PG&E's 2009 Participating Load Pilot

Overview

- Regulatory
- Pre-implementation
- Lessons
- Next Steps

Procedural History: 2008

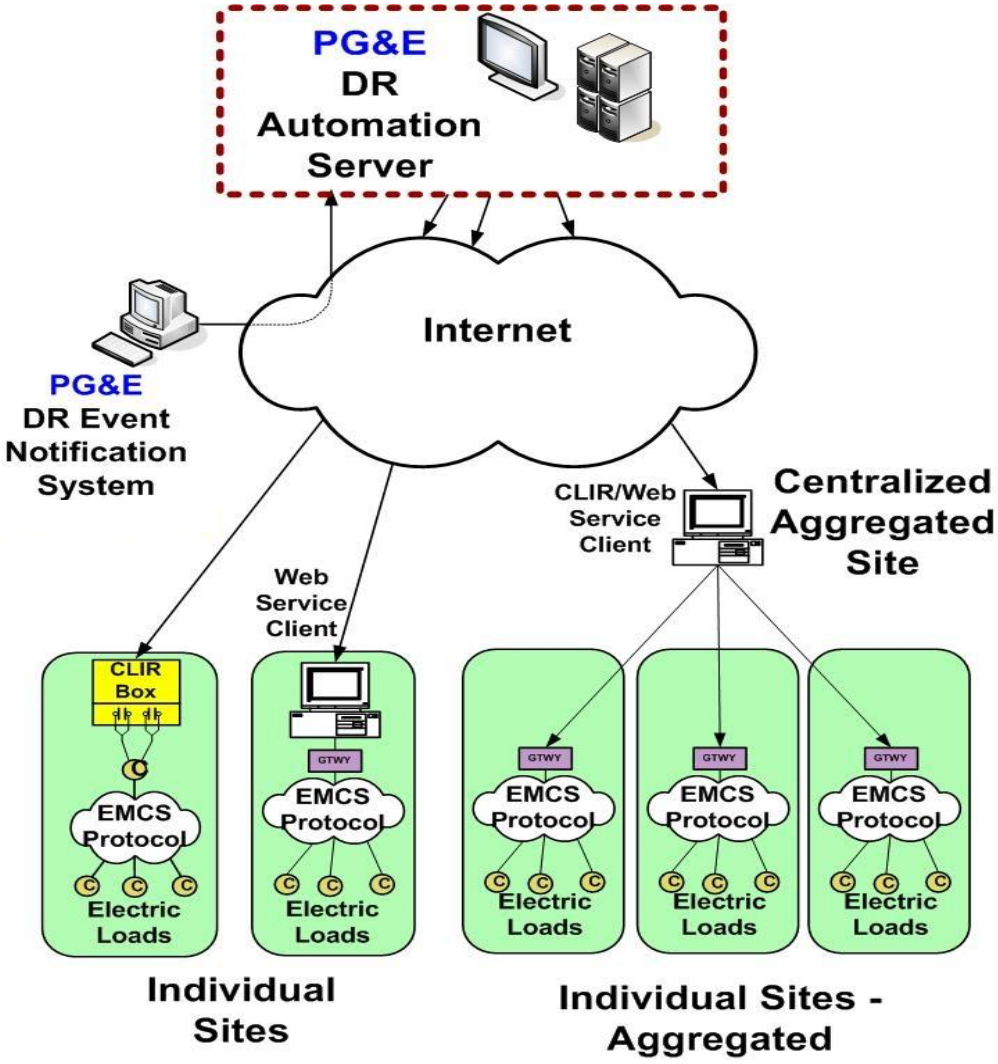
February	ALJ Hecht guidance on 2009–2011 DR application
June	IOUs file 2009–2011 DR activities and budgets
August	IOUs asked to provide supplemental information
December	CPUC grants funding

Participating Load?

