

Energy Monitoring

Overview

Energy monitoring is multi-layered: **Emporia Vue** provides granular circuit-level monitoring across 12 household circuits, **CO2 Signal** (Electricity Maps) provides real-time grid carbon intensity for Ontario, and the **Ontario Energy Board** integration provides local energy tariff data.

Emporia Vue

Integration: `emporia_vue` (HACS) | **Account:** Customer 233316 | **Device:** VUE003 (Vue3-812 firmware)

The Emporia Vue whole-home energy monitor is installed on the main panel. The system uses a single VUE003 unit with multiple CT clamp circuits.

Monitored Circuits

Circuit	Device Name	Area
Main Panel (whole home)	Cornell Vue	(unassigned)
Main Floor Plugs	Main Floor Plugs	Living Room
Hot Water Heater / HRV	Hot water Heater/HRV	Basement
Furnace	Furnace	Basement
AC	AC	Basement
2nd Floor Plugs	2nd Floor Plugs	Media Room
Washer	Washer	Laundry Room
Kitchen Appliances	Kitchen Appliances	Kitchen
Microwave	Microwave	Kitchen
Stove	Stove	Kitchen
Fridge	Fridge	Kitchen

Circuit	Device Name	Area
Kitchen Plugs	Kitchen Plugs	Kitchen
Kitchen Plug	Kitchen Plug	Kitchen
Dishwasher	Dishwasher	Kitchen
Dryer	Dryer	Laundry Room
Balance (remaining)	Balance	(unassigned)
Third Floor Plugs	Third Floor Plugs	Office
Main Floor Lights	Main Floor Lights	Living Room

“ The Kitchen has the most granular monitoring: 7 individual circuits (appliances + plugs).

Key Entities

Each Emporia circuit exposes power (`sensor.*.power`) and energy (`sensor.*.energy_today`) sensors.

Notable:

- `sensor.cornell_vue_energy_today` — daily whole-home energy usage
- `sensor.ac_power` — HVAC power draw
- `sensor.furnace_power` — heating power

CO2 Signal (Electricity Maps)

Integration: `co2signal` | **Device:** Electricity Maps

Provides real-time electricity grid carbon intensity data for the Ontario grid region.

Entity	Notes
<code>sensor.electricity_maps_*</code>	Grid carbon intensity (gCO2eq/kWh)

Useful for automations that shift non-essential loads to low-carbon grid hours.

Ontario Energy Board

Integration: `ontario_energy_board` (HACS) | **Authors:** jrfernandes, n3rdp1um23

Provides Ontario Time-of-Use (TOU) electricity pricing data:

- On-peak, mid-peak, off-peak rate selectors
 - Schedule-aware — useful for automations that avoid running high-draw appliances during on-peak hours
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Notes / Gotchas

- The Emporia Vue uses a cloud API — if Emporia cloud is down, data will be unavailable. Historical data is stored in HA's recorder database.
- For long-term storage and visualization, Emporia data flows into **InfluxDB** (add-on) and is visualized in **Grafana** (add-on).
- The HA Energy dashboard can be configured to use `sensor.cornell_vue_energy_today` as the grid consumption source.

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