

## **A Strategic Approach to Enhancing National Security in Sri Lanka by Decentralizing Energy Production Through Domestic Solar Systems**

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Energy security can be defined as the capability to consistently power a society at an affordable cost without the risk of a sudden power loss. Energy security becomes vital for political stability, social stability, economic performance, and national security. As of August 2023, in Sri Lanka, electricity capacity stood at 61% from thermal power and 22% from hydropower, with the remainder from other renewable sources, all energy products based on a limited number of centralized power plants. The dependence on fossil fuels, which is rain-fed, has become unbearable today because of the ever-increasing fuel prices. Further, regional conflicts, climatic changes, economic sanctions, or tensions involving the suppliers interrupt imports and turn Sri Lanka into more expensive options, giving rise to a dangerous national security risk. Sri Lanka's centralized energy infrastructure, including its major power plants, oil pipelines, storage facilities, and electrical grids, is crucial for energy supply. Damage to facilities like the Norochcholai Coal Power Plant, especially during the dry season from natural disasters, operation failures, or security threats, can lead to widespread power outages, disrupting daily life and economic activities. Having the advantage of geographical positioning for solar energy, domestic solar systems would make Sri Lanka more secure nationally by decentralizing energy production. It reduces security vulnerability associated with centralized power plants and grid infrastructure by providing more resilient and reliable access to energy. Decentralized domestic solar systems reduce geopolitical tensions, global supply disruptions, vulnerability of military targets, and rapid recovery from natural disasters or sabotage. The methodology used for the study to analyse the impact of decentralized energy production in Sri Lanka using domestic solar systems included surveys, analysis of historical data, and technical and economic feasibility data collection. The outcomes are the recommendations for reduction of dependence on centralized power plants, increased energy independence, and evidence-based recommendations for improving national security.

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