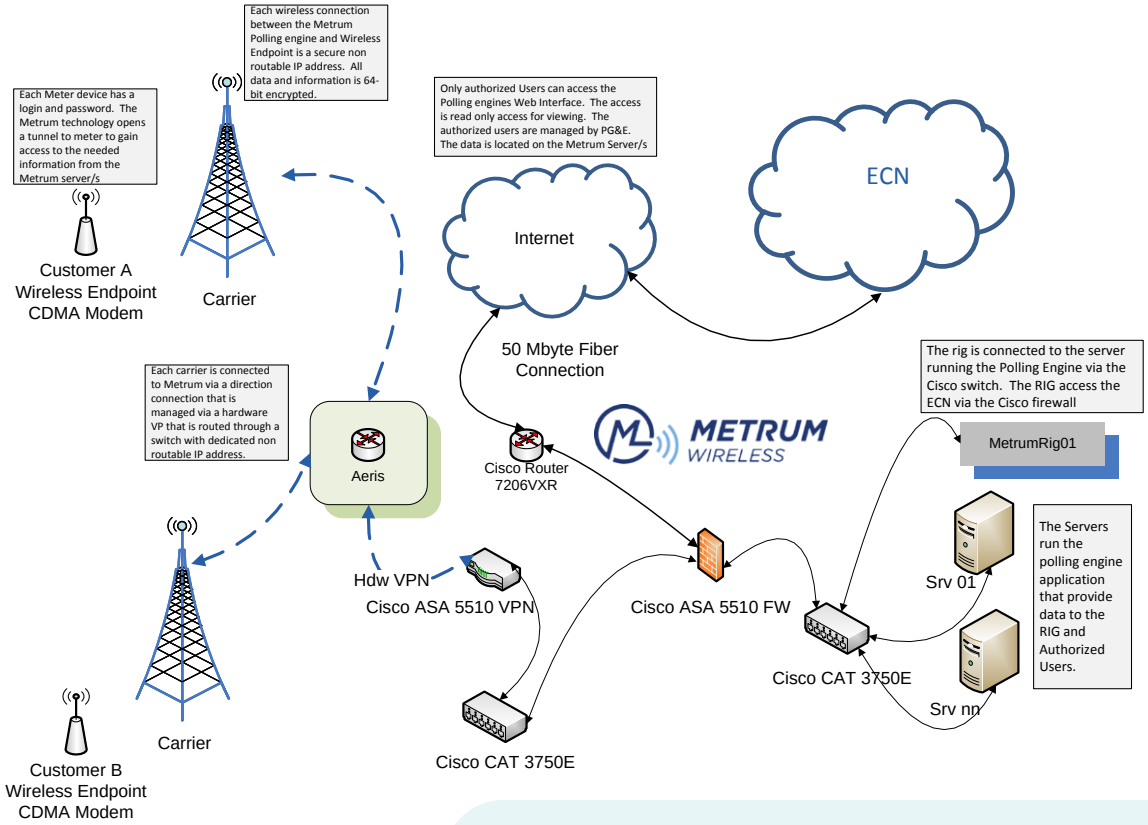
- CAISO vehicle that allows load resource to:
  - participate in the wholesale market
  - offer ancillary service, energy products
- Load resource must be **scheduled daily on an hourly basis,** even without the DR load reduction
  - separated from overall load schedules
- Must meet all CAISO technical specifications

Pre - Implementation

- Customer recruitment
  - Retail (HVAC), Industrial (Process), Local Gov. Office (HVAC)
  - Auto-DR enabled
  - No co-generation or back up generation
- Setup node points in CAISO's EMS and Full Network Model (FNM) database



