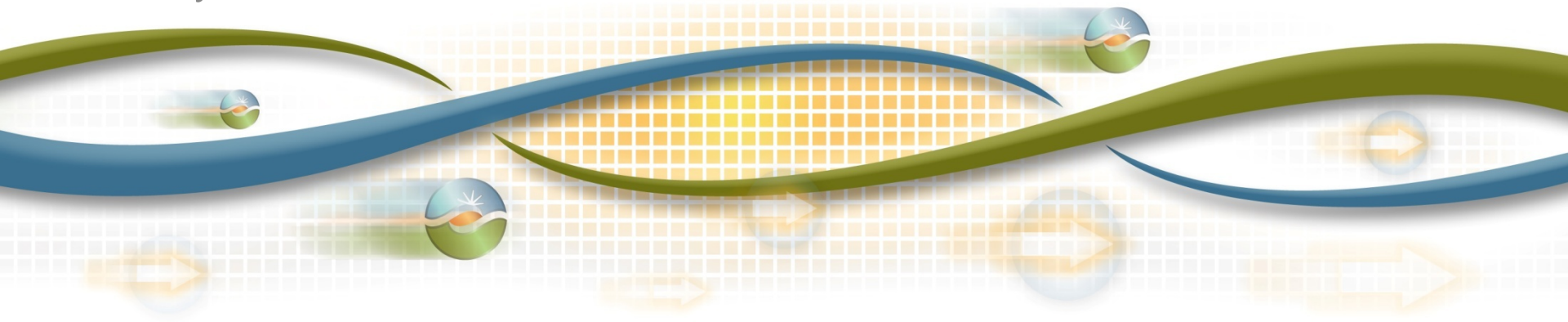


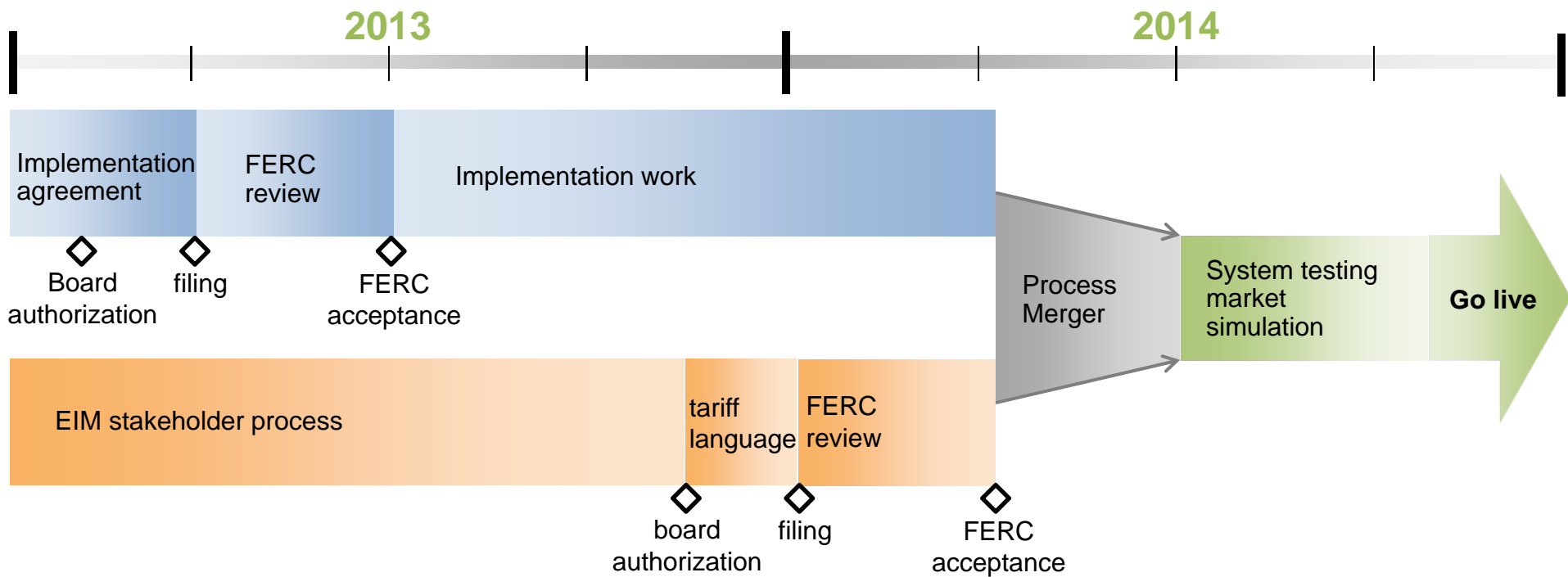
Energy Imbalance Market Design Straw Proposal

