



## Viridi reduces risk, improves production time to just 20 minutes for each unit

Global demand for battery storage is rapidly increasing as technological advancements have made it an option for both residential and commercial use cases. According to Bloomberg New Energy Finance (BNEF), energy storage installations will reach over one gigawatt-hour by 2030 and will require more than USD \$262 billion of investment, with about one quarter of installations to be located at homes and businesses.

Viridi is an early entrant, providing lithium-ion solutions to the construction and heavy industrial markets, but other applications include data centers, manufacturing, and medical and research facilities.

The company's products feature long cycle-life, a resilient physical design and self-contained architecture which is safe enough for it to be stored inside.

### Pioneering safety, efficiency, and sustainability in energy storage

Viridi's mission is to exemplify that safety, efficiency and sustainability can seamlessly co-exist. Their innovations aim to revolutionize energy storage and drive change that can benefit society. One prime example of their solution is providing reliable energy to schools that frequently experience blackouts.

Additionally, their technology ensures traffic lights remain operational during power outages, reducing the risk of accidents and easing the need for law enforcement resources to manage traffic flow.<sup>1</sup>

<sup>1</sup> Crowell, Chris. "Viridi: Nets Nearly \$100M for 'Fail-Safe' Lithium Ion Battery Tech in Funding Round." Solar Builder, 17 Jan. 2022. <https://solarbuildermag.com/batteries/viridi-nets-nearly-100m-for-fail-safe-lithium-ion-battery-tech-in-funding-round/>



**Automation battery storage units, each with 270 modules**



**Complex safety concerns, including fire hazard**



**Reduced production time to just 20 minutes, from 2 hours**

## Customer Story

# Viridi



## Our approach

Automating manufacturing lines can be complex due to factors such as electrical and safety concerns, industry standards, and various operational procedures. Eclipse Automation leverages decades of experience in vertical integration to address the most challenging automation problems. Our unique methodology consists of four stages: **Evaluate, Plan, Activate, and Maintain**. Together, they are designed to enhance safety, efficiency, agility, and innovation.

We begin by thoroughly assessing projects with a focus on business needs and existing processes. Our team of experts then identifies the most suitable solutions and develops a strategic roadmap that addresses engineering, safety, and compliance with industry standards. Once the right solution has been identified, we implement them and establish a sustainable framework for long-term success.

In collaboration with Viridi, Eclipse Automation was able to thoroughly understand the automation requirements, including production processes and volume objectives. With this knowledge, we were able to recommend some slight product enhancements to create a highly efficient automation solution for the client.

## Tackling complex automation

Viridi's battery storage units are comprised of more than 270 modules; each module has 16 smaller batteries approximately the size of a C- or a D-size battery. To ensure proper functionality, the modules need to be connected, while the wires remained live, as they are linked to live batteries. Our solution leveraged expertise from three North American locations, including Canada and the United States, to develop a complex automation unit capable of tackling this challenge.

The solution was intricate due to the need for the machine to scan the modules, validate the position of the terminals, and off-set the position and trajectory of the component installation.

The machine had to insert a spacer between the modules to maintain consistent spacing, followed by installing a nut and bolt to connect the units.

While performing these tasks, it was critical to hold the wires in place, otherwise the live wires could potentially cause a fire or injury. The machine had to work in a relatively confined space, executing relatively small but precise movements while still delivering the strength to properly torque the nut and bolt combination.



## The outcomes

Our teams developed a sophisticated, custom solution that blended minor product optimizations with an advanced automation solution to transform the production process and deliver outstanding results.

The results were significant. Before automation, assembling a single battery unit took approximately two hours. After the implementation of automation, that time was reduced to just 20-25 minutes. This incredible time reduction allowed the company to comfortably meet production targets, lower production costs, and unlock significant value.

Ready to get started?



Contact us today to see what's possible.

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