

CAVALRY BESS 101

ADAM FAUTH

MANAGER, SOLAR & BESS OPERATIONS AND MAINTENANCE

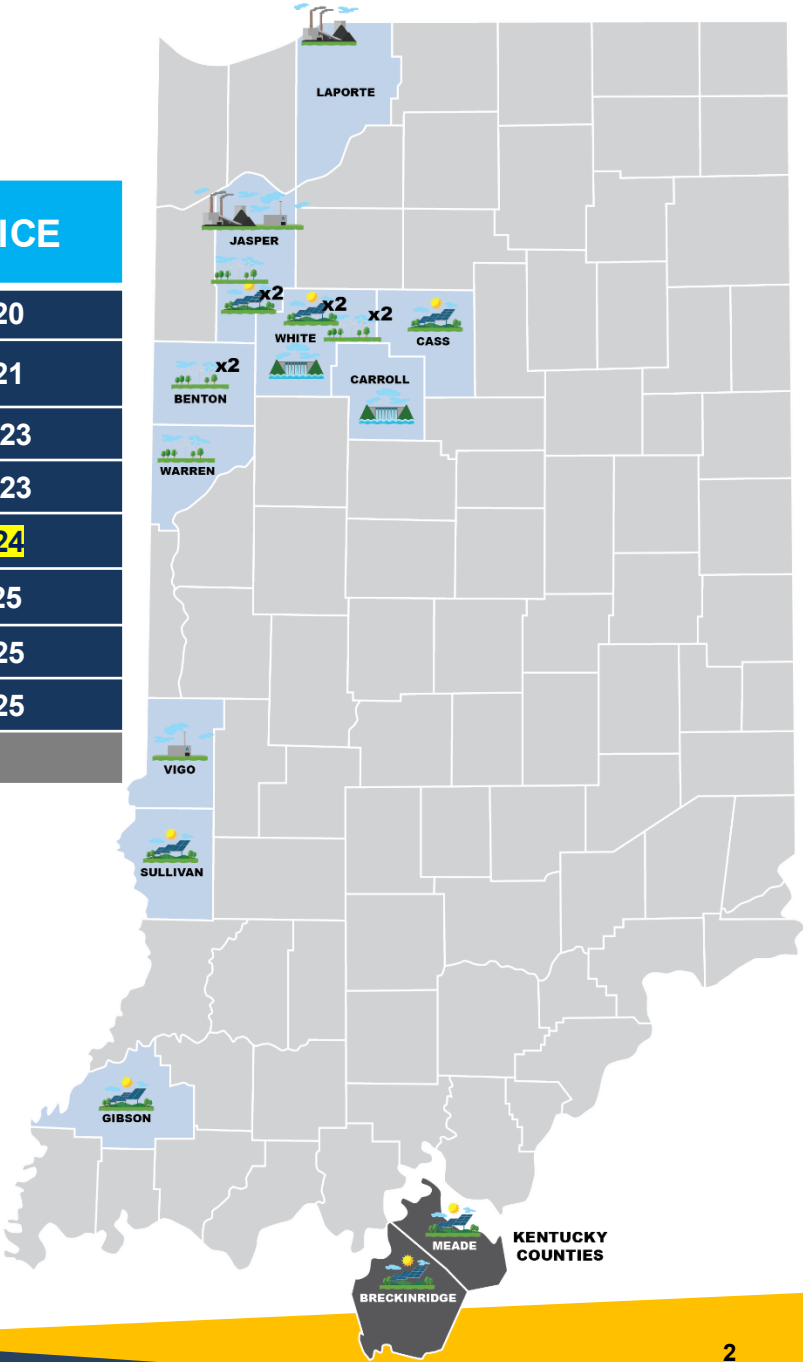


NIPSCO RENEWABLE PORTFOLIO

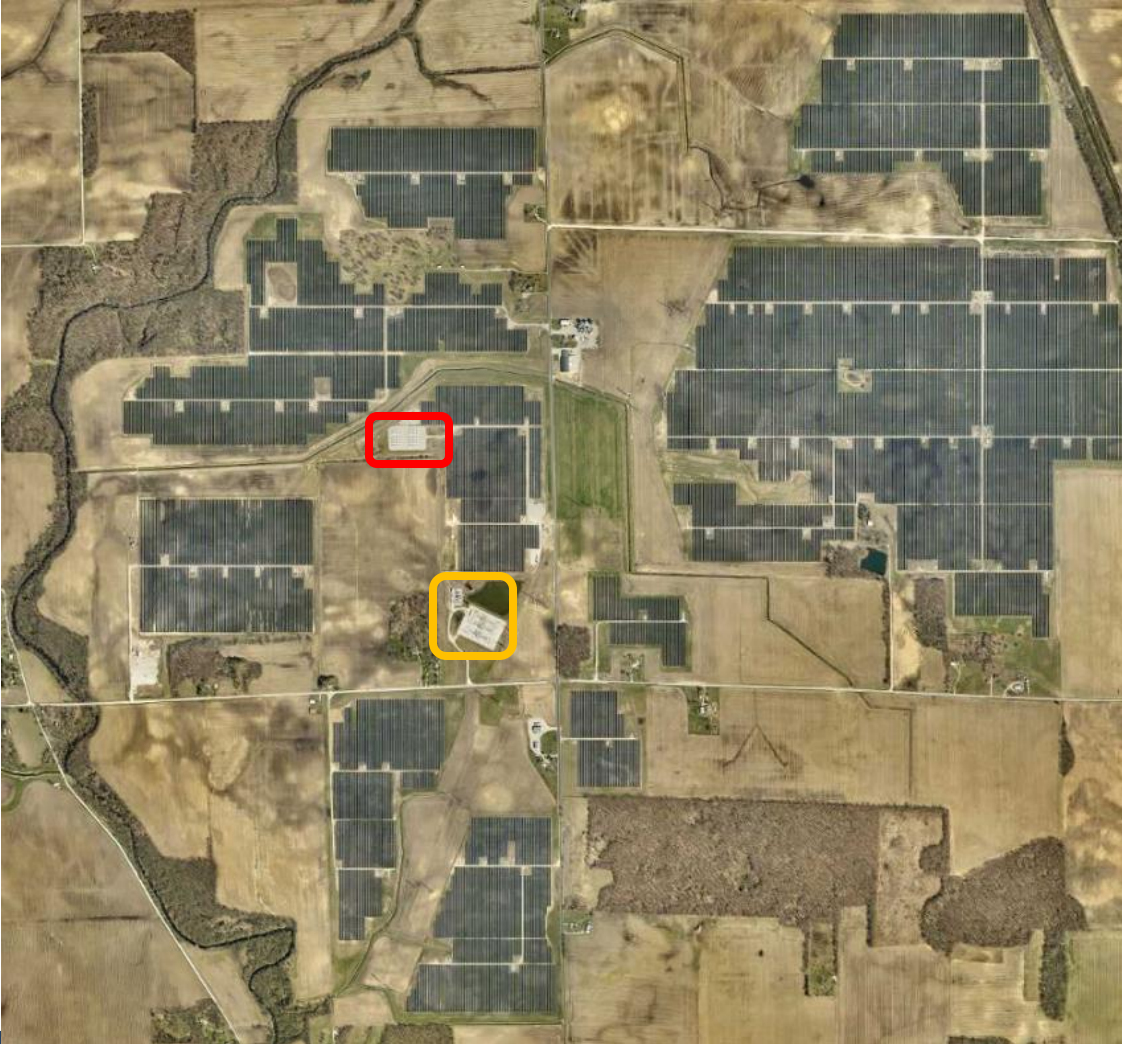
NEW GENERATION FACILITIES	INSTALLED CAPACITY (MW)	COUNTY	IN SERVICE
ROSEWATER WIND	102 MW	WHITE	DEC 2020
INDIANA CROSSROADS WIND I	302 MW	WHITE	DEC 2021
DUNNS BRIDGE SOLAR I	265 MW	JASPER	JUNE 2023
INDIANA CROSSROADS SOLAR	200 MW	WHITE	JUNE 2023
CAVALRY SOLAR	200 MW + 45 MW BATTERY	WHITE	MAY 2024
DUNNS BRIDGE SOLAR II	435 MW + 56.25 MW BATTERY	JASPER / STARKE	JAN 2025
FAIRBANKS SOLAR	250 MW	SULLIVAN	MAY 2025
GIBSON SOLAR	200 MW	GIBSON	AUG 2025
STAND ALONE BESS - TBD	400-500 MW	TBD	TBD