Lorenzo Kristov
Principal, Market & Infrastructure Policy

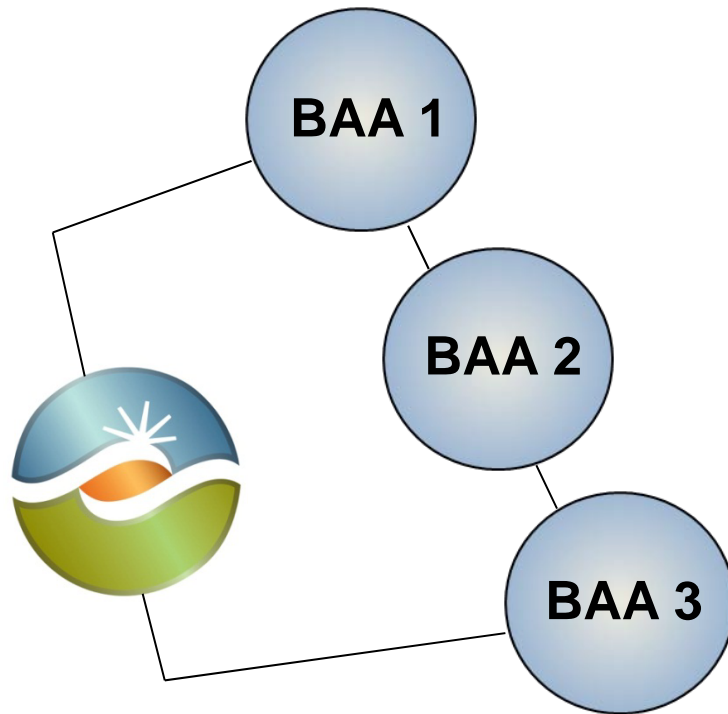
IEPR Workshop
California Energy Commission
May 7, 2013



EIM stakeholder process proceeds in parallel with PacifiCorp implementation

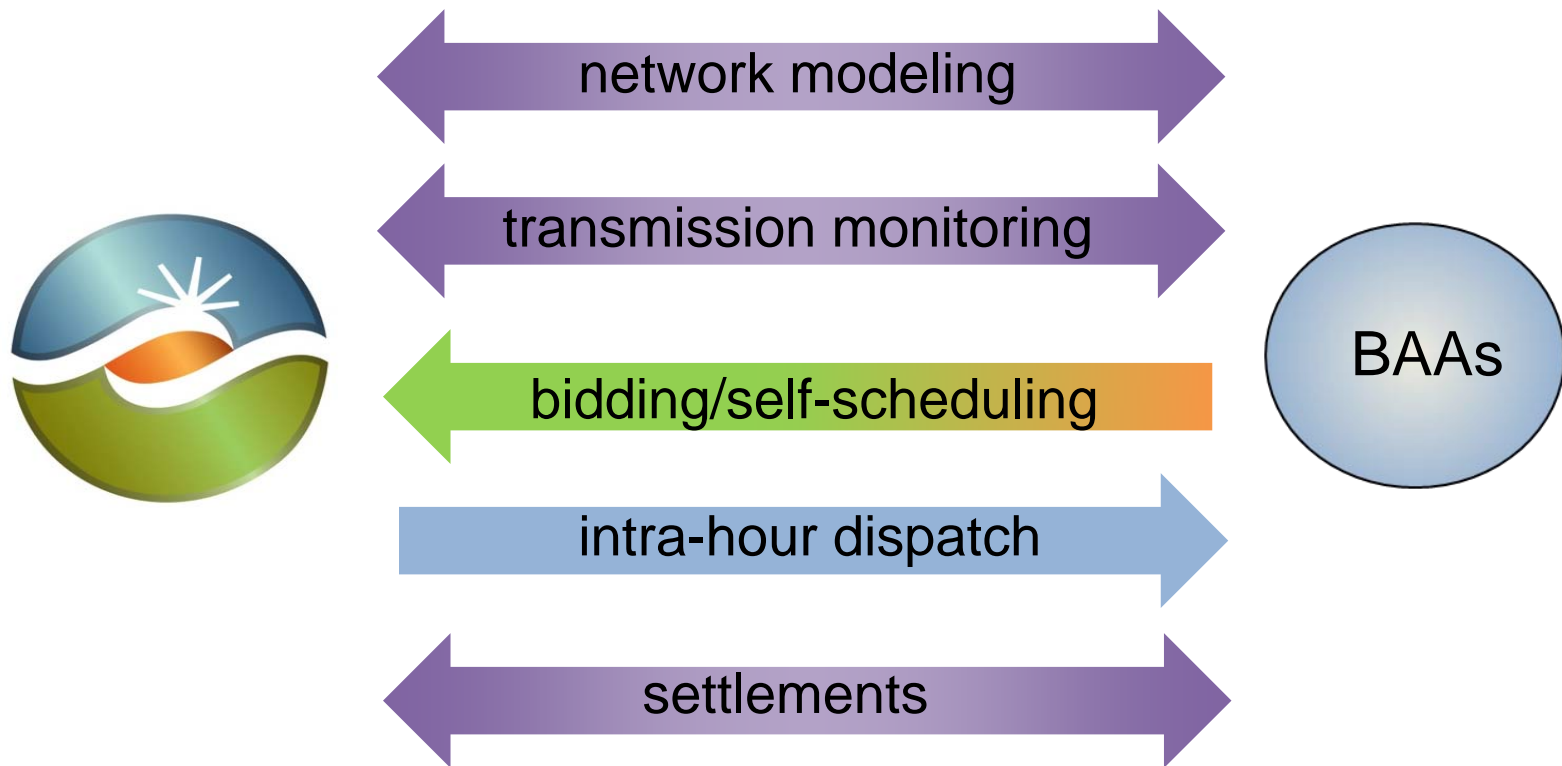


March 2012, CAISO proposed a scalable approach for implementing Energy Imbalance Market (EIM)



- No critical mass required – each participant can enter EIM when ready
- Preserves participants' autonomy and current practices
 - Balancing authorities balance and provide their own ancillary services
 - Balancing authorities can trade bilaterally
 - Participants retain all physical scheduling rights
 - Flexible modes of participation are available

CAISO proposed a scalable approach for implementing Energy Imbalance Market (EIM)



Energy Imbalance Market Definitions

EIM Entity is a balancing authority area that is enabling EIM to occur in their area. By enabling EIM, load and generation imbalances within the balancing authority will settle through the EIM.