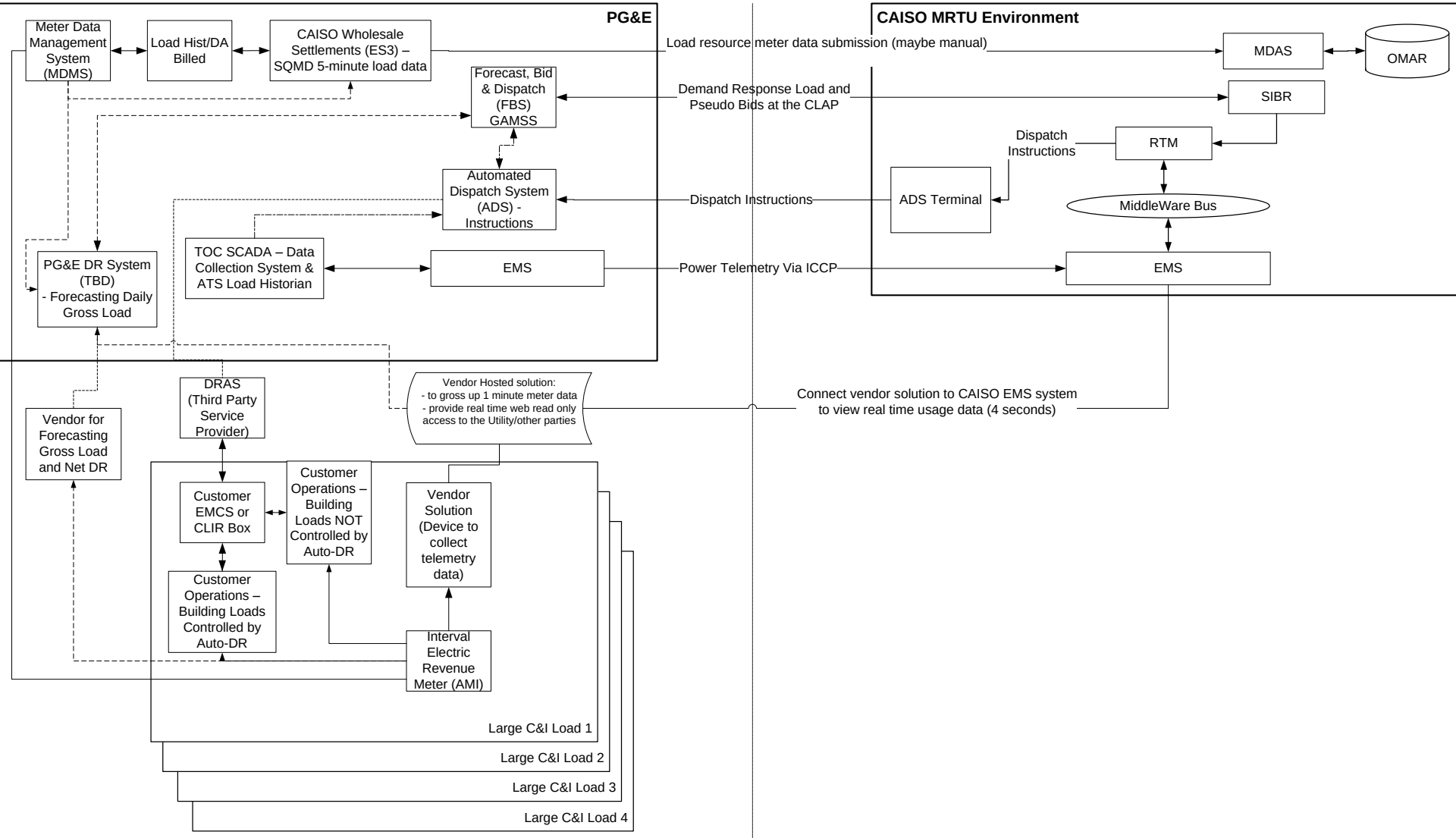
Pre - Implementation



- Metrum Technologies: sub 4-second data
- Feedback mechanism at one site
- CAISO certification as non-spinning

