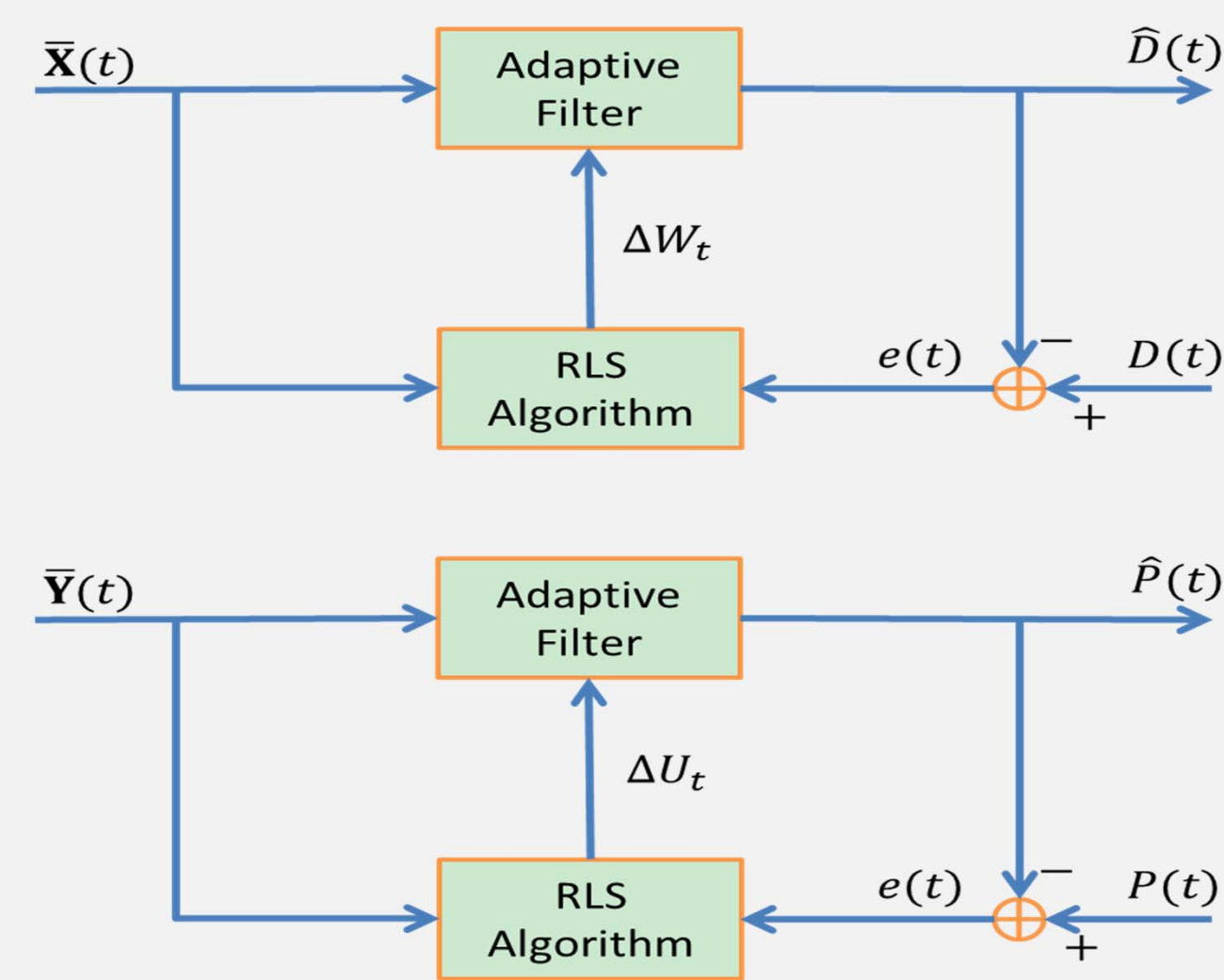


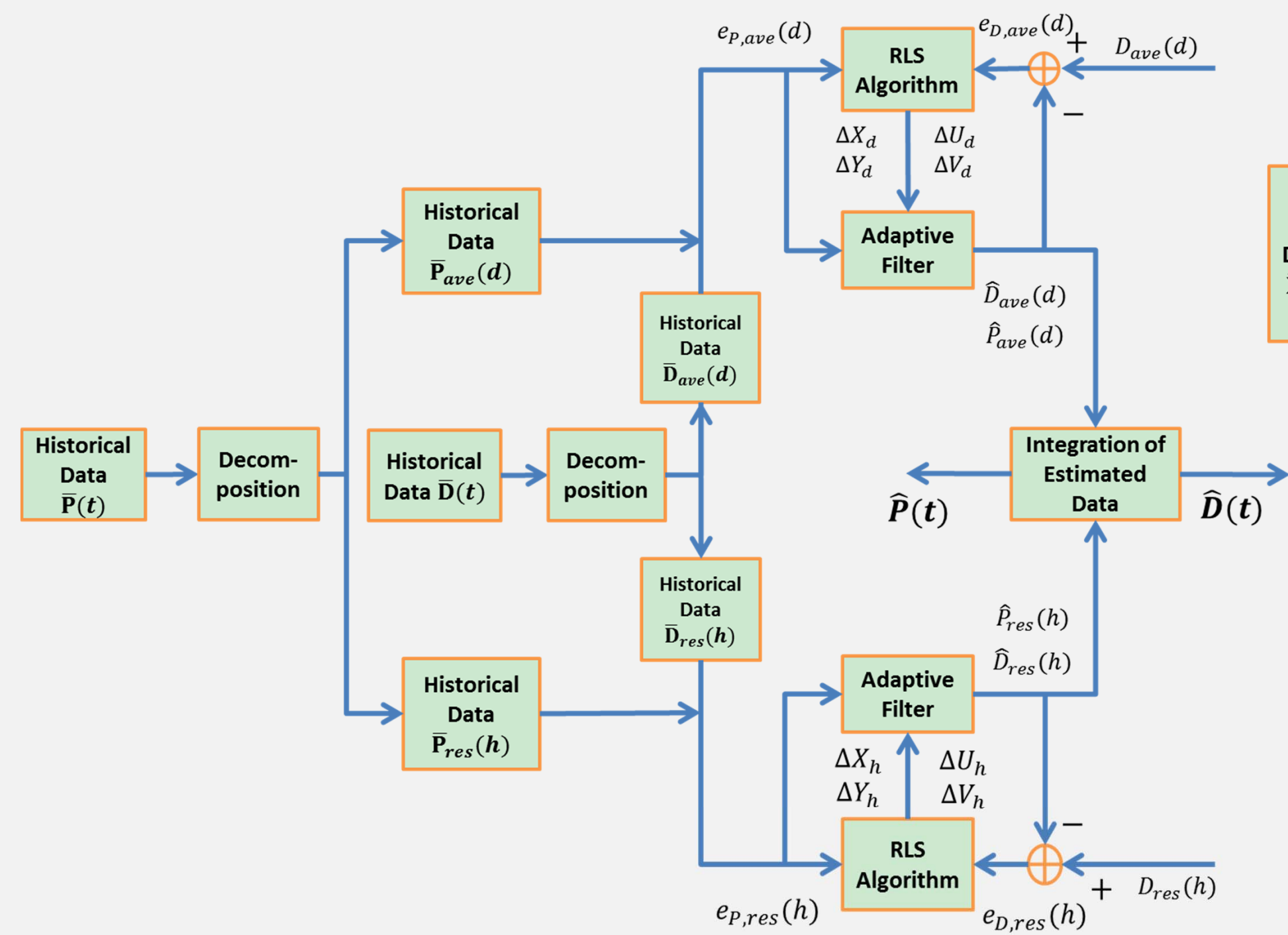
Research Objective

- ❑ Achieve a rational profit maximizing behavior for GENCOs during the day-ahead bidding process
- ❑ Design a dynamic bidding model using linear supply function equilibrium
- ❑ Demand and price forecasting using recursive least square method
- ❑ Demand and price forecasting using adaptive multiresolution prediction method
- ❑ Introduce the idea of an optimal portfolio strategy for GENCOs to participate into the electricity market operation

