

Renewable Energy Symposium, May 28th, 2015

A summary of key points – from presentations and discussion

The event was co-hosted and organized by the Energy Research Centre (UCT), the University of Sussex and GreenCape. Financial support was provided by the University of Durham Rising Powers, Clean Development and the Low Carbon Transition in sub-Saharan Africa Project, and is gratefully acknowledged.

Session 1: The REIPPPP: current state of play (Chaired by Brenda Martin)

Presenters: Lucy Baker, University of Sussex & ERC; Mike Mulcahy, GreenCape; Marion Green-Thompson, Globeleq

- Discussions on REFIT in 2007/8 → RE IPPPP in 2011 (auctions v feed-in tariffs).
- 5243 MW procured thus far under 4 bidding rounds (up to April 2015)
- Further allocation of 6300 MW announced (including 1800 MW for expedited-round projects)
- 37 projects connected to the grid to-date; Capital investment of approx. R170 billion
- Impact of financial crisis on renewable energy markets in Europe and US → reduction/ removal of subsidies by governments and slump in project development. Related investment started to shift to developing countries with SA key target.
- Global overcapacity in technology hardware → fierce competition → significant cost reductions, especially in solar PV.
- Increased profitability of renewable energy: growing interest of finance & investment in conventional energy, decrease in cost of capital. Consolidation of ownership. Fewer companies winning more MW.
- Hugely competitive - dramatic tariff decrease. Increase in local content requirements with each round.

Tariffs	Round 1 average bid (per kWh)	Round 2 average bid (per kWh)	Round 3 average bid (per kWh)	Round 4 average bid (per kWh)
Wind	R 1.14	R 0.90	R 0.66	R0.62
Solar PV	R 2.76	R 1.65	R 0.88	R0.79
CSP	R 2.69	R 2.51	R 1.46	

RE Tariffs, rounds 1 to 4

- More consolidated approach by banks. On-selling of equity shares and debt finance. Creation of a secondary market.
- Reduced role for development finance (e.g IDC, DBSA) in debt: more focussed on equity & BEE. Have already 'de-risked' the market.
- But: ownership of industry becoming domain of large internationals. Will financial returns benefit or leave the country? Nature of economic and community benefits? Disproportionate benefit to limited number of communities. Tensions between commercial priorities for 'bankability' and requirements for economic development and community ownership (definitions and perceptions of risk).
- How can the REIPPPP be leveraged to create a long-term local manufacturing and service industry? Which parts of the value chain offer the most viable prospects? What are the policy conditions needed to ensure this? Policy certainty, continuity and clarity are essential.

- CSP more compatible with base load thermal power stations, but small number of companies who are also developers, equity, EPC and O&M. Much harder for SA to break into CSP.
- It's getting more difficult to win the bid:
 - Round 1: 28 of 53; Round 2: 19 of 79; Round 3 :17 of 93; Round 4 : 11 of 77
- It costs R20 - 50 million to submit a compliant bid, there are 227 bids submitted but not successful i.e. R4,5bn – 11bn in risk capital lost.
- There is a great potential for bid manipulation; there are also sweet spots for improvement e.g. job creation potential (see figure below), module assembly,
- In 2014 RE saved the system a total of R 800 million in avoided diesel, blackouts and coal costs (CSIR).
- Some lessons learnt and mistakes made with SED/ED programme components. However, this programmatic approach very new – globally and in SA.
- In the absence of a comparator inclination is to make a comparison to a hypothetical 'perfect' standard. In the electricity space, it is possible to compare kWh's to kWh's. However, in the SED/ED space this can't apply and there is no real baseline for comparison.
- Ideally we should compare the REIPPPP program's SED/ED and transformation impacts to an equivalent build program (e.g. Medupi).
- What are we optimizing for? Essential to clarify this in order to optimize benefits.
- Are we preparing sufficiently on skills development and training? Does capacity building investment reflect this? Opportunities for investment interest here includes: government, RE sector (including IPPs), business, international funders & lenders, tertiary institutions.
- Some IPPs already putting up to 40% of ED spend on training and internships. There is need to capture and collate this information early on, to ensure continued learning and replication..
- There is an inherent tension between compliance and meaningful development. Is there, therefore, an opportunity to have the SED/ED component run separately, by a competent authority with this sole mandate?
- Communities need to be more engaged; lack of experience is common and learning becomes competitive edge for developers; legacies – visible, invisible, short and long term – matter.

Session 2: Unpacking key aspects of the emerging RE sector; identifying zones for improvement (Chaired by Maloba G Tshehla)

Panelists: Happy Khambule, **Project 90 by 2030**; Willie van Niekerk, Globeleq; Andrew Janisch, **City of Cape Town**; Wido Schnabel, **Canadian Solar on behalf of SAPVIA**; Holle Wlokas, **ERC**

Topics covered: Policy Impacts: National (HK), Technical Impacts: Grid/Networks/Transmission (WvN), Local Impacts: Small scale embedded generation (AJ), SMMEs (WS), Community benefits, challenges & opportunities (HW)

- REIPPPP was realized mainly due to political economy related to COP17.
- The RE White Paper of 2003 needs to be updated and Section 34 of the Electricity Regulation Act enforced.
- We are moving towards pro-sumers of electricity but legislation and regulation is not keeping up.
- Africa has managed to jump the landline, next we will jump the grid.
- South Africa needs to fully realise the potential of its resources by combining and optimizing uptake of solar PV, CSP and wind resources to establish a more robust “renewable symphony”
- There is no real grid stability north of SA; massive solar irradiation potential, with associated small, medium and micro enterprise development potential. South African based companies, and those with a base here, have the opportunity to plug into this increasing demand.
- Embedded generation enables job creation in a number of associated RE sectors from training to smart metering.

- GIZ research has shown recently that cost/benefits of solar PV where grid connection is problematic, is comparable to cost of embedded generation, strengthening the case for the latter.
- There are many grid-related advantages to addition of RE generation e.g. technical: grid stability and non-technical: co-benefits like upgraded IT access for surrounding communities.
- Unintended, costly and wasteful curtailment of RE generation is a reality with ailing grid infrastructure, particularly sites situated far from the central grid. Strengthening of the distribution grid is an essential component of RE uptake.
- Increased appetite for and viability of self-generation, through renewable energy technologies (especially rooftop solar PV) will drive the development of new financial models for energy at all levels, especially with municipalities and the traditional utility.
- New municipal finance models will be required within 5 years.
- After electricity, low emissions transport will provide the next energy challenge.
- Cape Town's grid is able to absorb an additional 500MW embedded PV (grid-tied only), more with improved battery storage tech.
- National SSEG regulation could speed things up (at local level) significantly.
- There are a host of initiatives undertaken to increase the capacity of both the private sector (especially SMMEs) and local government to embrace and adapt to the advent of renewable energy. The IDC, for example, is assisting in the training of community trustees to ensure that community funds from the REIPPPP are most effectively managed. A similar effort is being made by the Eastern Cape provincial government.



"The race for renewable energy has passed a turning point. The world is now adding more capacity for renewable power each year than coal, natural gas, and oil combined"

-Bloomberg Business, May 2015