Sustainable Development Forum: South Africa’s energy crisis

The Sustainable Development Forum recently hosted a panel discussion on the energy crisis. The aim of the discussion was to highlight ways in which directors of businesses (and individual homeowners) could address the energy scarcity risk and the risk of ongoing double-digit price increases and become more self-sufficient.

Energy scarcity affects the economy as a whole, acting as an inhibitor of growth: existing companies are cutting back on expansion plans, and new investment into the South African economy is being reconsidered by both local and international investors. As a result, the economy will remain sluggish and, critically, much-needed jobs will not be generated at anything like the rate needed to improve social stability.

Those with jobs are also affected as load shedding can lead to the cancellation of shifts and thus reduced income, as well as more difficult commuting conditions as traffic is slower and trains do not run. If shift times are altered to accommodate planned blackouts, employees often face childcare issues. At the same time, load shedding impacts family and social life; for example, alternative cooking and lighting options can be expensive or unsafe.

All the panellists are involved in various aspects of the renewable-energy industry, and offered a range of perspectives on how this industry is contributing, and could contribute, to providing solutions. The panel was chaired by Karin Ireton, chairperson of the Sustainable Development Forum. Other panellists were Dylan Tudor-Jones, Business Development and Projects Director, Solsquare; Gqi Raoleke, Executive Director: Investment and Funding at Pele Green Energy; and Alastair Campbell, Managing Director of Vantage GreenX. Solsquare implements photovoltaic systems in the residential and commercial sectors, Pele Green Energy is an independent power producer (IPP) and owns and operates renewable energy power plants generating 350 megawatts, while Vantage GreenX is a boutique finance house specialising in renewable energy.

Some of the main points discussed include:

Green power has become an important part of the energy mix and is delivering results both by companies looking to use it to supplement grid power and those companies looking to increase energy security into the South African grid via independent producers.

In the past, renewable energy was seen as expensive, and thus the primary reason for using it was to reduce the impact on the environment. Nowadays however, the price of renewable energy per megawatt has reduced and is now the same as, or cheaper than, power purchased off the grid (grid parity). Renewable energy is now obtainable from IPPs at around 89c/kWh, a dramatic reduction from the price of R2.60/kWh four years ago.

This dramatic reduction in the price of renewable energy is being driven by the success of South Africa’s procurement model. The Department of Energy rejected using feed-in tariffs in favour of competitive tenders. Its Renewable Energy Independent Power Project Procurement Programme (REIPPPP) has attracted massive global interest because of the benefits derived from channelling expertise and investment from the private sector into the grid-connected renewable energy. (A total of 64 projects has been awarded thus far, representing $14 billion in capital and 3 922 megawatts of power. The prices have dropped by 68 percent in respect of power generated by photovoltaic (solar) technologies, and by 42 percent in respect of wind.)

Panellists stressed that once the capital costs of the generating plant was fully written off, renewable energy would be even cheaper.

Another key benefit of renewable energy is that projects are quick to come online, especially when compared with the long lead times and massive delays being experienced by Eskom’s build programme. To date, all the REIPPPP projects have been completed on time and on budget with the risk of overruns carried by the independent producers not the South African taxpayer.

A key success factor was the creation of a strong regulatory framework, essential in providing certainty to the providers of capital that the power generated by their investments would be purchased. Additional certainty is provided by the National Treasury’s role as “payer of last resort” should Eskom find itself unable to pay for committed purchases from the IPPs.

Finally, panellists identified community involvement in the renewable energy industry as important. Local communities where these plants are situated need to see benefits.
REIPPP’s success has some far-reaching consequences

- Green energy is becoming more realistic for businesses and homes. The cost reductions and technology advances associated with REIPPP are filtering through into the domestic and commercial sectors, making it much more practical for businesses and individual home-owners to generate all or some of their own power. It was noted that businesses across Africa need to consider seriously the advisability of generating at least some of their own power.
- New skills are being created, along with jobs. Thanks to the REIPPP process, the number of project financiers able to put together such large and complex public-private partnerships has grown hugely. These skills can be applied to other sectors, with the looming threat of insufficient water supplies sure to spark a similar need for innovation. The legal, accounting, engineering and insurance industries have similarly developed the skills needed for these types of project.
- Artisan and technical skills for construction and maintenance are also being built.
- Innovative financing to enable smaller projects. Financing large IPP projects is extremely expensive, because of the uniqueness of each project. But, the panel proposed that if a more streamlined financing approach based on the process already used in the larger deals can be developed, it could make many smaller deals in the R10 million to 400 million range viable.
- South Africa now has the experience and expertise to gain business from the rest of Africa. The panellists agreed that Africa presents a massive energy opportunity—and that the skills and expertise that South Africa has developed in renewables means we are well placed to enter these (and other) new markets.

South Africa is some way off achieving power security

Renewable energy is not a total solution to South Africa’s energy woes—we still need increased baseload capacity. The acceptable reserve margin for security is 15 percent. Another challenge is that some of Eskom’s current plants will have to be retired – particularly the units that were returned to service because of the energy crisis.

This reinforces the need for businesses and home-owners to consider assuming the responsibility for self-generation. A paper by an energy think tank in the United States predicts that no houses in the American South will be on the grid by 2050—the panelists agreed that this would become the common model, and that the centralised generation model such as we have in this country will have to be replaced by a much more decentralised approach. Twenty-five percent of the energy is lost on long transmission lines. The centralised model is also acting as a bottleneck when it comes to renewable energy because upgrading of distribution infrastructure needed to bring solar or wind farms online was held up as cash is diverted to Eskom’s troubled build programme.

As a result, it was suggested that the unbundling of Eskom to create a separate distribution company at a minimum should be urgently considered and the faster adoption of regulatory systems that will allow companies and homeowners to sell excess power back to the grid. Renewables should make up a maximum of 23 percent of the total energy mix. The Department of Energy has 20 percent as a target, but the panellists believe it will be raised because of the downward pressure on the cost per megawatt of renewables.

The emergence of mass-market storage is critical

If and when storage technologies become much cheaper and more effective, the energy equation will shift decisively in favour of renewables, and could even make them fit for producing baseload.

What should businesses do now?

- Understand their current energy use. The first step is to understand the current status of the company with regards to their energy use. The National Business Initiative, a voluntary coalition of South African and multinational companies committed to working towards sustainable growth, is sponsoring energy audits by business; more information can be found at www.psee.org.za.
- Become more efficient first. Before considering self-generation, it makes sense to make the business as energy efficient as possible first. In this way, only the minimum amount of power would need to be generated.

The overriding conclusion was that renewable energy is now mature enough to provide useful solutions for business and to take some of the pressure off Eskom. Investing in renewable energy now makes economic sense for the country and for individual companies alike, and constitutes an investment in long-term sustainability for both.
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