Adaptive Control System using Prediction Algorithms



- ❑ Recursive least square prediction method structure



- ❑ Adaptive multiresolution prediction method structure

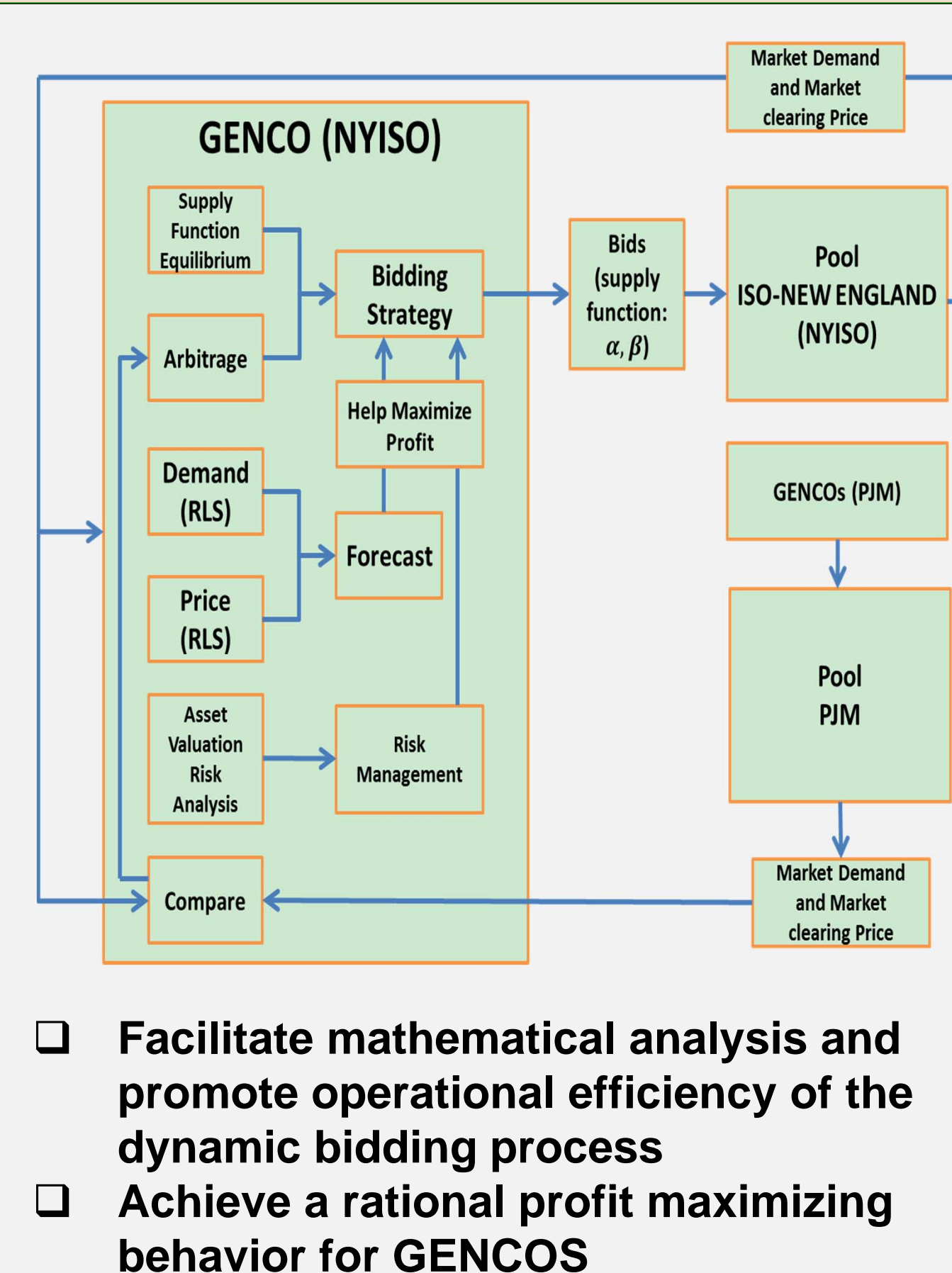
Electricity Market Structure



- ❑ Regulated electricity market structure:
 - Generation, transmission, distribution process
 - The only electricity provider
 - Natural monopoly
 - Market inefficiency

