

# Load Impact Evaluation: Overview of Methods

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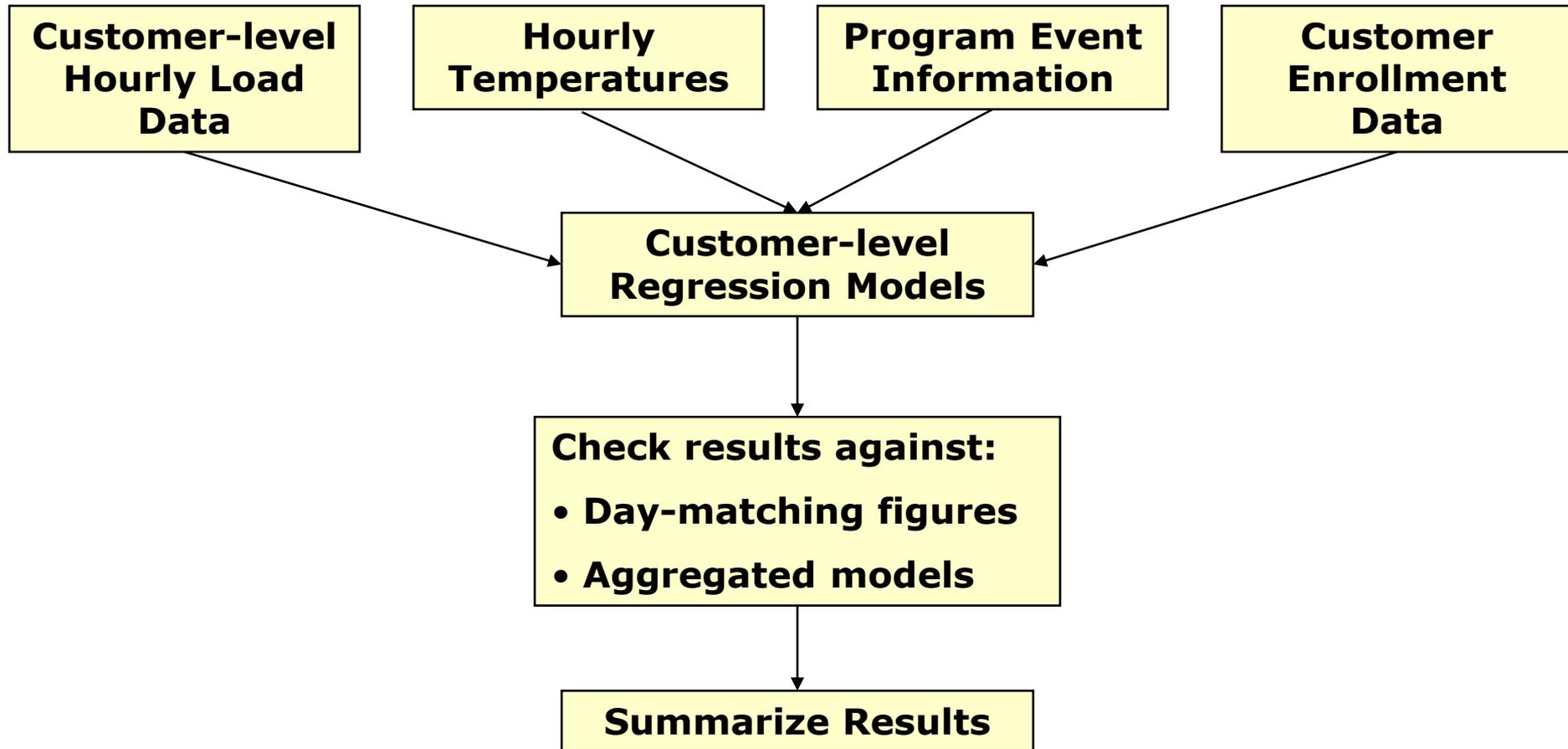
DRMEC Spring Workshop

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# Ex Post and Ex Ante Load Impact Estimation Methods

- CA Energy Consulting estimated load impacts for the following programs for 2010:
  - Demand Bidding Program (DBP – PG&E and SCE)
  - Aggregator programs
    - Capacity Bidding Program (CBP – PG&E, SCE and SDG&E)
    - Demand Response Contracts (DRC – SCE)
    - Aggregator Managed Portfolio (AMP – PG&E)
    - Demand Smart Program (DSP - SDG&E)
  - PeakChoice (PG&E)