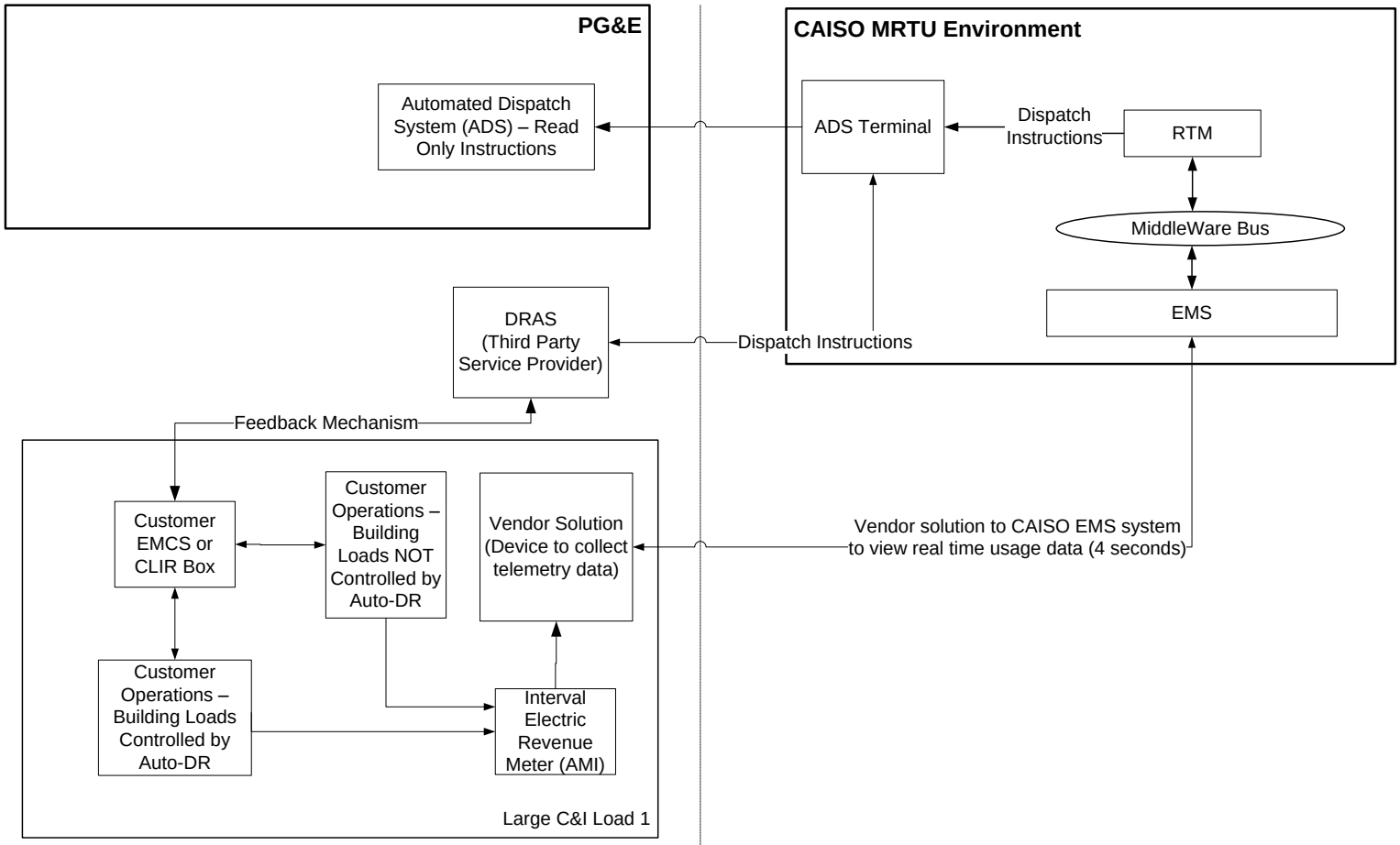
System Integration

PG&E – CAISO Process Flow



Dispatch

PG&E – CAISO Process Flow



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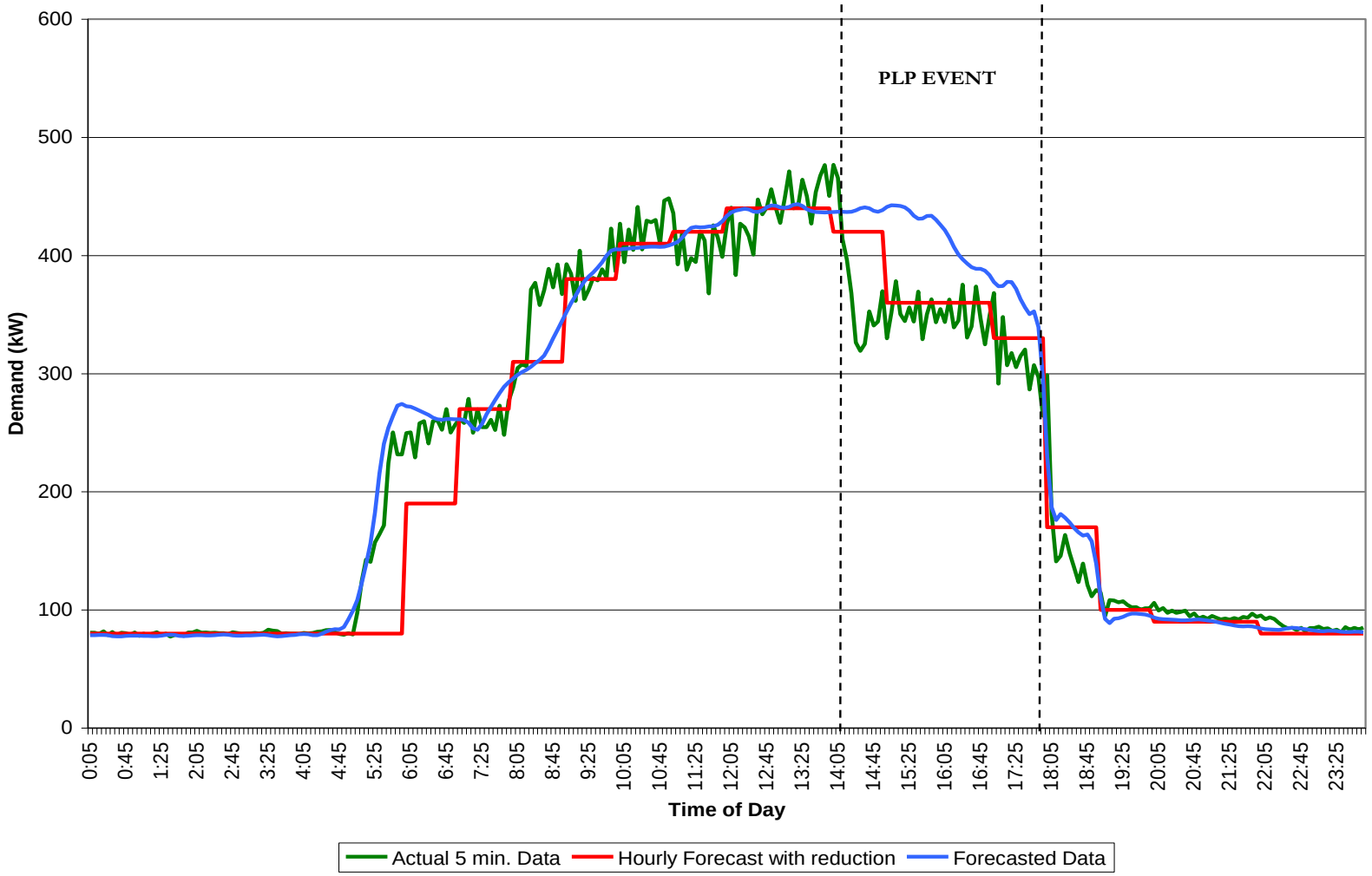
Example of PLP Event



Lessons (Operations)

- On average, resources were able to respond within 4 minutes of receiving the dispatches
- A total 16+ hours were called for non-spinning
- Performance was met when called by the CAISO
- Need better forecasting

Lessons (Technology)

- Real time telemetry met CAISO standards
  - 97% “on” time during pilot
- Successful ADS to DRAS integration without human intervention
- Feedback mechanism worked

Lessons (End Use Resources)

- Retail and local office participants ideal
  - Pre-dominant use of HVAC load
  - Lighting also provides a predictable result
- Industrial participant less predictable
- Participants pleased and eager to participate

Next Steps

- More comprehensive analysis of pilot
  - Produce sound pilots/programs/contracts for products like Spinning /Non-Spinning
  - Provides CPUC staff a roadmap
- Final decision on Direct Participation rules (Phase IV of DR OIR)
- 3Q 2010: CAISO release of Proxy Demand Product
- 1Q 2011: Field study for pilot demonstration on intermittent renewables