



# 'Energetic' Dialogues in South Africa: The US Example

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### RECOMMENDATIONS

- Despite three broad objectives (energy security, poverty eradication and economic growth), US initiatives in Africa have targeted few countries and could benefit from further expansion.
- South Africa has been cautious about adopting new technology enabling the exploitation of its shale beds. It should continue on this path given its water constraints and should resist caving in to pressure due to its domestic energy crisis if it is to emerge environmentally unscathed.
- The growing US–South Africa energy dialogue requires ongoing monitoring over the long run to see how it could inform and benefit both technology exchanges and partnerships with the continent.

'The United States anticipates complete independence from Middle Eastern crude oil by 2020, as a direct result of [its] development of shale gas reserves. Our government has adopted a cautious and responsible approach that seeks to understand the risks to the environment posed by fracking [...]

*Tina Joemat-Pettersson, Minister of Energy, 2014 Policy Budget Speech, Parliament, Cape Town, 21 July 2014<sup>2</sup>*

### EXECUTIVE SUMMARY

South Africa and the US have both recently attempted to take concrete action to transform their respective energy futures. This is happening against the backdrop of major shifts in the global energy landscape and South Africa's own need for new energy partnerships. After their energy relations hit a rough patch in 2012 with the imposition of US oil sanctions against Iran, the US–SA energy partnership has been nudged in a new direction by US President Barack Obama's launch of the 'Power Africa' initiative in Cape Town in 2013. Part of this emerging partnership is a joining of forces to improve access to energy across Africa. Given this recent warming in relations, this policy briefing presents the salient features of the emerging US–SA energy dialogue, with a focus on shale gas and renewable energy sources.

### INTRODUCTION

In 2008, successive crises in the South African energy sector forced the country to tackle its energy challenges. In the face of a global energy shift, South Africa has developed a new strategy on renewables – the Renewable Energy Independent Power Producer Procurement Programme (REI4P) – to increase their share in its energy mix.

Since the end of the apartheid, South Africa has become a strategic partner for many countries. The 2010 US–South African Strategic Dialogue underscores this bilateral relationship and points to shared interests in the energy sector. Beyond specific energy issues such as the development of nuclear power for civilian use, two topics are regularly discussed during these exchanges, namely the US

energy independence model, based on its domestic shale oil and gas boom, and increasing private investment in the renewable energy sector. In particular, the meteoric growth of 'unconventional fuels', a result of technological breakthroughs around hydraulic fracturing, has triggered South Africa's interest in exploiting shale gas in the Karoo.

While acknowledging how this shift has transformed the US economy and its energy security, there are questions about the extent to which it could shape the US–South Africa partnership, and especially the South African energy sector. This briefing focuses on common US and South African efforts to develop an energy dialogue, with an emphasis on energy challenges, embedded interests in shale gas and private investment in renewable sources.

### THE US ENERGY BOOM

Until recently the US has been the quintessential example of a net oil import-dependent economy. The first two oil crises (1973 and 1979), 'peak oil'<sup>3</sup> and various conflicts around securing energy resources in the Middle East had a direct impact on the US economy. However, since 2008 US oil imports have fallen by 44% and imports of natural gas have plummeted by 58%.<sup>4</sup> The US seems close to achieving energy independence without compromising its energy reserves. The recent surge in domestic supplies from both shale oil and gas and deepwater hydrocarbon reserves, and increasing investment in new energy technology illustrate the tensions that the US faced in as early as the 1970s between pursuing a 'hard' or a 'soft' energy path. In the 'hard path' scenario, energy consumption continues to rise, drawing increasingly on coal, oil and nuclear power, while in the 'soft path' scenario energy consumption peaks followed by a progressive decline because of greater energy efficiency – the result of technological innovation and the development of renewable energy.

