

# PG&E DER Disaggregation Methodologies

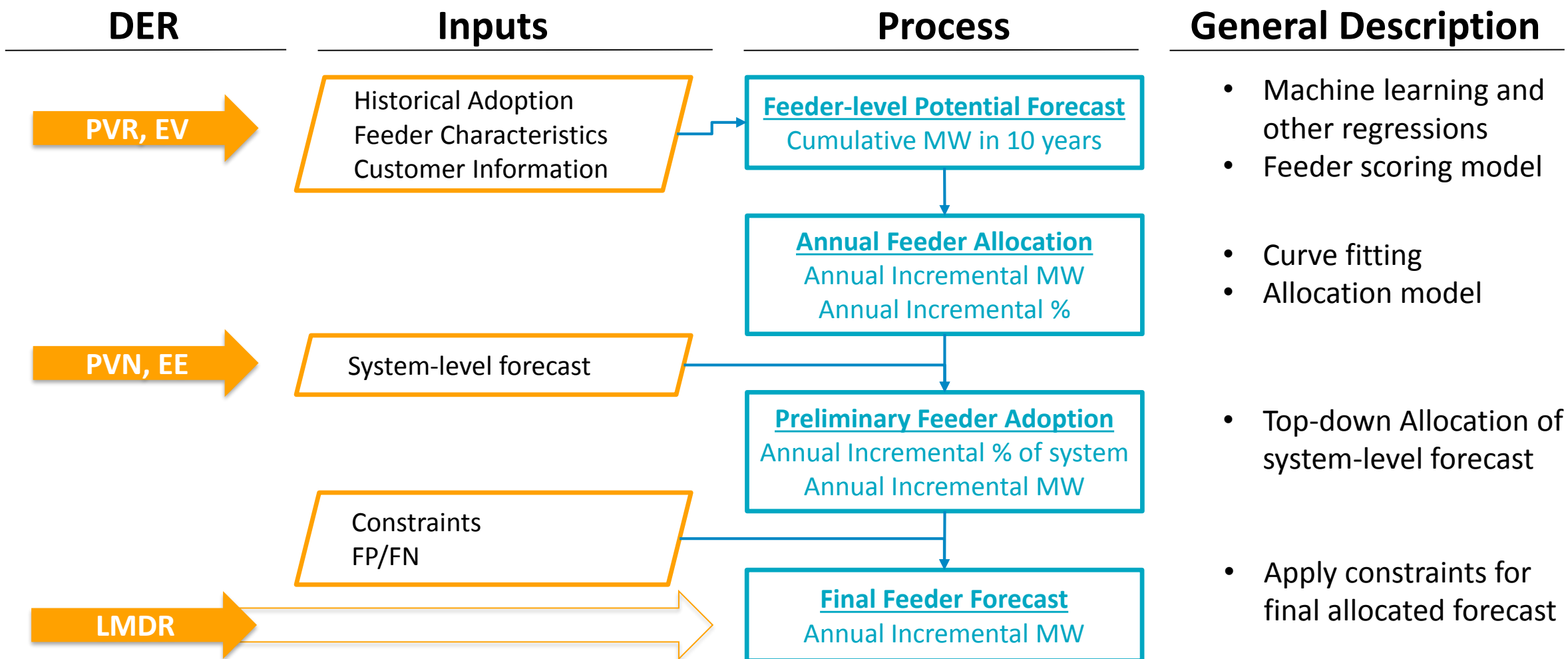
DFWG Meeting #1  
April 18, 2018

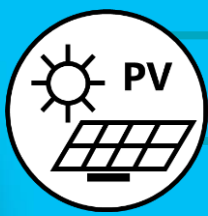


Together, Building  
a Better California

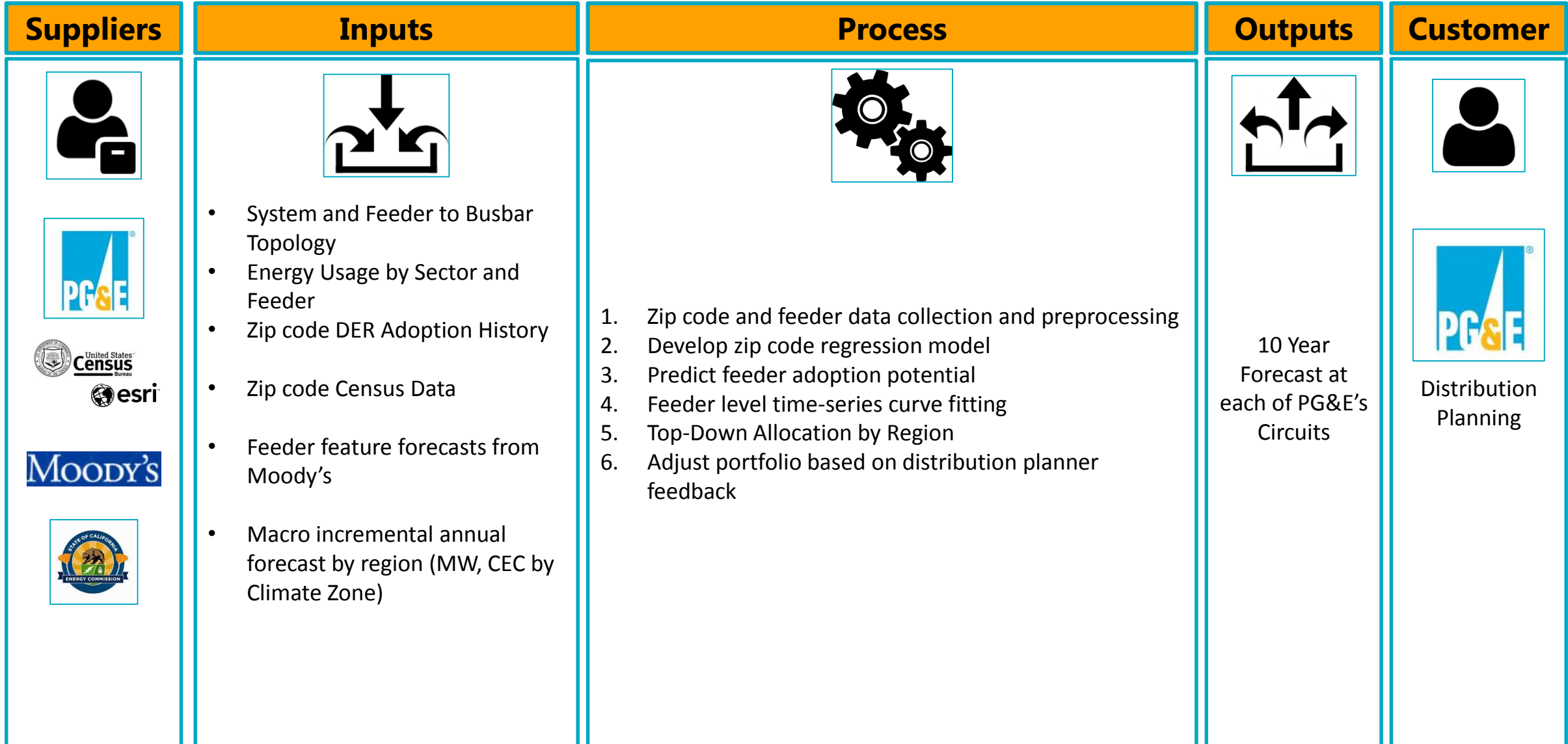


# DER Allocation Process and Description



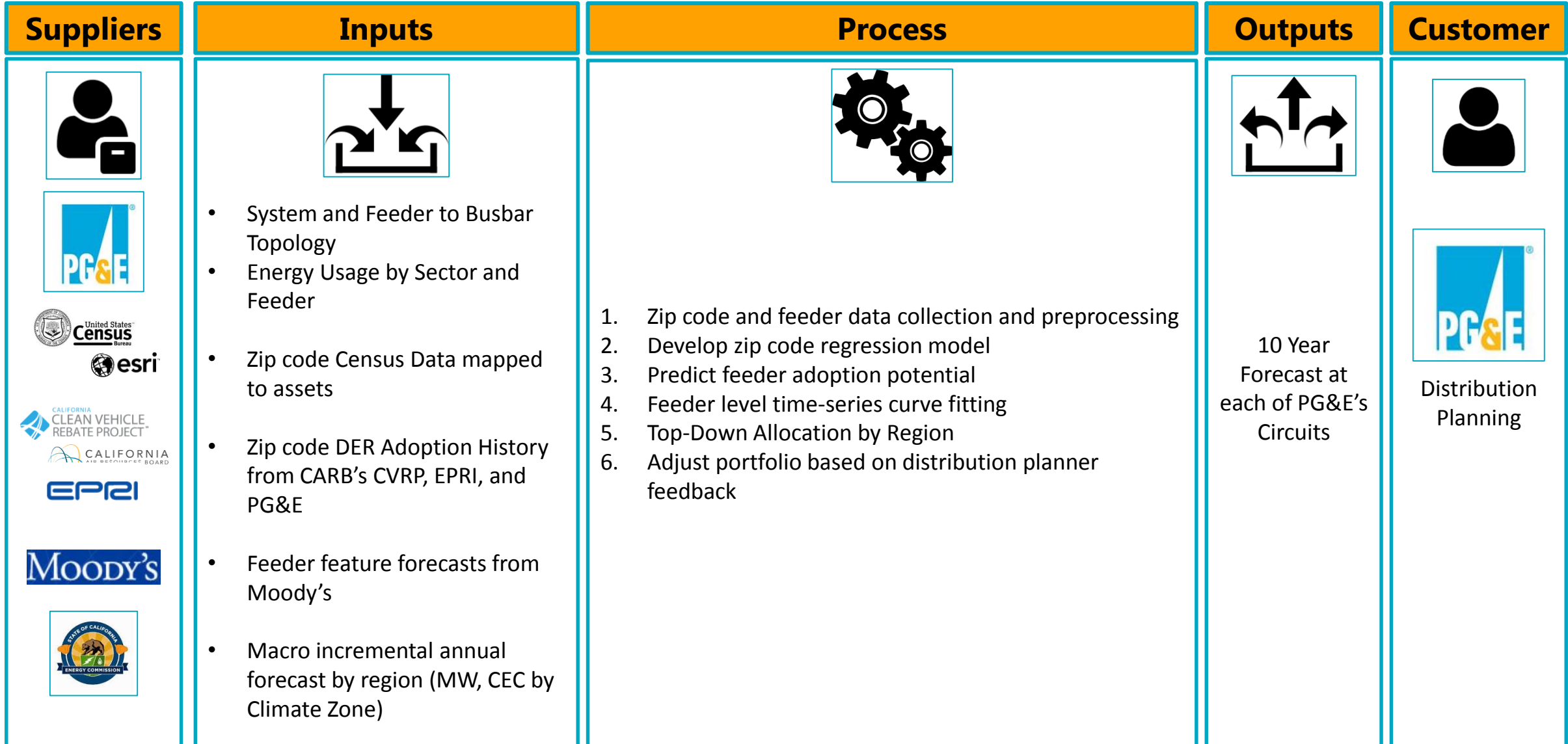