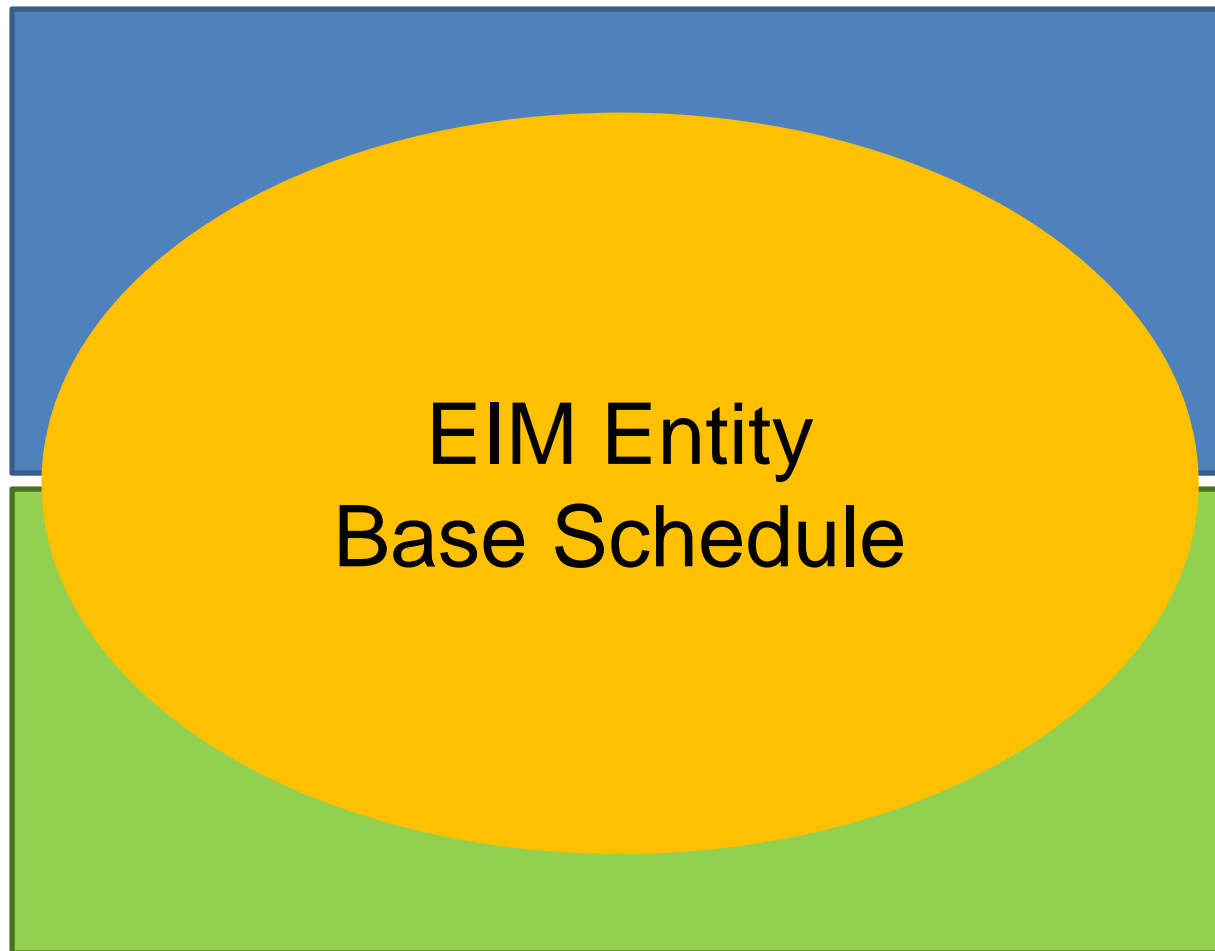
EIM Participant is a resource within the EIM Entity represented by a Scheduling Coordinator that has voluntarily elected to economically participate in the EIM.

