Industrial/Commercial Energy Asset Mgmt.
ABB OPTIMAX Reference Architecture
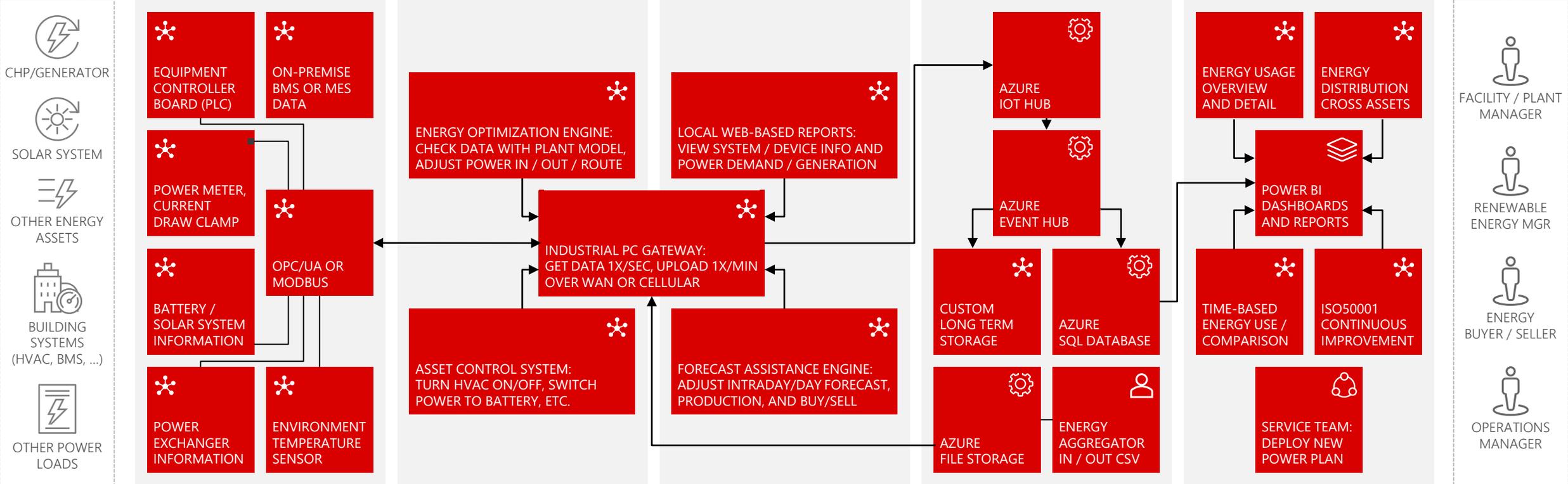
ABB

System Integration	Energy Optimization	Energy Forecasting	Cloud Services	Mgmt. Experience
Our solution integrates operational data from all your energy assets and power loads and analyzes it against your power plan and goals.	Energy optimization algorithms review each asset against the plan and come up with recommended changes to loads and planning.	Production/use data is merged with info from aggregators in reports that help you accurately adjust intraday and day forecasts.	Microsoft's Azure cloud provides a scalable, resilient, secure platform for your operational data and for our solution components.	Your team uses Power BI to review energy assets and production, improve efficiencies and meet continuous improvement req's.

Left side assets:
- CHP/GENERATOR
- SOLAR SYSTEM
- OTHER ENERGY ASSETS
- BUILDING SYSTEMS (HVAC, BMS, …)
- OTHER POWER LOADS

System Integration components:
- EQUIPMENT CONTROLLER BOARD (PLC)
- ON-PREMISE BMS OR MES DATA
- POWER METER, CURRENT DRAW CLAMP
- OPC/UA OR MODBUS
- BATTERY / SOLAR SYSTEM INFORMATION
- POWER EXCHANGER INFORMATION
- ENVIRONMENT TEMPERATURE SENSOR

Energy Optimization components:
- ENERGY OPTIMIZATION ENGINE: CHECK DATA WITH PLANT MODEL, ADJUST POWER IN / OUT / ROUTE
- INDUSTRIAL PC GATEWAY: GET DATA 1X/SEC, UPLOAD 1X/MIN OVER WAN OR CELLULAR
- ASSET CONTROL SYSTEM: TURN HVAC ON/OFF, SWITCH POWER TO BATTERY, ETC.

Energy Forecasting components:
- LOCAL WEB-BASED REPORTS: VIEW SYSTEM / DEVICE INFO AND POWER DEMAND / GENERATION
- FORECAST ASSISTANCE ENGINE: ADJUST INTRADAY/DAY FORECAST, PRODUCTION, AND BUY/SELL

Cloud Services components:
- AZURE IOT HUB
- AZURE EVENT HUB
- CUSTOM LONG TERM STORAGE
- AZURE SQL DATABASE
- AZURE FILE STORAGE
- ENERGY AGGREGATOR IN / OUT CSV

Mgmt. Experience components:
- ENERGY USAGE OVERVIEW AND DETAIL
- ENERGY DISTRIBUTION CROSS ASSETS
- POWER BI DASHBOARDS AND REPORTS
- TIME-BASED ENERGY USE / COMPARISON
- ISO50001 CONTINUOUS IMPROVEMENT
- SERVICE TEAM: DEPLOY NEW POWER PLAN

Right side roles:
- FACILITY / PLANT MANAGER
- RENEWABLE ENERGY MGR
- ENERGY BUYER / SELLER
- OPERATIONS MANAGER

Legend:
- ✳ Partner component
- ⬡ Solution Builder component
- ⚙ Azure service
- ▱ Microsoft product
- 👤 Customer component