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Localising the smart grid based on a South African context: A user centred approach to the micro-grid

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Abstract

Implementing a smarter grid for improved management and use of power is extremely important for the future and development of South Africa. Even more important is finding the best way to implement these grids in South Africa. A number of evolutions are expected, but ultimately the eventual solution will need to satisfy the requirements of the grid, while adhering to the relevant standards to result in a suitable solution for South Africa. It can therefore not be assumed that a solution which works successfully in another country will have the same results in South Africa. The economy, financial strength and technological maturity of South Africa are among the factors which are unique and will require an implementation tailored to fit South Africa and these factors. The architecture of the grid gives it structure. This report considers the architecture for implementing the grid in South Africa, employing a view which places more importance on the consumers. An existing architecture, the OPEN meter architecture, is identified and localised based on a South African context, and then validated using existing international frameworks which define characteristics that every grid architecture must have.