Process Overview Visual

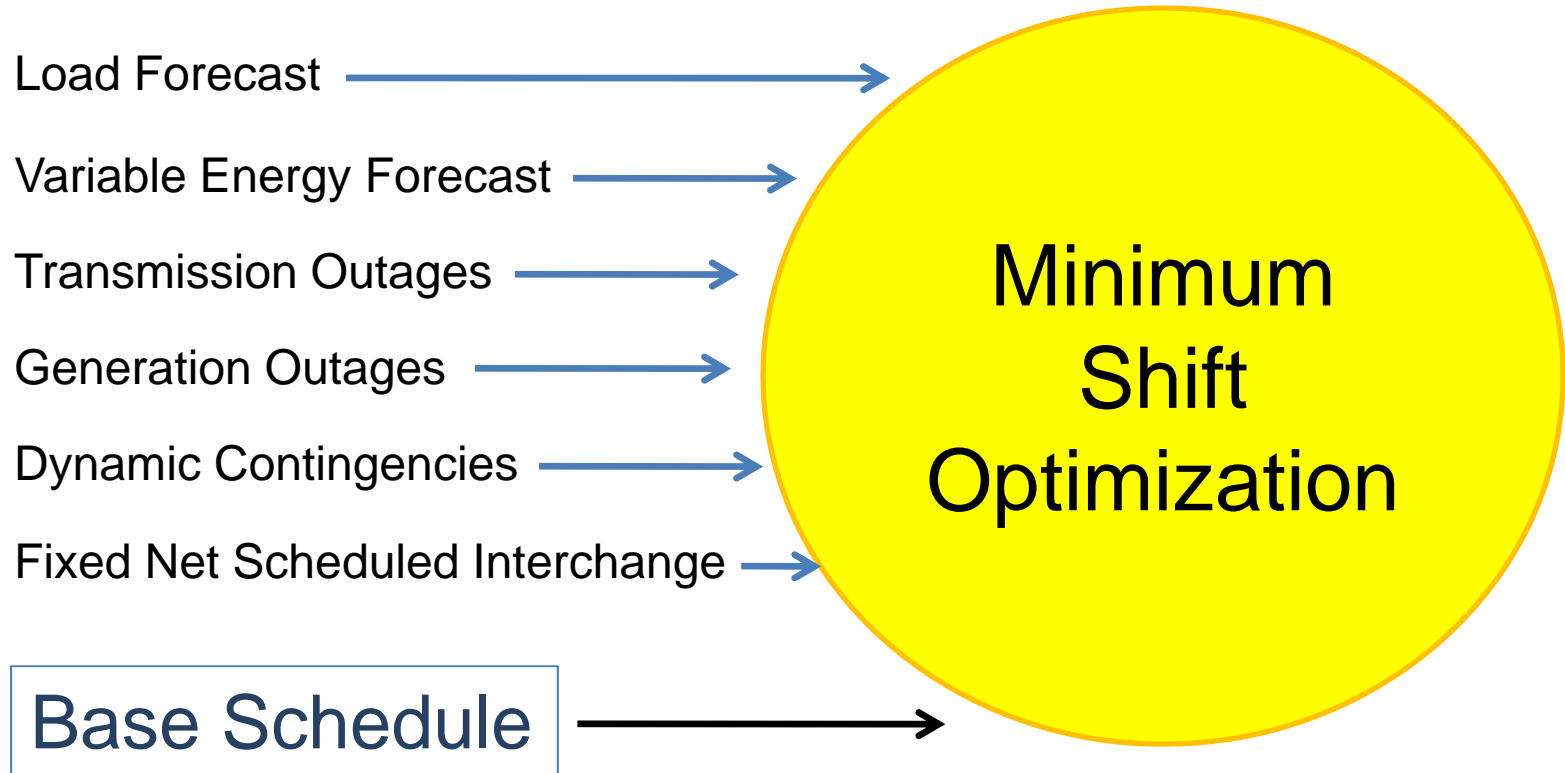
Full Network Model

Resource Master File

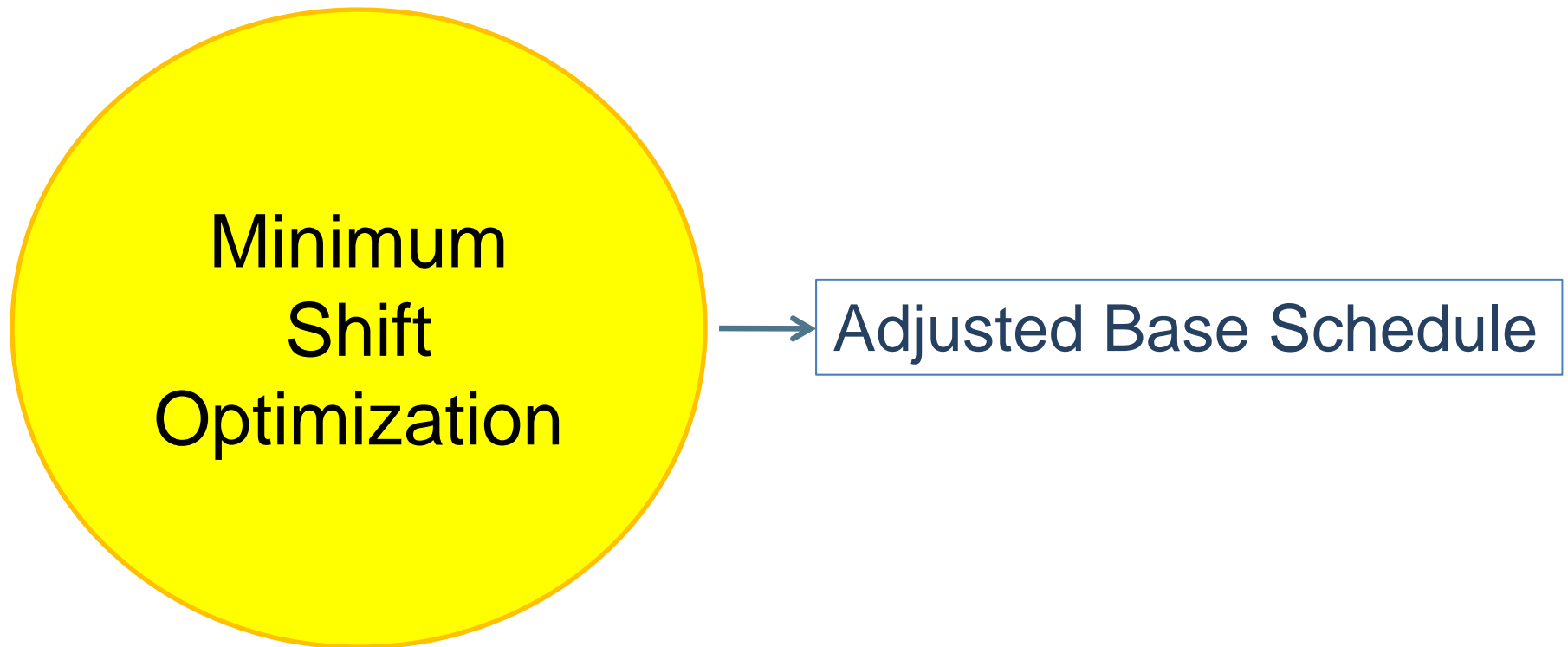
Process Overview Visual



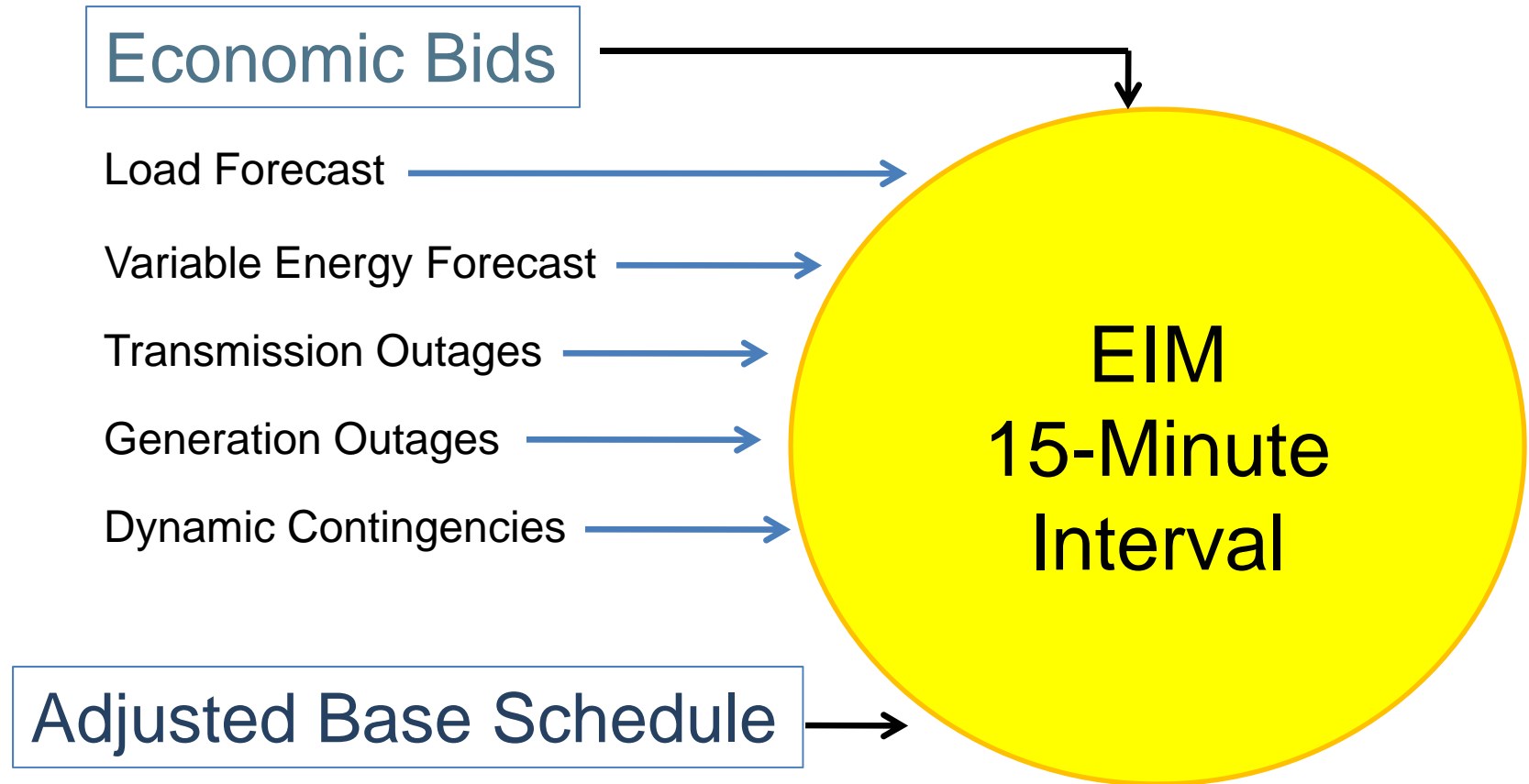
Process Overview Visual



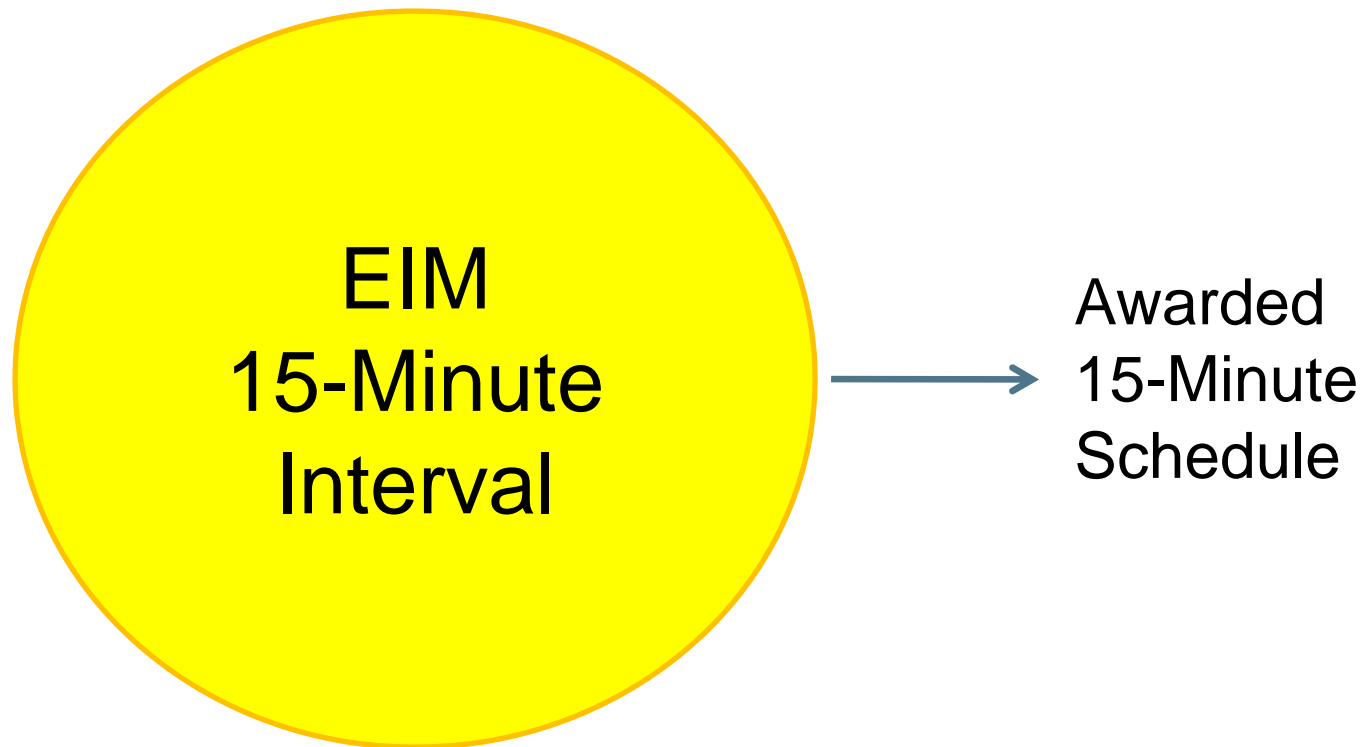
Process Overview Visual



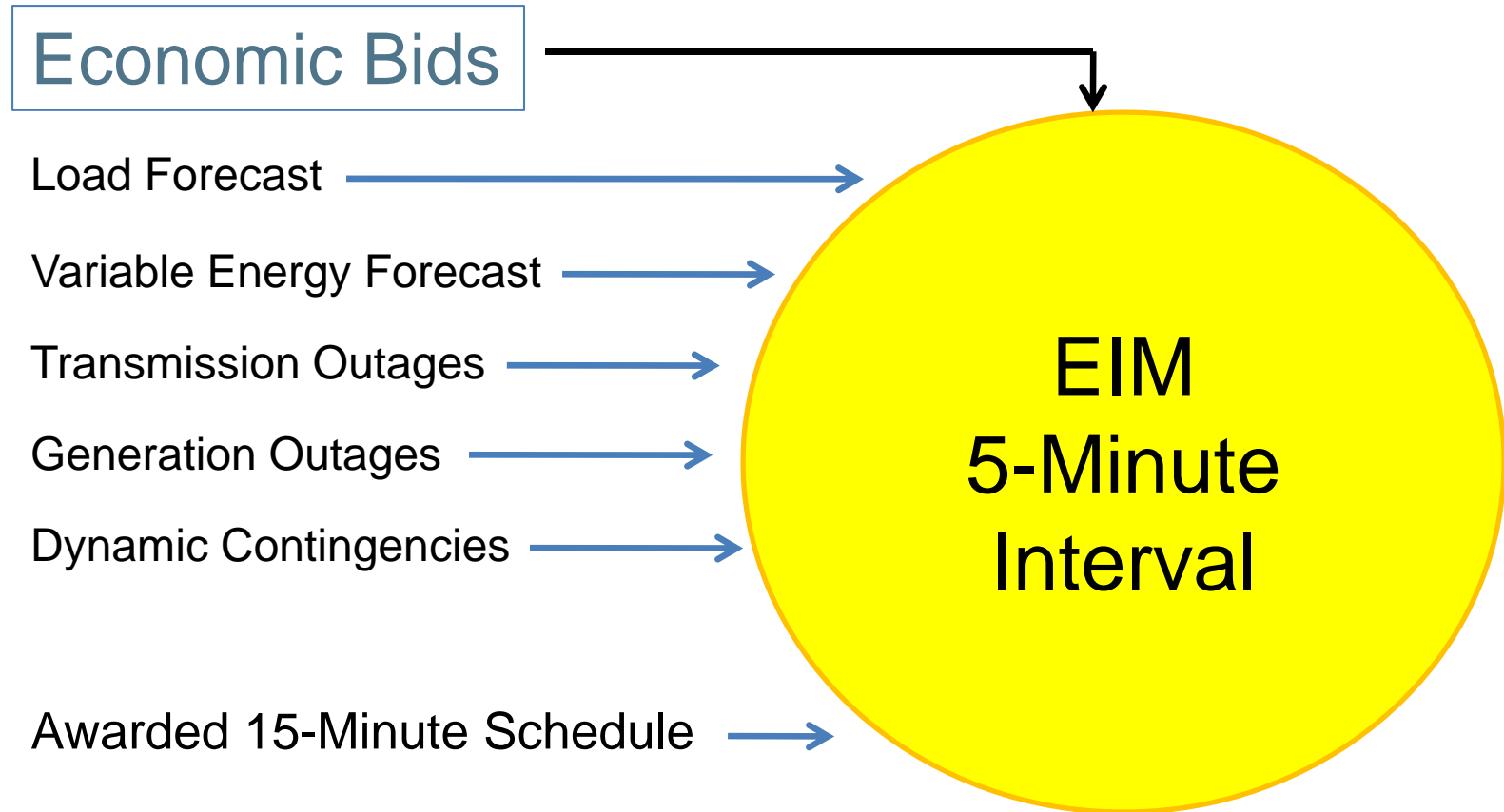
Process Overview Visual



