# Iot based smart grid system Vietnam

Can IoT technology be used in the smart energy grid?
Specifically, we focus on different IoT technologies including sensing, communication, computing technologies, and their standards in relation to smart energy grid. This article also presents a comprehensive overview of existing studies on IoT applications to the smart grid system.

Does Vietnam have a smart grid development roadmap?
Vietnam has been implementing the current Smart Grid Development Roadmap since 2012,following the Prime Minister's Decision No. 1670/QD-TTg dated 8 November 2012. However,as stated in this project TOR,the existing roadmap has not been updated to align with Vietnam's evolving policies and the significant growth in renewable energy sources.

Are IoT security vulnerabilities a major concern for smart grid systems?
This article also presents a comprehensive overview of existing studies on IoT applications to the smart grid system. Based on recent surveys and literature,we observe that the security vulnerabilities related to IoT technologies have been attributed as one of the major concernsof IoT-enabled energy systems.

What is a smart grid development roadmap?
Its primary output will be formulation of a Smart Grid Development Roadmap, covering the period up to 2030, with an extended vision to 2050. The goals of this roadmap are to enhance the quality and reliability of electricity supply and promote the efficient utilization of energy.

How to develop a smart grid?
Establishing a legal framework for the Smart Grid Development by reviewing, amending, and supplementing existing legal documents in the electricity sector; promulgating new documents related to development of renewable energy sources; and developing relevant technical standards and regulations. Load research and Pilot Demand Response Program.

Is Viet Nam ready for a transition from wholesale to retail?
The GIZ study has also introduced an additional index which is "Energy Market" to provide guidance for evaluation of Viet Nam's smart grid readiness for a transition from the current wholesale energy market stage to the anticipated retail market stage. More details of these Smart Grid Indexes are shown in the following figure.

Smart Grid and the Internet of Things (IoT) are riveting topics of the modern era. Integrating them makes it even more compelling. The power transmission process as a whole will increase its resiliency in consequence. And we will be one step closer to the era of Smart cities. This paper proposes a prototype of a Grid management system that converts any traditional Power Grid ...

delivery network. This article is of smart grid literature till 2011 on the enabling technologies for the smart grid. In this paper, three major system, are explored namely the smart infrastructure system, the smart management system and the smart protection system. Possible future directions are also proposed in each system.

IoT applications for smart grid through distributed energy plant meters: Quick and affordable wireless transfer of energy consumer information: 8 [53] GSM, ADC, Transformer sensor ... The subsequent exploration involves a breakdown of the components integrated into the circuit diagram of IoT-based smart energy management systems with PV Generation.

The internet of things is the widely accepted technology that connects everyday object to the internet for providing ease and various functionalities and the Smart Grid (SG) is defined as the power grid integrated with a large network of ICT. The Smart Grid is the combination of billions of smart appliances, smart meter, actuators and sensors etc.

Nevertheless the main challenge of SGs is the necessity for real-time tracing of all installed components within the grid via high speed, encyclopaedic and co-operative modern communication systems to facilitate full observability and controllability of various grid components (Yang, 2019)  contrast, Internet of things (IoT) is a network of physical devices that are ...

The system of smart networks mainly comprises IoT systems of various interconnected devices like smart phones, sensors, vehicles, home appliances and many more. Smart grid system is one of the sustainable energy management systems. The evolution of modern smart, automatic and two directional power grid systems is another reason [3 ...

Fig (1) :- Conventional Grid System SMART GRID SYSTEM The smart grid is decentralised system where power flows in both direction, from generation end to consumer end and vice versa. Smart grids are based on communication between provider and consumer. It is energy consumption monitoring and measuring system.

Smart building is a paradigm for controlling and monitoring electronic devices located in a building installation, interconnected through a complex data network [46, 47].The IoT, in turn, is a ...

4 ???· Suma N et al (2017) IOT based smart agriculture monitoring system. ... Study on performance and economic efficiency of solar power on agricultural land: a case study in Central Region, Vietnam. ... A novel adaptive fuzzy-based controller design using field programmable gate arrays for grid-connected photovoltaic systems. Advances in Smart Grid ...

This paper provides an overview of IoT-based energy management applications in smart grids. The deployment of IoT-based smart energy management in a smart grid has the potential to revolutionize the energy sector. Utilities can optimize energy use, balance the grid, incorporate renewable resources, improve dependability, and empower consumers to actively participate ...

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Monitoring and controlling energy use is critical for efficient power system management, particularly in smart grids. The internet of things (IoT) has compelled the development of intelligent ...

In this paper, a systematic literature review methods is used to collect and analyse related works on smart solid waste management systems.Literature has been compiled based on five major ...

The explosive development of electrical engineering in the early 19th century marked the birth of the 2nd industrial revolution, with the use of electrical energy in place of steam power, as well as changing the history of human development. The versatility of electricity allows people to apply it to a multitude of fields such as transportation, heat applications, lighting, ...

#2 IoT-based electric vehicle (EV) charging. Such IoT-based systems enable smart management of charging stations. These systems can adjust charging rates based on grid capacity and electricity pricing, provide real-time availability updates, and integrate with user apps for enhanced accessibility and usage tracking.

IoT Based Smart Greenhouse Framework and Control Strateg [1] ies for Sustainable Agriculture [2022] ... IoT enabled system to monitor and control greenhouse [2022] In this paper, the authors proposed a developed system merging power electronics and power systems, leveraging the gsm ... conventional grid electricity, thereby lowering operational ...

Advanced power systems are widely integrated with RERs-based smart grids to fulfill the rising demand for energy while maximizing the benefits of cost-effectiveness, environmental sustainability, and social profits [11, 12].Customers with the installations of RERs can fulfill their own energy needs and can generate significant revenue by selling out surplus ...

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