major new reserve in the area, to the great relief of Tanzanian consumers in general [www.orcaexploration.com/](http://www.orcaexploration.com/) ■



this market. This creates jobs, increases the government's tax base and increases the capabilities of the country at large. It's a real win-win situation."

So it's all a bit chicken-and-the-egg at the moment. Demand is high and there is all the gas the country needs below the waters; but

users are being restricted due to a lack of capacity in the system. PanAfrican Energy Tanzania is doing what it can by squeezing the last drop of productivity from the plant; but any real relief won't happen until Songas' expansion of the plant comes on-stream in 2013.

Parent company Orca Exploration has mapped and evaluated the SSW prospect adjacent to the



- Production and Processing equipment for crude and natural gas
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