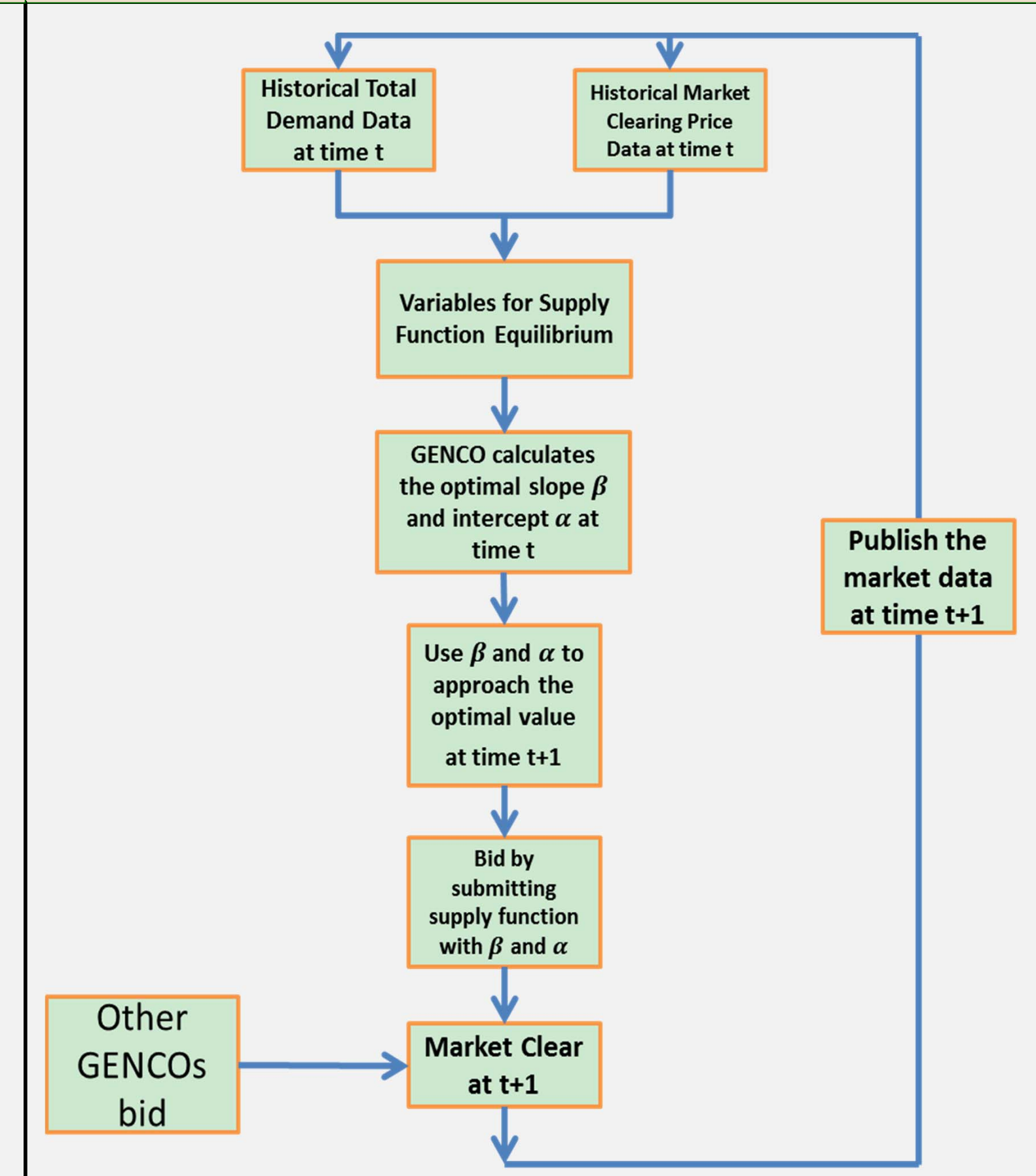
- ❑ Deregulated electricity market structure:
 - New market participants
 - An open environment for electric power industry
 - Electricity is now bought and sold in a competitive market as a commodity
 - More choices of where to sell or buy

Closed-loop Control System



- ❑ Facilitate mathematical analysis and promote operational efficiency of the dynamic bidding process
- ❑ Achieve a rational profit maximizing behavior for GENCOs

SFE Dynamic Bidding Strategy



Results and Discussion

