

EVERSMART  
CITY



## GREENLIGHT GREENPAPER

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Investigated **5** methods of power storage and **5** sources of renewable energy to generate **2** megawatts of electricity.

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EverSmart City needs to have reliable access to electricity when its solar panels are not producing energy. A method of storing power to use overnight, as well as renewable sources of energy that don't rely on the sun, can address this challenge. This presented the opportunity to investigate suitable power storage options and innovative sources of energy.

Our research indicated that sodium-ion batteries would best suit EverSmart City's power storage needs, while distributed wind and solar water heating would supplement the solar panels in energy generation. The sodium-ion batteries are safe and effective at storing the generated electricity and can be scaled to meet EverSmart City's power requirements. The wind and solar hybrid system would allow for greater utilization of the site's renewable resources. Implementing solar water heating systems would be a method of reducing demand for electricity.

Our Key Performance Indicators display the success of the project.

1. Research **5** energy storage options that are compatible with the solar energy produced during the day ✓
2. Determine alternative power options to offset power usage overnight to ensure residents have temperature control, lighting when needed, and ability to use appliances ✓
3. Provide **5** total options to determine the top **3** final presentation scenarios, with **1** preferred option ✓

### **Benefits to Project Partner**

EverSmart City has new insights into how they can meet the demand for power in their project. Our solutions offer ways to store, generate, and reduce demand for energy. This will allow residents to reliably access utilities at all hours of the day with zero demand on the main electrical grid.

### **Benefits to Solutioneers**

As Solutioneers, we had the opportunity to conduct research into modern energy storage and generation options. The project allowed an inventive approach to meeting energy needs for a small population. We were able to present our options at the Solutioneer Showcase to EverSmart City and the GreenLight community.

### **BENEFITS TO THE COMMUNITY**

The greater community benefits from our research through reduced demand on non-renewable energy. Our solutions offer methods to power EverSmart City with only renewable sources, contributing to Sustainable Development Goal #7: Affordable and Clean Energy.