# Ex Post Load Impact Estimation – Process



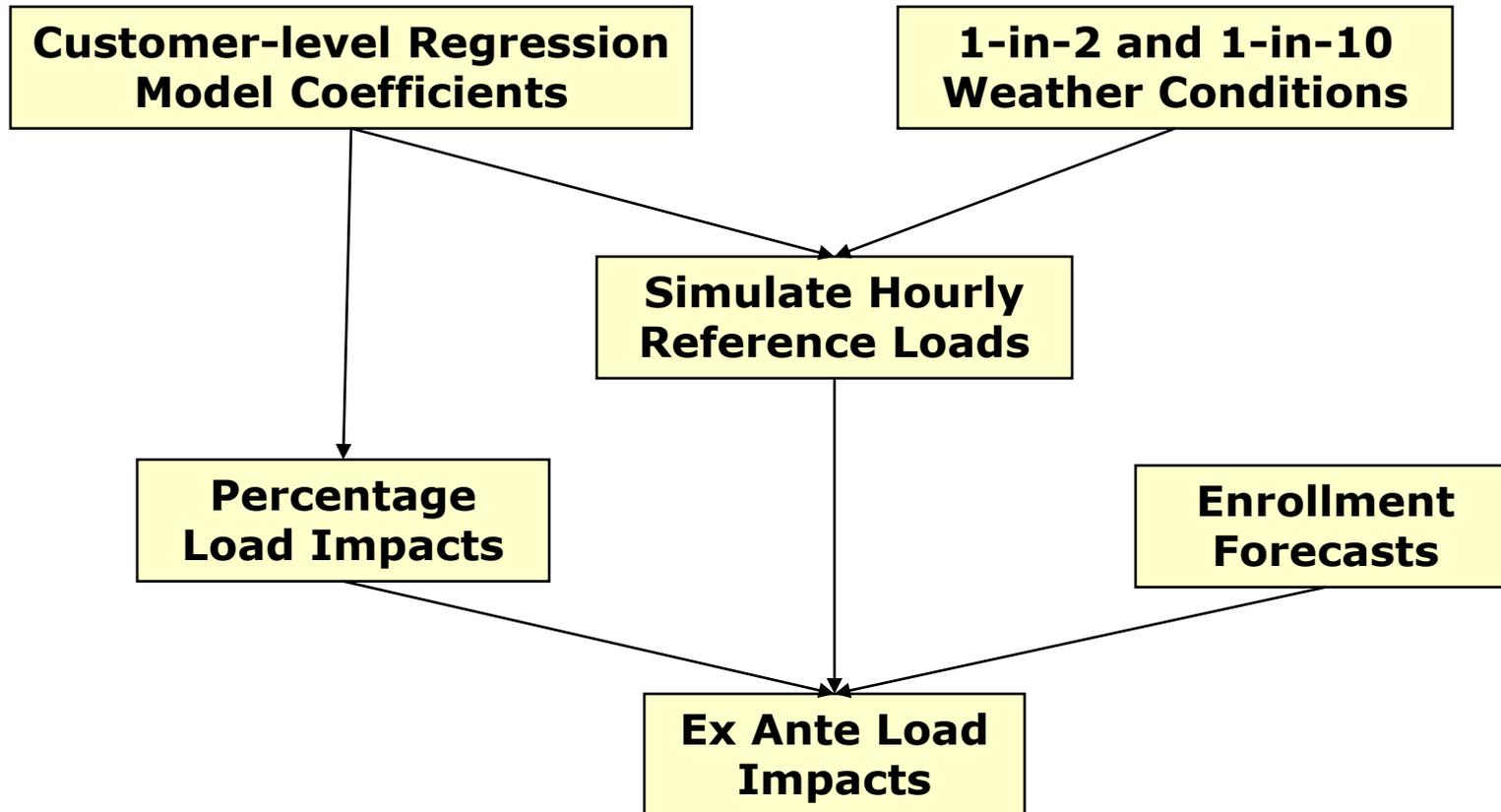
# Typical Ex-Post Regression Model

- ❑ Dependent variable = kWh/hour
- ❑ Independent variables:
  - To estimate hourly *event-day load impacts* --
    - Indicator variables for each hour of every event day
  - To control for *weather* conditions --
    - Hourly cooling degree-hour variables (50 degree threshold)
  - To establish *typical hourly load profile* --
    - Separate hourly indicator variables for Monday, Tuesday-Thursday, and Friday
  - To control for typical load *level* --
    - Day-of-week indicator variables
    - Month-of-year indicator variables

# Typical Ex-Post Regression Model (2)

- Independent variables (*continued*):
  - Event-hour indicators for events of *other DR programs* in which the customer is enrolled
  - Summer load differences
    - Introduced to improve estimates for schools
    - Summer defined as mid-June through mid-August
    - Separate summer load level, hourly load profile, and weather effects
  - Day-of, *morning-load* adjustment to improve accuracy
    - Average hourly load from hour-ending 1 through 10

# Ex Ante Load Impact Simulation Process



# Questions?

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