# Residential PV



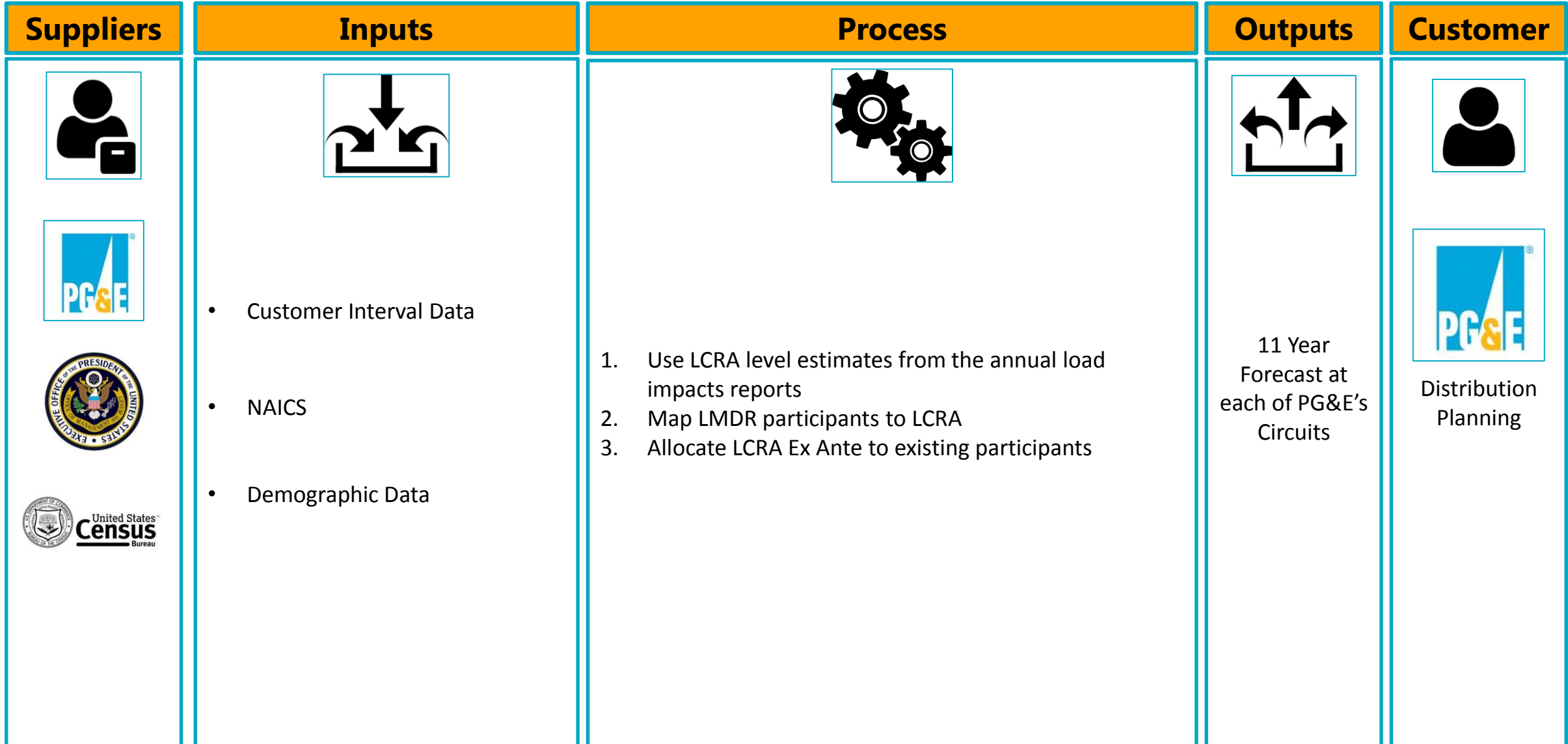


# Electric Vehicles



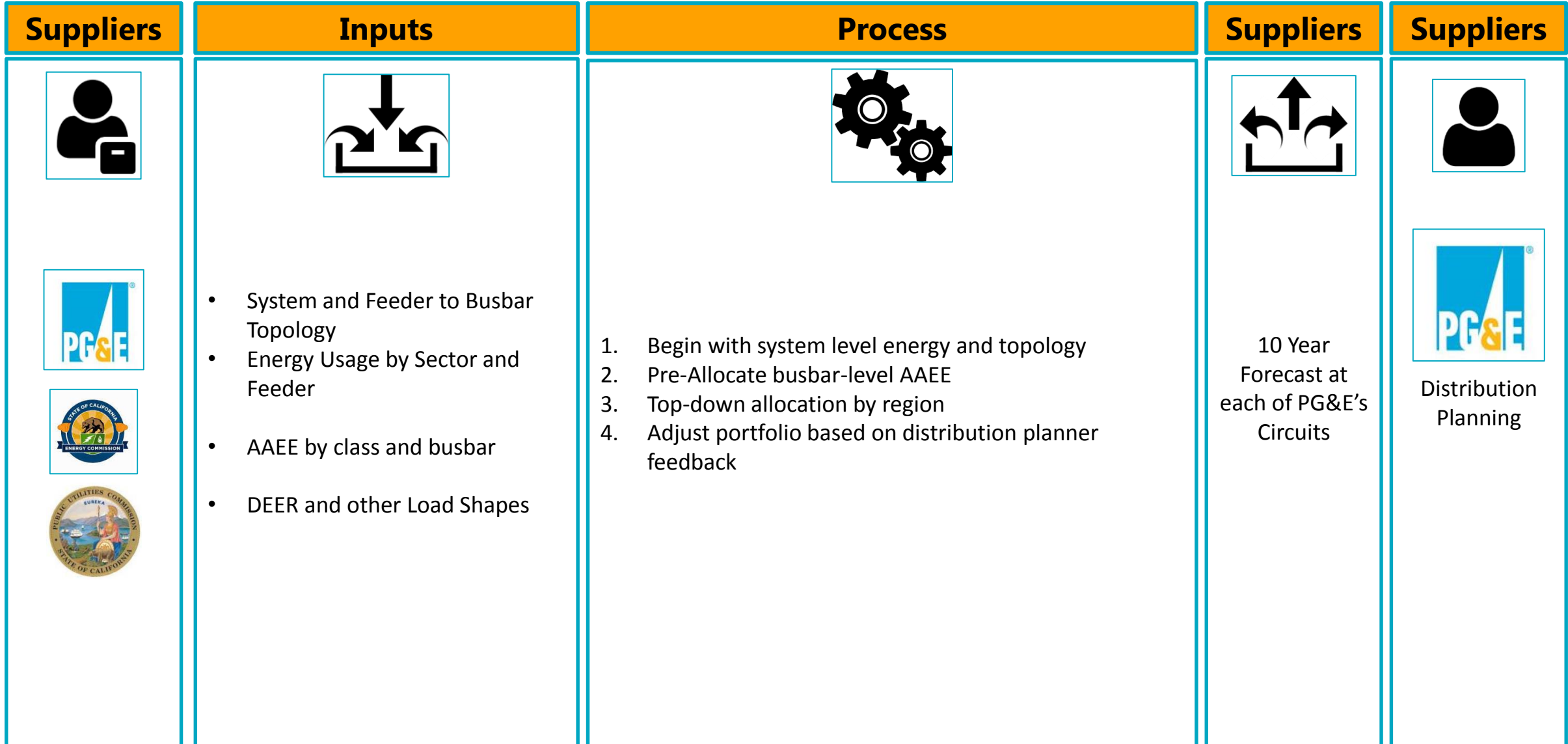


# Load Modifying Demand Response





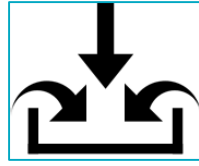
# Energy Efficiency



## Suppliers

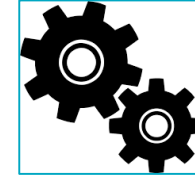


## Inputs



- System and Feeder to Busbar Topology
- Energy Usage by Sector and Feeder
  - a) Average daily summer consumption (kWh)
  - b) Feeder customer class load shapes (kW)
  - c) DER Adoption history
- AEE by class and busbar (MW)
- DEER and other Load Shapes

## Process



1. Begin with system level energy and topology
  - Calculate proportional consumption by customer class, busbar, and feeder (%)
  - Estimate feeder customer class load shapes:
    - Compute average coincident demand of top three peak hours at the system and busbar (kW)
    - Calculate proportional coincident demand (%)
2. Pre-Allocate busbar-level AEE
  - Multiply coincident consumption and load shape (MW)
  - Compute proportional consumption and demand by annual incremental AEE and load shapes (MW, MW)
  - Average the consumption and demand AEE by feeder (MW)
3. Top-down allocation by region
  - Allocate of average busbar AEE with min and max limits
4. Adjust portfolio based on distribution planner feedback
  - Add or remove load generation based on local expertise