## Raspberry Pi:

**Versatile & Compatible**

Raspberry Pi supports various communication protocols such as UART, I2C, and SPI which are necessary for interacting with BMS hardware. It also has General-Purpose Input-Output pins that enables interfacing with external hardwares, such as sensors, controllers, and BMS components.

**Ease of Development**

Raspberry Pi runs on a Linux-based OS (such as Raspberry Pi OS) and supports Python, making it easy to develop, test, and deploy applications.

Its wide support for libraries such as pyserial, python-can, and sqlite3 enables the team to efficiently handle communication, data processing, and storage.

**Energy Efficiency**

The Raspberry Pi consumes relatively low power, which aligns well with the renewable energy focus of the project, ensuring the system remains energy-efficient.

**Networking and IoT Capabilities**

Built-in Ethernet and Wi-Fi support allow for potential remote monitoring and data transfer capabilities, which could enhance the project's usability and scalability.

**Proven Use in Similar Applications**

Raspberry Pi has been successfully used in many projects involving battery management, renewable energy systems, and IoT applications, making it a reliable choice.