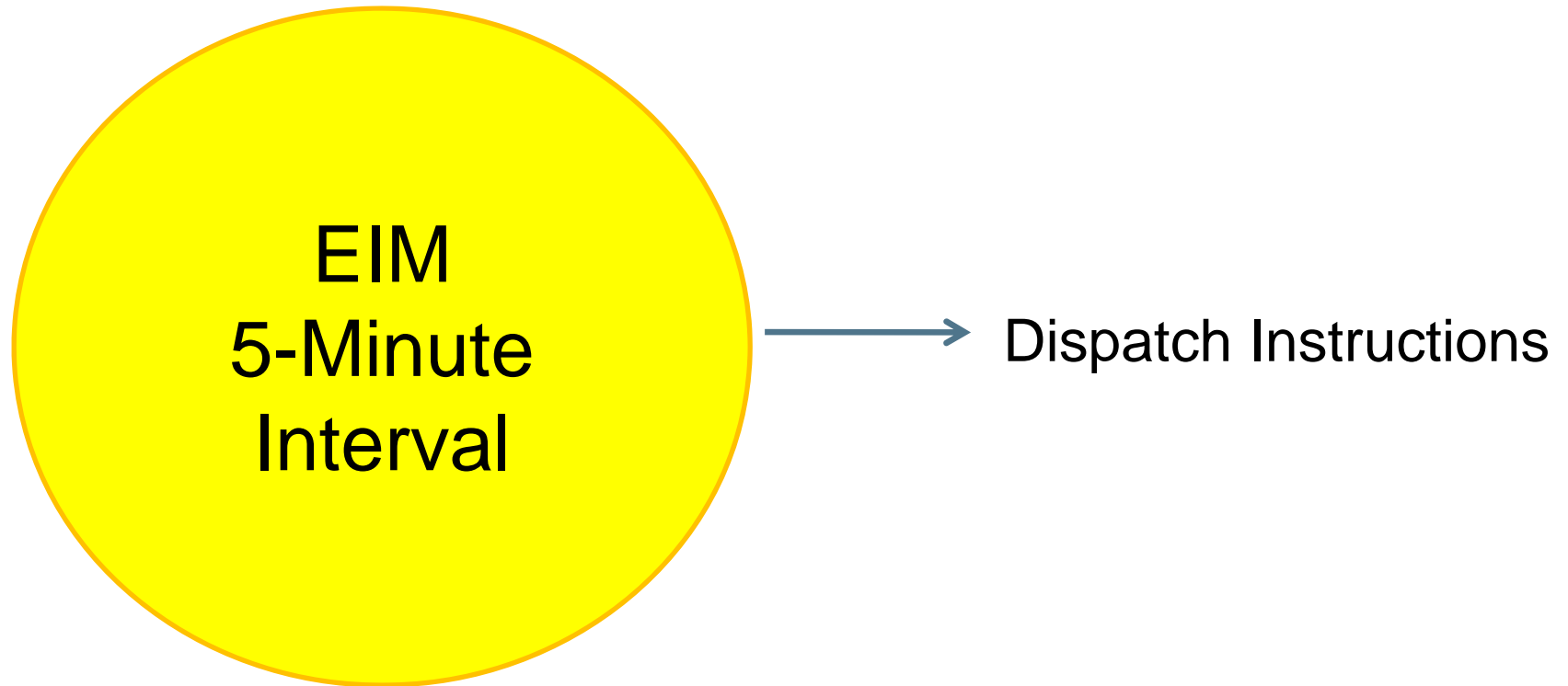
Process Overview Visual



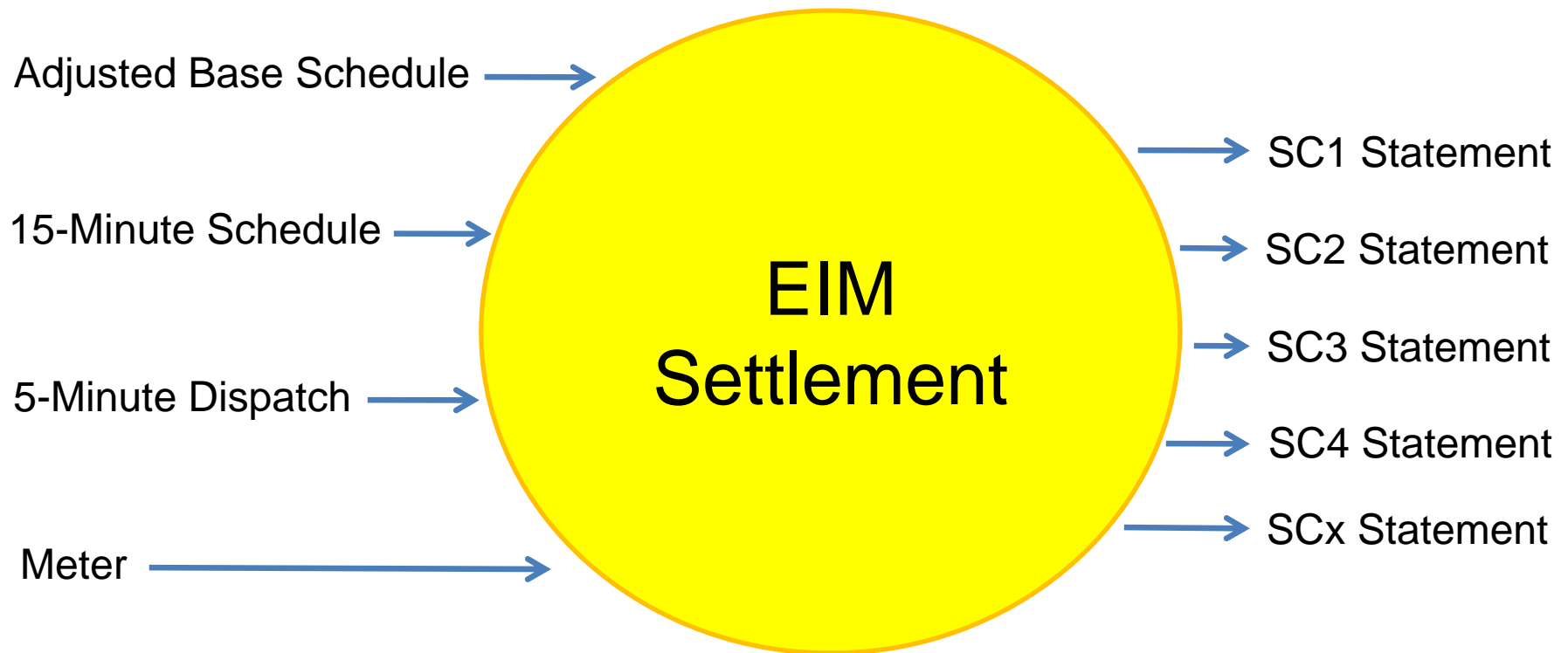
Process Overview Visual



Process Overview Visual



Process Overview Visual



EIM Administrative Costs

- Cost effective for October 2014-December 2014
- CAISO GMC and Cost of Service Study will be updated for the rates starting 2015
- Startup costs equal \$0.03 times the total annual energy usage
- Administrative rate of \$0.19 per MWh volume as calculated by:
 - Generation = MAX (5% Gross Generation, Generation Imbalance Energy: 5-minute vs. 15-minute)
 - Load = MAX (5% Gross Load, Load Imbalance Energy: 5-minute vs. 15-minute)

Process for New EIM Entities

- Encourage interested parties to engage as early as possible
 - For 2014, assessment based upon system complexity and timing of commitment
- Anticipate future implementations will occur on an annual commitment cycle with 12-18 month lead time
 - Implementation requires significant network modeling changes
 - Must align with CAISO spring and fall software release cycle
- New entrants pay start up fee (\$0.03 per MWh Demand)
 - Payment will be established through implementation agreement filed with FERC

The ISO offers comprehensive training programs

- Welcome to the CAISO
- Introduction to CAISO Markets
- Market Transactions
- EIM specific training is under development

Training calendar - <http://www.caiso.com/participate/Pages/Training/default.aspx>

Contact us - markettraining@caiso.com