IN SERVICE

DEVELOPMENT



CAVALRY SOLAR AND STORAGE – SITE GENERAL ARRANGEMENT



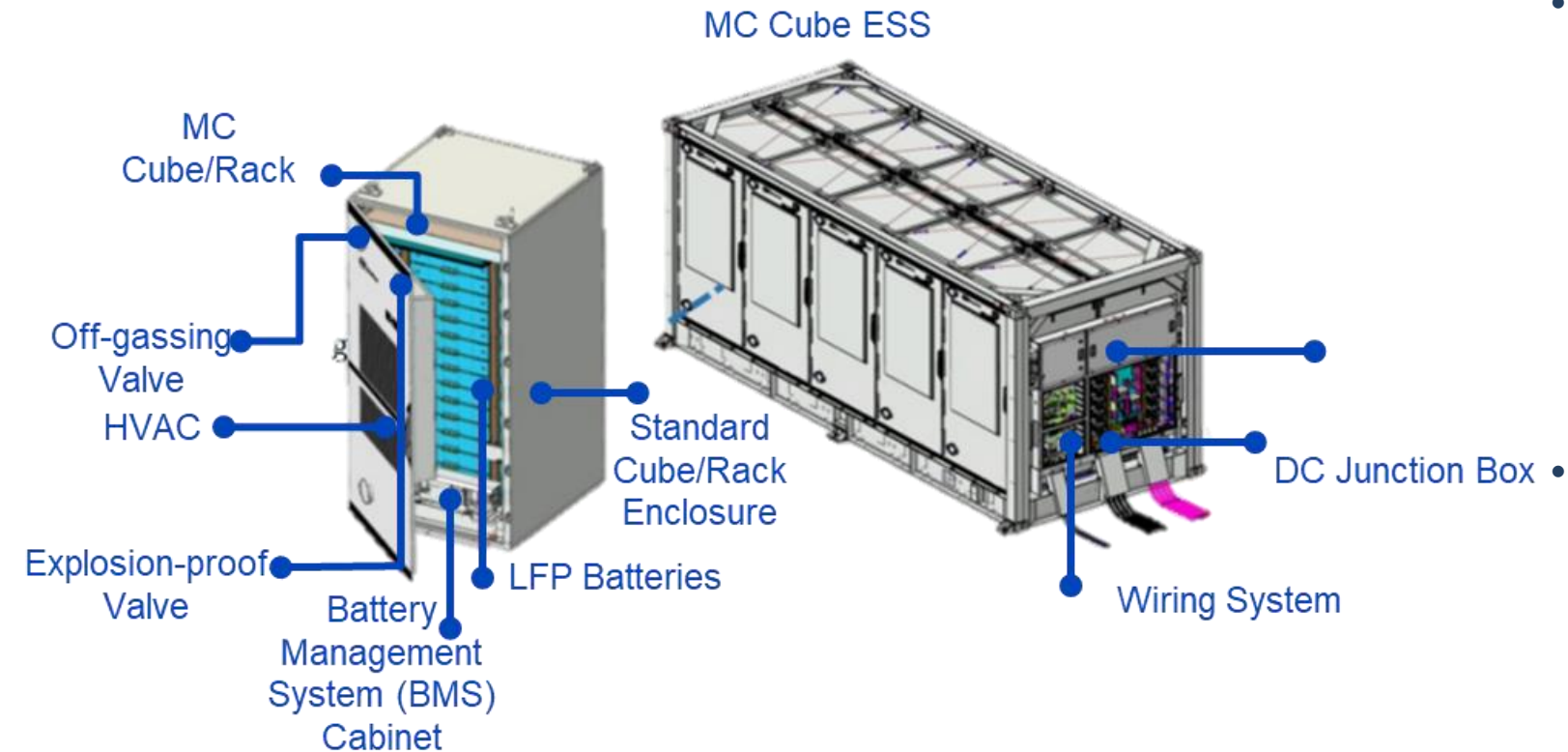
- **COMMERCIAL OPERATION ACHIEVED MAY 2024**
- **CO-LOCATED 200MW PV AND 45MW BESS**
- **SHARE A SUBSTATION**
- **1,100 ACRES UNDER PANEL**
- **SINGLE POINT OF INTERCONNECT**
- **OPERATIONS – MISO**
 - Arbitrage
 - Ancillary Services
 - AC Coupled

CAVALRY SOLAR AND STORAGE – BESS GENERAL ARRANGEMENT



- 42 Battery Containers (Blue)
- 14 Central Inverters (Red)
- 2 Aux Transformers with Switchgear (Green)
- ~3 acre footprint

