

Summary of REIPPP round three projects

by Mike Rycroft, features editor

The preferred bidders for window three of the REIPPP process were announced on 4 November 2013. Ninety-three bids were received on 19 August amounting to 6023 MW although the available MW for allocation was only 1473 MW.

Speaking at the announcement, the Minister of Energy, Dikobe Ben Martins, stated that the Department of Energy (DoE) was pleased to note the competitive pricing offered in the bids received. South Africa is presently rated as the 12th most attractive investment for renewable energy. The programme has to date, attracted over R150-billion in foreign direct investment. This bodes well for South Africa, as the programme has received international acclaim for fairness, transparency and the certainty of this programme.

Since the integrated resource plan (IRP) was initiated in March 2010, the DoE has entered into 28 agreements under bid-window 1 and 19 agreements under bid-window 2. To date the DoE has committed to purchase 2400 MW from independent power producers under windows 1 and 2 of the REIPP. The DoE will continue to work with the IDC, the co-ordinator of the government's green energy programme, and other stakeholders in the energy industry and local communities, to ensure that the socio-economic commitments related to job creation, skills development, local procurement and local economic development are met.

Preferred bidders

Summary

A total of 17 projects comprising 1456 MW were accepted, against the 1473 MW on offer. Wind and solar received higher allocations than originally proposed, and the allocation for small hydro was not awarded.

Table 1 shows a summary of the successful projects.

Solar PV

Table 2 gives details of the solar PV projects

Wind

Table 3 gives details of the wind projects

Concentrated solar power (CSP)

Table 4 gives details of the CSP projects

Landfill gas

Table 5 gives details of the landfill gas project.

	No of projects	MW taken up	MW available for window 3
Solar photovoltaic	6	435	401
Wind	7	787	654
Concentrated solar (CSP)	2	200	200
Small hydro	0	0	121
Landfill gas	1	18	25
Biomass	1	16	60
Biogas	0	0	12
Total	17	1456	1473

Table 1: Summary of successful projects

Project name	Contracted capacity (MW)	Fully indexed price (R/MWh)	Partially indexed price (R/MWh)	Portion indexed (%)
Adams Solar PV2	75	864,10	1239,30	20
Tom Burke Solar Park	60	952,20	1329,80	20
Mulilo Sonnedix Prieska PV	75	1100,00	1440,00	20
Electra Capital	75	1069,00	1324,60	20
Pulida Solar Park	75	992,20	1415,50	20
Mulilo Prieska PV	75	985,00	1473,10	20
Total Solar PV	435			

Table 2: Solar PV projects.

Project name	Contracted capacity (MW)	Fully indexed price (R/MWh)	Partially indexed price (R/MWh)	Portion indexed (%)
Red Cap – Gibson Bay	110	664,0	970,0	20
Longyuan Mulilo De Aar 2 North Wind Energy Facility	60	952,20	1329,80	20
Nojilo Wind Farm	87	682,0	999,0	20
Longyuan Mulilo De Aar Maanhaarberg Wind Energy Facility	96	795,0	1157,0	20
Noupoort Mainstream Wind	79	771,0	1022,0	20
Loeriesfontein 2 Wind Farm	138	759,6	1127,0	20
Total wind	787			

Table 3 : Wind projects.

Project name	Contracted capacity (MW)	Fully indexed price (R/MWh)	Partially indexed price (R/MWh)	Portion indexed (%)
Xsina CSP South Africa	100	1650,0	1860,0	29
Karoshhoek Consortium	100	1629,50	2098,80	46
Total CSP	200			

Table 4: CSP projects.

Biomass

Table 6 gives details of the biomass project.

Analysis of the first three rounds

Table 7 shows the allocations in the first three rounds.

Allocation of both wind and PV is about 60%, in line with the program.

Price variation: bid window 1 to bid window 3

The variation in prices for wind and solar PV are given in Table 8 which shows indexed prices based on 2011 and 2013. The price for CSP in 2013 is based on 12 hours per day at the base price and five "peak" hours at a rate of 270% of the base prices. It is thus not possible to compare prices over the three bid windows for CSP.

Fig. 1 shows a graph of the price variations for solar PV and wind. Wind projects show an average price decrease of 42%, while solar PV shows a average price decrease of 68%. If the trends shown in this graph continue, the price of solar PV may well approach or fall below that of wind power in the future. Predictions from the market are that the price of solar PV will continue to decrease, and as the South African market matures this is likely to follow the trend. Solar PV has also made extensive inroads into the private generation market in the form of rooftop PV systems, a market not open to large wind or to CSP, although several large companies worldwide have installed wind turbines at their factories, and commercial applications of CSP are being developed. Once the market for domestic rooftop solar takes off in South Africa, solar PV will probably become the dominant renewable energy source.

It should be noted that prices bid are based on projections and not on actual experience of operating renewable energy systems in South Africa. Under those conditions it can be assumed that bidders have built healthy safety factors into their pricing, to account for the many unknown variations in conditions. It is only once systems have been operating for some time that we can expect to see prices aligning with the real situation, and this could result in either an upwards or downwards movement.

Local content variations

Table 9 shows the variation in local content over the three bid windows for wind, solar PV and CSP.



Fig. 1: Price variations for Wind and Solar PV from Window 1 to Window 3.

Project name	Contracted capacity (MW)	Fully indexed price (R/MWh)	Partially indexed price (R/MWh)	Portion indexed (%)
Johannesburg landfill gas to electricity	18	940,0	1 108,0	50

Table 5: Landfill gas project.

Project name	Contracted capacity (MW)	Fully indexed price (R/MWh)	Partially indexed price (R/MWh)	Portion indexed (%)
Mkuze	16	1399,99	1850,51	50

Table 6: Biomass project.

Technology	1st Window	2nd Window	3rd Window	Total MW	Remaining MW
Solar PV	632	417	435	1484	1041
Wind	634	563	787	1984	1336
CSP	150	50	200	400	200
Small hydro	0	14	0	14	121
Landfill gas	0	0	18	18	7
Biomass	0	0	16	16	43
Biogas	0	0	0	0	60
Total	1416	1044	1456	3916	2808

Table 7: Allocation of capacity in windows 1,2 and 3.

	Bid window 1	Bid window 2	Bid window 3
Wind			
Price fully indexed (Av. R/kWh base April 2011)	R1,143	R0,897	R0,656
Price fully indexed (Av. R/kWh base April 2013)	R1,284	R1,008	R0,737
Solar PV			
Price fully indexed (Av. R/kWh base April 2011)	R2,758	R1,645	R0,881
Price fully indexed (Av. R/kWh base April 2013)	R3,098	R1,848	R0,990
CSP			
Price fully indexed (Av. R/kWh base April 2011)	R2,686	R2,512	R1,460
Price fully indexed (Av. R/kWh base April 2013)	R3,017	R2,822	R1,640

Table 8: Price variations from window 2 to window 3.

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	Bid window 1	Bid window 2	Bid window 3
Wind			
Local content value	R2391-m	R1638-m	R5627-m
Local content	21,7%	36,7%	46,9%
Solar PV			
Local content value	R6261-m	R5727-m	R3698-m
Local content	28,5%	47,5%	53,8%
CSP			
Local content value	R2391-m	R1638-m	R5627-m
Local content	21,0%	36,5%	44,3%

Table 9: Local content per project type.

Progress with rounds 1 and 2

The first solar PV project from round 1 has been completed two months ahead of schedule and is already delivering power to the grid. A second project is expected to reach completion shortly. There is currently no news of wind projects ready to go.

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