The US energy boom could turn energy-related geopolitics on its head. Shale gas discoveries multiply options for other net energy import-dependent economies. With the advent of liquefied natural gas technology, energy can now be exported across the globe with ease. This could be an interesting alternative for European countries, which currently buy gas from Russia. Shale gas deposits have been identified in China, with the world's largest estimated resources (over 1 100 trillion cubic feet of 'technically recoverable' shale gas), Argentina, Algeria, the US (over

600 trillion cubic feet), Canada, Mexico, Australia and South Africa (about 400 trillion cubic feet).<sup>5</sup> However, these estimates have to be balanced against drilling and recovery costs, market prices and environmental impacts. In South Africa, shale gas resources remain only a potential 'game changer for [the] economy'.<sup>6</sup>

While the US has achieved greater energy independence, its energy security is not insulated from worldwide energy price volatility. Global price projections underscore that current and future oil and gas prices remain resilient despite the increase in US production. In addition, the US' energy investment conditions are unique and it does not follow that there will be a similar boom in other countries. The US energy revolution will also not lead to the sustained decarbonisation of its energy mix – instead a switch from coal to gas is expected.<sup>7</sup>

While the US' international political economy approach could evolve, notably in terms of the government's role in its and the global energy market, it is unlikely to achieve either energy security or sustainability through the discovery of new energy sources. This presents an opportunity for South Africa and other African countries to consolidate their energy partnership with the US.

### US ENERGY ENGAGEMENT ACROSS AFRICA

In 2012, the 'US Strategy Toward Sub-Saharan Africa', which highlighted the opportunities and challenges in US–Africa relations, was released. A year later, Obama launched his 'Power Africa' initiative.<sup>8</sup> This five-year initiative (2013–2018) is structured around three pillars, namely energy security, poverty eradication and advancing economic growth, and responds directly to the continent's need for energy infrastructure and the desire to fully 'harness all African energy resources'.<sup>9</sup> This was followed by the establishment of a US–Africa Clean Energy Development and Finance Centre in Johannesburg in the same year. These high-level policy initiatives illustrate the US' increasing interest in Africa's energy sector and energy challenges.

During the US–Africa Energy Ministerial meeting in Addis Ababa in June 2014, which focused on 'catalysing sustainable energy growth in Africa', US Secretary of Energy Ernest Moniz said that energy infrastructure development was 'a critical enabler' for economic development and diversification in Africa. A large part

of the debate focussed on investment, with an emphasis on the private sector. The need for regional solutions, specifically in the electricity sector, was also highlighted. 'Beyond the Grid', a sub-initiative of Power Africa, was launched with the aim of developing micro-grids and decentralised energy hubs to increase electricity access in rural areas.

At an Africa Energy Forum the same month, Leocadia Zak, the director of the US Trade and Development Agency (USTDA), gave an overview of the progress Power Africa had made in its first year towards the goal of doubling energy access in Ethiopia, Ghana, Kenya, Liberia, Nigeria and Tanzania. In Ghana, for example, the US initiative includes providing technical and financial assistance to develop a gas sector action plan.<sup>10</sup>

These various energy initiatives have played a substantial role in elevating the US dialogue with a number of African governments, in particular during the US–Africa Summit. Nonetheless, South Africa remains a key partner in any attempt to increase the continent's access to energy. The launch of the Power Africa initiative in this country is no coincidence, but it does raise the question as to how the growing US–SA energy dialogue could contribute towards achieving this goal.

## US–SOUTH AFRICAN CO-OPERATION IN THE ENERGY SECTOR

South Africa experienced a game-changing energy crisis in 2008 due to severe capacity constraints in its energy infrastructure, exacerbated by the imposition of international sanctions against Iran, a key provider of crude oil to the country. It is thus no surprise that the potential of shale gas and renewable energy sources has gained increasing traction in political circles. In a recent speech Minister of Energy Tina Joemat-Pettersson underlined the importance of gas and its associated infrastructure to the South African economy, noting that 'the development of shale gas cannot be dismissed or ignored'.<sup>11</sup> Her July 2014 address highlighted an interest in 'learning from others' and quoted the US example as a way to overcome energy dependence on the Middle East.

