

Objectives

- Aid Leon County in increasing renewable generation capacity by 30% by 2030.
- Reduce kWh usage by 2% resulting in a net 30% reduction by 2030.
- Increase public awareness of renewable energy.
- A detailed report entailing all research and efforts that motivate and support the design including load and economic analysis, and design sets for prototyping.

Vendor Data

Big Belly Trash Compactor (Fig. 2)

- Wi-Fi Capable
- Covered Maintenance
- Custom wrapping
- Cost : \$200 - \$400 /month
- Uses 40W panel

Enerfusion Charging Station (Fig. 3)

- Wi-Fi Capable
- Picnic tables with covered canopy
- 4 USB and 4 GFI outlets
- Cost: \$14,174.59
- Uses three 65W panels and one 100W panel

Site Location (Tallahassee, FL)

J. Lewis Hall Woodville Park

1. High Accessibility and Utility
2. High Sunlight Penetration
3. High Savings Potential



Fig 1: Site area of the park



Fig. 2



Fig. 3

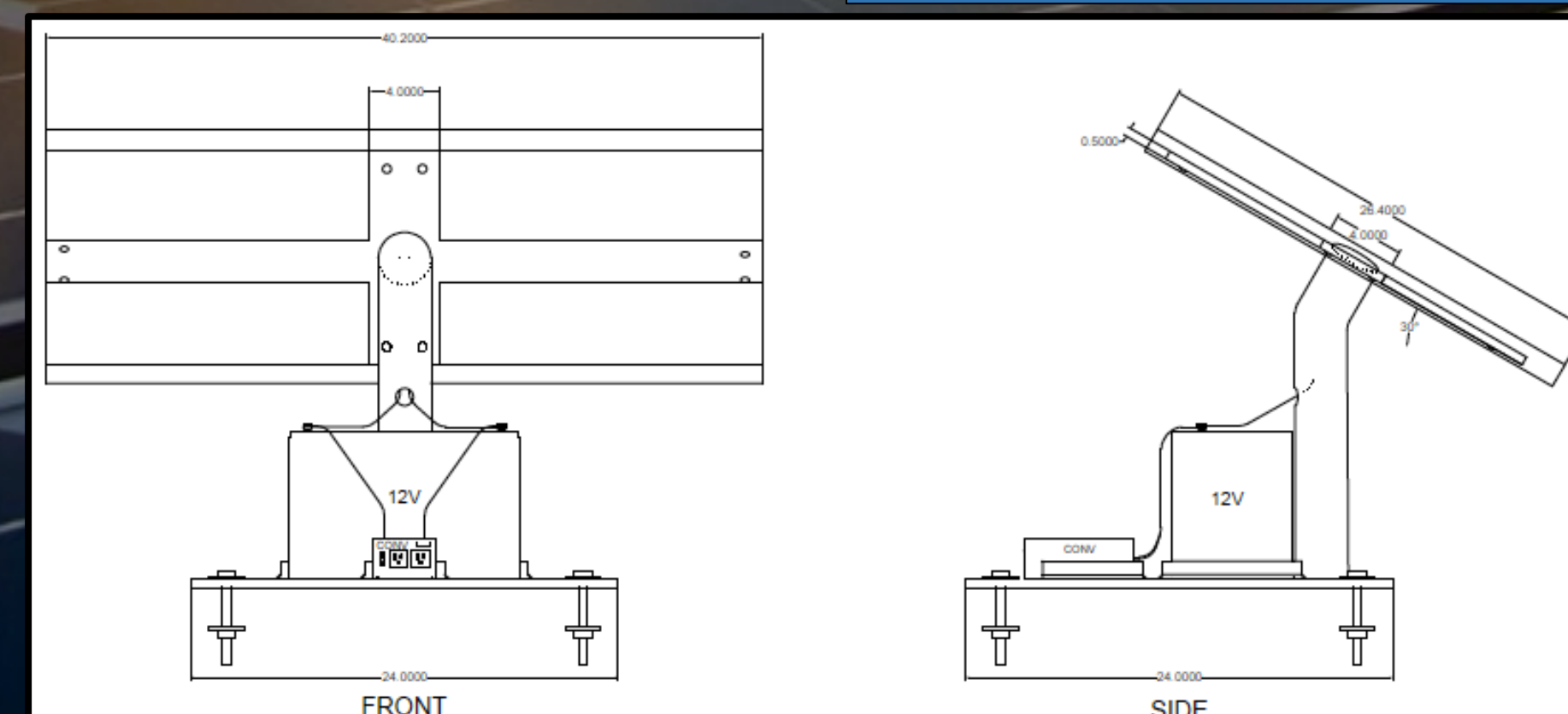
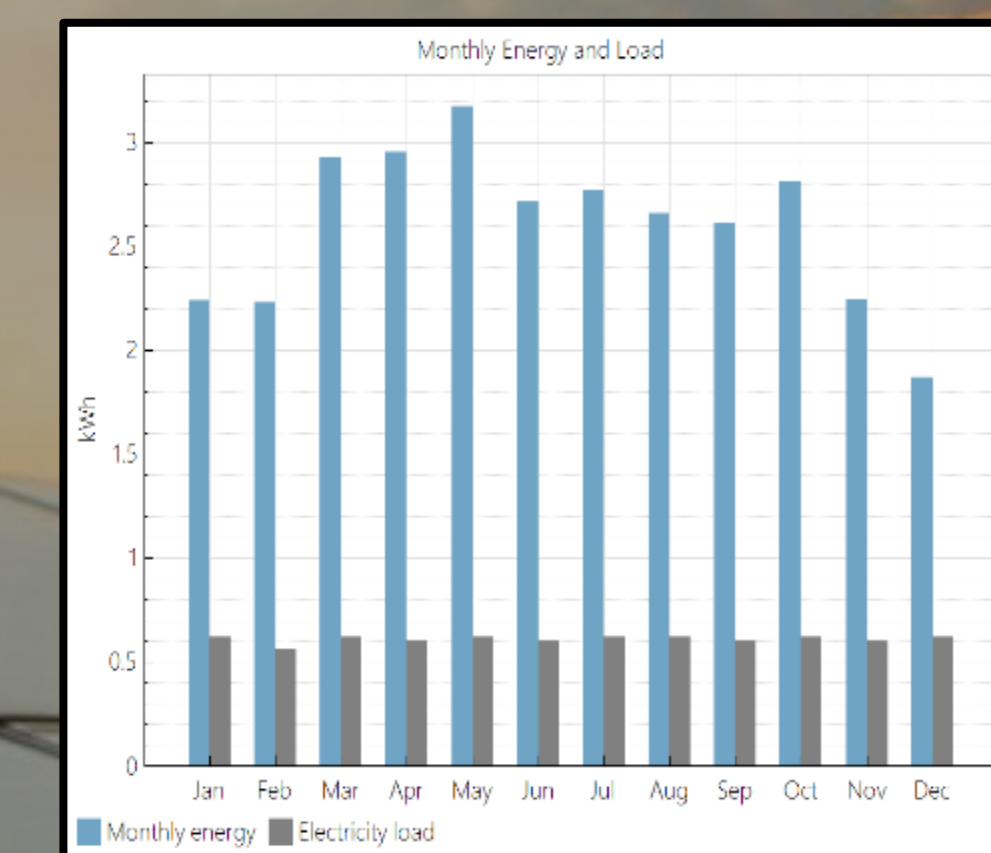
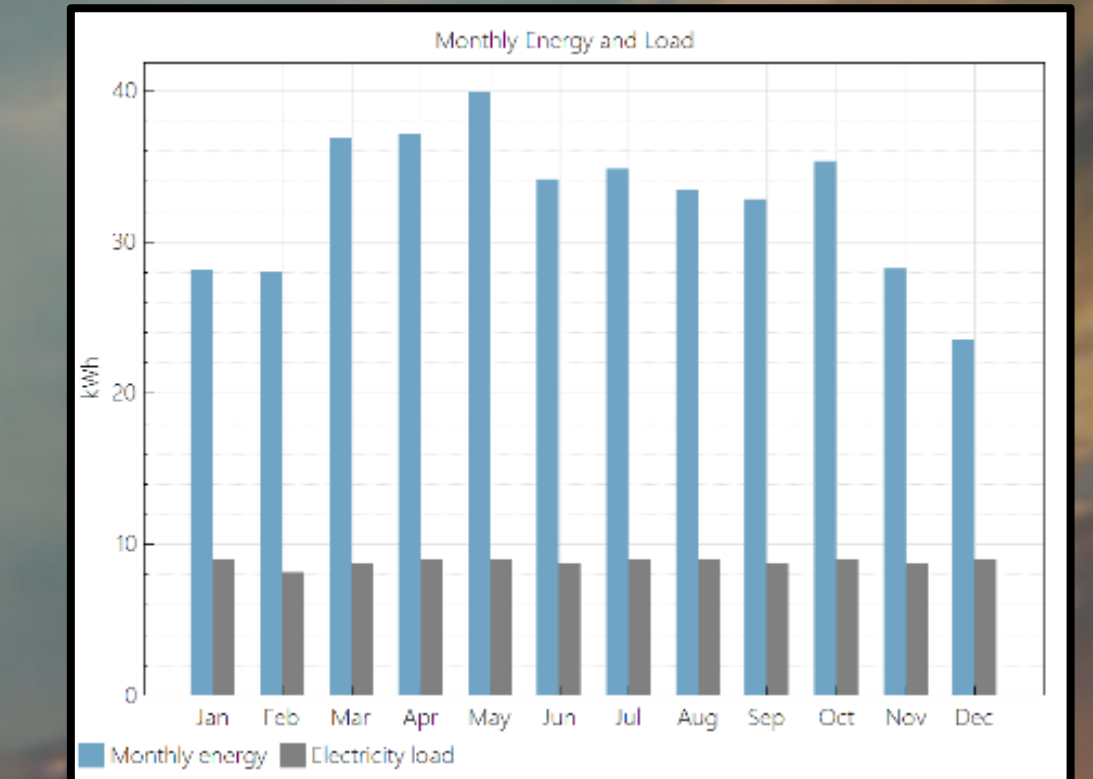
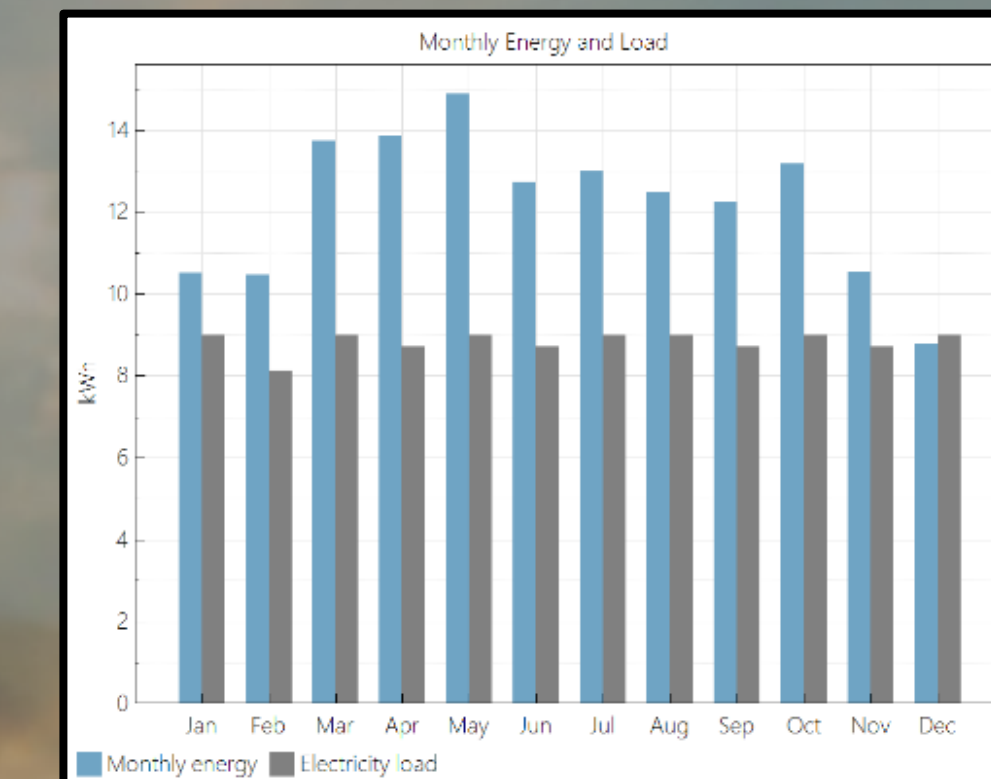


Fig. 4

System Advisory Models (SAM)

Key: **Blue:** Monthly Energy, **Gray:** Electricity Load



Graph 1 (Top Left):
Prototype

Graph 2 (Top Right):
Enerfusion

Graph 3 (Bottom Left):
Big Belly

Prototype Specs (Fig. 4)

- 1 **Nature Power** Panel Kit
- 1 **Renogy** Hybrid GEL battery
- 1 **GRAINGER** Aluminum Plate
- 1 **Rigid** Aluminum Conduit
- 4 **Hillman** Hex Bolts, 4 **Hillman** Hex Nuts
- 8 **Hillman** Washers
- 2 **Aluminum Bar** Aluminum Rectangle Bars

*Vendor/Supplier in bold * Further details in Bill of Materials