CAVALRY SOLAR AND STORAGE – BATTERY CONTAINERS

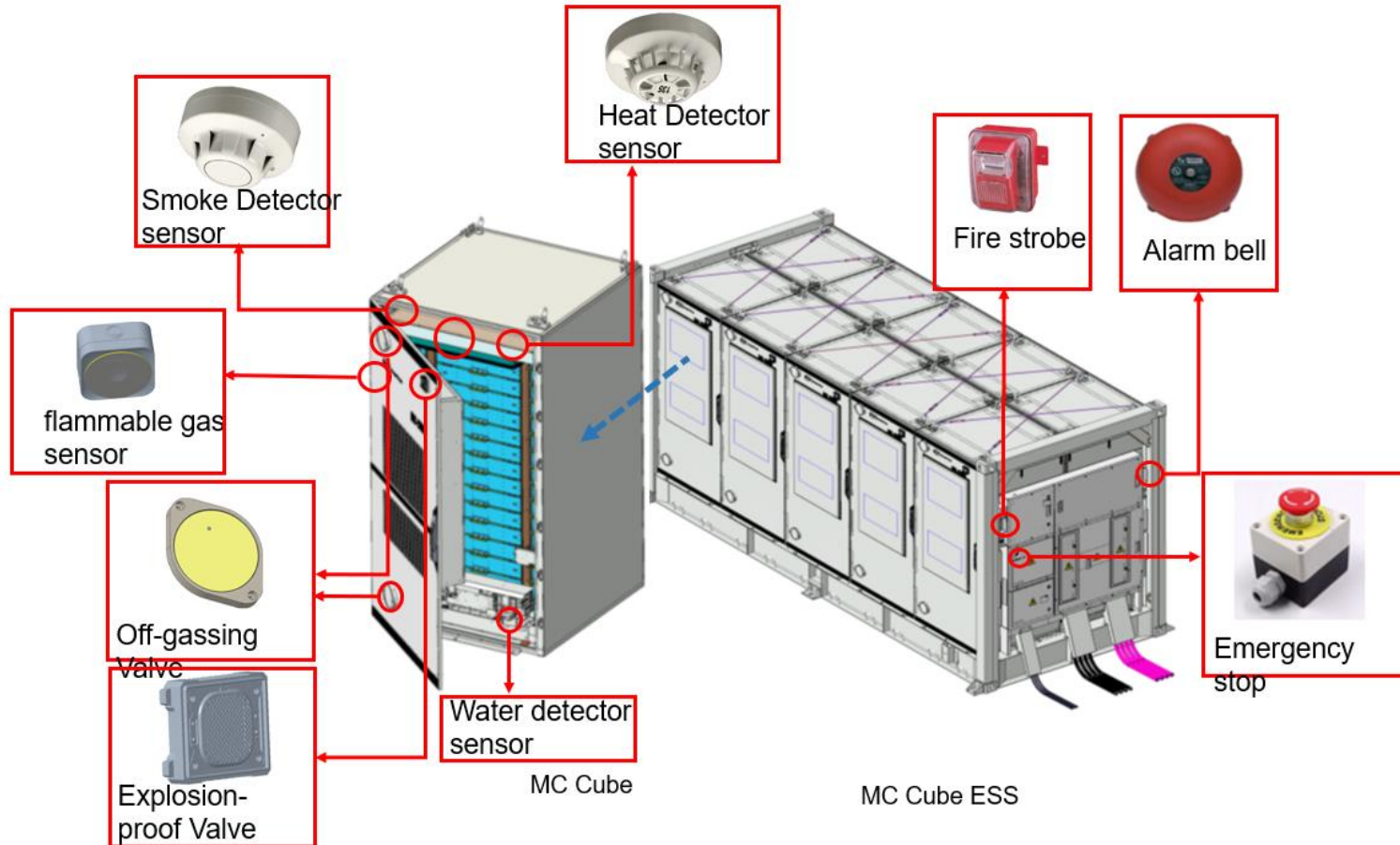


- **42 Battery Containers**
 - **Each Container consists of:**
 - **10 Modular “Cubes”** of self-contained batteries, HVAC and BMS
 - **~500kWh** each cube
 - **Air Cooled**
 - **Noise: $\leq 75\text{dBA}$**

Battery Specs

- **Lithium Iron Phosphate (LFP)**
- **Cell specs– 3.2v @ 403ah**
- **Cells in series per Cube – 416**
- **Protection for over temperature, over-voltage, over current, and min voltage.**
- **Charge/discharge rates 100-200A**

CAVALRY SOLAR AND STORAGE – BATTERY CONTAINERS – SAFETY INCLUSIONS



- Each Cube contains:
 - Smoke and Heat Sensors
 - Flammable Gas Sensor
 - Off-gassing Valve
 - Water detection sensor
 - Fire Strobe
 - Audible Alarm
 - E-Stop
- Emergency Response
 - Formal emergency action plan
 - Annual Awareness/response training with EMS
 - Defensive Response

CAVALRY SOLAR AND STORAGE – CENTRAL INVERTERS



- **14 Central Inverters**
 - **Each Inverter consists of:**
 - **DC BUS – 1500Vdc**
 - **Inverter Modules**
 - **MV Transformer**
 - **Dry**
 - **MV Switchgear**
 - **AC BUS – 34.5kVdc**
- **Inverter Specs**
 - **Max Output – 4.2MVA**
 - **Efficiency – 98%**
 - **4 Modules per Inverter**
 - **Air Cooled**

Construction Pictures