South Africa is considered an emerging power because of its economic size and its geopolitical role. In 2010, US Secretary of State Hillary Clinton and South Africa's Minister of International Relations and Co-operation Maite Nkoana-Mashabane launched the US–South Africa Strategic Dialogue to advance co-operation on energy

issues, among others. This dialogue includes the pursuit of common interests in renewable energy sources, energy efficiency, peaceful nuclear co-operation, carbon capture and shale gas exploration technologies.<sup>12</sup> Since then, four bilateral energy dialogues have taken place. During the most recent dialogue, in December 2013, both countries agreed to increase co-operation on the sustainable development of hydrocarbon resources, including shale gas and offshore conventional oil and gas; promote production in conjunction with more efficient water usage; enhance carbon capture sequestration; and work more closely on solar, wind and biogas as clean energy sources, in particular in the REI4P's fourth and fifth windows.

Besides the US' development assistance in the promotion of clean and lower emissions technology, in particular under the US Global Climate Change Initiative,<sup>13</sup> the US Export-Import Bank has since 2012 supported the Industrial Development Corporation, a South African development finance institution meant to finance the renewable energy sector, and Eskom, notably in the development of the Kusile coal-fired power plant. South Africa also benefits from the Power Africa initiative through the Overseas Private Investment Corporation (OPIC) component, which is the US' development finance institution. Operating from South Africa, OPIC supports private capital investment across the continent. The USTDA is also conducting several feasibility studies, in particular for solar and offshore gas exploitation in South Africa. Sasol has recently invested in the development of a gas-to-liquid facility in the US.

Despite the South African government's moratorium on the exploitation of shale gas since 2011, this is by no means the end of the road. At the end of 2013, new regulations were gazetted and private companies such as Shell, Falcon and Bundu expect to be granted exploration licences. These companies will need water permits, given the quantities of water that the hydraulic fracturing process requires and South Africa's significant water constraints. Petro SA, the national oil company, has already established a shale gas and hydraulic fracturing working group. However, a 2012 report to the Department of Mineral Resources noted that South Africa did not have the supportive infrastructure (service industries and pipelines) that had enabled the success of the US shale gas revolution.<sup>14</sup> South Africa's concerns about the use of new technology to extract resources, such as shale gas, are appropriate given its environmental constraints. It seems that the government intends to retain close regulating

control over how the landscape unfolds.

Thus, despite some similarities between the US and South African energy sectors, there are important differences in their legislative and regulatory environments, investment conditions and markets. The US trajectory towards energy independence might look appealing, but the cautious path taken by the South African government is justified by the challenges it faces, such as the lack of energy access, infrastructure gaps, economic considerations and environmental conditions. Given South Africa's comprehensive water regulation legislative framework, it could take the lead in promoting sound water recovery policies, notably by including water consumption requirements in future energy choices.

## CONCLUSION

Fresh on the heels of its growing energy independence, the US has launched initiatives to address not only Africa's infrastructure gap but also its energy needs. Starting five years ago the US has increased investment in the African energy sector and reinforced its partnership with South Africa, but it is still too early to draw conclusions about its engagement in the continent's energy challenges.

Building on the US experience and its recent energy partnership with South Africa, the dialogue between the two parties has identified the energy needs of South Africa and the continent, in particular for electricity production and access, and has developed a multi-level strategy to address these issues. However, South Africa should consider its domestic energy challenges and its regional role, particularly if it intends to become the US' strategic partner in the energy sector.

## ENDNOTES

- 1 Dr Agathe Maupin is a researcher in SAIIA's Global Powers in Africa Programme. She would like to thank Kevin Rosner from the Institute for the Analysis of Global Security for his helpful comments.
- 2 South Africa, Department of Energy, 2014 Policy Budget Speech by the Minister of Energy Tina Joemat-Pettersson, Good Hope Chambers, Parliament, Cape Town, 21 July 2014, <http://www.energy.gov.za/files/media/speeches/2014>

- 3 /2014-Budget-Vote-Speech-by-Minister.pdf, accessed 25 August 2014.
- 4 'Peak oil' refers to the time when the maximum rate of oil extraction is reached, after which its production rate declines.
- 5 Levi M, *The Power Surge, Energy, Opportunity, and the Battle for America's Future*. New York: Oxford University Press, 2013.
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- 7 State of the Nation Address by His Excellency Jacob G Zuma, President of the Republic of South Africa on the occasion of the Joint Sitting of Parliament, Cape Town, 17 June 2014, <http://www.thepresidency.gov.za/pebble.asp?relid=17569>, accessed 27 August 2014.
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