SWARM
Small Workplace Automation & Remote Monitoring

Energy Manager Module
For Buildings With Energy Metering

**Inputs**
- Energy Metering Data
- SWARM HVAC Data (Pelican)
- Building Plans/Nameplates

**HVAC Data**
- HVAC Runtime
- HVAC Load

**Daily Total Energy**

**Daily Baseload Energy**

**Pre-SWARM Baseline Period**
- Average Baseload for Weekday/end (since SWARM start)

**Post-SWARM Period**
- Estimated Daily HVAC Energy
- Estimated Daily HVAC Energy

**Separate into Bins for Months/Weekday**
- Weather Normalize to Baseline with Degree Days/Bin

**Annual Energy Savings/Bin**
- Get Percent of Annual Energy Use/Bin
- Get Percent Energy Savings/Bin

**Outputs**
- Annual Energy Savings
- Estimated Daily HVAC Energy
- Average Baseload for Weekday/end (since SWARM start)
For Buildings Without Energy Metering

Inputs:
- SWARM HVAC Data (Pelican)
- Building Plans/Nameplates
- HVAC Run Time
- HVAC Load

Daily HVAC Energy (since SWARM start)

Separate into Bins for Months/Weekday

Model Energy Use in Empty Bins

Model Energy Savings after Metered Buildings

Annual Energy Savings/Bin

Post-SWARM Period

Percent of Annual Energy Use/Bin

Percent Energy Savings/Bin

Average for All Buildings With Meters

If Less than a Full Year of Data

Estimate Annual Energy Use

Annual Energy Savings

All Bins