

Powering traffic lights: where batteries may be a better solution

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The Johannesburg Roads Agency (JRA) is reviewing alternative energy sources to keep the city's traffic lights operating and intersections flowing during blackouts.

The use of solar-powered lights and lights running on ordinary UPS batteries are being considered. Johannesburg already has 15 intersections

that use battery power on a pilot basis, while one site uses solar power.

The agency did not disclose the identity of the bodies funding the 15 battery intersections or their location, but the solar intersection, it said, was funded by Sunrise Technologies at a cost of about R250 000. It is at the corner of Rissik and De Korte streets in the CBD.

Government has trumpeted solar-powered traffic lights as a partial

solution to the energy crisis, but critics say there is no need to use solar in this case because it is expensive and has to be imported with long lead times, while battery technology can do the job as well for a fraction of the cost.

"The cost for a large intersection on solar power could run close to a million [rand] where the same job could be done using a battery for R50 000," says Tim Frayne, who used

to co-own a precision engineering and solar system company. But Barry Breckenkamp of the Central Energy Fund (CEF) places the cost at about R100 000.

The cost of a solar intersection seems to vary drastically. The solar system in Cape Town cost R150 000 to set up, while the pilot in Johannesburg cost about R250 000.

Frayne says the equipment necessary for solar-powered intersections

is too cumbersome to be practical. "They're extremely unsightly and open to accidents and vandalism."

Conel Cassius Mackay, JRA spokesperson, says the roll-out of battery-backed lights was cheaper, but solar power would prove more consistent. "The constraint on using the current electricity [to charge a battery] is that it can run out — and then what?"

Breckenkamp says a UPS battery



that does not require a sub-station built at every intersection can run for three to five hours. "We hope that blackouts don't last that long, but they could go on for six hours."

The solar project powers an intersection as well as the lights in front of the Johannesburg Civic Theatre. The device is a 48m² bed of solar panels elevated 4m above the ground by two concrete pillars and is connected to the nearby intersections. The initiative has been running since December 3 last year. Mackay said it has not lost power yet.

Bredenkamp says the solution proposed by the CEF is the combined use of batteries and more reliable solar power for "critical intersections". He says there were places identified by the JRA and the municipality that they would like have had "done yesterday" — such as Grayston Drive in Johannesburg and Fountain Circle in Pretoria.

Mackay says the options are being weighed and there are no plans to fast-track any specific proposal soon. "We might end up with a combination of each if that's what works out best for the city."

Government is allowing tax credits of R400-million to encourage businesses to sponsor solar-powered traffic lights. A special dispensation from the South African Revenue Service allows a 150% write-off on investments in solar traffic lights.

More than R40-million in funding has been secured, says the CEF, which is promoting the initiative.

