Smart grid protection system The Gambia

Will the Gambia be able to provide universal access to electricity?
The Gambia is poised to provide access to electricity for all its people. His Excellency, President Adama Barrow has stipulated that there is to be Universal Access by 2025. Given its unique geography, the country is fortunate in being able to achieve universal access almost exclusively through connections to the NAWEC grid.

What is the electricity system in the Gambia?
The existing electricity network in The Gambia consists of a number of separate 33 kV and 30 kV systemsfed from local power plants throughout the country. On-going projects are developing the transmission grid to interconnect these systems and establish interconnections with neighbouring systems.

Should MV grid be strengthened in the Gambia?
Reinforcement of the MV grid from Farafenni or via a cable across the river from Banjul are alternatives that may be considered if the western corridor does not present a viable solution. Transmission developments in The Gambia should be considered in relation to regional options.

What is a critical path to achieving universal electrification in the Gambia?
Critical path items are as follows: institutional strengthening,particularly NAWEC's 2019-25 Strategic Development Plan. Within the African continent,achieving universal electrification by 2025 will be a significant achievement in which The Gambia will be able to be justifiably proud.

Does the Gambia need more power generation capacity?
The Gambia's power sector will soon need additional generation capacityto be able to cover the forecast demand. A gap between available capacity and peak demand is identified from 2022 with the expiration of the Karpower contract and by 2025 nearly 140 MW of new capacity will be needed.

Should the Gambia import electricity from Senegal or Cote d'Ivoire?
The most important conclusion from the generation planning is that the least cost optionfor The Gambia is to import electricity from Senegal and/or Cote d'Ivoire. This conclusion is robust in all scenarios considered.

the smart grid protection system is shielded against false-data. injection attacks or command manipulations [5]. D E R 1. CB. R 2. R 1 1. R 1 2 R 1 3. R 2 2. R 2 1: R el a y. D E R 2. 02468 1 0 ...

Artificial intelligence (AI) based protection schemes may help to provide adequate answers to the smart grid"s protection challenges because of renewable integration and new technological adaptations. The adaptive ...

The Gambia"s energy sector is in the middle of a major transition. Since The Gambia entered a new political

chapter in 2017, electricity supply has been stabilized and villages in the North ...

Based on this, this paper discusses the system structure of the block chain, and puts forward the security diagnosis scheme of the smart grid according to the existing problems in the smart grid. Based on the theoretical basis of smart grid big data technology, this paper combines the grid data encryption process with the privacy protection ...

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The multi-agent system techniques can enable the power system to become smarter, reliable, self-healing, and robust. A Multi-agent System architecture suitable for smart grid applications was proposed by Shobole et al. [46]. In addition, the application of multi-agent systems in smart grid protection was reviewed.

The population of The Gambia is becoming increasingly urbanised and concentrated in and around the major cities of the Western region. Many homes and businesses here are reliant on back-up generators as the national grid system is current quite unreliable. The development of a smart grid system, initially in the Western region of

Artificial intelligence (AI) based protection schemes may help to provide adequate answers to the smart grid"s protection challenges because of renewable integration and new technological adaptations. The adaptive protection scheme is one of the advanced protection schemes which can provide reliable protection to the smart grid.

Research works done on Smart Grid protection techniques were reviewed and discussed. ... implemented adaptive current instantaneous trip protection does not provide the required protection in a micro-grid system. Hence, a new protection principle has been proposed. Specifically, the two-phase and three-phase short-circuit of the micro-grid are ...

There is a plethora of work which deals with the cybersecurity of wide-area measurement, protection, and control (WAMPAC) systems in the smart grid [10]- [15] but only a few deal with the ...

Understanding the protection needs is important for power system operators to know the reason why certain protection schemes cannot work on new and modern power systems as they seek ...

The smart grid performs a vital role that consists of a digital system, operational controls, automation, and computing resources which make the system perform two-way communication between the provider (such as electric suppliers/organizations) and consumers [20], as shown in Fig. 2.

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2021. According to a United Nations report, the world population will increase from 7 billion to 9 billion by 2050. Further, the water stress level is more than 70% in 22 countries while in another 31 countries it is between 25% and 70%.

Conference: Metering Africa 2001 Location: Accra, GhanaPresenter: Ousman NjieAbstract: In this paper Njie discusses the implementation of metering in Gambia including both operational and financial obsticles. In particular he focusses on water metering, domestic consumers, agricultural consumers, electricity mete

Fault detection and prediction in smart grid systems: 2018 [12] A survey on fault detection, isolation, and reconfiguration methods in electric ship power systems ... the actual operation time of protection systems is restricted to 70-80 milliseconds, including fault recognition, command transmission and line breaker switching time. Some ...

Abstract: This paper provides an overview on Protection, Automation and Control systems at Smart Grids. The aim is to analyze the state of art, challenges and barriers that protection ...

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